Faculty of Science Handbook 2003
## University semester and vacation dates 2003

<table>
<thead>
<tr>
<th>Event</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Summer School</strong></td>
<td></td>
</tr>
<tr>
<td>Lectures begin</td>
<td>Monday 6 January</td>
</tr>
<tr>
<td>Lectures end</td>
<td>Friday 7 March</td>
</tr>
<tr>
<td><strong>Semester 1</strong></td>
<td></td>
</tr>
<tr>
<td>Lectures begin</td>
<td>Monday 10 March</td>
</tr>
<tr>
<td>Easter recess:</td>
<td>Thursday 17 April</td>
</tr>
<tr>
<td>Last day of lectures</td>
<td>Monday 28 April</td>
</tr>
<tr>
<td>Study vacation: 1 week</td>
<td>Monday 16 June</td>
</tr>
<tr>
<td>Examinations commence</td>
<td>Monday 23 June</td>
</tr>
<tr>
<td>Lectures end</td>
<td>Saturday 5 July</td>
</tr>
<tr>
<td><strong>Semester 2</strong></td>
<td></td>
</tr>
<tr>
<td>Lectures begin</td>
<td>Monday 28 July</td>
</tr>
<tr>
<td>- Mid-semester recess:</td>
<td></td>
</tr>
<tr>
<td>Last day of lectures</td>
<td>Friday 26 September</td>
</tr>
<tr>
<td>Lectures resume</td>
<td>Tuesday 7 October</td>
</tr>
<tr>
<td>Study vacation: 1 week</td>
<td>Monday 3 November</td>
</tr>
<tr>
<td>Examinations commence</td>
<td>Monday 10 November</td>
</tr>
<tr>
<td>Lectures end</td>
<td>Saturday 22 November</td>
</tr>
<tr>
<td><strong>Last dates for withdrawal or discontinuation 2003</strong></td>
<td></td>
</tr>
<tr>
<td>Semester 1 units of study</td>
<td></td>
</tr>
<tr>
<td>Last day to add a unit</td>
<td>Friday 21 March</td>
</tr>
<tr>
<td>Last day for withdrawal</td>
<td>Monday 31 March</td>
</tr>
<tr>
<td>Last day to discontinue without failure (DNF)</td>
<td>Friday 2 May</td>
</tr>
<tr>
<td>Last day to discontinue (Discontinued - Fail)</td>
<td>Friday 13 June</td>
</tr>
<tr>
<td>Semester 2 units of study</td>
<td></td>
</tr>
<tr>
<td>Last day to add a unit</td>
<td>Friday 8 August</td>
</tr>
<tr>
<td>Last day for withdrawal</td>
<td>Friday 31 August</td>
</tr>
<tr>
<td>Last day to discontinue without failure (DNF)</td>
<td>Friday 12 September</td>
</tr>
<tr>
<td>Last day to discontinue (Discontinued - Fail)</td>
<td>Friday 31 October</td>
</tr>
<tr>
<td>Full Year units of study</td>
<td></td>
</tr>
<tr>
<td>Last day for withdrawal</td>
<td>Friday 31 March</td>
</tr>
<tr>
<td>Last day to discontinue with permission (DNF)</td>
<td>Friday 1 August</td>
</tr>
<tr>
<td>Last day to discontinue (Discontinued - Fail)</td>
<td>Friday 31 October</td>
</tr>
</tbody>
</table>

University semester and vacation dates 2001-2006 are listed in an Acrobat PDF document which can be downloaded from: [policy.rms.usyd.edu.au/000004e.pdf](policy.rms.usyd.edu.au/000004e.pdf).
Contents

Introduction iii
Message from the Dean vi
A brief history of the Faculty vii

1. Contact information viii
Bachelor degree program coordinators 1
Schools, departments, centres 1

2. Undergraduate enrolment advice and policies 4
Enrolment day FAQs 4
Bachelor of Science (BSc) 5
Enrolment guide by major 6
Bachelor of Science (Advanced) 8
Bachelor of Science (Advanced Mathematics) 9
Bachelor of Science (Bioinformatics) 10
Bachelor of Science (Environmental) 11
Bachelor of Science (Marine Science) 12
Bachelor of Science (Molecular Biology and Genetics) 13
Bachelor of Science (Molecular Biotechnology) 14
Bachelor of Science (Nutrition) 15
Combined Science/Law degrees (BSc/LLB) 16
Combined Science/Arts & Science degrees 17
Combined Engineering/Science degrees 18
Double degree in Science/Engineering 19
Combined Science/Commerce degrees 19
Combined Nursing/Science degrees 21
Combined Education/Science degrees 22
Bachelor of Liberal Studies (BLibStud) 23
Bachelor of Computer Science and Technology (BCST) 24

Bachelor of Computer Science and Technology (Advanced) 25
Bachelor of Information Technology (BIT) 26
Bachelor of Medical Science (BMedSc) 27
Combined Engineering/Medical Science degrees 28
Bachelor of Science in Media and Communications (BScMediaCommun) 28
Bachelor of Psychology (BPsych) 30
Honours in the Faculty of Science 31
Important policies relating to undergraduate candidature 32
Discontinuation and re-enrolment - University of Sydney (Coursework) Rule 33
Restrictions upon re-enrolment - University of Sydney (Coursework) Rule 34
Faculty life and representation 34
Employment for graduates in Science 35

3. Undergraduate tables and units of study 36
Units of study descriptions 95
Aerospace, Mechanical and Mechatronic Engineering 95
Agricultural Chemistry and Soil Science 95
Agricultural Chemistry 95
Soil Science 96
Anatomy and Histology 97
Biochemistry 99
Biological Sciences 102
Cell Pathology 110
Chemical Engineering 111
Chemistry 111
Civil Engineering 116
Computational Science 116
Environmental Science 117
Geosciences 118
Geography 118
Geology 121
History and Philosophy of Science 123
Immunobiology Major 124
Immunology 125
Information Technologies 125
Law units of study 131

Liberal Studies units of study 132
Marine Science 132
Mathematics and Statistics 136
Mathematics Junior units of study 136
Media and Communications units of study 146
Medical Science units of study 148
Medicinal Chemistry 150
Microbiology 150
Bachelor of Science (Molecular Biology and Genetics) 152
Molecular Biology and Genetics 152
Molecular Biotechnology 153
School of Molecular and Microbial Biosciences 154
Nanoscience and Technology 154
Neuroscience 154
Nutrition 155
Pharmacology 156
Physics 158
Physiology 162
Psychology 164

4. Talented Student Program 168

5. Undergraduate degree regulations 170
University of Sydney (Coursework) Rule 2000 170
Rules relating to coursework award courses 170
Bachelor of Science 173
Resolutions of the Senate 173
Resolutions of the Faculty 174
Combined degrees 175
Specific glossary for the BSc 178
Bachelor of Computer Science and Technology 178

Resolutions of the Senate 178
Resolutions of the Faculty 178
Specific glossary for the BCST 180
Bachelor of Information Technology 180
Resolutions of the Senate 180
Resolutions of the Faculty 180
Specific glossary for the BIT 182
Bachelor of Medical Science 182
Resolutions of the Senate 182
Resolutions of the Faculty 182
Specific glossary for the BMedSc 184
Bachelor of Psychology 184
Resolutions of the Senate 184
Resolutions of the Faculty 184
Specific glossary for the BPsych 185
Bachelor of Liberal Studies 185
Resolutions of the Senate 185
Resolutions of the Faculties of Arts and Science 185
Specific glossary for the BLibStud 187
Bachelor of Science in Media and Communications 188
Resolutions of the Senate 188
Resolutions of the Faculty of Science 188
Specific glossary for the BScMediaCommun 189

Generic glossary for BSc, BCST, BIT, BMedSc, BPsych, BLibStud & BScMediaCommun 189

6. Postgraduate degree requirements 191
Research degrees 191
Doctor of Science (DSc) 191
Doctor of Philosophy (PhD) 191
Master of Science (MSc) 191
Master of Science (Environmental Science) 191
Presentation of theses 192
Coursework/research degrees 192
Doctor of Clinical Psychology / Master of Science 192
Doctor of Clinical Psychology / Doctor of Philosophy 192
Coursework degrees 195
Coursework degrees in Science 195
Graduate Diploma in Science 195
<table>
<thead>
<tr>
<th>Course/Program</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Science and Law</td>
<td>196</td>
</tr>
<tr>
<td>Master of Environmental Science and Law</td>
<td>196</td>
</tr>
<tr>
<td>History and Philosophy of Science</td>
<td>197</td>
</tr>
<tr>
<td>Graduate Certificate in Science (History and Philosophy of Science)</td>
<td>197</td>
</tr>
<tr>
<td>Information Technology</td>
<td>198</td>
</tr>
<tr>
<td>Graduate Certificate in Information Technology</td>
<td>198</td>
</tr>
<tr>
<td>Graduate Diploma in Information Technology</td>
<td>198</td>
</tr>
<tr>
<td>Master of Information Technology</td>
<td>198</td>
</tr>
<tr>
<td>Information Technology units of study</td>
<td>201</td>
</tr>
<tr>
<td>Foundational units of study</td>
<td>201</td>
</tr>
<tr>
<td>Specialist units of study</td>
<td>202</td>
</tr>
<tr>
<td>IT project units</td>
<td>205</td>
</tr>
<tr>
<td>Applied Information Technology</td>
<td>205</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Information Technology</td>
<td>205</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Information Technology</td>
<td>205</td>
</tr>
<tr>
<td>Master of Applied Information Technology</td>
<td>205</td>
</tr>
<tr>
<td>Units of study available in majors in 2003</td>
<td>206</td>
</tr>
<tr>
<td>Applied Information Technology units of study</td>
<td>207</td>
</tr>
<tr>
<td>Elementary units</td>
<td>207</td>
</tr>
<tr>
<td>Marine Ecology</td>
<td>207</td>
</tr>
<tr>
<td>Graduate Certificate in Quantitative Marine Ecology</td>
<td>207</td>
</tr>
<tr>
<td>Graduate Diploma in Quantitative Marine Ecology</td>
<td>207</td>
</tr>
<tr>
<td>Master of Quantitative Marine Ecology</td>
<td>207</td>
</tr>
<tr>
<td>Mathematics</td>
<td>209</td>
</tr>
<tr>
<td>Master of Science (coursework)</td>
<td>209</td>
</tr>
<tr>
<td>Microscopy and Microanalysis</td>
<td>209</td>
</tr>
<tr>
<td>Graduate Certificate in Science (Microscopy and Microanalysis)</td>
<td>209</td>
</tr>
<tr>
<td>Graduate Diploma in Science (Microscopy and Microanalysis)</td>
<td>209</td>
</tr>
<tr>
<td>Master of Science (Microscopy and Microanalysis)</td>
<td>209</td>
</tr>
<tr>
<td>Nutrition and Dietetics</td>
<td>209</td>
</tr>
<tr>
<td>Master of Nutrition and Dietetics</td>
<td>210</td>
</tr>
<tr>
<td>Nutrition Research Project units</td>
<td>210</td>
</tr>
<tr>
<td>Master of Nutritional Science</td>
<td>210</td>
</tr>
<tr>
<td>Psychology</td>
<td>211</td>
</tr>
<tr>
<td>Graduate Diploma in Psychology</td>
<td>211</td>
</tr>
<tr>
<td>Graduate Diploma in Science (Psychology)</td>
<td>211</td>
</tr>
<tr>
<td>Master of Psychology</td>
<td>212</td>
</tr>
<tr>
<td>Units of study available in 2003</td>
<td>212</td>
</tr>
<tr>
<td>Coursework degrees in Applied Science</td>
<td>213</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science</td>
<td>213</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Science</td>
<td>213</td>
</tr>
<tr>
<td>Master of Applied Science</td>
<td>213</td>
</tr>
<tr>
<td>Bioinformatics</td>
<td>213</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science (Bioinformatics)</td>
<td>213</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Science (Bioinformatics)</td>
<td>213</td>
</tr>
<tr>
<td>Master of Applied Science (Bioinformatics)</td>
<td>213</td>
</tr>
<tr>
<td>Coastal Management</td>
<td>215</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science (Coastal Management)</td>
<td>215</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Science (Coastal Management)</td>
<td>215</td>
</tr>
<tr>
<td>Master of Applied Science (Coastal Management)</td>
<td>215</td>
</tr>
<tr>
<td>Environmental Science</td>
<td>216</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science (Environmental Science)</td>
<td>216</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Science (Environmental Science)</td>
<td>216</td>
</tr>
<tr>
<td>Master of Applied Science (Environmental Science)</td>
<td>216</td>
</tr>
<tr>
<td>Environmental Science: other units</td>
<td>217</td>
</tr>
<tr>
<td>Informatics and Communication</td>
<td>218</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science (Informatics and Communication)</td>
<td>218</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Science (Informatics and Communication)</td>
<td>218</td>
</tr>
<tr>
<td>Microscopy and Microanalysis</td>
<td>219</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science (Microscopy and Microanalysis)</td>
<td>219</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Science (Microscopy and Microanalysis)</td>
<td>219</td>
</tr>
<tr>
<td>Master of Applied Science (Microscopy and Microanalysis)</td>
<td>219</td>
</tr>
<tr>
<td>Molecular Biotechnology</td>
<td>220</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science (Molecular Biotechnology)</td>
<td>220</td>
</tr>
<tr>
<td>Master of Applied Science (Molecular Biotechnology)</td>
<td>220</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>221</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science (Neuroscience)</td>
<td>221</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Science (Neuroscience)</td>
<td>221</td>
</tr>
<tr>
<td>Master of Applied Science (Neuroscience)</td>
<td>221</td>
</tr>
<tr>
<td>Photonics</td>
<td>222</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science (Photonics)</td>
<td>222</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Science (Photonics)</td>
<td>222</td>
</tr>
<tr>
<td>Master of Applied Science (Photonics)</td>
<td>222</td>
</tr>
<tr>
<td>Psychology of Coaching</td>
<td>223</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science (Psychology of Coaching)</td>
<td>223</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Science (Psychology of Coaching)</td>
<td>223</td>
</tr>
<tr>
<td>Surface Coatings</td>
<td>225</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science (Surface Coatings)</td>
<td>225</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Science (Surface Coatings)</td>
<td>225</td>
</tr>
<tr>
<td>Wildlife Health and Population Management</td>
<td>226</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Science (Wildlife Health and Population Management)</td>
<td>226</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Science (Wildlife Health and Population Management)</td>
<td>226</td>
</tr>
<tr>
<td>Master of Applied Science (Wildlife Health and Population Management)</td>
<td>226</td>
</tr>
<tr>
<td>Wildlife Health and Population Management optional units of study</td>
<td>227</td>
</tr>
<tr>
<td>7. Postgraduate degree regulations</td>
<td>228</td>
</tr>
<tr>
<td>University of Sydney (Coursework) Rule 2000</td>
<td>228</td>
</tr>
<tr>
<td>Rules relating to coursework award courses</td>
<td>228</td>
</tr>
<tr>
<td>Degrees of Doctor</td>
<td>231</td>
</tr>
<tr>
<td>Doctor of Science (DSc)</td>
<td>231</td>
</tr>
<tr>
<td>Doctor of Philosophy (PhD)</td>
<td>232</td>
</tr>
<tr>
<td>Doctor of Clinical Psychology/Doctor of Philosophy (DCP/PhD)</td>
<td>232</td>
</tr>
<tr>
<td>Doctor of Clinical Psychology/Master of Science (DCP/MSc)</td>
<td>233</td>
</tr>
<tr>
<td>Degrees of Master</td>
<td>234</td>
</tr>
<tr>
<td>Master of Science (MSc)</td>
<td>234</td>
</tr>
<tr>
<td>Master of Science (Environmental Science) (MSc(EnvironSc))</td>
<td>235</td>
</tr>
<tr>
<td>Master of Science (Microscopy and Microanalysis) (MSc(Micr&amp;An))</td>
<td>236</td>
</tr>
<tr>
<td>Master of Information Technology (MInfTech)</td>
<td>236</td>
</tr>
<tr>
<td>Master of Applied Information Technology (MAppIT)</td>
<td>237</td>
</tr>
<tr>
<td>Master of Nutrition and Dietetics</td>
<td>238</td>
</tr>
<tr>
<td>Master of Nutritional Science</td>
<td>238</td>
</tr>
<tr>
<td>Master of Psychology (MPsyCh)</td>
<td>238</td>
</tr>
<tr>
<td>Master of Psychology (MPsyCh)</td>
<td>239</td>
</tr>
<tr>
<td>Master of Environmental Science and Law (MEnviSciLaw)</td>
<td>240</td>
</tr>
<tr>
<td>Graduate diplomas</td>
<td>240</td>
</tr>
<tr>
<td>Graduate Diploma in Science (GradDipSc)</td>
<td>240</td>
</tr>
<tr>
<td>Graduate Diploma in Science (Microscopy and Microanalysis) (GradDipSc(Micr&amp;An))</td>
<td>240</td>
</tr>
<tr>
<td>Graduate Diploma in Science (Psychology) (GradDipSc(Psych))</td>
<td>240</td>
</tr>
<tr>
<td>Graduate Diploma in Science (Microscopy and Microanalysis) (GradDipSc(Micr&amp;An))</td>
<td>241</td>
</tr>
<tr>
<td>Graduate Diploma in Science (Psychology) (GradDipSc(Psych))</td>
<td>241</td>
</tr>
<tr>
<td>Graduate Diploma in Information Technology (GradDipInfTech)</td>
<td>242</td>
</tr>
<tr>
<td>Graduate Diploma in Applied Information Technology (GradDipAppUT)</td>
<td>242</td>
</tr>
<tr>
<td>Graduate Diploma in Psychology (GradDipPsiCh)</td>
<td>242</td>
</tr>
<tr>
<td>Graduate certificates</td>
<td>243</td>
</tr>
<tr>
<td>Graduate Certificate in Science (History and Philosophy of Science)</td>
<td>243</td>
</tr>
<tr>
<td>Graduate Certificate in Science (Microscopy and Microanalysis) (GradCertSc(Micr&amp;An))</td>
<td>243</td>
</tr>
<tr>
<td>Graduate Certificate in Information Technology (GradCertInfTech)</td>
<td>243</td>
</tr>
<tr>
<td>Graduate Certificate in Applied Information Technology (GradCertAppIT)</td>
<td>244</td>
</tr>
</tbody>
</table>
### Articulated programs
- Quantitative Marine Ecology 244
- Graduate Certificate in Quantitative Marine Ecology (GradCertQuantMarEcol) 244
- Graduate Diploma in Quantitative Marine Ecology (GradDipQuantMarEcol) 244
- Master of Quantitative Marine Ecology (MQuantMarEcol) 244

### Applied Science
- Graduate Certificate in Applied Science (GradCertAppISc) 245
- Graduate Diploma in Applied Science (GradDipAppISci) 245
- Master of Applied Science (MAppISc) 245

### Resolutions of the Faculty
- 8. **Staff** 248
  - Faculty of Science 248
  - Agricultural Chemistry and Soil Science 248
  - Anatomy and Histology 248
  - Biological Sciences 249
  - Chemistry 250
  - Geosciences 251
  - Infectious Diseases 251
  - Information Technologies 252
  - Mathematics and Statistics 252
  - Molecular and Microbial Biosciences 253
  - Biochemistry 253
  - Human Nutrition Unit 254
  - Microbiology 255
  - Virtual Department of Molecular Biotechnology 255
  - Pathology 255
  - Pharmacology 255
  - Physics 256
  - Physiology 257
  - Psychology 257
  - Other units 258
    - Australian Key Centre for Microscopy and Microanalysis 258
    - Centre for Research on Ecological Impacts of Coastal Cities 258
  - Coastal-Studies Unit 258
- 9. **Scholarships** 260
- Undergraduate prizes and scholarships 260
- Postgraduate prizes and scholarships 266
- 10. **General University information** 268
- Student organisations 272
- **Glossary** 274
- **Science subject area index** 284
- **Index** 287
- **Main campus map** 298
- **Course planner** 300
Introduction

This is the Faculty of Science handbook. In it you will find a store of information about things you need to know about the Faculty and the University. In particular, it will help you to find out who are the people in your Faculty, the requirements for degrees in the Faculty and the ways that these can be satisfied.

Chapter 1 is the 'who and where' of the Faculty, names and locations of people and offices you are likely to need to contact during the year.

Chapter 2 contains enrolment advice for undergraduates as well as frequently asked questions and important policy affecting students in the Faculty. You will find enrolment guides and a degree planner to assist you to plan your degree. You should read this chapter in conjunction with chapters 3 and 5.

Chapter 3 contains degree tables and unit of study descriptions for undergraduates. If you want to know what a unit of study is and how it fits into your degree plan, this is the best place to look. You should read this chapter in conjunction with chapters 2 and 5.

Chapter 4 introduces the Faculty's Talented Student Program and gives contact details for coordinators in participating departments and schools.

In chapter 5 you will find the fine print, the undergraduate degree resolutions (rules) covering your degree. The information in this chapter takes precedence over all other information in chapters 2 and 3. You should definitely read the relevant parts of this chapter, and refer to them from time to time during your studies to make sure you are on track to satisfy the requirements of your degree.

Postgraduate students should look at the coloured pages, chapters 6 and 7, for enrolment information regarding their degrees. Chapter 6 contains enrolment advice and, for coursework students, unit of study information Like chapter 5, chapter 7 contains the degree resolutions or rules, only for postgraduate degrees. You should make sure you read the resolutions pertaining to your degree. It will probably prove useful to read this in conjunction with the information in chapter 6.

Chapter 8 contains scholarships and prizes information for both undergraduate and postgraduate students.

In chapter 9 the staff of the Faculty are listed under their School or Department.

General University Information and the Glossary are handy reference pages for all sorts of services on campus or to explain that obscure term.

The Science Subject Area Index is a useful reference tool for students who know what they want to study, but don't know quite how it fits into the Faculty structure. Use it to help you locate the department or school that best serves your interests or needs.
Australia has recognised the importance of innovation, and science is its major source. The early part of the 21st century offers exciting opportunities and challenges for science. New interdisciplinary approaches are evolving to solve a wide range of environmental, marine, health and technology related problems. In the post genomic era, with access to advanced computing and new research techniques, science is at the basis of major technological developments. Science also uses these developments to address the human side through social, environmental and medical applications. There are many challenges for those who choose a science or a science related career now. Opportunities also exist to combine science with commerce, arts, education, engineering, law and nursing, giving a new angle to a career in science.

Science has a key role to play in the sustainable development and the protection of our planet from further degradation, and in its restoration. Science must also tackle the problems of the conservation of existing energy sources and the development of new ones as well as the control of disease and the promotion of health. Science is critical to understanding human behaviour, computers and systems in society, and how these interact with the biological and physical environment. Who in 1900 would have imagined the scientific advances of the 20th century? And who can predict where science will take us in the next 100 years? Just as the past 100 years have seen a revolution in transport and information technology, there will be many (as yet unimaginable) developments in these areas and in other areas such as biotechnology, information science and neuroscience during the next decades.

Science impacts on all areas of our life. Scientists study the small electrical potentials of the brain as well as the massive electrical charges generated in the upper atmosphere. Science is concerned with the structure of the universe, the structure of the ocean bed, the structure of a butterfly wing, as well as the structure of an atom. It is concerned with thinking and theorising as well as with applying knowledge in all sorts of inventive ways.

Adaptable, well trained, critical and creative scientists will always be at a premium. The degree programs offered in science at The University of Sydney are of exceptional quality and produce scientists and science based professionals of the highest calibre. Many of our academic staff have won excellence in teaching awards, and the Faculty has exceptional research strength. The science degree programs at The University of Sydney are designed to offer challenges and excitement at a range of different levels, including the Talented Students’ Program, Advanced Science degree and the BSc with its specialist streams that provide more directed science training, including in some cases, opportunities for industry placements. The Faculty of Science has excellent links with industry and a wide range of employers and will provide opportunities throughout your degree to explore career options.

In designing the degree programs we have been particularly careful to ensure that you can specialise if you wish, but that you don’t have to make that decision before having completed a general first year in Science. The first year experience in Science is designed to help you settle into University, to meet other students, and to decide on or confirm your interest in a specialised area of study. The variety of innovative teaching methods used across the Faculty help ensure that you will develop sound generic computing skills, interpersonal and communication skills, and an ability to work in teams and groups. Most importantly, you will learn how to analyse problems, work out solutions, and communicate these clearly to others. We aim to help you expand your interest in finding out how things function, develop lifelong strategies for learning new approaches, and gain skills to explore and use information in a wide range of contexts.

Beryl Hesketh, Dean
A brief history of the Faculty

On 17 April 1882 there was a special meeting of the University Senate to receive a report from the By laws and Curriculum Committee. The adoption of this report was moved by Mr Rolleston; it recommended:

1. There shall be four Faculties in the University viz, Arts, Science, Medicine and Law.
2. All undergraduates shall attend first year Arts and after satisfactory examination at the end of first year 'may elect which of the following Faculties, whether Arts, Science or Medicine, they will graduate in, and after the Second Year examination' they may elect to graduate in Law.

After deciding upon the regulations for the Faculty of Arts the meeting was adjourned to the following day. It was then (18 April 1882) that regulations for the Faculty of Science were formulated. Two degrees, BSc and DSc, were established. The course of study in the bachelor's degree was as follows:

- First Year Arts: Latin; one of Greek, French or German; mathematics; elementary chemistry; elements of natural philosophy.
- Second Year: chemistry; physics; natural history; mathematics; French or German.
- Third Year: At least three of: chemistry; physics; mathematics; mineralogy; geology and palaeontology; zoology and botany.

This, then, was the formal beginning of the Faculty. It was not the beginning of the teaching of science in the University. The first professors, all based in the Faculty of Arts, arrived in 1852; they were the Rev. Dr John Woolley (Classics), MB Pell. (Mathematics and Natural Philosophy) and John Smith (Chemistry and Experimental Philosophy, ie, Physics). In 1853 there were suggestions that chairs in geology and natural history be established; however, no appointments were made. There was evidently some pressure for academic studies in geology and mineralogy and in 1866, AM Thomson was appointed reader in geology and mineralogy and demonstrator in practical chemistry. In 1870 he became professor of geology.

In 1880 two events occurred that were to have a profound influence upon the development of the University: the Public Instruction Act, framed by Sir Henry Parkes, was passed by the NSW Parliament; and John Henry Challis died. The Public Instruction Act meant that a much wider group of children received a secondary education and formed a reservoir for increased university enrolments. And upon the death of Challis, a prosperous businessman who had earlier endowed the remarkable Royal Window in the Great Hall, it was revealed that he had left his fortune to the University. This money, a colossal sum for the then financially struggling institution, was to accrue for five years after the death of Mrs Challis, and when finally received in 1889-90 amounted to more than £250,000. At that time the annual governmental funding was around £5000. 10,000 and by 1902 had risen to only £14,000. The knowledge of these riches to come gave the Senate a sense of financial security for the first time; hitherto, apart from fees charged, the University had been completely dependent upon the Government of New South Wales. There was an air of optimism; the University could expand instead of merely survive.

On 26 July 1882 the draft of a Bill went to Parliament entitled 'A Bill for attending the Faculties and Schools in The University of Sydney and for other purposes in relation thereto'. The Senate was empowered to establish the Faculty of Science, the government providing the money required until the Challis bequest should be received. In 1882 the chair of geology was replaced by a chair in natural history, and JS Stephens was appointed to it. He also doubled as professor of classics from 1884, when the Rev. Dr Charles Badham died, until a new appointment was made. The chair of chemistry and experimental philosophy was divided, Smith retaining chemistry, the new chair of physics being filled by R Threlfall. He insisted upon the introduction of practical work and designed and supervised the construction of a physical laboratory. The names of the first graduates in science appeared in the Calendar for 1885. They were Frank Leverrier and Clarence E Wood. By 1890 there were nine graduates, including the first woman, Fanny E Hunt (1888).

In 1890 the obligatory year of Arts for entry to the Faculty of Science was dropped. Entry became by means of an Arts degree, a pass in Arts I or a pass in the Senior Public Examination (equivalent to today's HSC) or equivalent examination in the following subjects: Latin; one of Greek, French or German; and three of arithmetic, algebra, geometry, trigonometry, elementary surveying and astronomy, mechanics, and applied mechanics. There was now a three year course in science (the fourth year for honours came in 1922) and all first year students took biology, chemistry, mathematics, physics and physiography.

In 1932, when the Faculty was 50 years old, there were six chairs: physics, chemistry, zoology, geography and physical geography, botany, and chemistry (pure and applied). There were 353 undergraduates. In 1982 (the centenary year) there were 31 chairs; many of these were in new disciplines, and some disciplines had several professors. The number of students had grown to 2500.

At the end of the Second World War, the Commonwealth Reconstruction Training Scheme provided entry to the University for many ex servicemen and ex servicewomen. The increased numbers of students required additional facilities; the staff was enlarged and several temporary buildings (some of which are still in use) were put up. The next period of expansion came in 1951 when the then Prime Minister, RG Menzies, announced the entry of the Commonwealth Government into University financing. This led to the expansion of the University into the Darlington area and the erection of many new buildings: Carslaw, Chemistry, Geology and Geophysics, and Biochemistry, to name a few.

In 1954 a donation from Adolph Basser enabled the University to buy its first computer; in 1956 an electron microscope was purchased. These items of major equipment opened up many new fields of research and teaching.

Undergraduates have come to play an increasing part in the activities and operation of the Faculty. In 1904 the Science Society was established, which eventually became the Sydney University Science Association, and in 1971 the first students were elected to the Faculty of Science.

In 1985 the Faculty celebrated the centenary of its first graduates. A series of lectures, exhibitions, films and social events was held. A history book, Ever Reaping Something New was published. A film about the Faculty, entitled A Century of Science, was also produced and broadcast nationally by the ABC.

In 2003 the Faculty of Science offers over 80 degrees at the undergraduate and postgraduate levels.
1 Contact information

Information in this section is accurate as at 18 October, 2002.

The Faculty of Science
Carslaw Building, F07
The University of Sydney
NSW 2006

Counter hours
Mon Thu, 10.30 am - 3.30 pm
Fri, 10.30 am - 1.00 pm
Phone: (02) 9351 3021
Fax: (02) 9351 4846
Email: faculty@science.usyd.edu.au
Web: www.science.usyd.edu.au

Bachelor degree program coordinators

**BSc (Advanced Maths):** A/Prof Don Taylor

**BSc (Bioinformatics):** A/Prof Lars Jermin

**BSc (Environmental):** Dr Craig Barnes, Dr Philip McManus

**BSc (Marine Science):** Dr Craig Barnes, Dr Peter Cowell

**BSc (Molecular Biology & Genetics):** Dr Merlin Crossley

**BSc (Molecular Biotechnology):** A/Prof Anthony Weiss

**BSc (Nutrition):** Prof Jennie Brand Miller

**B Medical Science:** A/Prof Tan Spence

**B Computer Science & Technology:** Dr Geoff Kennedy

**B Information Technology:** Dr Irena Koprinska

**B Psychology:** Prof Robert Boakes

**B Liberal Studies:** A/Prof Charles Macaskill

**B Science Media & Communications:** A/Prof Charles Macaskill

Academic advisers

**Anatomy**
Undergraduate: Dr John Mitrofanis, A/Prof Jan Provis
Graduate: Dr John Mitrofanis

**Histology**
All years: Prof Christopher R Murphy, A/Prof Maria Byrne

Biochemistry
see Molecular and Microbial Biosciences

Institute for Biomedical Research
Room E214, Anderson Stuart Building, F13
Phone: (02) 9351 2841
Fax: (02) 9351 2058
Email: ibr gm@ibr.usyd.edu.au
Web: www.ibr.usyd.edu.au
Director: Professor Jonathan Stone

Cell Pathology
see Pathology

School of Biological Sciences
Science Road Cottage, A10
Phone: (02) 9351 2848
Fax: (02) 9351 2558
Email: office@bio.usyd.edu.au
Web: www.bio.usyd.edu.au
Head of School: Associate Professor Rosalind T Hinde

Academic advisers

**Junior year:** Dr Susan Franklin
**Intermediate year:** Dr Ben Oldroyd
**Senior year:** Dr Ben Oldroyd
**Honours year:** Dr Murray Henwood
Graduate adviser: A/Prof Robyn Overall

School of Chemistry
School of Chemistry, Fi 1
Phone: (02) 9351 4504
Fax: (02) 9351 3329
Email: enquiries@chem.usyd.edu.au
Web: www.chem.usyd.edu.au
Head of School: Professor Trevor Hambley

Academic advisers

**Junior year:** Dr Adrian George
**Intermediate year:** Dr Rob Baker
**Senior year:** A/Prof Scott Kable
**Honours year:** A/Prof Damon Ridley
Graduate adviser: Dr George Backsky

Computational Science
see Physics

Computer Science
see Information Technologies

Centre for Research on Ecological Impacts of Coastal Cities
Old Geology Building, A1 1
Phone: (02) 9351 4835
Fax: (02) 9351 6713
Email: eicc@bio.usyd.edu.au
Web: www.eicc.bio.usyd.edu.au
Director: Professor Antony J Underwood
### Fruit Fly Research Centre
Botany Building, A12  
Phone: (02) 9351 2541  
Fax: (02) 9351 7504  
Email: mrobson@bio.usyd.edu.au  

Chair: Associate Professor Christopher B Gillies

#### Academic advisers
Graduate: Prof Antony Underwood

### School of Geosciences
Geology and Geophysics: Edgeworth David Building, F05  
Geography: Room 470, Madsen Building, F09  
Phone: (02) 9351 2912  
Fax: (02) 9351 0184  
Email: admin@es.usyd.edu.au  
Web: [www.es.usyd.edu.au](http://www.es.usyd.edu.au)

Head of School: Professor John Connell

**Academic advisers**

#### Geography
<table>
<thead>
<tr>
<th>Junior year:</th>
<th>Dr Bill Pritchard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate year:</td>
<td>A/Prof Phil Hirsch</td>
</tr>
<tr>
<td>Senior year:</td>
<td>Dr Stephen Gale</td>
</tr>
<tr>
<td>Honours year:</td>
<td>Prof Phil McManus</td>
</tr>
<tr>
<td>Graduate adviser:</td>
<td>A/Prof Deirdre Dragovich</td>
</tr>
</tbody>
</table>

#### Geology and Geophysics
<table>
<thead>
<tr>
<th>Junior year:</th>
<th>Mr Tom Hubble</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate year:</td>
<td>Dr Patrice Rey</td>
</tr>
<tr>
<td>Environmental Geology:</td>
<td>Dr Gavin Birch</td>
</tr>
<tr>
<td>Senior year:</td>
<td>Dr Michael Hughes</td>
</tr>
<tr>
<td>Honours year:</td>
<td>Dr Geoffrey Clarke</td>
</tr>
<tr>
<td>Graduate adviser:</td>
<td>Dr Derek Wyman</td>
</tr>
</tbody>
</table>

### History and Philosophy of Science Unit
Room 441, Carslaw Building, F07  
Phone: (02) 9351 4226  
Fax: (02) 9351 4124  
Email: hps@science.usyd.edu.au  

Director: Dr Rachel Ankeny

**Academic advisers**

#### Undergraduate:
Dr Rachel Ankeny

#### Graduate:
Dr Hans Pols

### Immunology Unit
Blackburn Building, D06  
Phone: (02) 9351 7308  
Fax: (02) 9351 3968  
Email: hbriscoe@med.usyd.edu.au  

Unit Head: Professor W J Britton

**Academic adviser**

All years: Dr Helen Briscoe

### Department of Infectious Diseases
Room 676, Blackburn Building, D06  
Phone: (02) 9351 2412  
Fax: (02) 9351 4731  
Email: charbour@infdis.usyd.edu.au  
Web: [www.usyd.edu.au/su/infdis](http://www.usyd.edu.au/su/infdis)

Head of Department: Associate Professor Colin Harbour

**Academic adviser**

All years: A/Prof Colin Harbour

### School of Information Technologies
Room G71, Madsen Building, F09  
Phone: (02) 9351 3423  
Fax: (02) 9351 3838  
Email: admin@it.usyd.edu.au  
Web: [www.it.usyd.edu.au](http://www.it.usyd.edu.au)

### University of Sydney Institute of Marine Science
USIMS: Room 211, Edgeworth David Building, F05  
Phone: (02) 9351 2972  
Email: craigb@mail.usyd.edu.au  

Director: Dr Dietmar Muller

**Academic advisers**

Undergraduate: Dr Craig Barnes  
Dr Peter Cowell  
Dr Adele Pile

Graduate: Dr Craig Barnes  
Prof Antony Underwood

### School of Mathematics and Statistics
Carslaw Building, F07  
Phone: (02) 9351 4533  
Fax: (02) 9351 4534  
Email: firstyear@maths.usyd.edu.au, enq@maths.usyd.edu.au, statenq@maths.usyd.edu.au  
Web: [www.maths.usyd.edu.au](http://www.maths.usyd.edu.au)

Head of School: Professor E N Dancer

**Academic advisers**

#### Junior year: First year Office;
Ms Sandra Britton

#### Intermediate year
Applied Mathematics: Dr D Ivers and Dr R Thompson  
Mathematical Statistics: Mrs Mary Phipps  
Pure Mathematics: Dr Roger Eytland

#### Senior year
Applied Mathematics: Dr David Galloway  
Mathematical Statistics: Dr Marc Raimondo  
Pure Mathematics: Ms Jenny Henderson

#### Honours year
Applied Mathematics: Dr Chris Cosgrove  
Mathematical Statistics: A/Prof Malcolm Quine  
Pure Mathematics: Dr Laurentiu Paunescu

Graduate adviser: Dr David Easdown

### Microbiology
See Molecular and Microbial Biosciences

### Australian Key Centre for Microscopy and Microanalysis
Room LG21, Madsen Building, F09  
Phone: (02) 9351 3178  
Fax: (02) 9351 7682  
Email: keentres@emu.usyd.edu.au  
Web: [www.kcmm.usyd.edu.au](http://www.kcmm.usyd.edu.au)

Director: Associate Professor Simon Ringer

**Academic adviser**

Graduate: Dr Vicki Keast

### Molecular Biotechnology
See School of Molecular & Microbial Sciences

### School of Molecular and Microbial Biosciences
Web: [www.mmb.usyd.edu.au](http://www.mmb.usyd.edu.au)

Head of School: Professor Richard I. Christopherson

### Biochemistry Discipline
Room 633, Biochemistry/Microbiology Building, G08  
Phone: (02) 9351 2235/2597
Contact Information

Academic advisers

Pharmacology

Intermediate year: Dr Hilary Lloyd
Senior year: A/Prof Ian Spence, Professor Graham Johnston
Honours year: A/Prof Robin Allan
Graduate adviser: Dr Robert Vandenberg

School of Physics

Room 202, School of Physics, A28
Phone: (02) 9351 3057
Fax: (02) 9351 7726
Email: physics@physics.usyd.edu.au
Web: www.physics.usyd.edu.au
Head of School: Associate Professor Brian James

Academic advisers

Junior year: Dr John O’Byrne
Intermediate year: Dr Gordon Robertson
Senior year: Dr Bill Tango
Honours year: Dr Anne Green
Graduate adviser: Prof Ross McPhedran
Computational Science: Dr Mike Wheatland

Department of Physiology

Room E212, Anderson Stuart Building, F13
Phone: (02) 9351 3247
Fax: (02) 9351 2058
Email: enquiries@physiol.usyd.edu.au
Web: www.physiol.usyd.edu.au
Head of Department: Associate Professor Rebecca Mason

Academic advisers

Intermediate year: Dr Miriam Frommer
Medical Science: Mrs Franciseo Janod Groves
Senior year: Dr Joseph Holt
Medical Science: Dr Bill Phillips
Honours year: Mrs Irene Schneider
Graduate adviser: Prof David Allen

Key Centre for Polymer Colloids

Phone: (02) 9351 6968
Fax: (02) 9351 8651
Email: gilbert@chem.usyd.edu.au
Web: www.kcpc.usyd.edu.au
Director: Professor Robert G Gilbert

School of Psychology

Room 410, Griffith Taylor Building, A19
Phone: (02) 9351 2872
Fax: (02) 9351 2603
Email: enquiries@psych.usyd.edu.au
Web: www.psych.usyd.edu.au
Head of School: Professor Ian Curthoys

Academic advisers

Junior year: Dr Julie Hatfield
Intermediate year: Prof Lazar Stankov
Senior year: Prof Lazar Stankov
Honours year: Prof Sally Andrews
GradDipSc(Psych): Dr Alan Craddock
Doctor of Clinical Psych: Dr Caroline Hunt
Graduate adviser: Dr David Grayson

Department of Pharmacology

Room 215, Blackburn Building, D06
Phone: (02) 9351 2408
Fax: (02) 9351 3868
Email: riimrir@pharmacol.usyd.edu.au
Web: www.usyd.edu.au/su/pharmacology/
Head of Department: Associate Professor Ewan Mylecharane
2 Undergraduate enrolment advice and policies

This chapter is intended to give enrolment advice to undergraduate students in the Faculty of Science. You will find answers to frequently asked questions covering all students. Following this are specific summaries of the requirements for each degree including examples of how unit of study choices can be made over the duration of the degree. With some degrees there is information on recommended combinations of units of study, especially in first year, to help guide you to your goals.

It should be stressed that the information in this chapter is intended to be a rough guide only. All students will have to decide for themselves how to plan their degree to suit their own particular interests and situation.

All students are expected to read the degree resolutions for their course before they commence their studies, and from time to time during their studies. Undergraduate degree resolutions appear in Chapter 5. The tables of undergraduate units of study available for each degree and unit descriptions appear in Chapter 3.

Inside the back cover of this handbook you will find a planner to assist you to map out your degree. It is recommended that you plan your studies carefully with an eye to your final years, so that you take the correct prerequisites in the preceding years. It will be useful to revisit this planner during your studies as your interests take more detailed shape.

Enrolment day FAQs

What is a ‘major’?

Some degrees in the Faculty of Science require you to complete a major. A major is a specialisation in the Senior year of your degree. It is useful to have an idea of what major, or group of majors, interest you now, so that you can plan your Junior and Intermediate years properly. The Bachelor of Science majors Neuroscience, and Nanoscience and Technology require earlier planning than most others. If you are interested in these then read Table I of the Science Handbook carefully and/or seek advice.

A major is usually defined as 24 credit points of study at me Senior level in a single Science Area. Neuroscience and Psychology both have additional requirements. Depending on the majors chosen, it is possible to complete more than one major in your degree.

Degrees where you choose a major are the Bachelor of Science (and Advanced), Bachelor of Computer Science and Technology (and Advanced), Bachelor of Information Technology, Bachelor of Science in Media and Communications and the Bachelor of Liberal Studies (and International).

How many credit points should I take per semester?

You should take 24 credit points each semester if you are a full time student. If you take less than 18 credit points in each semester you will automatically become part time.

To finish your degree in the recommended minimum time you will have to take 48 credit points per year, or 24 per semester. If you enrol part time you can take as few credit points as you like. You must keep in mind however that you have a 10 year limit to finish your degree. The degree summaries and sample programs in this chapter assume you will enrol full time.

Do I need to be full time?

If you receive any financial support, whether from a University scholarship or from the government, you may well need to enrol as a full time student. You should check carefully the terms and conditions of that support before going part time.

Australian citizens and permanent residents who wish to receive a transport concession card must be full time students.

International students are required to be full time.

Can I take units of study from other faculties?

Yes. You cannot take any unit of study offered by the Faculty of Arts and the Faculty of Economics. Lists of available units of study will be available on enrolment day, or in each faculty's handbook.

Also available are undergraduate units from any other faculty at the university. The onus however is on you to get written permission from the relevant department and bring it to the Faculty of Science.

But there are limits, and exclusions. You should refer to the degree summary sections of this chapter for specific information about your particular degree.

The Bachelor of Science allows for up to 48 credit points of Non Science units of study to be included in the 3 year program. Junior Econometrics (ECMT units) and General Statistical Methods (STAT units) are specifically excluded from the BSc. Students in specialist programs and combined degrees may have less flexibility.

Can I get credit for previous tertiary study?

Yes. The amount of credit you can receive depends on your individual circumstances, but in general is capped at 48 credit points for a degree already completed or 96 credit points for an incomplete degree.

If you apply for credit before enrolment day and receive a letter in return specifying the credit awarded you can make your unit of study choices with this information in mind on enrolment day itself. You should bring this letter with you.

If you do not apply for credit before enrolment day you will have to make unit of study choices as if you have had no previous university study. You should then apply that day for your credit request to be processed. Because of the large numbers of applications received at enrolment there can be a considerable delay in processing your application. It is in your best interests to apply in the year preceding your planned enrolment.

The Faculty must sight originals of your academic transcripts, as well as unit of study descriptions clearly indicating credit point value or hours per week, and length of units you want credited. You may only apply for credit ONCE in your degree.

Are there any bridging courses available?

There are bridging courses in Biology, Chemistry, Mathematics and Physics, designed to cover the assumed knowledge that students would normally cover in the HSC. They run in February each year after enrolment and are recommended for students who either didn't take a subject at the HSC or feel they need some revision.

Who can enrol in Advanced units of study?

Advanced units of study are available to those students enrolled in any program in the Faculty of Science who have performed at a high level in science subjects in the HSC or who perform well in their studies at the University.

Consult a departmental adviser about your eligibility to enrol in Advanced level subjects in the first year of study. You must obtain special permission to enrol in any Advanced unit of study except Software. For Software Advanced units of study, you must meet the criteria listed on the permission form for Advanced units of study. The departmental advisers have copies of the permission form for Advanced units of study.

Students should also consult the unit of study Tables for assumed and prerequisite marks in the HSC required to enrol in Advanced units of study.

For students in an Advanced degree it is recommended that you enrol in no more than 24 credit points of Advanced units of study in a year. Advanced units of study are very demanding and students are required to perform at a higher standard than in the normal units of study.

What is the Talented Student Program?

The Talented Student Program (TSP) is unique to The University of Sydney. It is tailored to meet students' individual needs and is restricted to the very top students.

Students may be able to bypass some first year study and enrol directly in a second year course. If you have outstanding results in any of your HSC science subjects you may wish to negotiate a special program of study with one of the departments in the Faculty of Science.
The Talented Student Program is available in most areas of Science. Students receive special supervision by academic staff and often engage in studies on an individual basis with small numbers of fellow students, all of whom have a special interest in the same subject.

**Am I eligible for the Talented Student Program?**

Entry to the TSP is by invitation from the Dean which you should have received by the time you enrol. The following guidelines apply generally, although Departments may have additional (and sometimes more stringent) requirements for entry into the program. To get into the program in your first year, you should normally have a UAI (or equivalent) of 98.8 and a result in band 6 in at least one HSC Science subject area, and/or a result in band E4 of HSC Mathematics Extension 2. For entry into the program in your second and third years, you should normally have a weighted average mark of 85 or over and a high distinction grade in the relevant subject area.

### Bachelor of Science (BSc)

#### Summary of requirements

The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

#### Enrolment guide

In your Junior year you should complete:
- 12 credit points from the Science subject areas of Mathematics and Statistics;
- 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics and Statistics; and
- 12 credit points of elective units of study from Science, Arts, Economics, Engineering or other faculties.

To complete your degree you must gain credit for at least 144 credit points. The 144 credit points required for the degree must include:
- at least 96 credit points from Science subject areas;
- at least one major from those included in Table I (see Table I: Bachelor of Science: Chapter 3);
- at least 12 credit points from the Science subject areas of Mathematics and Statistics;
- at least 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics and Statistics.

#### Sample Bachelor of Science

<table>
<thead>
<tr>
<th>Sem</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>Science elective A 1XXX</td>
<td>Science elective B 1XXX</td>
<td>Elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>Science elective A 1XXX</td>
<td>Science elective B 1XXX</td>
<td>Elective</td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

#### Plans of study

It is important when choosing units of study at any stage of your university career that you consider your overall degree program. There is a sample degree program below as well as information about each major and recommended first year combinations of units of study. There is also a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

**Require:** 144cp total, min. 96cp Science, min 36cp Junior Science incl. 12cp Maths, max. 60cp Junior, one major.
Planning for a Biology major

The Science units of study available for this degree are set out in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables. You may also wish to refer to the handbooks of other faculties as the degree resolutions allow.

Pass (Concessional)

Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Honours

There will be Honours courses in all Science subject areas. Please refer to ‘Honours in the Faculty of Science’ in this chapter, and to Table VI: Honours units of study in chapter 3.

Discontinuation

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transferring into the BSc

Students may transfer from other courses offered by the Faculty of Science or from other degree programs into the BSc, with the permission of the Dean.

Universities Admissions Index (UAI)

The minimum UAI for admission to the Faculty varies from year to year. You should not be deceived about the level of difficulty of the BSc degree course.

Degree resolutions

See Chapter 5.

Enrolment guide by major

The following is a list of recommended combinations of Junior units of study if you are intending to complete a major in a particular Science Subject Area. Students should also consult Table I: Bachelor of Science and school/department advisers for further information on major requirements.

Agricultural Chemistry

Major not offered at the Advanced level. 12 credit points of Junior units of study in each of Biology + Chemistry + Mathematics + 12 credit points from one of Physics, Geology or Geography.

Anatomy and Histology

Major not offered at the Advanced level. 12 credit points of Junior units of study in either Biology or Psychology + 12 credit points of Mathematics + 24 credit points from Junior Chemistry, Physics, Mathematics or from units of study selected in consultation with an adviser.

Biochemistry

Major offered at the Advanced level. 12 credit points of Junior units of study in each of Biology + Chemistry + Mathematics + 12 credit points from units of study selected in consultation with an adviser.

Biology

Planning for a Biology major

12 credit points of Junior Biology are needed to enrol in Intermediate units of study in Biology. Students intending to major in Biology should take at least 16 credit points of Intermediate Biology. The Biology major is also offered at the Advanced level.

Recommended Junior combinations for a Biology major

BIOL 1001 + BIOL 1002 + 12 credit points of Junior units of study in Chemistry + Mathematics + 12 credit points from units of study selected in consultation with an adviser.

Junior Biology Information

BIOL 1001 Concepts in Biology is an introductory unit for all biology students.

BIOL 1002 Living Systems is suitable for students who want to go on into plant, animal or molecular biology.

BIOL 1003 Human Biology is suitable for students who specifically want to go onto human related units of study.

Assumed knowledge

All students are eligible to enrol in BIOL 1001 Concepts in Biology, BIOL 1002 Living Systems or BIOL 1003 Human Biology. The assumed knowledge is HSC 2 Unit biology. The biology bridging course is recommended for students who have not studied biology for the HSC.

Advanced Biology

If you have a UAI of at least 93 and an HSC Biology result in the 90th percentile or better, or Distinction or better in a University level Biology unit you are eligible to enrol in Advanced units of study in Junior Biology. It is not necessary to enrol in both semester 1 and semester 2 Advanced units of study.

Related Junior subject areas

It is recommended that you take 12 Junior credit points of Chemistry, preferably CHEM 1101 and CHEM 1102, or their equivalent, if you intend to proceed into any Intermediate year Biology, Biochemistry or Molecular Biology units of study.

Biology Information

CHEM 1001 and 1002 are recommended for students whose Chemistry background is weak or non-existent. CHEM 1101 and 1102 are recommended for students who have HSC Chemistry. Students intending to enrol in Intermediate and Senior Chemistry should take this level or higher.

Assumed knowledge

A chemistry bridging course is recommended for students who have not studied chemistry for the HSC and wish to take Chemistry 1A and 1B or higher.

Advanced Chemistry and Special Studies

If you have a UAI of at least 93 and an HSC chemistry result in the 90th percentile or better, you are eligible to choose Advanced Chemistry units. The Special Studies Program is designed for the truly exceptional Chemistry student and entry is by invitation only. The minimum requirement for entry to CHEM1903 is a UAI of 98.7 and an HSC result in the 94th percentile or better.

Computational Science

Planning for a Computational Science major

Computational Science is an interdisciplinary major comprising core and elective units of study at the Senior level offered by several Schools and Departments in the Faculty of Science (see Table 1). In addition, a variety of Junior and Intermediate units of study offered across the Faculty provide a solid basis for Senior studies and sufficient knowledge to apply Computational Science in specific areas of science. The Computational Science major is also offered at the Advanced level.
Recommended Junior combinations for a Computational Science major
COSC 1001 + COSC 1002 + SOFT 1001 + SOFT 1002 + 12 credit points of Junior Mathematics + 18 credit points selected in consultation with an adviser.

Junior Computational Science Information
Junior COSC units of study are useful for later studies in computational science, but are not prerequisites.

Advanced Computational Science
Junior COSC units of study are also offered at the Advanced level. To enrol in COSC 1901 (Advanced) or COSC 1902 (Advanced) you must have a UAI of 90 or more, or have a Distinction or better in another Junior COSC or SOFT unit.

Assumed knowledge
See individual units for entry requirements.

Computer Science
Major offered at the Advanced level.
SOFT 1001 + SOFT 1002 + MATH 1001 + MATH 1002 + MATH 1005 + (MATH 1003 or MATH 1004) + 24 credit points of other junior units of study. (Each of the above units of study can be replaced by the corresponding Advanced unit of study).

Geography
Major not offered at the Advanced level.
12 credit points of junior units of study in each of Geography + Mathematics + either Geology or Biology 1001 or 1901 or 1002 or 1902 + either Chemistry or Physics.

Geology
Major not offered at the Advanced level.
12 credit points of junior units of study in each of Geology + Chemistry or Physics + Mathematics + two units of study selected in consultation with an adviser.

Geophysics
Major not offered at the Advanced level.
12 credit points of junior units of study in each of Geophysics + Mathematics + two units of study selected in consultation with an adviser.

History and Philosophy of Science
Planning for a major in History and Philosophy of Science
Currently History and Philosophy of Science is not available as junior units of study. 24 credit points of Junior study are needed to enrol in Intermediate units of study in History and Philosophy of Science. Students intending to major in History and Philosophy of Science must take 8 credit points of Intermediate History and Philosophy of Science. We strongly encourage pursuit of a double major in History and Philosophy of Science and another area of Science, with completion of the appropriate junior units of study for that major.

Recommended Junior combinations
12 credit points of Junior units of study in Mathematics and Statistics; 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics and Statistics; and 12 credit points of elective units of study from history, philosophy, gender studies, physics, psychology, or other related areas of study in arts or science in consultation with an History and Philosophy of Science adviser about appropriate combinations of electives to help prepare for an History and Philosophy of Science major.

Related Junior subject areas
Students interested in related topics should consider taking the unit Concepts and Issues in Physical Science (PHYS 1600) which serves as useful background for further studies in History and Philosophy of Science and counts as an Arts elective.

Immunobiology
Major not offered at the Advanced level.
Immunology is offered at Intermediate and Senior levels. 24 credit points of Junior units of study from any of the science discipline areas is required for Intermediate study in Immunology. We recommend these include: BIOL 1001 or 1901 and BIOL 1002 or 1902 or 1003 or 1903 and MATH 1015 or MATH 1005 or 1905 and CHEM 1001 and 1002 or CHEM 1101/1901 and 1102/1902. For the Immunobiology major the minimum requirement is Senior Immunology, IMMU 3002 and 12 credit points from the elective senior units of study listed in Table I. Intermediate studies must include Introductory Immunology, IMMU 2001. MBLG 2001/2901 is highly recommended and students should note the prerequisites for each elective to determine their choice of concurrent Intermediate study units.

Information Systems
Major not offered at the Advanced level.
ISYS 1003 + 6 credit points of a language unit (ENGL 1005 or LNGS 1001 or 1002 or 1005) +12 credit points of Junior Mathematics units of study + 24 credit points selected in consultation with an adviser.

Marine Science
Major not offered at the Advanced level.
Biology 1001 or 1901 + Biology 1002 or 1902 + 12 credit points of Junior units of study in each of Geosciences + Mathematics + Chemistry or Physics + Mathematics.

Mathematics
Planning for a Mathematics major
12 credit points of Junior Mathematics are needed to enrol in Intermediate units of study in Mathematics. Students intending to major in Mathematics should take at least 16 credit points of Intermediate Mathematics. The Maths major is also offered at the Advanced level.

Recommended Junior combinations for a Mathematics major
MATH 1001/1901/1906 + MATH 1002/1902 + MATH 1003/1903/1907+ MATH (1004/1904 or 1005/1905) + 36 other Junior credit points.

Junior Mathematics information
If you have HSC Mathematics: MATH 1011,1012,1013 and 1015 (all Life Sciences). Note that no progression to later year Mathematics is possible, except in very special circumstances.
If you have HSC Mathematics Extension 1: MATH 1001, 1002 and two from MATH 1003,1004 or 1005 (all Normal).

Advanced Mathematics and Special Studies
If you have HSC Mathematics extension 2, you are eligible to choose MATH 1903.
If you have HSC Mathematics extension 2, or a result in Band E2 or better of HSC Mathematics Extension 1 you are eligible to choose MATH1905.
If you have HSC Mathematics extension 2, or a result in Band E4 of HSC Mathematics Extension 1 you are eligible to choose MATH 1901,1902 and 1904
If you have a UAI of at least 98.5 and a result in Band E4 of HSC Mathematics Extension 2 you are eligible to be invited into: MATH 1906 Mathematics (Special Studies Program) A.

Assumed knowledge
Bridging courses in mathematics are recommended for students who do not have the assumed knowledge for their selected level of Mathematics study.

Mathematics in other majors
Statistics majors: must include MATH 1015/1005/1905 and MATH 1003/1903
Computer Science majors: Should include MATH 1005/1905

Biological and other Life Science majors: should include MATH 1015/1005/1905

Medicinal Chemistry
Major offered at the Advanced level.
12 credit points of junior units of study in each of Chemistry + Physics + Mathematics + Biology 1001 or 1901 + Biology 1002 or 1003 or 1902 or 1903.

Microbiology
Major offered at the Advanced level.
12 credit points in each of Junior Biology, Chemistry and Mathematics + 12 credit points from other areas.

Nanoscience and Technology
Major offered at the Advanced level.
12 credit points in each of Chemistry, Mathematics and Physics + MECH 2300 + 8 credit points chosen in consultation with an adviser.

Neuroscience
Major possible at the Advanced level.
12 credit points of junior Mathematics + 24 credit points from Biology, Chemistry, Computer Science, Physics or Psychology + 12 credit points chosen in consultation with an adviser.
Planning for a Psychology major

Psychology (double major) students are advised to complete 8 plus at least 32 credit points of Senior Psychology. The Psychology requires 16 credit points of Intermediate Psychology.

Assumed knowledge
Mathematics + 18 credit points of Junior Chemistry, Biology, and/or Mathematics.

Planning for a Physics major

12 credit points of Junior Physics are needed to enrol in Intermediate units of study in Physics. 8 credit points of Intermediate Physics in semester 1 completes a first pass through Physics begun in Junior Physics. Students intending to major in Physics should take at least 16 credit points of Intermediate Physics. The Physics major is also offered at the Advanced level.

Recommended Junior combinations for a Physics major
12 credit points of Junior units of study in each of Physics + Chemistry + Mathematics (MATH 1001/1901 + MATH 1002/1902 + MATH 1003/1903 + MATH 1005/1905) + 12 credit points of other Junior units of study selected in consultation with an adviser.

Junior Physics information
Your choice of units in Junior Physics in semester 1 is governed by your Physics experience at school.

PHYS 1001 (Regular) is for those who scored 65 or more in HSC Physics (or equivalent).

PHYS 1002 (Fundamentals) is primarily for those who have not studied physics before, or who scored less than 65 in HSC Physics.

In semester 2 your choice should be determined by your interests and the direction of your future studies.

Students from any first semester option may move into either PHYS 1003 (Technological) or PHYS 1004 (Environmental & Life Science).

You may choose to study PHYS 1003 (Technological) in either semester, but we recommend completing one of the semester 1 units beforehand if possible.

Advanced Physics
Junior Physics units of study are also offered at the Advanced level.

To enrol in PHYS 1901 (Advanced) or PHYS 1902 (Advanced) you must have a UAI of 95 or more or a HSC Physics result in Band 6 (or equivalent), or have successfully completed the other Junior Physics (Advanced) unit, or have a Distinction or better in the appropriate non-advanced Junior Physics unit.

If you have a very high UAI you may be invited to participate in activities of the Physics Talented Student Program (TSP).

Assumed knowledge
A bridging course in Physics is recommended for students who did not study Physics at the HSC.

Other Junior options
Students interested in Astronomy may enrol in PHYS 1500 (Semester 2 only). It should be noted that PHYS 1500 is a general interest course, has no maths or physics requirements and does not count towards the 12 credit points needed for progression to Intermediate Physics or the BSc (Marine Science) program. Students wishing to pursue careers in Astronomy or Astrophysics should also take other Physics units in order to progress to Intermediate Physics.

PHYS 1600 Concepts and Issues in Physics Science is offered in the Faculty of Arts. It does not count towards the 12 credit points needed for progression to Intermediate Physics. PHYS 1600 does not count as a Science unit, but as an Arts unit.

Physiology
Major offered at the Advanced level.
6 credit points of Junior Chemistry + 12 credit points of Intermediate units of study in Psychology. A major in Psychology requires 16 credit points of Intermediate Psychology plus at least 32 credit points of Senior Psychology. The Psychology major is not offered at the Advanced level.

Note: If planning to complete a second Science major with Psychology (double major) students are advised to complete 8 credit points of Senior Psychology in the second semester of year 2 (see Psychology web page).

Recommended Junior combinations for a Psychology major
PSYC 1001 + PSYC 1002 + 12 credit points of Junior units of study in Mathematics including MATH 1015 or 1005 or 1905 (statistics) + 12 credit points of Junior Science electives + 12 credit points of Junior electives.

Junior Psychology Information
PSYC 1001 and 1002 provide an introduction to Psychology for all Psychology students.

Assumed knowledge
All students are eligible to enrol in PSYC 1001 and 1002. There is no assumed knowledge.

Soil Science
Major not offered at the Advanced level.
12 credit points of Junior units of study in each of Chemistry + Mathematics + Physics or Computer Science + 12 credit points from other areas.

Statistics
Planning for a Statistics major
The Junior Mathematics, units MATH 1005/1905 and MATH 1001/1901/1906, are needed to enrol in Intermediate units of study in Statistics and MATH 1005/1903/1907 are required to complete a major in Statistics. Students intending to major in Statistics should take 16 credit points of Intermediate Statistics. The Statistics major is also offered at the Advanced level.

Recommended Junior combinations for a Statistics major
See entry under Mathematics.

Junior Mathematics information
See entry under Mathematics.

Advanced Mathematics and Special Studies
See entry under Mathematics.

Assumed knowledge
Bridging courses in mathematics are recommended for students who do not have the assumed knowledge for their selected level of Statistics study.

Statistics in other majors
Computer Science majors: Should include MATH 1005/1905 Biological and other Life Science majors: should include MATH 1015/1005/1905

Bachelor of Science (Advanced)

Summary of requirements
The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

Enrolment guide
In your Junior year you should complete:
• 12 credit points from the Science subject areas of Mathematics and Statistics;
• 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics and Statistics; and
• 12 credit points of elective units of study from Science, Arts, Economics, Engineering or other faculties.

Advanced students usually take 24 credit points of the above at the Advanced level.

To complete your degree you must satisfy the requirements outlined for the BSc and gain credit for at least 144 credit points. The 144 credit points required for the degree must include:
• no more than 48 credit points from Junior units of study; and
• at least 16 credit points of Intermediate units of study at either the Advanced level or as TSP units;
• at least 48 credit points of Senior units of study of which at least 24 credit points are completed at the Advanced level or as TSP units in a single Science subject area; and
• at least 12 credit points from the Science subject areas of Mathematics and Statistics.
Bachelor of Science (Advanced Mathematics)

Sample Bachelor of Science (Advanced)

<table>
<thead>
<tr>
<th>Year</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>Science elective A</td>
<td>Science elective B</td>
<td>Elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1XXX/19XX</td>
<td>1XXX/19XX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>Science elective A</td>
<td>Science elective B</td>
<td>Elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1XXX/19XX</td>
<td>1XXX/19XX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Major 1 Intermediate 29XX</td>
<td>Major 2 Intermediate</td>
<td>Intermediate or Senior</td>
<td>Intermediate or Senior</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8</td>
<td>2XXX</td>
<td>elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Major 1 39XX</td>
<td>Major 2 or elective 3XXX</td>
<td>Major 2 or elective 3XXX</td>
<td>Major 2 or elective 3XXX</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total credit points: 144

Progression requirements
You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the BSc.

Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall degree program. See the Bachelor of Science entry for information about each major and recommended first year combinations of units of study. There is a sample degree program above and a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

Units of study
The Science units of study available for this degree are set out in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables. You may also wish to refer to the handbooks of other faculties as the degree resolutions allow.

Pass (Concessional)
Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Honours
There are Honours courses in all Science subject areas. Please refer to 'Honours in the Faculty of Science' in this chapter, and Table VI: Honours units of study in Chapter 3.

Discontinuation
If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission
You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transferring into the BSc (Advanced)
Students who have completed at least 48 credit points may, with the permission of the Dean, transfer to the BSc (Advanced) from the BSc or other degree programs if their mark averaged over all attempted units of study is 75 or greater, and they are able to enrol in the required number of Advanced level units or TSP units.

Universities Admissions Index (UAI)
The minimum UAI for admission to the Faculty varies from year to year.

Degree resolutions
See Chapter 5.

Bachelor of Science (Advanced Mathematics)

Summary of requirements
The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

Enrolment guide
In your Junior year you should complete:
- 12 credit points from Junior Advanced Mathematics and Statistics units of study;
- 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics and Statistics; and
- 12 credit points of elective units of study from Science, Arts, Economics, Engineering or other faculties.

To complete your degree you must satisfy the requirements outlined for the BSc and gain credit for at least 144 credit points. The 144 credit points required for the degree must include:
- no more than 48 credit points from Junior units of study;
- at least 16 credit points of Intermediate units of study at either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics; and
- at least 48 credit points of Senior units of study of which at least 24 credit points are completed at the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics.

Progression requirements
You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the BSc.
### Bachelor of Science (Bioinformatics)

**Summary of requirements**

The requirements for the degree are set out in Table IA: Bachelor of Science (Bioinformatics) (see Chapter 3) and the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree.

**Enrolment guide**

In your Junior year you should complete:
- 12 credit points from the Science subject areas of Mathematics and Statistics;
- 12 credit points of Junior units of study in the Science subject area of Biology;
- 12 credit points of Junior units of study in the Science subject area of Chemistry; and
- 12 credit points of Junior units of study in the Science subject area of Computer Science (SOFT1001/1002).

To complete your degree you must gain credit for at least 144 credit points as specified in Table IA: Bachelor of Science (Bioinformatics).

**Plans of study**

It is important when choosing units of study at any stage of your university career that you consider your overall degree program. See the Bachelor of Science entry for information about majors in Mathematics and Statistics and recommended first year combinations of units of study. There is a sample degree program on page 10 and a degree planner inside the back cover.

**Units of study**

The Science units of study available for this degree are set out in Table IA: Bachelor of Science (Bioinformatics) and in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables.

**Pass (Concessional)**

Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

**Honours**

There are Honours courses in Science subject areas suitable for Bioinformatics students. Please refer to ‘Honours in the Faculty of Science’ in this chapter, and Table VI: Honours units of study in Chapter 3.

**Discontinuation**

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

**Special permission**

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

**Transferring into the BSc (Advanced Mathematics)**

Students who have completed at least 48 credit points may, with the permission of the dean, transfer to the BSc (Advanced Mathematics) from the BSc or other degree programs if their mark averaged over all attempted units of study is 75 or greater, and they are able to enrol in the required number of advanced level units or TSP units.

**Universities Admissions Index (UAI)**

The minimum UAI for admission to the Faculty varies from year to year.

**Honours**

The minimum UAI for admission to the Faculty varies from year to year.

---

### Sample Bachelor of Science (Advanced Mathematics)

<table>
<thead>
<tr>
<th>Year</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MATH 19XX</td>
<td>MATH 19XX</td>
<td>Science elective 1XXX</td>
<td>Science elective 1XXX</td>
<td>Elective</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>MATH 19XX</td>
<td>MATH 19XX</td>
<td>Science elective 1XXX</td>
<td>Science elective 1XXX</td>
<td>Elective</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>MATH 19XX</td>
<td>MATH 19XX</td>
<td>Major 2 Intermediate or Science elective 2XXX</td>
<td>Intermediate or Senior Science elective</td>
<td>Intermediate or Senior Elective</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>MATH 19XX</td>
<td>MATH 19XX</td>
<td>Major 2 Intermediate or Science elective 2XXX</td>
<td>Intermediate or Senior Elective</td>
<td>Intermediate or Senior Elective</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>MATH 19XX</td>
<td>MATH 19XX</td>
<td>MATH 39XX</td>
<td>Major 2 or elective 3XXX</td>
<td>Major 2 or elective 3XXX</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>MATH 19XX</td>
<td>MATH 19XX</td>
<td>MATH 39XX</td>
<td>Major 2 or elective 3XXX</td>
<td>Major 2 or elective 3XXX</td>
<td>24</td>
</tr>
</tbody>
</table>

Require: 144cp total, min. 96cp science, max. 48cp Junior incl. 12cp Maths, min. 48cp Senior, min. 16cp Intermediate Advanced and/or TSP Maths and/or Stats, min. 24cp Senior Advanced and/or TSP Maths and/or Stats.
### Bachelor of Science (Environmental)

#### Summary of requirements
The requirements for the degree are set out in Table IB: Bachelor of Science (Environmental) (see Chapter 3) and the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree.

#### Enrolment guide
In your Junior year you should complete:
- ENV11001 and ENV11002;
- 12 credit points from the Science subject areas of Mathematics and Statistics;
- 12 credit points of Junior units of study in the Science subject area of Biology;
- 12 credit points of Junior units of study in the Science subject area of Chemistry; and
- The study of some Biology, Chemistry or Mathematics at the Advanced level is recommended but not compulsory.

To complete your degree you must gain credit for at least 144 credit points as specified in Table IB: Bachelor of Science (Environmental). The 144 credit points required for the degree must include:
- the Intermediate Environmental Science units of study, ENVI 2001 and ENVI 2002;
- the Senior Environmental Science units of study, ENVI 3001 and ENVI 3002.

### Sample Bachelor of Science (Bioinformatics)

<table>
<thead>
<tr>
<th>Year</th>
<th>Semester</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>BIOL 1XXX</td>
<td>CHEM 1XXX</td>
<td>SOFT 1XXX</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>BIOL 1XXX</td>
<td>CHEM 1XXX</td>
<td>SOFT 1XXX</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>SOFT 2XXX</td>
<td>MBLG 2XXX</td>
<td>Life Science elective</td>
<td>MATH/SOFT elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>SOFT 2XXX</td>
<td>MBLG 2XXX</td>
<td>Life Science elective</td>
<td>MATH/SOFT elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>SOFT 3XXX</td>
<td>Life Science elective</td>
<td>SOFT/ MATH/ PHYS elective</td>
<td>SOFT/ MATH/ PHYS elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>ENVI 3001</td>
<td>Life Science elective</td>
<td>SOFT/ MATH/ PHYS elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Total credit points: 144

Require: 144cp total, and units of study as per Table IA.

---

### Bachelor of Science (Environmental)

#### Summary of requirements
The requirements for the degree are set out in Table IB: Bachelor of Science (Environmental) (see Chapter 3) and the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree.

#### Enrolment guide
In your Junior year you should complete:
- ENV11001 and ENV11002;
- 12 credit points from the Science subject areas of Mathematics and Statistics;
- 12 credit points of Junior units of study in the Science subject area of Biology;
- 12 credit points of Junior units of study in the Science subject area of Chemistry; and
- The study of some Biology, Chemistry or Mathematics at the Advanced level is recommended but not compulsory.

To complete your degree you must gain credit for at least 144 credit points as specified in Table IB: Bachelor of Science (Environmental). The 144 credit points required for the degree must include:
- the Intermediate Environmental Science units of study, ENVI 2001 and ENVI 2002;
- the Senior Environmental Science units of study, ENVI 3001 and ENVI 3002.

### Sample Bachelor of Science (Environmental)

<table>
<thead>
<tr>
<th>Year</th>
<th>Semester</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>ENVI 1001</td>
<td>BIOL 1XXX</td>
<td>CHEM 1XXX</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>ENVI 1002</td>
<td>BIOL 1XXX</td>
<td>CHEM 1XXX</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>ENV1 2001</td>
<td>Table IB elective</td>
<td>Table IB elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>ENV1 2002</td>
<td>Table IB elective</td>
<td>Table IB elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>ENV1 3001</td>
<td>Table IB elective</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>ENV1 3002</td>
<td>Table IB elective</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Total credit points: 144

Require: 144cp total, and units of study as per Table IB.
Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall degree program. There is a sample degree program on below. See the Bachelor of Science entry for additional information. There is also a degree planner inside the back cover. Consultation with the degree coordinator or a Faculty adviser is always recommended. Students can also check the Environmental Science Web site for further information, at www.usyd.edu.au/envsci.

Units of study
The Science units of study available for this degree are set out in Table IB: Bachelor of Science (Environmental) and in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables.

Pass (Concessional)
Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Honours
There are Honours courses in Science subject areas suitable for Environmental Science students. Please refer to 'Honours in the Faculty of Science' in this chapter, and Table VT: Honours units of study in Chapter 3.

Discontinuation
If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission
You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transferring into the BSc (Environmental)
Students may be permitted to transfer from other courses offered by the Faculty of Science or from other degree programs into the BSc (Environmental) with the permission of the Dean.

Universities Admissions Index (UAI)
The minimum UAI for admission into the course varies from year to year

Degree resolutions
See Chapter 5.

---

### Sample Bachelor of Science (Marine Science)

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>PHYS 1XXX</td>
<td>BIOL 1XXX</td>
<td>GEOL/Geog</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>CHEM 1XXX</td>
<td>BIOL 1XXX</td>
<td>GEOL/Geog</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Year 2</td>
<td>MARS 2001</td>
<td>MARS 2003</td>
<td>BIOL 2XXX</td>
<td>Science elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>MARS 2002</td>
<td>MARS 2004</td>
<td>BIOL 2XXX</td>
<td>Science elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Year 3</td>
<td>MARS 3XXX</td>
<td>MARS 3XXX</td>
<td>MARS 3XXX</td>
<td>Table IC elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>Table IC elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>MARS 3XXX</td>
<td>MARS 3XXX</td>
<td>MARS 3XXX</td>
<td>Table IC elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Total credit points: 144

Require: 144cp total, and units of study as per Table IC.
Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall degree program. There is a sample degree program below. See the Bachelor of Science entry for additional information. There is also a degree planner inside the back cover. Consultation with a Faculty or USIMS adviser is always recommended. Students can also check the Marine Science Web site for further information at www.usyd.edu.au/marine.

Pass (Concessional)
Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Units of study
The Science units of study available for this degree are set out in Table IC: Bachelor of Science (Marine Science), Table IB: Bachelor of Science (Environmental) and in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables.

Honours
There is an Honours course in Marine Science. Please refer to 'Honours in the Faculty of Science' in this chapter, and Table VI: Honours units of study in Chapter 3.

Discontinuation
If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission
You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transferring to the BSc (Marine Science)
Students may be permitted to transfer from other courses offered by the Faculty of Science or from other degree programs into the BSc (Marine Science) with permission of the Dean.

Universities Admissions Index (UAI)
The minimum UAI for admission into the course varies from year to year.

Degree resolutions
See Chapter 5.

Sample Bachelor of Science (Molecular Biology & Genetics)

<table>
<thead>
<tr>
<th>Semester</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MATH1XXX</td>
<td>MATH1XXX</td>
<td>BIOL1X01</td>
<td>CHEM1907</td>
<td>Science elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>MATH1XXX</td>
<td>MATH1XXX</td>
<td>BIOL190X</td>
<td>CHEM1909</td>
<td>Science elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>MBLG2X01</td>
<td>CHEM2903</td>
<td>Science elective</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>4</td>
<td>MBLG2X02</td>
<td>MIRC2909</td>
<td>Science elective</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>5</td>
<td>BCHM3X01</td>
<td>BIOL3X18</td>
<td>BIOL3X27</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>6</td>
<td>Table ID elective</td>
<td>Table ID elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Total credit points: 144

Require: 144cp total, and units of study as per Table ID.
Pass (Concessional)

Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Honours

There are Honours courses in Science subject areas suitable for Molecular Biology and Genetics students. Please refer to 'Honours in the Faculty of Science' in this chapter, and Table VI: Honours units of study in Chapter 3.

Discontinuation

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transferring into the BSc (Molecular Biology and Genetics)

Students who have completed at least 48 credit points may, with the permission of the Dean, be permitted to transfer to the BSc (Molecular Biology and Genetics) from the BSc or from other programs if their mark averaged over all attempted units of study is 75 or greater, and they are able to enrol in the required number of Advanced or TSP level units.

Universities Admissions Index (UAI)

The minimum UAI for admission into the course varies from year to year.

Degree resolutions

See Chapter 5.

Bachelor of Science (Molecular Biotechnology)

This degree program is taught mainly by departments in the Faculty of Science and includes industry participation.

Summary of requirements

The requirements for the degree are set out in Table IE: Bachelor of Science (Molecular Biotechnology) (see Chapter 3) and the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree.

Sample Bachelor of Science (Molecular Biotechnology)

<table>
<thead>
<tr>
<th>Sem</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yr 1</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>BIOL 1XXX</td>
<td>CHEM 1XXX</td>
<td>Elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Yr 2</td>
<td>MOBT 2001</td>
<td>MBLG 2XXX</td>
<td>CHEM 2311</td>
<td>Table IE elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>MOBT 2002</td>
<td>MBLG 2XXX</td>
<td>CHEM 2312</td>
<td>Elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>8</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>MOBT 3001 Table IE elective 3XXX</td>
<td>AGCH/ BCHM/ BIOL or CHEM 3XXX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>12</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>MOBT 3002 Table IE elective 3XXX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total credit points: 144

Enrolment guide

In your Junior year you should complete:
- 12 credit points from the Science subject areas of Mathematics and Statistics;
- 12 credit points of Junior units of study in the Science subject area of Biology;
- 12 credit points of Junior units of study in the Science subject area of Chemistry; and
- 12 credit points of elective units of study from Science, Agriculture, Arts, Economics, Engineering or other faculties. To complete your degree you must gain credit for at least 144 credit points as specified in Table IE: Bachelor of Science (Molecular Biotechnology).

Plans of study

It is important when choosing units of study at any stage of your university career that you consider your overall degree program. There is a sample degree program below. See the Bachelor of Science entry for additional information. There is also a degree planner inside the back cover. Consultation with the degree coordinator or a Faculty adviser is always recommended.

Units of study

The Science units of study available for this degree are set out in Table IE: Bachelor of Science (Molecular Biotechnology) and in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables.

Pass (Concessional)

Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Honours

Please refer to 'Honours in the Faculty of Science' in this chapter, and Table VI: Honours units of study in Chapter 3. Candidates for the Honours degree in Molecular Biotechnology shall complete an Honours program incorporating research in molecular biotechnology and related areas through one of the Departments or Schools within the Faculty of Science. Under some circumstances co supervision may be provided by suitably qualified staff based in relevant industrial settings.

Discontinuation

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.
Bachelor of "Science'(Nutrition)" UNDERGRADUATE ENROLMENT ADVICE AND POLICIES

Transferring into the BSc (Molecular Biotechnology)
Students may transfer from other courses offered by the Faculty of Science or from other degree programs into the BSc (Molecular Biotechnology) with the permission of the Dean.

Universities Admissions Index (UAI)
The minimum UAI for admission into the course varies from year to year.

Degree resolutions
See Chapter 5.

■ Bachelor of Science (Nutrition)

Summary of requirements
The requirements for the degree are set out in Table IF: Bachelor of Science (Nutrition) (see Chapter 3) and the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree.

Enrolment guide
In your Junior year you should complete:
• 12 credit points in the Science subject area of Mathematics and Statistics;
• 12 credit points in the Science subject area of Biology;
• 12 credit points in the Science subject area of Chemistry (CHEM 1908 and CHEM 1909 preferred option); and
• 12 credit points in the Science subject areas of Computer Science, Physics or Psychology.
To complete your degree you must gain credit for at least 192 credit points in total as specified in Table IF: Bachelor of Science (Nutrition).

Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall degree program. There is a sample degree program above. See the Bachelor of Science entry for additional information. There is also a degree planner inside the back cover. Consultation with the degree coordinator or a Faculty adviser is always recommended.

Sample Bachelor of Science (Nutrition)

<table>
<thead>
<tr>
<th>Sem</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>BIOL 1XXX</td>
<td>CHEM 1908</td>
<td>SOFT/PHYS/PSYC elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>BIOL 1XXX</td>
<td>CHEM 1909</td>
<td>SOFT/PHYS/PSYC elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>NUTR 2901</td>
<td>MBLG 2X01</td>
<td>PHSI 2001</td>
<td>MICR/ CHEM/ PCOL elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>NUTR 2902</td>
<td>BCHM 2X02</td>
<td>PHSI 2002</td>
<td>MICR/ CHEM/ PCOL elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>NUTR 3901</td>
<td>Table IF elective 3XXX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>NUTR 3902</td>
<td>BCHM 3X02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>1</td>
<td>NUTR 4001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>NUTR 4002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>1</td>
<td>NUTR 4101</td>
<td>NUTR 4102</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>NUTR 4103</td>
<td>NUTR 4104</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Total credit points: 192

* Students do Honours in either the Clinical or Research strands.

Units of study
The Science units of study available for this degree are set out in Table IF: Bachelor of Science (Nutrition) and in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables.

Progression requirements
A minimum requirement for progression in the BSc (Nutrition) will be set annually and will be based on WAM. Students must achieve a WAM of 60 in Junior year and a WAM of 65 in Intermediate and Senior years, or be transferred to the BSc.

Pass (Concessional)
Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Honours
Please refer to 'Honours in the Faculty of Science' in this chapter, and to Table VI: Honours units of study in Chapter 3. Candidates for the Honours degree in Nutrition shall complete an Honours program in either (1) clinical strand or (2) by research. Students who enrol in the BSc (Nutrition) in order to achieve accreditation as a dietitian will need to complete the clinical strand.

Discontinuation
If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission
You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.
### Transferring into the BSc (Nutrition)

Students may transfer from other courses offered by the Faculty of Science or from other degree programs into the BSc (Nutrition) with the permission of the Dean.

### Universities Admissions Index (UAI)

The minimum UAI for admission into the course varies from year to year.

### Degree resolutions

See Chapter 5.

### Combined Science/Law degrees (BSc/LLB)

#### Summary of requirements

The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

A student may proceed concurrently to the degrees of Bachelor of Laws and Bachelor of Science, Bachelor of Science (Advanced) or Bachelor of Science (Advanced Mathematics).

### Enrolment guide

In your Junior year you should complete:

- 12 credit points from the Science subject areas of Mathematics and Statistics;
- 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics and Statistics;
- LAWS 1006, LAWS 1010 and LAWS 1008.

To qualify for the award of the BSc degree a student must complete 96 credit points from Science units of study set out in Table I: Bachelor of Science, and 48 credit points from units set out in Table II: Law units of study, including:

- at least 12 credit points from the Science subject areas of Mathematics and Statistics;
- 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics or Statistics;
- 60 credit points of Intermediate/Senior units of study in Science subject areas;
- a major in a Science area.

The order in which Law units of study are taken is specified in the Resolutions of the Senate and Faculty for the Bachelor of Laws. Students who first enrolled in a combined Science/Law degree prior to 2001 should note that the order and credit point values of some units of study have been changed as the result of adoption of new resolutions. Such students will complete their degrees under old resolutions and should consult the information on page 122 of the 2000 Faculty of Science handbook.

For commencing 2003 students, Law units of study are taken in the following sequence:

- in the first year of attendance the student will take LAWS 1006, LAWS 1008 and LAWS 1010;
- in the second year of attendance the student will take LAWS 1002 and LAWS 1003; and
- in the third year of attendance the student will take LAWS 3000 and LAWS 3002.

In the combined Science/Law course students will spend the first three years at the Camperdown campus during which time the Science degree is completed along with the equivalent of one year’s study towards the Law degree. The remainder of the course will be completed at the Law School in the city (St James campus) over a period of two years. Full details of the units of study to be completed during this time are included in the Faculty of Law handbook. General enquiries about the combined Science/Law course can be directed to staff in the Faculty of Science Office.

### Advanced streams

To qualify for the award of the BSc degree in an Advanced stream, a student shall complete the requirements for the BSc degree outlined above and in addition, except with the permission of the Dean,

- include at least 16 credit points of Intermediate Science units of study at either the Advanced level or as TSP units (for BSc(Advanced Mathematics) at least 16 credit points from the Science subject areas of Mathematics and Statistics at either the Advanced level or as TSP units);
- include at least 24 credit points of Senior Science units of study at the Advanced level or as TSP units in a single Science subject area (for the BSc (Advanced)) or 24 credit points of Senior units of study at the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics (for the BSc (Advanced Mathematics))

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the BSc.

### Plans of study

It is important when choosing units of study at any stage of your university career that you consider your overall degree program. There is a sample degree program below. See the Bachelor of Science entry for information about each major and recommended first year combinations of units of study. There is also a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

### Sample Bachelor of Science/Bachelor of Laws (Years 1 to 3)

<table>
<thead>
<tr>
<th>Semester</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>Science elective A 1XXX</td>
<td>Science elective B 1XXX</td>
<td>LAWS 1006</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>Year 2</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>Science elective A 1XXX</td>
<td>Science elective B 1XXX</td>
<td>LAWS 1010</td>
<td>LAWS 1008</td>
<td>24</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>0</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>Major Intermediate 2XXX</td>
<td>Intermediate Science elective 2XXX</td>
<td>LAWS 1002</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 3</td>
<td>Major 3XXX</td>
<td>LAWS 3000</td>
<td>Science elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>12</td>
<td>10</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>Major 3XXX</td>
<td>LAWS 3002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>22</td>
</tr>
</tbody>
</table>

Total credit points: 144

Require: 144cp total, min. 96cp Science, min 36cp Junior Science incl. 12cp Maths, min. 60cp Intermediate & Senior Science, one major.

Law units as per Table II.
**Units of study**

The Science units of study available for this degree are set out in Table I: Bachelor of Science, and Table II: Laws units of study in Chapter 3. Unit descriptions follow the tables. You may also wish to refer to the Faculty of Law handbook for higher year law options.

**Pass (Concessional)**

Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

**Honours**

Students interested in graduating with Honours should bear the following in mind:

- Students in the combined Law course who wish to take an Honours program in Science may elect to spend an additional year in Science after the third year of the Combined course. Please note that the Faculty of Law generally permits only one year of suspension of candidature from the Bachelor of Laws degree (including the combined Law degree). Alternatively, it may be possible for students to defer an Honours year in Science until after the completion of the entire combined course.

- There is no separate Honours year for the degree of Bachelor of Laws. Graduation with honours in Law is based on weighted average marks (including failures) and requires a high standard of performance in all units of study for the LLB degree, including units of study taken during the first three years of the combined course while the student is completing the Science segment of the course.

**Discontinuation**

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

**Sample Bachelor of Science/Bachelor of Arts**

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3 XXX</td>
<td>MATH 1XXX</td>
<td>3 XXX</td>
<td>MATH 1XXX</td>
<td>3 XXX</td>
</tr>
<tr>
<td>6</td>
<td>1XXX</td>
<td>6</td>
<td>1XXX</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>1XXX</td>
<td>6</td>
<td>1XXX</td>
<td>6</td>
</tr>
<tr>
<td>6</td>
<td>1XXX</td>
<td>6</td>
<td>1XXX</td>
<td>6</td>
</tr>
<tr>
<td>24</td>
<td>24</td>
<td>26</td>
<td>24</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Science major 3XXX</th>
<th>Elective</th>
<th>Arts elective 1XXX</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective</th>
<th>Arts Senior elective</th>
<th>Arts Senior elective major</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Arts Senior elective</th>
<th>Arts Senior elective</th>
<th>Arts Senior elective major</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective</th>
<th>Arts Senior elective</th>
<th>Arts Senior elective major</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Special permission**

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

**Universities Admissions Index (UAI)**

The minimum UAI for admission into the course varies from year to year.

**Degree resolutions**

See Chapter 5.

**Summary of requirements**

The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

A student may proceed concurrently to the degrees of Bachelor of Arts and Bachelor of Science, Bachelor of Science (Advanced) or Bachelor of Science (Advanced Mathematics) within either a BA/BSc or BSc/BA course.

**Enrolment guide**

In your Junior year you should complete:

- 12 credit points from the Science subject areas of Mathematics and Statistics;
• 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics and Statistics; and
• 12 credit points of Junior units of study from Part A of the table of undergraduate units of study in the Faculty of Arts.

To qualify for the award of the pass degrees in the BA/BSc course a student shall complete units of study to a total value of at least 240 credit points including:
• at least 96 credit points from Science subject areas;
• at least 12 credit points from the Science subject areas of Mathematics and Statistics;
• at least 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics or Statistics;
• no more than 100 credit points from Junior units of study;
• a major in a Science area; and
• at least 72 credit points of Senior units of study in Arts subject areas, including a major from Part A of the table of undergraduate units of study in the Faculty of Arts.

To qualify for the award of the pass degrees in the BSc/BA course a student normally shall satisfy the requirements for the BSc in the first six semesters of enrolment.

Advanced streams
To qualify for the award of the pass degree in the BSc (Advanced) stream, a student shall complete the requirements for the BSc and in addition:
• include at least 16 credit points of Intermediate Science units of study at either the Advanced level or as TSP units; and
• include at least 24 credit points of Senior units of study at the Advanced level or as TSP units in a single Science subject area.

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the non Advanced stream.

To qualify for the award of the pass degree in the BSc (Advanced Mathematics) stream, a student shall complete the requirements for the BSc degree as outlined above and in addition:
• include at least 16 credit points of Intermediate Science units of study at either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics; and
• include at least 24 credit points of Senior units of study at the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics.

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the non Advanced stream.

Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall degree program. There is a sample degree program on page 17. See the Bachelor of Science entry for information about each subject area (for the BSc (Advanced)) or 24 credit points of Senior units of study at the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics (for the BSc (Advanced Mathematics)).

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be awarded the Bachelor of Science.

Honours
Students who are qualified to do so may undertake honours courses in either or both degrees or a joint honours course at the completion of the combined degrees. Please refer to ‘Honours in the Faculty of Science’ in this chapter, and to Table VI: Honours units of study in Chapter 3.

Abandoning and discontinuing
Students may abandon the combined degree course and elect to complete either a BSc or a BA in accordance with the Resolutions governing those degrees.

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission
You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transferring into the BSc/BA or BA/BSc

Students may be permitted to transfer from other courses offered by the Faculty of Science or from other degree programs into the BSc/BA and BA/BSc with the permission of the Deans of Arts & Science.

Supervision
Supervision of all students in the combined degrees will be the responsibility of the Faculty of Science and the Faculty of Arts.

Universities Admissions Index (UAI)
The minimum UAI for admission into the course varies from year to year.

Degree resolutions
See Chapter 5.

■ Combined Engineering/Science degrees
See also Summary of Requirements of the BSc.

Summary of requirements
The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

A student may proceed concurrently to the degrees of Bachelor of Science, Bachelor of Science (Advanced) or Bachelor of Science (Advanced Mathematics) and any stream of the Bachelor of Engineering.

Enrolment guide
To qualify for the award of the pass degrees a student shall complete units of study to a total value of at least 240 credit points including:
• 80 credit points from Science subject areas and 160 credit points from prescribed Engineering units of study; and
• a major in a Science area.

Advanced streams
To qualify for the award of the pass degree in the Advanced or Advanced Mathematics stream of the BSc a student must:
• complete at least 56 credit points of Intermediate/Senior Science units of study of which at least 36 credit points shall be completed at the Advanced level or as TSP units; and
• complete at least 24 credit points of Senior Science units of study at the Advanced level or as TSP units in a single Science subject area (for the BSc (Advanced) or 24 credit points of Senior units of study at the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics (for the BSc (Advanced Mathematics)).

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be awarded the Bachelor of Science.

Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall degree program. See the Bachelor of Science entry for information about each
major and recommended first year combinations of units of study. There is a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

Units of study
The Science units of study available for this degree are set out in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables. The Engineering units of study available for this degree are set out in tables in the Faculty of Engineering handbook.

Pass (Concessional)
Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Honours
Students who are so qualified may be awarded honours in the BE degree or undertake an honours course in the BSc degree. Please refer to ‘Honours in the Faculty of Science’ in this chapter, and to Table VI: Honours units of study in Chapter 3.

Abandoning and discontinuing
Students may abandon the combined degree course and elect to complete either a BSc or a BE in accordance with the Resolutions governing those degrees.

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission
You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Supervision
Students will be under the general supervision of the Faculty of Engineering however students may refer to the Faculty of Science Office for additional information.

Universities Admissions Index (UAI)
The minimum UAI for admission into the course varies from year to year.

Degree resolutions
See Chapter 5.

■ Double degree in Science/Engineering

Admission requirements
A student enrolled for a Bachelor of Engineering degree may be permitted to transfer to a BSc degree if:

• at least 96 credit points from units of study in Engineering have been completed, of which no more than 12 credit points are from units of study with the grade of Pass (Concessional); and

• the student is qualified to enrol in a major in a Science area.

For admission to the Advanced and Advanced Mathematics streams a student must have completed at least 48 credit points of units of study from the BSc with a mark averaged over all attempted units of study of 75 or greater and have met the prerequisites to be able to enrol in the required number of Advanced level units or TSP units.

Enrolment guide
To qualify for the award of the pass degree a student shall complete units of study to a value of at least 48 credit points including:

• 40 credit points of Intermediate/Senior units of study in Science subject areas; and

• a major in a Science area.

Advanced streams
To qualify for the award of the pass degree in the Advanced or Advanced Mathematics stream of the BSc a student shall in addition:

• include at least 80 credit points of Intermediate/Senior Science units of study; and

• include at least 24 credit points of Senior Science units of study at the advanced level or as TSP units in a single Science subject area (for the BSc (Advanced)) or 24 credit points of Senior units of study at the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics (for the BSc (Advanced Mathematics))

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the Bachelor of Science.

Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall degree program. See the Bachelor of Science entry for information about each major and recommended first year combinations of units of study. There is a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

Units of study
The Science units of study available for this degree are set out in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables. The Engineering units of study available for this degree are set out in tables in the Faculty of Engineering handbook.

Pass (Concessional)
Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Method of candidature
The requirements outlined above must be completed in one year of full time study or two years of part time study. Students who complete at least 40 but less than 48 credit points in the prescribed time limits may in the following year of enrolment in the BE complete the remaining units to satisfy the requirements of the BSc. Students who complete less than 40 credit points may apply to be readmitted to the degree, subject to Resolutions relating to credit transfer.

Applications
Bachelor of Engineering students should apply to the Faculty of Science before 15 November in the year prior to candidature.

Honours
Students who are qualified may be awarded honours in the BE degree or undertake an honours course in the BSc. Please refer to ‘Honours in the Faculty of Science’ in this chapter, and to Table VI: Honours units of study in Chapter 3.

Discontinuing
If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission
You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Degree resolutions
See Chapter 5.

■ Combined Science/Commerce degrees

See also Summary of Requirements of the BSc.

Summary of requirements
The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions

19
are summarised below. The Resolutions should be consulted for any clarification of the summary points.

A student may proceed concurrently to the degrees of Bachelor of Commerce and Bachelor of Science, Bachelor of Science (Advanced) or Bachelor of Science (Advanced Mathematics).

Enrolment guide

In your Junior year you should complete:
- 12 credit points from the Science subject areas of Mathematics and Statistics;
- 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics and Statistics; and
- 12 credit points of Junior units of study from either Economics, Accounting or the combination ECMT 1010 and INFS 1000.

To qualify for the award of the pass degrees a student shall complete units of study to a total value of at least 240 credit points including:
- in the first six semesters of enrolment at a grade of pass or better:
  - (a) 12 credit points of units of study from the Science subject areas of Mathematics and Statistics listed in Table I: Bachelor of Science, not including MATH 1015/1005/1905;
  - (b) ECMT 1010 and INFS 1000;
  - (c) 12 credit points in Junior units of study from each of Accounting and Economics;
  - (d) at least 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics or Statistics; and
  - (e) at least 96 credit points from Science subject areas;
- no more than 100 credit points from Junior units of study;
- at least 64 credit points of Senior units of study in Economics and Business from the list of approved majors for the BCom; and
- a major in a Science area, and a major in Economics and Business subject areas.

Sample Bachelor of Science/Bachelor of Commerce

<table>
<thead>
<tr>
<th>Sem</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>Science elective A 1XXX</td>
<td>Science elective B 1XXX</td>
<td>Commerce Junior core 1XXX</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2</td>
<td>Science major 2XXX</td>
<td>Intermediate Science elective 2XXX</td>
<td>Intermediate Science elective 2XXX</td>
<td>Commerce Junior core 1XXX</td>
<td></td>
<td></td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>4</td>
<td>4</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 3</td>
<td>Science major 3XXX</td>
<td>Commerce/Science elective</td>
<td>Commerce Junior core 1XXX</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 4</td>
<td>Elective</td>
<td>Commerce Senior elective</td>
<td>Commerce Senior elective major</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 5</td>
<td>Int/Senior elective</td>
<td>Commerce Senior elective</td>
<td>Commerce Senior elective major</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Advanced streams

To qualify for the award of the pass degree in the BSc (Advanced) stream, a student shall complete the requirements for the BSc and in addition:
- include at least 16 credit points of Intermediate Science units of study at either the Advanced level or as TSP units; and
- include at least 24 credit points of Senior units of study at the either the Advanced level or as TSP units in a single Science subject area;

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the non Advanced stream.

To qualify for the award of the pass degree in the BSc (Advanced Mathematics) stream, a student shall complete the requirements for the BSc degree and in addition:
- include at least 16 credit points of Intermediate units of study at either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics; and
- include at least 24 credit points of Senior units of study at the either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics.

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the non Advanced stream.

Plans of study

It is important when choosing units of study at any stage of your university career that you consider your overall degree program. There is a sample degree program below. See the Bachelor of Science entry for information about each major and recommended first year combinations of units of study. There is also a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

|
|---|
|Require: 240cp total, max 100cp Junior, min. 96cp Science, min 36cp Junior Science incl. 12cp Maths, one Science major, min 100cp Commerce, min 36cp specified Junior Commerce units, either a Commerce major (32cp) or a Commerce double major (48cp).|

20
To qualify for the award of the pass degree a student shall

- 24 credit points of Junior units of study from at least two
  points including:
  - complete units of study to a total value of at least 240 credit
  
<table>
<thead>
<tr>
<th>Table I: Bachelor of Science in Chapter 3. Unit descriptions</th>
</tr>
</thead>
</table>

The Science units of study available for this degree are set out in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables. The Commerce units of study available for this degree are set out in Table A for the Bachelor of Commerce the Faculty of Economics and Business handbook. You may also wish to refer to the handbooks of other faculties as the degree resolutions allow.

Honours

Students who are qualified to do so may undertake honours courses in either or both degrees or a joint honours course on completion of the combined degree. Please refer to 'Honours in the Faculty of Science' in this chapter, and to Table VI: Honours units of study Chapter 3.

Abandoning and discontinuing

Students may abandon the combined degree course and elect to complete either a BSc or a BCom in accordance with the Resolutions governing those degrees.

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transferring into the BSc/BCom

Students may be permitted to transfer from other courses offered by the Faculty of Science or from other degree programs into the BSc/BCom with the permission of the Deans of Economics and Business & Science.

Supervision

The Faculty of Science is the Supervising Faculty for the Bachelor of Science/Commerce. However for student matters related to the Bachelor of Commerce component (eg, credit, graduation and progression advice) students should refer to the Faculty of Economics and Business Student Information Office.

Universities Admissions Index (UAIs)

The minimum UAIs for admission into the course varies from year to year.

Degree resolutions

See Chapter 5.

Combined Nursing/Science degrees

See also Summary of Requirements of the BSc.

Summary of requirements

The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

A student may proceed concurrently to the degrees of Bachelor Nursing and Bachelor of Science, Bachelor of Science (Advanced) or Bachelor of Science (Advanced Mathematics).

Enrolment guide

To qualify for the award of the pass degrees a student shall complete units of study to a total value of at least 240 credit points including:

- a major in a Science area;
- no more than 60 credit points from Junior Science units of study;
- at least 132 credit points of units of study listed in the table of units for the degree of BSc; and
- a further 12 credit points of electives taken from either Science or Nursing.

Advanced streams

To qualify for the award of the pass degree in the BSc (Advanced) stream, a student shall complete the requirements for the BSc and in addition:

- include at least 16 credit points of Intermediate Science units of study at either the Advanced level or as TSP units; and
- include at least 24 credit points of Senior units of study at the either the Advanced level or as TSP units in a single Science subject area;

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the Bachelor of Science.

To qualify for the award of the pass degree in the BSc (Advanced Mathematics) stream, a student shall complete the requirements for the BSc degree and in addition:

- include at least 16 credit points of Intermediate units of study at either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics; and
- include at least 24 credit points of Senior units of study at the either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics.

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the Bachelor of Science.

Plans of study

It is important when choosing units of study at any stage of your university career that you consider your overall degree program. See the Bachelor of Science entry for information about each major and recommended first year combinations of units of study. There is a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

Pass (Concessional)

Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Units of study

The Science units of study available for this degree are set out in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables. The Nursing units of study available for this degree are set out in the Faculty of Nursing handbook.

Honours

Students who are qualified to do so may undertake honours courses in either or both degrees or a joint honours course on completion of the combined degree.

Abandoning and discontinuing

Students may abandon the combined degree course and elect to complete either a BSc or a BN in accordance with the Resolutions governing those degrees.

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Supervision

Students will be under the general supervision of the Faculty of Nursing.
The minimum UAI for admission into the course varies from year to year.

Degree resolutions
See Chapter 5.

Combined Education/Science degrees

See also Summary of Requirements of the BSc.

Summary of requirements

The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

A student may proceed concurrently to the degrees of Bachelor of Education (Secondary) and Bachelor of Science, Bachelor of Science (Advanced), Bachelor of Science (Advanced Mathematics) or Bachelor of Science (Psychology)

Enrolment guide

BEd (Secondary: Science)/BSc

To qualify for the award of the pass degrees a student shall complete units of study to a total value of at least 240 credit points including:

- at least 96 credit points from Science subject areas and 132 credit points from prescribed Education units of study;
- at least 12 credit points from the Science subject areas of Mathematics and Statistics;
- at least 24 credit points from Junior units of study from at least two Science subject areas other than Mathematics or Statistics;
- a major in a Science area;
- a major in Education;
- at least 32 credit points of units of study in Methods and Practice of Teaching; and
- 32 credit points in Teaching and Learning including successful completion of the practicum.

BEd (Secondary: Mathematics)/BSc

To qualify for the award of the pass degrees a student shall complete units of study to a total value of at least 240 credit points including:

- at least 96 credit points from Science subject areas and 132 credit points from prescribed Education units of study;
- at least 12 credit points from the Science subject areas of Mathematics and Statistics;
- at least 24 credit points from Junior units of study from at least two Science subject areas other than Mathematics or Statistics;
- a major in the Science subject area of Mathematics or Statistics;
- a major in Education;
- at least 32 credit points of units of study in Methods and Practice of Teaching; and
- 32 credit points in Teaching and Learning including successful completion of the practicum.

Advanced streams

To qualify for the award of the pass degree in the BSc (Advanced) stream, a student shall complete the requirements for the BSc and in addition:

- include at least 16 credit points of Intermediate units of study at either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics; and
- include at least 24 credit points of Senior units of study at either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics.

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the Bachelor of Science.

To qualify for the award of the pass degree in the BSc (Advanced Mathematics) stream, a student shall complete the requirements for the BSc degree and in addition:

- include at least 16 credit points of Intermediate units of study at either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics; and
- include at least 24 credit points of Senior units of study at either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics.

You should note that you must maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment, or be transferred to the Bachelor of Science.

BEd(Secondary)/BSc(Psychology)

To qualify for the award of the pass degrees a student shall complete units of study to a total value of at least 244 credit points including:

Years I to III

- 48 credit points from prescribed Education units of study;
- in Year I, 12 credit points from Junior units of study in Mathematics and Statistics, Psychology and either Chemistry or Physics;
- in Year II, 16 credit points from Intermediate units of study in Psychology and 16 credit points from Intermediate units of study in Mathematics and Statistics, Chemistry or Physics;
- in Year III, 32 credit points from Senior units of study in Psychology.

Years IV & V

- 16 credit points from prescribed Education units of study;
- 16 credit points from prescribed units of study in School Counselling;
- 16 credit points from Senior units of study in either Mathematics and Statistics, Chemistry or Physics; and
- complete fourth year Honours or equivalent in Psychology (48 credit points).

The Bachelor of Science (Psychology) is not available at an Advanced level.

Plans of study

It is important when choosing units of study at any stage of your university career that you consider your overall degree program. See the Bachelor of Science entry for information about each major and recommended first year combinations of units of study. There is a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

Units of study

The Science units of study available for this degree are set out in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables. The Education units of study available for this degree are set out in the Faculty of Education handbook.

Pass (Concessional)

Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Honours

Students who are qualified to do so may undertake honours courses in either or both degrees or a joint honours course on completion of the combined degree. Please refer to 'Honours in the Faculty of Science' in this chapter, and to Table VI: Honours units of study in Chapter 3.

Abandoning and discontinuing

Students may abandon the combined degree course and elect to complete either a BSc or a BEd in accordance with the Resolutions governing those degrees.

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Supervision

Students will be under the general supervision of the Faculty of Education.
Bachelor of Liberal Studies (BLibStud)

Summary of requirements
In the Bachelor of Liberal Studies students will undertake a broad liberal education which emphasisescommunication and problem solving skills. The degree is available in two streams the Bachelor of Liberal Studies and the Bachelor of Liberal Studies (International). The Faculties of Arts and Science jointly administer the degree.

The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

Enrolment guide
B Liberal Studies
To qualify for the award of the degree a student shall complete units of study having a total value of at least 192 credit points, including:

- at least 120 Intermediate or Senior credit points;
- at least one Arts major and one Science major;
- at least 28 credit points, including 16 Intermediate or Senior credit points, from units of study in one language subject area other than English from Part A of the Tables of units of study for the degree of Bachelor of Arts;
- a 6 credit point unit of study in communication and analytical skills or in other academic skills as may be prescribed from time to time (currently ENGL 1005 and LNGS 4005);
- a minimum of 6 credit points from units of study in Mathematics and Statistics; and
- no more than 18 credit points from units in which a grade of Pass (Concessional) has been awarded (Pass (Concessional) is awarded for Junior units of study only) Note: Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

You should also note the following:

- A maximum of 28 credit points may be counted towards the degree requirements from units of study offered by faculties other than the Faculties of Arts and Science and in addition to those listed in Part B of the Table of units of study for the Bachelor of Arts.
- All other units of study must come from Part A of the Table of units of study for the Bachelor of Arts or from Table I: Bachelor of Science.

B Liberal Studies (International)
The requirements for this stream of the degree are the same as those for the BLibStud except that a minimum of 24 credit points (one semester equivalent) of study must be completed at an overseas university while enrolled as an exchange student as part of The University of Sydney Exchange Program. The Exchange Program is usually undertaken in the second or third year of enrolment, and students will comply with the rules of, and be under the administration of, the Exchange Program during the period of exchange. To qualify for participation in the Exchange Program a student must have completed at least 48 credit points towards the BLibStud and have an average mark of 65 or greater over all units of study completed.

During the period of their exchange program a student must be enrolled as a full time student in the Bachelor of Liberal Studies (International) at The University of Sydney and take classes at the overseas university that will qualify for a minimum of 24 credit points per semester towards the Bachelor of Liberal Studies (International) degree.

Under the Exchange program a student's academic fees are covered by normal HECS arrangements based on their enrolment at The University of Sydney. However, students are responsible for their own travel and living expenses during the Exchange Program. The Faculties of Arts and Science will provide a number of travel grants each year on a competitive basis, which

Sample Bachelor of Liberal Studies

<table>
<thead>
<tr>
<th>Sem</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>Science Junior elective A</td>
<td>Arts/Science Junior elective B</td>
<td>Language Junior elective</td>
<td>Maths or ENGL 1005 or LNGS 1005</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Science major Intermediate elective</td>
<td>Arts/Science Junior elective</td>
<td>Language Intermediate elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>6</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Science major Intermediate elective</td>
<td>Arts/Science Junior elective</td>
<td>Language Intermediate elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>6</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Science major Senior elective</td>
<td>Arts major Senior elective</td>
<td>Junior elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>8</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>26</td>
</tr>
<tr>
<td></td>
<td>Science major Senior elective</td>
<td>Arts major Senior elective</td>
<td>Junior elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>8</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>Year 3</td>
<td>Arts/Science Intermediate/Senior elective</td>
<td>Arts major Senior elective</td>
<td>Intermediate/Senior elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>12</td>
<td>8</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>Year 4</td>
<td>Arts/Science Intermediate/Senior elective</td>
<td>Arts major Senior elective</td>
<td>Intermediate/Senior elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year Total credit points: 192</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
assist towards students' travel costs, and students are also eligible to apply for the scholarships and bursaries provided by the University as part of the Exchange Program.

Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall degree program. See the Bachelor of Science entry for information about each Science major and recommended first year combinations of units of study. There is a sample degree program below and a degree planner inside the back cover. Consultation with an adviser from the Faculty of Arts and/or Science is always recommended. Each Faculty has an Associate Dean responsible for Liberal Studies.

Pass (Concessional)
Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Units of study
The Science units of study available for this degree are set out in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables. The Arts units of study available for this degree are set out in Part A of the table of undergraduate units of study in the Faculty of Arts handbook. You may also wish to refer to the handbooks of other faculties as the degree resolutions allow.

Honours
There will be honours courses in all Arts and Science subject areas. To qualify for the award of an honours degree, students shall complete 48 credit points of honours units of study in Part A of the Table of undergraduate units of study for the Bachelor's degrees in Arts or Science, or in Table VI: Honours units of study. You may also wish to refer to 'Honours in the Faculty of Science' in this chapter, and Table VI: Honours units of study in Chapter 3.

Transfer to the Bachelor of Arts or the Bachelor of Science
Students who at the end of at least four semesters of candidature have completed at least 96 credit points in total, and who intend to satisfy the requirements for entry to a Fourth Year Honours unit of study or joint Honours unit of study for the Bachelor's degrees in Arts or Science, may apply to transfer to candidature for one of these degrees.

Students who at the end of at least six semesters of candidature have completed at least 144 credit points in total, and who intend to satisfy the requirements for entry to a Fourth Year Honours unit of study for the Bachelor's degrees in Arts or Science may apply to transfer to candidature for one of these degrees.

Students for the degree may, with the permission of the Faculty concerned, transfer to candidature for the pass degrees of Bachelor of Arts or Bachelor of Science no later than the end of the fourth semester of candidature.

If a student has completed the normal requirements for the pass degree of Bachelor of Arts, Bachelor of Arts (Asian Studies) or Bachelor of Science, he or she may apply to take one of these degrees provided that candidature for the Bachelor of Liberal Studies is abandoned.

Transfer between the BLibStud and the BLibStud(International)
Students who have completed at least 48 credit points may be permitted with the permission of the Deans of Arts and Science to transfer from the Bachelor of Liberal Studies to the Bachelor of Liberal Studies (International) stream if:
(1) their marks averaged over all attempted units of study is 65 or greater, and
(2) they are able to qualify for participation in the Exchange Program.

Students enrolled in the Bachelor of Liberal Studies (International) stream who do not qualify for, or are unable or unwilling to participate in an Exchange Program may, with the permission of the Deans of Arts and Science, transfer to the Bachelor of Liberal Studies.

Discontinuation
If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission
You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree.

Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Supervision
General supervision of students alternates between the Faculties of Arts and Science every two years. For 2003 the Faculty of Arts is the supervising faculty.

Universities Admissions Index (UAI)
The minimum UAI for admission to the Faculty varies from year to year.

Degree Resolutions
See Chapter 5.

Bachelor of Computer Science and Technology (BCST)

Summary of requirements
The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points. Students can also consult the School of Information Technologies Web site at www.it.usyd.edu.au.

Enrolment guide
To complete your degree you must gain credit for at least 144 credit points. The 144 credit points required for the degree must include:

• at least 92 credit points from Table III associated with the degree of Bachelor of Information Technology, including:
  (a) at least 20 credit points from III(i)
  (b) at least 8 credit points from III(ii)
  (c) at least 36 credit points from III (iv) and/or III (v)
  (d) at least 8 credit points from III (v)

• at least 16 credit points from the Science subject areas of Mathematics and Statistics
• at least 40 credit points from units of study which have codes starting other than INFO, COMP, ISYS, MULT, NETS, SOFT
• no more than 18 credit points from units of study in which a grade of Pass (Concessional) has been awarded. Note: Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004
• at most 72 credit points from Junior units of study

You should also note the following:
• you can complete majors in Principles of Computer Science, Information Systems, Multimedia Technology, Network and Systems, Software Development, Digital Systems and Computational Science as defined in Table TBA: Bachelor of Information Technology majors, but it is not necessary to complete a major in order to qualify for the degree
• units of study completed at The University of Sydney Summer School which correspond to units of study in the table of undergraduate units of study may be credited towards the course requirements
• a standard full time enrolment is 24 credit points per semester; less than 18 credit points per semester is considered to be part time
• you may not enrol in more than 32 credit points in any one semester without permission
• before being permitted to enrol in a unit of study, you have to meet any prerequisites and corequisites for that unit of study
• Advanced units of study are indicated by a 9 (or 8) as the second digit of the unit of study code. Entry to these units of study is limited (details can be obtained from departments)
• once the award course requirements of 144 credit points have been satisfied a student may not enrol in additional units of study without first obtaining permission from the Dean
• if a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re enrol in that unit of study.

Note: Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.
Sample Bachelor of Computer Science & Technology

<table>
<thead>
<tr>
<th>Sem</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>Elective</td>
<td>Elective</td>
<td>Elective</td>
<td>Elective</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>SOFT 2X04</td>
<td>Table III(ii) elective</td>
<td>MATH elective</td>
<td>Table III (ii/iii)</td>
<td>IT-related elective</td>
<td>Elective</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Table III(i/v/iv/v) elective</td>
<td>Table III(i/v/iv/v) elective</td>
<td>Table III(i/v/iv/v) elective</td>
<td>Table III(i/v/iv/v) elective</td>
<td>Elective</td>
<td>Elective</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>Table III(i/v/iv/v) elective</td>
<td>Table III(i/v/iv/v) elective</td>
<td>Table III(i/v/iv/v) elective</td>
<td>Table III(i/v/iv/v) elective</td>
<td>Table III(i/v/iv/v) Project</td>
<td>Elective</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

Total credit points: 144

Require: 144cp total, min. 92cp Table III, max. 72 Junior, min. 16cp Maths, 20cp Table III(i), min. 8cp Table III(ii), min. 36cp Table III(iv), min. 8cp Table III(v), min 40cp from COMP, INFO, ISYS, MULT, NETS, SOFT.

Plans of units of study

It is important when choosing units of study at any stage of your university career that you should consider your overall degree program. The BCST is designed as a flexible degree program which enables students with a strong interest in computing to combine a core of fundamental computer science topics with a wide range of subjects in other computationally based disciplines. There is a sample degree program on page 25 and there is also a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

Units of study

The units of study available for this degree are set out in Table I: Bachelor of Information Technology and in Table II: Bachelor of Science in Chapter 3. Unit descriptions follow the tables.

Pass (Concessional)

Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Honours

There will be honours in the subject areas of Computer Science and Information Systems. Please refer to 'Honours in the Faculty of Science' in this chapter, and Table VI: Honours units of study in Chapter 3.

Discontinuation

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications for special consideration should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transferring into the BCST

Students may transfer from other courses offered by the Faculty of Science or from other degree programs into the Bachelor of Computer Science and Technology with the permission of the Dean.

Universities Admissions Index (UAI)

The minimum UAI for admission to the Faculty varies from year to year.

Degree resolutions

See Chapter 5.

Bachelor of Computer Science and Technology (Advanced)

Summary of requirements

The Bachelor Computer Science and Technology (Advanced) degree program requires the equivalent of three years of full time study. An Honours program is available and requires the equivalent of a further year of full time study. The Resolutions of the Senate and Faculty governing candidature for the degree of Bachelor of Computer Science and Technology listed in Chapter 5 also govern the BCST (Advanced) degree program.

Enrolment guide

To complete your degree you must satisfy the requirements outlined for the BCST and gain credit for at least 144 credit points. The 144 credit points required for the degree must include:

- at least 16 credit points of Intermediate units of study from Table in (i) and/or H1 (ii) at either the Advanced level or as TSP units
- at least 48 credit points of Senior units of study of which at least 24 are completed at the Advanced level or as TSP units taken from Table III (iv) and/or in (v)

Progression requirements

In order to enrol in the necessary number of Advanced units of study specified, students must achieve at least Distinction performance in the pre requisite units of study.

Universities Admissions Index (UAI)

The minimum UAI for admission to the Faculty varies from year to year.

Transferring into the BCST (Advanced) degree program

Students who have completed at least 48 credit points may be permitted to transfer to the BCST (Advanced) from the BCST or other degree programs if their mark averaged over all attempted units of study is 75 or greater, and they are able to enrol in the required number of advanced level units or TSP units.

Degree resolutions

See Chapter 5.
■ Bachelor of Information Technology (BIT)

Summary of requirements
The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points. Students can also consult the School of Information Technologies Web site at www.it.usyd.edu.au.

Enrolment guide
To complete your degree you must gain credit for at least 192 credit points. The 192 credit points required for the degree must include:

- at least 144 credit points from Table IE: Bachelor of Information Technology (in Chapter 3), including
  - (a) at least 20 credit points from III(i) with results of Credit or better
  - (b) at least 16 credit points from III(ii) with results of Credit or better
  - (c) at least 72 credit points from III(iv) and/or III(v)
  - (d) either INFO 3600 or INFO 4900
- at least 16 credit points from the Science subject areas of Mathematics and/or Statistics
- at least 40 credit points are from units which have codes starting other than INFO, COMP, ISYS, MULT, NETS, SOFT
- at most 72 credit points from Junior units
- at least 84 credit points from Senior and/or Honours units

You should also note the following:
- you can complete majors in Principles of Computer Science, information Systems, Multimedia Technology, Networks and Systems, Software Development, Digital Systems and Computational Science as defined in Table IIIA: Bachelor of Information Technology majors, but it is not necessary to complete a major in order to qualify for the degree
- you cannot count any unit of study with the grade Pass (Concessional) toward the degree
- units of study completed at The University of Sydney Summer School which correspond to units of study in the table of undergraduate units of study may be credited towards the course requirements
- a standard full time enrolment is 24 credit points per semester; less than 18 credit points per semester is considered to be part time
- you may not enrol in more than 32 credit points in any one semester without permission
- in order to enrol in a unit of study, you have to meet any prerequisites and corequisites for that unit of study
- Advanced units of study are indicated by a 9 (or 8) as the second digit of the unit of study code. Entry to these units of study is limited (details can be obtained from departments)
- once the award course requirements of 192 credit points have been satisfied a student may not enrol in additional units of study without first obtaining permission from the Dean
- if a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re enrol in that unit of study.

Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall program. There is a sample degree program above and there is also a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

Units of study
The units of study available for this degree are set out in Table HJ: Bachelor of Information Technology and in Table I: Bachelor of Science, in Chapter 3 Unit descriptions follow the tables.

Honours
The BIT may be awarded as an Honours degree. Students may enrol in the Honours course after completion of 144 credit point, if they meet the specified performance conditions. Please refer to 'Honours in the Faculty of Science' in this chapter, and Table VI: Honours units in Chapter 3.

Sample Bachelor of Information Technology

<table>
<thead>
<tr>
<th>Sem</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>SOFT 1X01</td>
<td>Table III (iii/v)</td>
<td>IT related elective</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>SOFT 1X02</td>
<td>Table III (iii/v)</td>
<td>IT related elective</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>1</td>
<td>SOFT 2X04</td>
<td>Table III (iii) elective</td>
<td>Table III (iii) elective</td>
<td>MATH elective</td>
<td>Table III (iii/v)</td>
<td>IT related elective</td>
<td>Elective</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>SOFT 2X01</td>
<td>Table III (iii) elective</td>
<td>Table III (iii) elective</td>
<td>Table III (iii/v)</td>
<td>IT related elective</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>1</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>1</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>Table III (iii/v) elective</td>
<td>Table III (iii/v) elective</td>
<td>INFO 3600/INFO 4900</td>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>12</td>
<td>4</td>
<td></td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Total credit points: 192

Require: 192cp total, min. 144cp Table III, max. 72cp Junior, min. 84cp Senior/Honours, min. 16cp Maths, min 20cp Table III(i), min. 16cp Table III(ii), min. 72cp Table III(iii/v), either INFO 3600 or INFO 4900, min 40cp from COMP, INFO, ISYS, MULT, NETS, SOFT.
Discontinuation
If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission
You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications for special consideration should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transferring into the BIT
Students who have completed at least 48 credit points may be permitted to transfer to the Bachelor of Information Technology degree from other degree programs, if their mark averaged over all attempted units of study is 70 or greater. A quota may apply to the number of students allowed to transfer into the BIT in a given calendar year.

Universities Admissions Index (UAI)
The minimum UAI for admission to the Faculty varies from year to year.

Degree resolutions
See Chapter 5.

Bachelor of Medical Science (BMedSc)

Summary of requirements
The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

Enrolment guide
To complete your degree you must gain credit for at least 144 credit points. The 144 credit points required for the degree must include:
- at least 48 credit points from junior units of study, comprising 12 credit points each from Biology, Chemistry, Mathematics and Physics; with the permission of the Faculty 12 credit points of Biology may be replaced with junior units of study in Computer Science or Psychology
- no more than 60 credit points from Junior units of study listed in Table IV: Bachelor of Medical Science
- 40 credit points of core Intermediate units of study
- a minimum of 36 credit points from senior units of study taken from the subject areas of Anatomy and Histology, Biology (Genetics), Biochemistry, Cell Pathology, Immunology, Infectious Diseases, Microbiology, Pharmacology and Physiology listed in Table IV: Bachelor of Medical Science
- no more than 20 credit points from units of study other than those specified in Table IV: Bachelor of Medical Science.

Students are required to have completed at least 32 credit points of the core intermediate units of prior to enrolment in any senior units of study. It is possible for students to 'carry' up to 8 credit points of core or elective units from the intermediate year into the senior year, provided that these units of study are not prerequisites for electives they may wish to undertake in the senior year.

You should also note the following:
- you cannot count any unit of study with the grade Pass (Concessional) toward the degree
- units of study completed at The University of Sydney Summer School which correspond to units of study in the table of undergraduate units of study may be credited towards the course requirements
- a standard full time enrolment is 24 credit points per semester; less than 18 credit points per semester is considered to be part time
- you may not enrol in more than 32 credit points in any one semester without permission
- in order to enrol in a unit of study, you have to meet any prerequisites and corequisites for that unit of study
- Advanced units of study are indicated by a 9 (or 8) as the second digit of the unit of study code. Entry to these units of study is limited (details can be obtained from departments)
- once the award course requirements of 144 credit points have been satisfied a student may not enrol in additional units of study without first obtaining permission from the Dean
- if a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re enrol in that unit of study.
- The combination MATH 1003 and 1004 or 1903 and 1904 is not recommended in this degree Students wishing to study Statistics/Calculus are advised to select from MATH 1003, 1005, 1903, 1905, 1013, 1015.

Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall degree program. There is a sample degree program above and there is also a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

Units of study
The Science units of study available for this degree are set out in Table IV: Bachelor of Medical Science and in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables.

Sample Bachelor of Medical Science

<table>
<thead>
<tr>
<th>Semester</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>CHEM 1XXX</td>
<td>PHYS 1XXX</td>
<td>BIOL 1XXX</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 2</td>
<td>BMED 2501</td>
<td>BMED 2502</td>
<td>BMED 2503</td>
<td>Elective</td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>6</td>
<td>8</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Year 3</td>
<td>Senior core 3XXX</td>
<td>Senior core 3XXX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total credit points: 144

Require: 144cp total, min 48cp Junior, min 40cp Intermediate core, min 36cp Senior core, no more than 20cp from units of study outside Table V.
Honours
There will be Honours courses in Anatomy, Biochemistry, Biology (Genetics), Cell Pathology, Histology and Embryology, Immunology, Infectious Diseases, Microbiology, Pharmacology and Physiology. Please refer to 'Honours in the Faculty of Science' in this chapter, and Table VI: Honours units of study in Chapter 3.

Discontinuation
If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission
You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transferring into the BMedSc degree program
A limited number of students may be permitted to transfer into the BMedSc course at the beginning of the intermediate year from other degrees offered by the Faculty, from other degrees offered by The University of Sydney or from other institutions. In order to transfer students must achieve a Pass or better in all of the qualifying units of study, or units of study deemed equivalent by the Faculty. Selection is based solely on performance in the first year subjects. Applicants should anticipate a WAM of about 75 would be necessary to gain admission. Students who wish to transfer must apply for admission to the BMedSc course through the Universities Admission Centre.

Universities Admissions Index (UAI)
The minimum UAI for admission to the Faculty varies from year to year.

BMedSc degree resolutions
See Chapter 5.

■ Combined Engineering/Medical Science degrees

Summary of requirements
The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates.

A student may proceed concurrently to the degrees of Bachelor of Engineering (in any specialisation except Civil Engineering) and Bachelor of Medical Science.

Enrolment guide
To qualify for the award of the pass degrees a student shall complete units of study to a total value of at least 240 credit points including:

• at least 160 credit points from prescribed Engineering units of study (this total to include the 12 credit points from the Interdisciplinary Thesis)
• 40 credit points of intermediate core units of study listed in Table V: Bachelor of Medical Science
• at least 24 credit points of senior units of study from the subject areas listed in Table IV: Bachelor of Medical Science
• 12 credit points from the Interdisciplinary Thesis.

Students who are so qualified may be awarded honours in the BE degree or undertake an honours course in the BMedSc degree.

Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall degree program. See the Bachelor of Medical Science entry for information about recommended first year combinations of units of study and the sample degree program. There is a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

Units of study
The Science units of study available for this degree are set out in Table IV: Bachelor of Medical Science in Chapter 3. Unit descriptions follow the tables. The Engineering units of study available for this degree are set out in the Faculty of Engineering handbook.

Pass (Concessional)
Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Abandoning and discontinuing
Students may abandon the combined degree course and elect to complete either a BMedSc or a BE in accordance with the Resolutions governing those degrees. If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission
You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Supervision
Students will be under the general supervision of the Faculty of Engineering.

Universities Admissions Index (UAI)
The minimum UAI for admission into the course varies from year to year.

Degree resolutions
See Chapter 5.

■ Bachelor of Science in Media and Communications (BScMediaCommun)

Summary of requirements
The Bachelor of Science in Media and Communications is a four year degree in which students undertake a broad interdisciplinary education which encompasses training in a science area with training and industry experience in facets of the media (print journalism, radio, television and online media and communications). The science components are based on the units of study offered in the BSc leading to a Science major, while the media components draw on those units offered for the BA(Media & Communications) leading to a major in the area of media, and also including an industry internship with an organisation associated with science media. The degree is awarded with the grades of High Distinction, Distinction and Pass depending on performance. The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5 of this Handbook) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

Enrolment guide
To complete your degree you must gain credit for at least 192 credit points. The 192 credit points required for the degree must include:

• at least 120 credit points of Intermediate or Senior units of study
• at least one Science major from those included in Table I: Bachelor of Science;
• a major in Media and Communications (normally 12 credit points from Junior units and 32 credit points from Senior units in MECO listed in Table V: Bachelor of Science in Media and Communications);
• at least 8 credit points of Senior units from each of the areas of Government and Media, Law and Media, and Media Relations;
• 16 credit points from the Science Media and Communications Practice units listed in Table V: Bachelor of Science in Media and Communications, taken in an approved industry in the third or fourth year of candidature;
Sample Bachelor of Science in Media and Communications

<table>
<thead>
<tr>
<th>Sem</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>MECO 1001</td>
<td>Science elective 1XXX</td>
<td>ENGL 1005</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>MECO 1003</td>
<td>Science elective 1XXX</td>
<td>Elective</td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>MECO 2001</td>
<td>Major Intermediate Science elective</td>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>MECO 2002</td>
<td>MECO 2003</td>
<td>Major Intermediate Science elective</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Science major 3XXX</td>
<td>MECO 3001</td>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>8</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Science major 3XXX</td>
<td>MECO 3002</td>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>8</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>MECO 3701</td>
<td>GOVT 2303</td>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>MECO 3702</td>
<td>MECO 3003</td>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>8</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Total credit points: | 192 |

Require: 192cp total, min. 12cp Maths and/or Stats, 6cp communication skills, 16cp from Media and Communication Practice units, 8cp Senior from each of Government, Media, Law and Media, and Media Relations, min. 120cp Intermediate or Senior units, one Science major and a major in Media and Communications

- A 6 credit point unit of study in communication and analytical skills or in other academic skills as may be prescribed from time to time (currently ENGL 1005);
- A minimum of 12 credit points from units of study in Mathematics and Statistics.

You should also note the following:

- No more than 12 credit points from units of study in which the grade Pass (Concessional) has been awarded. Pass (Concessional) is awarded for Junior units of study only.
- Note: Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.
- Units of study completed at The University of Sydney Summer School which correspond to units of study in the table of undergraduate units of study may be credited towards the course requirements.
- A standard full-time enrolment is 24 credit points per semester; less than 18 credit points per semester is considered to be part-time.
- You may not enrol in more than 32 credit points in any one semester without permission.
- In order to enrol in a unit of study, you have to meet any prerequisites and corequisites for that unit of study.
- Advanced units of study are indicated by a 9 (or 8) as the second digit of the unit of study code. Entry to these units of study is limited (details can be obtained from departments).
- Once the award course requirements of 192 credit points have been satisfied, a student may not enrol in additional units of study without first obtaining permission from the Dean.
- If a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re-enrol in that unit of study.

Plants of study

It is important when choosing units of study at any stage of your university career that you consider your overall degree program. There is a sample degree program on page 29, as well there is information about each major and recommended first year combinations of units of study earlier listed under the Bachelor of Science. There is also a degree planner inside the back cover. Consultation with a Faculty adviser is always recommended.

Units of study

The units of study available for this degree are set out in Table V: Bachelor of Science in Media and Communications and the Science units of study are set out in Table I: Bachelor of Science in Chapter 3. Unit descriptions follow the tables. You may also wish to refer to the handbooks of other faculties as the degree resolutions allow.

Pass (Concessional)

Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.

Honours

There will be Honours courses in Media and Communications and in all Science subject areas. Please refer to 'Honours in the Faculty of Science' in this chapter, and Table VI: Honours units of study in Chapter 3.

Discontinuation

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transfer between the BScMediaCommun and the BSc

Students who have completed at least 48 credit points may with the permission of the Dean be permitted to transfer from the BSc to the BScMediaCommun if their marks averaged over all attempted units of study is 75 or greater.

If a student has completed the normal requirements for the pass degree of BSc he or she may apply to take this degree provided that candidature for the BScMediaCommun is abandoned.

Students who at the end of at least four semesters of candidature have completed at least 96 credit points in total, and who intend to satisfy the requirements for entry to a Fourth Year Honours unit of study or joint Honours unit of study for the BSc, may apply to transfer candidature to the BSc.

Universities Admissions Index (UAI)

The minimum UAI for admission to the Faculty varies from year to year.

Degree Resolutions

See Chapter 5.
Bachelor of Psychology (BPsych)

Summary of requirements
The requirements for the degree are set out in the Senate and Faculty Resolutions (see Chapter 5) which should be read by all intending candidates. In particular it is important to ensure that any proposed course of study will comply with the basic requirements for the degree. Important aspects of the Resolutions are summarised below. The Resolutions should be consulted for any clarification of the summary points.

Enrolment guide
To complete your degree you must gain credit for at least 192 credit points including completing the honours course in Psychology and maintaining the required average grade in each year of study in the Science Subject Area of Psychology. The 192 credit points required for the degree must include:

- at least 12 credit points of junior Psychology units of study at an average grade of Credit or better
- at least 12 credit points of units of study in the Science Subject Areas of Mathematics and Statistics
- at least 12 credit points are junior units of study from Science Subject Areas other than Psychology and Mathematics and Statistics
- at least 16 credit points of intermediate Psychology units of study at an average grade of Distinction or better
- at least 36 credit points of senior Psychology units of study (including PSYC 3201 and PSYC 3202) at an average grade of Distinction or better
- at least 96 credit points from Science Subject Areas
- 48 credit points of Honours Psychology units of study with a grade of Honours (H3 or better)

You should also note the following:

- no more than 18 credit points may be counted from units in which a grade of Pass (Concessional) has been awarded. Note: Pass (Concessional) will no longer be awarded by the Faculty of Science from 2004.
- a maximum of 48 credit points may be counted towards the requirements of study of any one unit of study offered by faculties other than the Faculty of Science
- a student who fails to meet progression requirements will be transferred to the BSc.
- a student may not enrol in Psychology Honours until they have completed 144 credit points of units of study and have satisfied all requirements for the BPsych except those related to Honours

Plans of study
It is important when choosing units of study at any stage of your university career that you consider your overall degree program. There is a sample degree program above and there is also a degree planner inside the back cover. Consultation with a Faculty or School adviser is always recommended.

Sample Bachelor of Psychology

<table>
<thead>
<tr>
<th>Sem</th>
<th>Unit of study 1 &amp; credit points</th>
<th>Unit of study 2 &amp; credit points</th>
<th>Unit of study 3 &amp; credit points</th>
<th>Unit of study 4 &amp; credit points</th>
<th>Unit of study 5 &amp; credit points</th>
<th>Unit of study 6 &amp; credit points</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PSYC 1001</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>Science elective</td>
<td>1XXX</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>PSYC 1002</td>
<td>MATH 1XXX</td>
<td>MATH 1XXX</td>
<td>Science elective</td>
<td>1XXX</td>
<td>Elective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>1</td>
<td>PSYC 2111</td>
<td>PSYC 2112</td>
<td>Science elective</td>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>PSYC 2113</td>
<td>PSYC 2114</td>
<td>Science elective</td>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>24</td>
</tr>
<tr>
<td>1</td>
<td>PSYC 3202</td>
<td>PSYC 3XXX</td>
<td>PSYC 3XXX</td>
<td>PSYC 3XXX</td>
<td>PSYC 3XXX or elective</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>PSYC 3201</td>
<td>PSYC 3XXX</td>
<td>PSYC 3XXX</td>
<td>PSYC 3XXX</td>
<td>PSYC 3XXX or elective</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>24</td>
</tr>
<tr>
<td>1</td>
<td>PSYC 4011</td>
<td>PSYC 4012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
<tr>
<td>2</td>
<td>PSYC 4013</td>
<td>PSYC 4014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24</td>
</tr>
</tbody>
</table>

Total credit points: 192

Notes:
- require: 192cp total, min 12cp Junior Psychology, min 16cp Intermediate Psychology, min 36cp Senior Psychology (incl. PSYC 3201 and PSYC 3202), min 48cp Honours Psychology, min. 96cp Science, min 12cp Maths, max 60cp Junior
Honours

Students shall complete the requirements for the honours course full time over two consecutive semesters. If the Faculty is satisfied that a student is unable to attempt the honours course on a full time basis and if the Head of Department concerned so recommends, permission may be granted to undertake honours half time over four consecutive semesters. A student may not re attempt the Psychology honours course. Please refer to ‘Honours in the Faculty of Science’ in this chapter, and Table VI: Honours units of study in Chapter 3.

Discontinuation

If you wish to discontinue a unit of study it is important to talk to staff in the Faculty Office. In some circumstances, discontinuation can affect your access to units of study, prizes and scholarships. Deadlines for withdrawal and discontinuation can be found on the second page of this handbook.

Special permission

You should note that the Faculty can, in certain circumstances, permit exceptions to the normal requirements for a degree. Applications should be made in writing to the Associate Dean (Undergraduate) after discussion with staff in the Faculty Office.

Transferring into the BPsych

Students who have completed a minimum of 48 credit points of Junior units of study without fail may, with the permission of the Dean, be permitted to transfer to the BPsych from the BSc or from other degree programs provided they have obtained a High Distinction average (85%) in at least 12 credit points of Junior Psychology units of study

Universities Admission Index (UAI)

The minimum UAI for admission to the Faculty varies from year to year.

Degree Resolutions

See Chapter 5.

Honours in the Faculty of Science

Honours in the BSc (Including all streams and combined degrees), BCST, BMedSc

Admission

To qualify to enrol in an honours course, students shall

(1) (a) have qualified for the award of a relevant pass degree from the Faculty of Science, or
(b) be a pass graduate of the Faculty of Science, or
(c) be a pass graduate holding an equivalent qualification from another institution

(2) have completed a minimum of 24 credit points of senior units of study relating to the intended honours course (or equivalent at another institution)

(3) have achieved either
(a) a credit average in the relevant senior units of study, or
(b) a SCIWAM of at least 58 (or equivalent at another institution)

(4) satisfy any additional criteria set by the Head of Department concerned.

You should also note the following:

• Students shall complete the requirements for the honours course full time over two consecutive semesters. If the Faculty is satisfied that a student is unable to attempt the honours course on a full time basis and if the Head of Department concerned so recommends, permission may be granted to undertake honours half time over four consecutive semesters. Not all Departments offer students part time enrolment in Honours, or Honours enrolment commencing in the July semester. Students considering these types of enrolment are urged to contact the Department concerned.

• A student may not re attempt an honours course in a single subject area. A student who is qualified to enrol in two honours courses may either complete the honours courses in the two subject areas separately and in succession, or complete a joint honours course, equivalent to an honours course in a single subject area, in the two subject areas. A joint honours course shall comprise such parts of the two honours courses as may be decided by the Dean.

Honours in the BIT

Admission

To qualify to transfer into the Bachelor of Information Technology (Honours) degree, students shall

(1) have completed at least 144 credit points from the Bachelor of Information Technology degree;

(2) have completed a minimum of 24 credit points from Table HI (iv) and/or III (v), or the equivalent at another institution;

(3) have achieved either a distinction average (75) in the relevant units of study in Table U1 (iv) and/or in (v), or a SCIWAM of at least 70;

(4) satisfy any additional criteria set by the Head of Department concerned.

To qualify for the award of the Bachelor of Information Technology (Honours) degree, students shall complete 192 credit points as outlined in Section 4 of the Resolutions, including at least 40 credit points from Honours level units, of which both FNFO 4000 and INFO 4900 must be completed with a result of at least 65 However, students who fail to meet the requirements for the award of honours and who have satisfied the requirements of the BIT will graduate with a pass BIT degree.

You should also note the following:

• Students shall complete the requirements for the honours course full time over two consecutive semesters. If the Faculty is satisfied that a student is unable to attempt the honours course on a full time basis and if the Head of Department concerned so recommends, permission may be granted to undertake honours half time over four consecutive semesters. Not all Departments offer students part time enrolment in Honours, or Honours enrolment commencing in the July semester. Students considering these types of enrolment are urged to contact the Department concerned.

• A student may not re attempt an honours course in a single subject area. A student who is qualified to enrol in two honours courses may either complete the honours courses in the two subject areas separately and in succession, or complete a joint honours course, equivalent to an honours course in a single subject area, in the two subject areas. A joint honours course shall comprise such parts of the two honours courses as may be decided by the Dean.

Honours in the BScMediaCommun and BLibStud

Admission

To qualify to enrol in the honours course, students shall

(1) (a) have completed the relevant degree with the grade of Distinction or High Distinction
(b) be a pass graduate holding an equivalent qualification from another institution

(2) completed a major at Credit average in the subject area related to the intended honours course

(3) satisfy any additional criteria set by the Head or Chair of Department concerned.

You should also note the following:

• Students shall complete the requirements for the honours course full time over two consecutive semesters. If the Faculty is satisfied that a student is unable to attempt the honours course on a full time basis and if the Head of Department concerned so recommends, permission may be granted to undertake honours half time over four consecutive semesters. A student may not re attempt an honours course.
s

grades of achievement similar to that expected by first rate academic

3

students show some initiative but are more reliant

independent level and complete tasks in a timely manner, and

have demonstrated their ability to conduct work at an

command of the theory and practice of the discipline. They will


input into the direction of the study or development of

broad and deep, with the presentation of some novel insights.

some independence of thought in the subject area. Some students

experimental practices of the discipline, and clear evidence of

familiarity with and ability to use central methodology and

clearly established work in the area.


75

79

very high standard of work similar to above but overall

performance is borderline for award of a Medal. Lower level of

performance in certain categories or areas of study above.

Note: In order to qualify for the award of a university medal, it

is necessary but not sufficient for a candidate to achieve a

SCIWAM of 80 or greater and an SCIWAM of 77 to 79.

First class honours student is proficient in

the theory and practice of their discipline but has not developed

complete independence of thought, practical mastery or clarity of

presentation. Student shows adequate but limited understanding

of the topic and has largely followed the direction of the

supervisor.

65

69

Third class honours performance indicates that the student has

successfully completed the work, but at a standard barely

meeting honours criteria. The student's understanding of the

topic is extremely limited and they have shown little or no

independence of thought or performance.

SCIWAM for all degrees

SCIWAM means the weighted average mark calculated by the

Faculty from the results for all intermediate and senior units

of study with a weighting of 2 for intermediate units and 3 for senior

units.

The SCIWAM is calculated by summing the products of the

marks achieved and the weighted credit point values of the units

of study taken in the degree and then dividing by the sum of

the weighted credit point values, with all attempts at units of study

being included in the calculation, except where units of study are

discontinued with permission; the formula used is:

\[ WAM = \frac{\sum (W_i \times M_i)}{\sum W_i} \]

where \( W_i \) is the weighted credit point value, i.e., the product of

the credit point value and level of weighting of 2 for 2000-2999

units of study and 3 for 3000-3999 units of study; where \( M_i \) is

the greater of 45 or the mark out of 100 for the unit of study.

In calculating the SCIWAM for a student transferring from

another university, units of study are assigned level weightings

and credit point values consistent with their equivalent units of

study at The University of Sydney. A mark is assigned to each

unit of study credited based on the results provided on a validated

academic transcript from the university. Where no mark is

provided by the institution an appropriate estimate is used.

Students are encouraged to obtain actual marks from

Departments at those universities that do not issue formal marks.

Ranking for postgraduate scholarships

Ranking for postgraduate scholarships is determined by a

combination of the SCIWAM and the Honours mark in the

ratio 35:65.

Honours units of study

Honours units of study are listed in Table VI. Honours units of

study in the relevant degree (all tables appear in Chapter 3).

Please note that enrolment in Honours requires both Faculty

and Departmental permission, and students intending to attempt

an Honours year should read the relevant sections of Chapters 3

and 5 for further information.

Important policies relating to undergraduate candidature

Restrictions (general)

(1) A candidate for a degree must satisfy the minimum eligibility

requirements before commencing the degree units of study.

Units of study taken before satisfying these requirements cannot

normally be counted for degree purposes.

(2) A candidate may not take a unit of study in any subject

without having previously completed the qualifying unit(s) of

study appropriate to that subject. Except with the permission of

the Head of Department, he or she must also complete the

prerequisites and corequisites as prescribed.

(3) The only combinations of units of study available are those

permitted by the timetable. A candidate may attend evening

units of study if they are available.

Time limits

The Faculty resolved at its meeting on 14 March 1995 that, except

with the permission of the Faculty, students must complete the requirements for award of their degree within ten
calendar years of admission to candidature. This rule applies to all students who first enrolled in their degree after 1995, and applies from 1998 to students who first enrolled in their degree before 1996.

Suspension
The Faculty resolved at its meeting on 14 March 1995 that all students must re enrol each calendar year unless the Faculty has approved suspension of candidature. Candidature will lapse if a student has not obtained approval for suspension and does not re enrol. A student whose candidature has lapsed must be selected for admission again (usually by submitting an application to UAC) before they can re enrol.

The Faculty also resolved that, except with the prior permission of the Faculty, a student shall not be granted a suspension of candidature in order to enrol in another course of tertiary study. Candidature will lapse if a student enrols in another course of tertiary study after having been granted a suspension of candidature.

Satisfactory progress
If a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re enrol in that unit of study.

Faculty of Science attendance policy
Students enrolled in courses and units of study under the administration of the Faculty of Science are expected to attend a minimum of 80 per cent of tutorials, seminars and practical sessions etc associated with those courses or units, unless granted exemption by the Dean or Head of the relevant department. The Head of Department may set additional requirements for the minimum number of assessment items such as practical reports, tutorial papers, seminars, essays, exercises, quizzes etc which must be completed. On the recommendation of the relevant Head of Department, the Dean may determine that a student fails a unit of study because of inadequate attendance or insufficient assessment items completed.

Credit
The Faculty resolved at its meeting on 14 March 1995 that students who have previously completed studies which are considered by the Faculty to be equivalent to any unit of study listed in the Tables may be given credit for that unit of study providing that the unit of study was completed not more than nine years before admission to candidature in the Faculty.

Examinations and assessment
The Faculty resolved at its meeting on 9 March 1993 that the various forms of assessment of a student's performance in an undergraduate unit of study should include an examination or examinations conducted under University supervision and requiring written answers to unseen questions, provided that the general scope of a supervised examination paper may be made known to students in advance.

Results
For all Junior, Intermediate and Senior units of study in the Bachelor of Science, Bachelor of Liberal Studies, Bachelor of Medical Science, Bachelor of Computer Science and Technology, Bachelor of Information Technology, Bachelor of Science in Media and Communications and Bachelor of Psychology degrees, the following mark ranges apply within the Faculty of Science:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Mark Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>HD</td>
<td>85 - 100</td>
</tr>
<tr>
<td>D</td>
<td>75 - 84</td>
</tr>
<tr>
<td>CR</td>
<td>65 - 74</td>
</tr>
<tr>
<td>P</td>
<td>50 - 64</td>
</tr>
<tr>
<td>PCON</td>
<td>46 - 49</td>
</tr>
<tr>
<td>F</td>
<td>Below 46</td>
</tr>
<tr>
<td>AF</td>
<td>Below 46 or 50</td>
</tr>
<tr>
<td>DF</td>
<td>Not to count as failure</td>
</tr>
</tbody>
</table>

A maximum of 12 credit points of University of Sydney (Coursework) Rule

Honours
For Final Year Honours units of study, the following Honours grades apply from 1999. The grade of Honours is determined by the mark in the final year (Honours) course.

<table>
<thead>
<tr>
<th>Honours Class</th>
<th>Mark Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>80+</td>
</tr>
<tr>
<td>II (Division 1)</td>
<td>75 - 79</td>
</tr>
<tr>
<td>II (Division 2)</td>
<td>70 - 74</td>
</tr>
<tr>
<td>III</td>
<td>65 - 69</td>
</tr>
</tbody>
</table>

AF: Absent Fail

* Note that in these cases the award of the Pass degree is recommended.

Special consideration
The Faculty of Science recognises that the performance of students may be adversely affected by illness or other misadventure, and makes provision for special consideration of such disabilities when examination results are considered. Faculty intends only to compensate for sub standard performance in assessments, which do not reflect a student's true competence in a subject, and such provisions must not act to the disadvantage of other students. Combined Law students should familiarise themselves with the Faculty of Law's provisions as they affect Law subjects.

Any student who believes that his/her performance has been or may be adversely affected by an occurrence of illness or misadventure may request Faculty to give special consideration to the circumstances. Such a request must be made within one week of the occurrence and must be accompanied by an appropriate medical certificate or other relevant documentary evidence.

Such certificates should state not only the nature of the illness or misadventure but also (where relevant) the opinion of the issuer as to the extent of disability involved.

Where several requests for special consideration have been received from one student, the Faculty may wish to obtain from the medical practitioner or other issuer of corroborating certificates more detail as to the precise extent of the disability. In cases where the Faculty believes that other students may be adversely affected by the giving of special consideration, it may require the applicant to obtain a professional opinion from another source.

Any student who is subject to a chronic or recurrent disability or who has been in need of, or undertaken counseling assistance should discuss the matter with a Departmental or Faculty adviser, as appropriate.

Discontinuation and re enrolment

University of Sydney (Coursework) Rule

Division 5 Discontinuation of enrolment and suspension of candidature

12. Discontinuation of enrolment

(1) A student who wishes to discontinue enrolment in an award course or a unit of study must apply to the relevant dean and will be presumed to have discontinued enrolment from the date of that application, unless evidence is produced showing:

(a) that the discontinuation occurred at an earlier date; and

(b) that there was good reason why the application could not be made at the earlier time.

(2) A student who discontinues enrolment during the first year of enrolment in an award course may not re enrol in that award course unless:

(a) the relevant dean has granted prior permission to re enrol; or

(b) the student is reselected for admission to candidature for that course.

(3) No student may discontinue enrolment in an award course or unit of study after the end of classes in that award course or unit of study, unless he or she produces evidence that:

(a) the discontinuation occurred at an earlier date; and
(b) there was good reason why the application could not be made at the earlier time.
(4) A discontinuation of enrolment may be recorded as Withdrawn (W) or Discontinued Not To Count As Failure (DNF) where that discontinuation occurs within the time-frames specified by the University and published by the faculty, or where the student meets other conditions as specified by the relevant faculty.

Restrictions upon re enrolment

Undergraduate Enrolment Advice and Policies

University of Sydney (Coursework) Rule

Division 6 Unsatisfactory progress and exclusion

14. Satisfactory progress

A faculty has authority to determine what constitutes satisfactory progress for all students enrolled in award courses in that faculty, in accordance with the policies and directions of the Academic Board.

15. Requirement to show good cause

(1) For the purposes of this Rule, good cause means circumstances beyond the reasonable control of a student, which may include serious ill health or misadventure, but does not include demands of employers, pressure of employment or time devoted to non University activities, unless these are relevant to serious ill health or misadventure. In all cases the onus is on the student to provide the University with satisfactory evidence to establish good cause. The University may take into account relevant aspects of a student's record in other courses or units of study within the University and relevant aspects of academic studies at other institutions provided that the student presents this information to the University.

(2) The relevant dean may require a student who has not made satisfactory progress to show good cause why he or she should be allowed to re enrol.

(3) The dean will permit a student who has shown good cause to re enrol.

16. Exclusion for failure to show good cause

The dean may, where good cause has not been established:

(1) exclude the student from the relevant course; or
(2) permit the student to re enrol in the relevant award course subject to restrictions on units of study, which may include, but are not restricted to:
   (a) completion of a unit or units of study within a specified time;
   (b) exclusion from a unit or units of study, provided that the dean must first consult the head of the department responsible for the unit or units of study; and
   (c) specification of the earliest date upon which a student may re enrol in a unit or units of study.

17. Applying for re admission after exclusion

(1) A student who has been excluded from an award course or from a unit or units of study may apply to the relevant dean for readmission to the award course or re enrolment in the unit or units of study concerned after at least 4 semesters, and that dean may readmit the student to the award course or permit the student to re enrol in the unit or units of study concerned.

(2) With the written approval of the relevant dean, a student who has been excluded may be given credit for any work completed elsewhere in the University or in another university during a period of exclusion.

18. Appeals against exclusion

(1) In this Rule a reference to the Appeals Committee is a reference to the Senate Student Appeals Committee (Exclusions and Readmissions).

(2) (a) (i) A student who has been excluded in accordance with this Rule may appeal to the Appeals Committee:
   (ii) A student who has applied for readmission to an award course or re enrolment in a unit of study after a period of exclusion, and who is refused readmission or re enrolment may also apply to the Appeals Committee.
   (b) The Appeals Committee shall comprise:
      (i) 3 ex officio members (the Chancellor, the Deputy Chancellor and the Vice Chancellor and Principal);
      (ii) the Chair and Deputy Chairs of the Academic Board;
      (iii) 2 student Fellows; and
      (iv) up to 4 other Fellows.

(b) The Appeals Committee may meet as one or more sub-committees providing that each sub committee shall include at least 1 member of each of the categories:
   (i) ex officio member;
   (ii) Chair or Deputy Chair of the Academic Board;
   (iii) student Fellow; and
   (iv) other Fellows.

(c) The Appeals Committee and its sub committees have authority to hear and determine all such appeals and must report its decision to the Senate annually.

(d) Three members shall constitute a quorum for a meeting of the Appeals Committee or a sub committee.

(e) The appeals committee or its sub committees have authority to hear and determine all such appeals and must report its decision to the Senate annually.

(f) No appeal shall be determined without granting the student the opportunity to appear in person before the Appeals Committee or sub committee considering the appeal. A student so appearing may be accompanied by a friend or adviser.

(g) The Appeals Committee or sub committee may hear the relevant dean but that dean may only be present at those stages at which the student is permitted to be present. Similarly, the dean is entitled to be present when the Committee or sub-committee hears the student.

(h) If, due notice having been given, a student fails to attend a meeting of the Appeals Committee or sub committee scheduled to consider that student's appeal, the Appeals Committee or sub committee, at its discretion, may defer consideration of the appeal or may proceed to determine the appeal.

(i) A student who has been excluded in accordance with these resolutions and has lodged a timely appeal against that exclusion may re enrol pending determination of that appeal if it has not been determined by the commencement of classes in the next appropriate semester.

Faculty life and representation

Student membership of the Faculty

The Constitution of the Faculty of Science provides that, in addition to the ex officio and academic staff members of the Faculty, there shall be the following categories of membership:

1. not more than three persons distinguished in the field of Science and its teaching, appointed by the Faculty on the nomination of the Dean;
2. not more than six students, undergraduate or postgraduate, enrolled as candidates for a degree or diploma in the Faculty of Science elected in the manner prescribed by resolution of the Senate; and
3. not more than five persons, who have teaching, research or offer appropriate associations with the work of the Faculty, appointed by the Faculty on the nomination of the Dean.

Two of the six students are elected annually by the undergraduate students in the faculty, two are elected by the postgraduate students and one each is nominated by each of the Sydney University Science Society and the Sydney University Postgraduate Representative Association.

The Senate resolutions for the student membership of the Faculty of Science are set out in full in the University of Sydney Calendar.

Students may request permission to attend Faculty meetings as observers. Details are available from the Faculty office.

Sydney University Science Society (SCISOC)

As a student in the Faculty of Science you are a member of the Sydney University Science Society (SCISOC), the Faculty society. Part of the fee you pay to the SRC is allocated to your Faculty society; SCISOC uses this money to promote activities of both an educational and a social nature.

The Society holds a number of activities throughout the year, including barbecues every two weeks and the Annual Science 'Bucky' Ball. The Society appoints sports directors who help organise interfaculty sport.

The society runs a stall during orientation week, where T shirts are sold and you can find out more about what the SCISOC does. The Aqua Regia (official publication of SCISOC) which
heralds information concerning the activities of SCISOC and Science departmental societies, is produced weekly and can be found on official departmental noticeboards. The postal address is Faculty of Science, Carslaw Building, F07, University of Sydney, 2006.

The affairs of the society are governed by a council consisting of office bearers, delegate members from member societies, student members of Faculty and nine members elected at the annual general meeting, at least three of whom are first year students. You are encouraged to attend the AGM (held in February Semester) and to take an active part in the society and on council. Council meets regularly during term and all members are invited to attend the meetings. These are advertised in the Daily Bull. Your attendance will ensure that SCISOC effectively meets the needs of science students on campus. Visit the Web site at www.sci.soc.usyd.edu.au.

Member societies

A number of the departments within the Faculty of Science have departmental societies, for example the Alchemist’s Society, Biochemical Society, Biological Society, School of Geosciences Society (includes Geography, Geology, Environmental Science and Marine Science), Mathematical Society, Medical Science Society, Microbiology Society, Physics Society, and Psychological Society. These societies organise talks, films, field trips and other activities relating to their particular discipline, as well as parties, wine and cheese evenings and other social activities. Most departmental societies have a stall during the orientation period.

Employment for graduates in Science

The field of employment for science graduates is extraordinarily wide, ranging from the dedicated research scientist in a university or research laboratory to the managing director of a large corporation, the school teacher, the technical representative, the laboratory bench worker, the production superintendent, the consultant geologist, the bird banding biologist, the actuary, the computer sales representative, the beachcomber... the list is endless and will depend on a student's subject choices and interests. Many science graduates choose to undertake further study to prepare for employment. There is a wide range of graduate diplomas and coursework masters degrees available. Some of these are: molecular biotechnology, bioinformatics, nutrition and dietetics, information technology, environmental science, marine ecology and psychology.

Some science graduates complete a Bachelor of Engineering degree after an additional two years' study. This qualifies them as professional engineers, with a wide range of additional job opportunities in chemical, civil, electrical, mechanical and mining engineering. If you wish to consider this option, it is important to make sure that you choose the appropriate prerequisite subjects in your science degree.

It is prudent to plan your course with a career in mind, or a couple of careers if possible. For example, even though you might be sure you want to teach mathematics, you might include some computer science in your course so that if you did not like teaching you would have another choice of career. Alternatively, you might have your heart set on being a biologist, but as an insurance policy in case you could not get a job as a biologist, you might consider also majoring in biochemistry, microbiology or chemistry to widen the scope. This is not to say you should give up too easily if you want to be a biologist. In areas where jobs are not too plentiful you have to start right at the beginning of your course to prepare to secure that job on graduation. Some suggestions are to learn scuba diving, join the bush walking or speleological clubs, work in the vacation for one of the national parks for nothing if necessary and make as many personal contacts as you can. Such evidence of keenness and initiative impresses an employer. As you will have understood, it is not only your academic ability an employer looks at but also your personality, evidence of a sense of responsibility and activities beyond the set curriculum.

Similarly, if you want a job related to chemistry, physics, geology, computer science, biochemistry, etc, do your best to obtain a vacation job that will enable you to claim relevant experience when applying for your first job. These vacation jobs are hard to get, admittedly, but the extra legwork and initiative involved in finding one will pay off in the long run. Some undergraduate degrees, such as the BSc (Molecular Biotechnology) feature in industry experience as part of the requirements for the degree. Such placements occur during semester teaching periods. Other departments can organise industry placements for their students, which do not count to the degree but provide valuable experience for a new graduate.
### 3 Undergraduate tables and units of study

#### Table 1: Bachelor of Science

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agricultural Chemistry</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGCH 2001 Molecular Processes in Fxosystems</td>
<td>8</td>
<td>P: BIOL (1002 or 1902). Students who have not satisfied the prerequisites in Biology may enrol with SOIL 2001 as a corequisite.</td>
<td>Q: CHEM 1002 or equivalent.</td>
<td>N: May not be counted with any Intermediate unit of study in Biochemistry.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Senior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGCH 3025 Chemistry and Biochemistry of Foods A</td>
<td>6</td>
<td>P: 8 credit points of intermediate units in Agricultural Chemistry, Chemistry or Biochemistry.</td>
<td>N: May not be counted with AGCH (3003, 3005, 3017, 3024).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGCH 3026 Chemistry and Biochemistry of Foods B</td>
<td>6</td>
<td>c: AGCH 3025.</td>
<td>N: May not be counted with AGCH (3003, 3005).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGCH 3020 Chemistry &amp; Biochemistry of Ecosystems A</td>
<td>4</td>
<td>P: AGCH (2001 or 2002) or CHEM (2001 or 2101 or 2202 or 2301 or 2302 or 2902) or BCHM (2002 or 2902) or ENVI (2001 or 2002).</td>
<td>N: May not be counted with AGCH (3001 or 3004).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGCH 3021 Chemistry &amp; Biochemistry of Ecosystems B</td>
<td>4</td>
<td>c: AGCH 3020.</td>
<td>N: May not be counted with AGCH (3001 or 3004).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGCH 3022 Chemistry &amp; Biochemistry of Ecosystems C</td>
<td>4</td>
<td>C: AGCH 3021 or ENVI (2001 and 2002).</td>
<td>N: May not be counted with AGCH (3001 or 3004).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGCH 3024 Chemistry and Biochemistry of Foods</td>
<td>6</td>
<td>P: MBLG (2001 and 2002); and either [CHEM (2311 and 2312) or 2903], or BCHM (2002 or 2902).</td>
<td>N: May not be counted with AGCH (3003 or 3005 or 3017 or 3025).</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Anatomy and Histology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANAT 2001 Principles of Histology</td>
<td>4</td>
<td>p: 12 credit points of Junior Biology or Junior Psychology.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td>Summer 1</td>
<td></td>
</tr>
<tr>
<td>ANAT 2002 Comparative Primate Anatomy</td>
<td>4</td>
<td>A: Knowledge of basic vertebrate biology.</td>
<td>p: 12 credit points of Junior Biology or Junior Psychology or Junior Archaeology.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANAT 2003 Concepts in Neuroanatomy</td>
<td>4</td>
<td>A: Background in basic mammalian biology.</td>
<td>p: 12 credit points of Junior Biology or Junior Psychology.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANAT 2004 Principles of Development</td>
<td>4</td>
<td>Q: ANAT 2001.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Senior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANAT 3001 Microscopy and Histochemistry</td>
<td>12</td>
<td>p: ANAT 2001. For BMedSc students: 32 credit points of Intermediate BMED units including BMED (2503, 2504, and 2505).</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANAT 3002 Cells and Development</td>
<td>12</td>
<td>A: (i) an understanding of the basic structure of vertebrates; (ii) an understanding of elementary biochemistry and genetics.</td>
<td>p: ANAT 2001. For BMedSc students: 32 credit points of Intermediate BMED units including BMED (2503, 2504, and 2505).</td>
<td>N: May not be counted with ANAT 3003.</td>
<td>NB: Not more than 12 credit points allowed from ANAT3004, ANAT3007 &amp; ANAT3008. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANAT 3003 Transmission &amp; Scanning Electron Microscope</td>
<td>12</td>
<td>P: ANAT 2001 or 32 credit points of Intermediate BMED units of study including BMED (2503, 2504 and 2505).</td>
<td>NB: Students are advised that this unit is timetabled at the same time as ANAT 3002 and the units cannot be taken simultaneously.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANAT 3006 Forensic Osteology</td>
<td>6</td>
<td>A: Understanding of basic human musculoskeletal anatomy.</td>
<td>p: ANAT 2002 or 32 credit points of Intermediate BMED units including BMED (2503, 2504 and 2505).</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 1: Bachelor of Sciences (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 3007 Visceral Anatomy</td>
<td>6</td>
<td>A Some knowledge of basic mammalian biology. p ANAT (2002 or 2003) or 32 credit points of Intermediate BMED units including BMED (2503,2504 and 2505). NB: Not more than 12 credit points allowed from ANAT 3004, ANAT 3007 &amp; ANAT 3008. The completion of MBLG 2001 or 2101 is highly recommended.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANAT 3008 Musculoskeletal Anatomy</td>
<td>6</td>
<td>P ANAT 2002. N May not be counted with ANAT 3005. NB: Not more than 12 credit points allowed from ANAT 3004, ANAT 3007 and ANAT 3008. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Biochemistry

For a major in Biochemistry, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

**Intermediate units of study**

The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

**Senior units of study**

A total of at least 16 credit points of Intermediate MBLG and BCHM units. For BMedSc students: 32 credit points of Intermediate BMED units including BMED (2501,2502 and 2504). N May not be counted with BCHM 3001.

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>BCHM 3001 Mol Biology and Structural Biochemistry</td>
<td>12</td>
<td>P A total of at least 16 credit points of Intermediate MBLG and BCHM units. For BMedSc students: 32 credit points of Intermediate BMED units including BMED (2501,2502 and 2504). N May not be counted with BCHM 3001.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCHM 3002 Cellular and Medical Biochemistry</td>
<td>12</td>
<td>P A total of at least 16 credit points of Intermediate MBLG and BCHM units. For BMedSc students: 32 credit points of Intermediate BMED units including BMED (2501,2502 and 2504). N May not be counted with BCHM 3002.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCHM 3005 Computational Biochemistry</td>
<td>4</td>
<td>P Distinction in a total of at least 16 credit points from Intermediate MBLG and BCHM units. For BMedSc students: 32 credit points of Intermediate BMED units including Distinctions in BMED (2501,2502 and 2504). N May not be counted with BCHM 3005.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCHM 3008 Functional Genomics and Proteomics</td>
<td>6</td>
<td>P MBLG(2001 or 2901) orat least 12 credit points from Intermediate BMED units. N May not be counted with BCHM 3008.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Biology

For a major in Biology, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

**Junior units of study**

A HSC 2 unit Biology. Students who have not undertaken an HSC biology course are strongly advised to complete a biology bridging course before lectures commence. N May not be counted with BIOL (1901 or 1902).

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 1001 Concepts in Biology</td>
<td>6</td>
<td>A HSC 2 unit Biology. Students who have not undertaken an HSC biology course are strongly advised to complete a biology bridging course before lectures commence. N May not be counted with BIOL (1901 or 1902).</td>
<td>1, Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1901 Concepts in Biology (Advanced)</td>
<td>6</td>
<td>P UAI of at least 93 and HSC Biology result in the 90th percentile or better, or Distinction or better in a University level Biology unit, or by invitation. N May not be counted with BIOL (1001 or 1500). NB: Department permission required for enrolment.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1002 Living Systems</td>
<td>6</td>
<td>A HSC 2 unit Biology. Students who have not undertaken an HSC biology course are strongly advised to complete a biology bridging course before lectures commence. N May not be counted with BIOL (1902 or 1500).</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1902 Living Systems (Advanced)</td>
<td>6</td>
<td>P UAI of at least 93 and HSC Biology result in the 90th percentile or better, or Distinction or better in a University level Biology unit, or by invitation. N May not be counted with BIOL (1002 or 1904 or 1905 or 1500). NB: Department permission required for enrolment.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1003 Human Biology</td>
<td>6</td>
<td>A HSC 2 unit Biology. Students who have not undertaken an HSC biology course are strongly advised to complete a biology bridging course before lectures commence. N May not be counted with BIOL (1903 or 1500) or EDUH 1016.</td>
<td>2, Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit of study</td>
<td>CP</td>
<td>A: Assumed knowledge</td>
<td>P: Prerequisite</td>
<td>Q: Qualifying</td>
<td>C: Corequisite</td>
<td>N: Prohibition</td>
<td>Session</td>
</tr>
<tr>
<td>--------------</td>
<td>----</td>
<td>---------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>BIOL 1903 Human Biology (Advanced)</td>
<td>6 P UAI of at least 93 and HSC Biology result in the 90th percentile or better, or Distinction or better in a University level Biology unit, or by invitation.</td>
<td>No previous knowledge required.</td>
<td>No May not be counted with BIOL (1003 or 1904 or 1905 or 1500) or EDUH 1016.</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>BIOL 1500 Biology Today</td>
<td>6 A</td>
<td>No previous knowledge required.</td>
<td>No May not be counted with BIOL (1001,1901,1002,1902,1003,1903 or 1904 or 1905) or EDUH 1016. May not be counted as a prerequisite for any Intermediate units of study in Biology.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

### Intermediate units of study

See also Molecular Biology and Genetics MBLG (2002/2902/2102). The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

**BIOL 2001 Invertebrate Zoology**

8 P 12 credit points of Junior Chemistry. For students in the BSc (Marine Science) stream: 6 credit points of Junior Chemistry and either an additional 6 credit points of Junior Chemistry or 6 credit points of Junior Physics.

Q BIOL (1001 or 1901) and either BIOL (1002 or 1902 or 1003 or 1903) or EDUH 1016 (for BEd (Secondary) (Human Movement and Health Education)).

N May not be counted with BIOL (2101 or 2901).

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL (1002 or 1902) is assumed knowledge and students entering from BIOL (1003 or 1903) will need to do some preparatory reading. Students taking this unit concurrently with (or following completion of) BIOL (2004 or 2904) must complete 32 hours of alternative work in one unit.

**BIOL 2001 (Advanced) Invertebrate Zoology**

8 P 12 credit points of Junior Chemistry. For students in the BSc (Marine Science) stream: 6 credit points of Junior Chemistry and either an additional 6 credit points of Junior Chemistry or 6 credit points of Junior Physics.

Q Distinction average in BIOL (1001 or 1901) and one of BIOL (1002,1902,1003,1903).

These requirements may be varied and students with lower averages should consult the unit Executive Officer.

N May not be counted with BIOL (2001 or 1901).

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL (1002 or 1902) is assumed knowledge and students entering from BIOL (1003 or 1903) will need to do some preparatory reading. Students taking this unit concurrently with (or following completion of) BIOL (2004 or 2904) must complete 32 hours of alternative work in one unit.

**BIOL 2101 Invertebrate Zoology Theory**

4 Q BIOL (1001 or 1901) and either BIOL (1002 or 1902 or 1003 or 1903) or LWSC1002 or EDUH 1016 (for BEd (Secondary) (Human Movement and Health Education)).

N May not be counted with BIOL (1001,1901,1002,1902,1003,1903 or 1904 or 1905) or EDUH 1016. May not be counted as a prerequisite for any Intermediate units of study in Biology. Students taking this unit concurrently with (or following completion of) BIOL (2004 or 2904) must complete 16 hours of alternative work in one unit, in place of the core material common to both units.

**BIOL 2002 Vertebrates and their Origins**

8 P 12 credit points of Junior Chemistry. For students in the BSc (Marine Science) stream: MBLG (2001 or 2101) and 6 credit points of Junior Chemistry and either an additional 6 credit points of Junior Chemistry or 6 credit points of Junior Physics.

Q BIOL (1001 or 1901) and either BIOL (1002 or 1902 or 1003 or 1903) or EDUH 1016 (for BEd (Secondary) (Human Movement and Health Education)).

N May not be counted with BIOL (2001 or 1901).

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL (1002 or 1902) is assumed knowledge and students entering from BIOL (1003 or 1903) will need to do some preparatory reading. Not a prerequisite for Senior units of study in Biology. Students taking this unit concurrently with (or following completion of) BIOL (2004 or 2904) must complete 32 hours of alternative work in one unit.

**BIOL 2902 Vertebrates and their Origins (Advanced)**

8 P 12 credit points of Junior Chemistry. For students in the BSc (Marine Science) stream: MBLG (2001 or 2101) and 6 credit points of Junior Chemistry and either an additional 6 credit points of Junior Chemistry or 6 credit points of Junior Physics.

Q Distinction average in BIOL (1001 or 1901) and one of BIOL (1002,1902,1003,1903).

These requirements may be varied and students with lower averages should consult the unit Executive Officer.

N May not be counted with BIOL (2001,1901,1002,1902,1003,1903 or 1904 or 1905) or EDUH 1016. May not be counted as a prerequisite for any Intermediate units of study in Biology. Students taking this unit concurrently with (or following completion of) BIOL (2004 or 2904) must complete 32 hours of alternative work in one unit.

**BIOL 2102 Vertebrates and their Origins Theory**

4 Q BIOL (1001 or 1901) and either BIOL (1002 or 1902 or 1003 or 1903) or LWSC1002 or EDUH 1016 (for BEd (Secondary) (Human Movement and Health Education)).

N May not be counted with BIOL (2002 or 2902).

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL (1001 or 1901) is assumed knowledge and students entering from BIOL (1003 or 1903) will need to do some preparatory reading. Not a prerequisite for Senior units of study in Biology.

**BIOL 2003 Plant Anatomy and Physiology**

8 Q BIOL (1001 or 1901) and either BIOL (1002 or 1902 or 1003 or 1903) or EDUH 1016 (for BEd (Secondary) (Human Movement and Health Education)).

N May not be counted with BIOL 2903.

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL (1002/1902) is assumed knowledge and students entering from BIOL (1003 or 1903) will need to do some preparatory reading.

**BIOL 2903 Plant Anatomy and Physiology (Advanced)**

8 Q Distinction average in BIOL (1001 or 1901) and one of BIOL (1002,1902,1003,1903).

These requirements may be varied and students with lower averages should consult the unit Executive Officer.

N May not be counted with BIOL 2003.

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL 1002/1902 is assumed knowledge and students entering from BIOL 1003 or 1903 will need to do some preparatory reading.
### Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biol 2004</strong></td>
<td>8</td>
<td>Q BIOL (1001 or 1901) and/or BIOL (1002 or 1902 or 1003 or 1903) or WCS1002 or EDUH1016 (for BEd (Secondary) (Human Movement and Health Education)).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Biol 2904</strong></td>
<td>8</td>
<td>Q Distinction average in BIOL (1001 or 1901) and one of BIOL (1002, 1902, 1003, 1903).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cell Biology 2006</strong></td>
<td>8</td>
<td>P 12 credit points of Junior Chemistry. For students in the BSc(Marine Science) stream: 6 1 credit points of Junior Chemistry and either an additional 6 credit points of Junior Chemistry or 6 credit points of Junior Physics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cell Biology (Advanced) 2006</strong></td>
<td>8</td>
<td>P 12 credit points of Junior Chemistry. For students in the BSc(Marine Science) stream: 6 1 credit points of Junior Chemistry and either an additional 6 credit points of Junior Chemistry or 6 credit points of Junior Physics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cell Biology Theory 2106</strong></td>
<td>4</td>
<td>P 12 credit points of Junior Chemistry. For students in the BSc(Marine Science) stream: 6 1 credit points of Junior Chemistry and either an additional 6 credit points of Junior Chemistry or 6 credit points of Junior Physics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Entomology Introductory 2007</strong></td>
<td>8</td>
<td>P 12 credit points of Junior Chemistry. For students in the BSc(Marine Science) stream: 2 MBLG (2001 or 2101) and 6 credit points of Junior Chemistry and either an additional 6 credit points of Junior Chemistry or 6 credit points of Junior Physics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Senior units of study**

- **Biol 3011**
  - **Ecophysiology**
    - 6 P 16 credit points of Intermediate Biology including BIOL (2002 or 2003 or 2006 or 2902 or 2903 or 2906).
    - N May not be counted with BIOL 3911.
    - NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

- **Biol 3911**
  - **Ecophysiology (Advanced)**
    - 6 P Distinction average in 16 credit points of Intermediate Biology including BIOL (2002 or 2003 or 2006 or 2902 or 2903 or 2906). These requirements may be varied and students with lower averages should consult the unit Executive Officer.
    - N May not be counted with BIOL 3912.
    - NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

- **Biol 3012**
  - **Animal Physiology**
    - 6 P 16 credit points of Intermediate Biology including BIOL (2002 or 2003 or 2006 or 2902 or 2903 or 2906).
    - N May not be counted with BIOL 3912.
    - NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

- **Biol 3912**
  - **Animal Physiology (Advanced)**
    - 6 P Distinction average in 16 credit points of Intermediate Biology including BIOL (2002 or 2003 or 2006 or 2902 or 2903 or 2906). These requirements may be varied and students with lower averages should consult the unit Executive Officer.
    - N May not be counted with BIOL 3912.
    - NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

- **Biol 3013**
  - **Marine Biology**
    - 6 A MARS 2002.
    - P 16 credit points of Intermediate Biology, including BIOL (2001 or 2002 or 2003 or 2004 or 2901 or 2902 or 2903 or 2904).
    - N May not be counted with BIOL 3913.
    - NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

- **Biol 3913**
  - **Marine Biology (Advanced)**
    - 6 A MARS 2002.
    - P Distinction average in 16 credit points of Intermediate Biology including BIOL (2001 or 2002 or 2003 or 2004 or 2901 or 2902 or 2903 or 2904). These requirements may be varied and students with lower averages should consult the unit Executive Officer.
    - N May not be counted with BIOL 3913.
    - NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.
<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3014 Biology of Terrestrial Vertebrates</td>
<td>6 p</td>
<td>16 credit points of Intermediate Biology.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BIOL 3914 Biology of Terrestrial Vertebrates (Adv)</td>
<td>6 p</td>
<td>Distinction average in 16 credit points of Intermediate Biology. These requirements may be varied and students with lower averages should consult the unit Executive Officer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BIOL 3015 Plant Systematics and Biogeography</td>
<td>6 P</td>
<td>16 credit points of Intermediate Biology (BioL 2004 or 2904).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BIOL 3915 Plant Systematics and Biogeography (Adv)</td>
<td>6 p</td>
<td>Distinction average in 16 credit points of Intermediate Biology including BIOL (2004 or 1 2904). These requirements may be varied and students with lower averages should consult the unit Executive Officer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BIOL 3017 Fungal Biology</td>
<td>6 p</td>
<td>16 credit points of Intermediate Biology, or 8 credit points of Intermediate Biology and 8 Intermediate credit points of either Microbiology or Geography, or their equivalent.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BIOL 3917 Fungal Biology (Advanced)</td>
<td>6 p</td>
<td>Distinction average in 16 credit points of Intermediate Biology, or 8 credit points of Intermediate Biology and 8 Intermediate credit points of either Microbiology or Geography, or their equivalent.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BIOL 3018 Applications of Recombinant DNA Tech</td>
<td>6 P</td>
<td>MBLG (2001/2901 and 2002/2902) or 16 credit points of Intermediate Biology including BIOL (2005 or 2905). For BMEdSc students: 32 credit points of Intermediate BMED units including BMED 2502.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BIOL 3918 Applications of Recombinant DNA Tech Adv</td>
<td>6 P</td>
<td>Distinction average in MBLG (2001/2901 and 2002/2902) or in 16 credit points of Intermediate Biology including BIOL (2005 or 2905). For BMEdSc students: 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should consult the unit Executive Officer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BIOL 3021 Plant Development</td>
<td>6 P</td>
<td>16 credit points of Intermediate Biology including BIOL (2003 or 2903 or 2006 or 2906).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIOL 3931 Plant Development (Advanced)</td>
<td>6 p</td>
<td>Distinction average in 16 credit points of Intermediate Biology including BIOL (2003 or 2006 or 2903 or 2906). These requirements may be varied and students with lower averages should consult the unit Executive Officer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIOL 3022 Plant Physiology</td>
<td>6 P</td>
<td>16 credit points of Intermediate Biology including BIOL (2003 or 2006 or 2903 or 2906).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIOL 3932 Plant Physiology (Advanced)</td>
<td>6 P</td>
<td>Distinction average in 16 credit points of Intermediate Biology including BIOL (2003 or 2006 or 2903 or 2906). These requirements may be varied and students with lower averages should consult the unit Executive Officer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIOL 3023 Ecological Methods</td>
<td>6 P</td>
<td>16 credit points of Intermediate Biology including BIOL (2001 or 2901 or 2002 or 2902 or 2004 or 2904).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIOL 3923 Ecological Methods (Advanced)</td>
<td>6 P</td>
<td>Distinction average in BIOL (2001 or 2901) and (2002 or 2902), or in 16 credit points of Intermediate Biology including BIOL (2004 or 2904).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIOL 3024 Ecology</td>
<td>6 P</td>
<td>BIOL (2001 or 2901) and BIOL (2002 or 2902) or 16 credit points of Intermediate Biology including BIOL (2004 or 2904).</td>
<td>BIOL (2004 or 2904).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIOL 3924 Ecology (Advanced)</td>
<td>6 P</td>
<td>Distinction average in BIOL (2001 or 2901) and (2002 or 2902), or in 16 credit points of Intermediate Biology including BIOL (2004 or 2904).</td>
<td>BIOL (2004 or 2904).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIOL 3025 Evolutionary Genetics &amp; Animal Behaviour</td>
<td>6 P</td>
<td>16 credit points of MBLG (2001 or 2901 or 2002 or 2902) and Intermediate level Biology units. For BMEdSc students 32 credit points of Intermediate BMED units including BMED 2502.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>BIOL 3925 Evolutionary Gen. &amp; Animal Behaviour Adv</td>
<td>6 P</td>
<td>Distinction average in 16 credit points from MBLG (2001, 2901, 2002 or 2902) and Intermediate Biology units. For BMEdSc students 32 credit points of Intermediate BMED units including distinction in BMED 2502. These requirements may be varied and students with lower averages should consult the unit Executive Officer.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Unit of study</td>
<td>CP</td>
<td>A: Assumed knowledge</td>
<td>P: Prerequisite</td>
<td>Q: Qualifying</td>
<td>C: Corequisite</td>
<td>N: Prohibition</td>
<td>Session</td>
</tr>
<tr>
<td>--------------</td>
<td>----</td>
<td>---------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>BIOL 3926 Developmental Genetics</td>
<td>6</td>
<td>MBLG (2001/2901 and 2002/2902) or 16 credit points of Intermediate Biology including BIOL (2005 or 2905), for BMedSc students: 32 credit points of Intermediate BMED units including BMED 2502.</td>
<td>N May not be counted with BIOL (3926 or 3929).</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>BIOL 3926 Developmental Genetics</td>
<td>6</td>
<td>Distinction average in MBLG (2001/2901 and 2002/2902) or in 16 credit points of Intermediate Biology including BIOL (2005 or 2905). For BMedSc students 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should contact the unit Executive Officer.</td>
<td>N May not be counted with BIOL (3026 or 3929).</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>BIOL 3027 Bioinformatics and Genomics</td>
<td>6</td>
<td>MBLG (2001 or 2101 or 2901) or 16 credit points of Intermediate Biology including BIOL (2001 or 2901 or 2004 or 2904 or 2005 or 2905 or 2006 or 2906). For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2502.</td>
<td>N May not be counted with BIOL 3927.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BIOL 3927 Bioinformatics and Genomics</td>
<td>6</td>
<td>Distinction in MBLG (2001 or 2101 or 2901) or Distinction average in 16 credit points of Intermediate Biology including BIOL (2001 or 2901 or 2004 or 2904 or 2005 or 2006 or 2906). For BMedSc students: 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should contact the unit Executive Officer.</td>
<td>N May not be counted with BIOL 3027.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**Cell Pathology**

For a major in Cell Pathology, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

**Senior units of study**

The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

**Chemistry**

For a major in Chemistry, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.
## Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Intermediate units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 2001 Chemistry 2 (Life Sciences)</td>
<td>8</td>
<td>6 credit points of Junior Mathematics.</td>
<td>CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>Q CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>N May not be counted with CHEM (2101 or 2301 or 2901 or 2903 or 2311 or 2312 or 2502).</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>CHEM 2101 Chemistry 2 (Environmental)</td>
<td>8</td>
<td>6 credit points of Junior Mathematics.</td>
<td>CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>Q CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>N May not be counted with CHEM (2001 or 2301 or 2901 or 2903 or 2311 or 2312 or 2502).</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>CHEM 2301 Chemistry 2A</td>
<td>8</td>
<td>6 credit points of Junior Mathematics.</td>
<td>CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>Q CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>N May not be counted with CHEM (2001 or 2301 or 2901 or 2903 or 2311 or 2312 or 2502).</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>CHEM 2302 Chemistry 2B</td>
<td>8</td>
<td>P 6 credit points of Junior Mathematics.</td>
<td>CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>Q CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>N May not be counted with CHEM (2101 or 2301 or 2901 or 2903 or 2311 or 2312 or 2502).</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>CHEM 2901 Chemistry 2A (Advanced)</td>
<td>8</td>
<td>P 6 credit points of Junior Mathematics.</td>
<td>CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>Q CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>N May not be counted with CHEM (2001 or 2101 or 2901 or 2903 or 2311 or 2312 or 2502).</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>CHEM 2902 Chemistry 2B (Advanced)</td>
<td>8</td>
<td>P 6 credit points of Junior Mathematics.</td>
<td>CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>Q CHEM (1102 or 1902 or 1904 or 1909).</td>
<td>N May not be counted with CHEM (2202 or 2902).</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Senior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 3101 Chemistry 3A</td>
<td>12</td>
<td>p CHEM (2001 or 2101 or 2301 or 2901) and CHEM (2302 or 2902).</td>
<td>CHEM (3111,3601,3602,3901 or 3903).</td>
<td>N May not be counted with CHEM 3201.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>CHEM 3901 Chemistry 3A (Advanced)</td>
<td>12</td>
<td>p Distinction average in CHEM (2001 or 2101 or 2301 or 2901) and CHEM (2202 or 2302 or 2902); by invitation.</td>
<td>CHEM (3101,3311,3601,3602 or 3903).</td>
<td>N May not be counted with CHEM 3201.</td>
<td>N May not be counted with CHEM (3101,3311,3601,3602 or 3903).</td>
<td>N May not be counted with CHEM 3201.</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 3201 Chemistry 3A Additional</td>
<td>12</td>
<td>p CHEM (2001 or 2101 or 2301 or 2502 or 2901) and CHEM (2302 or 2902).</td>
<td>CHEM (3101 or 3901).</td>
<td>N May not be counted with CHEM (3601,3602,3901 or 3903).</td>
<td>N May not be counted with CHEM 3201.</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>CHEM 3102 Chemistry 3B</td>
<td>12</td>
<td>p CHEM (2001 or 2101 or 2301 or 2901) and CHEM (2302 or 2902).</td>
<td>CHEM (3102 or 3902).</td>
<td>N May not be counted with CHEM (3601,3602,3901 or 3903).</td>
<td>N May not be counted with CHEM 3202.</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>CHEM 3902 Chemistry 3B (Advanced)</td>
<td>12</td>
<td>p Distinction or better in CHEM (2902 or 3101 or 3901); by invitation.</td>
<td>CHEM (3102,3311,3601,3602 or 3903).</td>
<td>N May not be counted with CHEM (3102,3311,3601,3602 or 3903).</td>
<td>N May not be counted with CHEM 3202.</td>
<td>N May not be counted with CHEM (3102,3311,3601,3602 or 3903).</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 3202 Chemistry 3B Additional</td>
<td>12</td>
<td>p CHEM (2001 or 2101 or 2301 or 2502 or 2901) and CHEM (2302 or 2902).</td>
<td>CHEM (3102 or 3902).</td>
<td>N May not be counted with CHEM (3601,3602 or 3903).</td>
<td>N May not be counted with CHEM 3202.</td>
<td>N May not be counted with CHEM (3601,3602 or 3903).</td>
<td>2</td>
</tr>
</tbody>
</table>

### Computational Science

For a major in Computational Science the minimum requirement is:

(i) 12 credit points from the core Senior units of study; and

(ii) a minimum of 12 credit points from the elective Senior units of study, to be chosen from units of study listed in this subject area.

#### Junior units of study

<table>
<thead>
<tr>
<th>Course</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>COSC 1001 Computational Science in Matlab</td>
<td>3</td>
<td>A: HSC Mathematics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>COSC 1901 Computational Science in Matlab (Adv)</td>
<td>3</td>
<td>A: HSC Mathematics.</td>
<td>P UAI of at least 90, or COSC 1902, or a distinction or better in COSC 1002, SOFT (1001, 1002,1901 or 1902).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>COSC 1002 Computational Science in C</td>
<td>3</td>
<td>A: HSC Mathematics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>COSC 1902 Computational Science in C (Adv)</td>
<td>3</td>
<td>A: HSC Mathematics.</td>
<td>P UAI of at least 90, or COSC 1901, or a distinction or better in COSC 1001, SOFT (1001, 1002, 1901 or 1902).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

#### Senior core units of study

<table>
<thead>
<tr>
<th>Course</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 3016 Mathematical Computing I</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics and one of MATH 1001 or 1003 or 1901 or 1903 or 1906 or 1907.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MATH 3916</strong> Mathematical Computing I (Advanced)</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics and one of MATH 1903 or 1907 or Credit in MATH 1003.</td>
<td>N May not be counted with MATH 3016.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>PHYS 3301</strong> Scientific Computing</td>
<td>4</td>
<td>P 16 credit points of Intermediate units of study in Science Subject Areas.</td>
<td>N May not be counted with PHYS 3931.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>PHYS 3931</strong> Scientific Computing (Advanced)</td>
<td>4</td>
<td>P 16 credit points of a level of Credit or better of Intermediate units of study in Science Subject Areas.</td>
<td>N May not be counted with PHYS 3301.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>PHYS 3303</strong> Scientific Visualisation</td>
<td>4</td>
<td>P 16 credit points of Intermediate units of study in Science Subject Areas.</td>
<td>N May not be counted with PHYS 3933.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>PHYS 3933</strong> Scientific Visualisation (Advanced)</td>
<td>4</td>
<td>P 16 credit points of a level of Credit or better of Intermediate units of study in Science Subject Areas.</td>
<td>N May not be counted with PHYS 3303.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

- **Senior elective units of study**

| **BINF 3001** Bioinformatics Project | 8  | P SOFT (2004 or 2904) and 16 credit points from intermediate Biology, Biochemistry, Microbiology, Molecular Biology and Genetics and/or Pharmacology. | N May not be counted with COMP 3206. |                     |                | 2       |
| **BIOL 3023** Ecological Methods | 6  | P 16 credit points of Intermediate Biology including BIOL (2001 or 2901 or 2002 or 2902 or 2004 or 2904). | N May not be counted with BIOL 3923. | NB: The completion of MBLG (2001 or 2091 or 2091) is highly recommended. |                | 2       |
| **BIOL 3923** Ecological Methods (Advanced) | 6  | P Distinction average in BIOL (2001 or 2901 and (2002 or 2902), or in 16 credit points of Intermediate Biology including BIOL (2004 or 2904). | N May not be counted with BIOL 3023. | NB: The completion of MBLG (2001 or 2091 or 2091) is highly recommended. |                | 2       |
| **BIOL 3027** Bioinformatics and Genomics | 6  | P MBLG (2001 or 2101 or 2901) or 16 credit points of Intermediate Biology including BIOL (2001 or 2901 or 2004 or 2904 or 2905 or 2905 or 2006 or 2906). For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2902. | N May not be counted with BIOL 3927. |                     |                | 1       |
| **BIOL 3927** Bioinformatics and Genomics (Advanced) | 6  | P Distinction in MBLG (2001 or 2101 or 2901) or Distinction average in 16 credit points of Intermediate Biology including BIOL (2001 or 2901 or 2004 or 2904 or 2905 or 2905 or 2006 or 2906). For BMedSc students: 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should contact the unit Executive Officer. | N May not be counted with BIOL 3027. |                     |                | 1       |
| **COSC 3601** Parallel Computing | 4  | A Some familiarity is assumed with Unix and a programming language (eg, C or Fortran). | P At least one of SOFT (2004 or 2904) or COMP (2004 or 2904) or PHYS (3301 or 3901) or MATH 2903 or MATH (3016 or 3916). | N May not be counted with COMP 3206. |                | N/A 2003 |
| **COSC 3701** Computational Science Project | 8  | A Able to program in a standard language. | P 16 credit points of intermediate level natural sciences plus at least one of COSC (1001 or 1001 or 1002 or 1902) or SOFT (1001 or 1901) or MATH (2003 or 2903) or PHYS (2001 or 2901 or 2002 or 2902). | N NB: Not available in 2003. |                | 2       |
| **GEOS 3004** Geophysics, Imaging, Oil/Ore Production | 6  | P 16 credit points of Intermediate Science units of study or CIVL 2409. | N May not be counted with GEOG 3302. |                     |                | 2       |
| **GEOS 3007** Remote Sensing: Imaging the Earth | 6  | P 16 credit points of Intermediate Science units of study or CIVL 2409. | N May not be counted with GEOL 3101. |                     |                | 1       |
| **MARS 3005** Marine Geophysical Data Analysis | 6  | P MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409. | N May not be counted with GEOG 3302. |                     |                | 1       |
| **MARS 3006** Dynamics of Ocean Basins and Margins | 6  | A Prior completion of MARS 3005 is highly recommended. | P MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409. | N May not be counted with GEOG 3104. |                | 1       |
| **MARS 3105** Coastal Oceanography & Sediment Dynamics | 6  | P MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409. | N May not be counted with GEOG 3104. |                     |                | 2       |
| **MATH 3903** Ordinary Differential Equations | 4  | P 8 credit points of Intermediate Mathematics (strongly advise MATH 2002 or 2902, with 2001 or 2901). | N May not be counted with MATH 3921. |                     |                | 1       |
| **MATH 3918** Partial Differential Equations and Waves | 4  | P MATH (2001 or 2901) and MATH (2005 or 2905). | N May not be counted with MATH 3921. |                     |                | 1       |
| **MATH 3921** P & E And Waves (Advanced) | 4  | P MATH (2901 or credit in 2001) and (2905 or credit in 2005). | N May not be counted with MATH 3018. |                     |                | 1       |
| **MATH 3919** Signal Processing | 4  | P MATH (2001 or 2901) and MATH (2005 or 2905). | N May not be counted with MATH 3918. |                     |                | 1       |
| **MATH 3919** Signal Processing (Advanced) | 4  | P MATH 2905 or Credit in MATH 2905. | N May not be counted with MATH 3019. |                     |                | 1       |
For a major in Computer Science, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

### Computer Science

For a major in Computer Science, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

#### Junior units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MULT 3004 Computer Graphics</td>
<td>4</td>
<td>p COMP (2111 or 2811 or 2002 or 2902) and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and MATH (1002 or 1902). N May not be counted with MULT 3904 or COMP (3004 or 3904).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MULT 3904 Computer Graphics (Advanced)</td>
<td>4</td>
<td>p COMP (2111 or 2811 or 2002 or 2902) and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and MATH (1002 or 1902) and Distinction in a MULT or SOFT unit at 2000 level or above. N May not be counted with MULT 3004 or COMP (3004 or 3904).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>STAT 3002 Applied Linear Models</td>
<td>4</td>
<td>P STAT 2004 (or STAT 1022 for Arts students) and MATH (1002 or 1902). N May not be counted with STAT 3902.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>STAT 3902 Linear Models (Advanced)</td>
<td>4</td>
<td>P STAT 2004 and (STAT 2903 or Credit in 2003) and (MATH 2002 or 2902). N May not be counted with STAT 3002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>STAT 3003 Time Series Analysis</td>
<td>4</td>
<td>P STAT (2003 or 2903). N May not be counted with STAT 3903.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>STAT 3903 Time Series Analysis (Advanced)</td>
<td>4</td>
<td>P STAT 2903 or credit or better in STAT 2003. N May not be counted with STAT 3003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>STAT 3004 Design of Experiments</td>
<td>4</td>
<td>P STAT (3002 or 3902). N May not be counted with STAT 3904.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>STAT 3904 Design of Experiments (Advanced)</td>
<td>4</td>
<td>P STAT 3902 or credit or better in STAT 3002. N May not be counted with STAT 3004.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

#### Intermediate units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 2003 Languages and Logic</td>
<td>4</td>
<td>Q [SOFT (1002 or 1902) or COMP (1002 or 1902)] and MATH (1004 or 2009 or 2011). N May not be counted with COMP 2903.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>COMP 2903 Languages and Logic (Advanced)</td>
<td>4</td>
<td>Q [SOFT (1002 or 1902) or COMP (1002 or 1902)] and MATH (1004 or 2009 or 2011) and Distinction in one COMP, SOFT or MATH unit of study. N May not be counted with COMP 2003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>COMP 2111 Algorithms 1</td>
<td>4</td>
<td>Q SOFT (1002 or 1902) or COMP (1002 or 1902). c MATH (1004 or 2009 or 2011). N May not be counted with COMP (2811 or 2902).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>COMP 2111 Algorithms 1 (Advanced)</td>
<td>4</td>
<td>Q, [SOFT (1002 or 1902) or COMP (1002 or 1902)] and Distinction in one COMP, SOFT or MATH unit. c MATH (1004 or 2009 or 2011). N May not be counted with COMP (2111 or 2002 or 2902).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>INFO 2000 Systems Analysis and Design</td>
<td>4</td>
<td>Q ISYS 1003 or INFO 1000 or INF5 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or SOFT (1001 or 1901) or COMP (1001 or 1901). N May not be counted with INFO 2900.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td>INFO 2900 System Analysis and Design Advanced</td>
<td>4</td>
<td>Q ISYS 1003 or INFO 1000 or INF5 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or SOFT (1001 or 1901) or COMP (1001 or 1901) and Distinction in one INFO, ISYS or SOFT unit. N May not be counted with INFO 2111.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>INFO 2005 Database Management, Introductory</td>
<td>4</td>
<td>Q ISYS 1003 or INFO 1000 or INF5 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or SOFT (1001 or 1901) or COMP (1001 or 1901). N May not be counted with INFO 2905.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>INFO 2005 Database Management, Introductory (Adv)</td>
<td>4</td>
<td>Q ISYS 1003 or INFO 1000 or INF5 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or SOFT (1001 or 1901) or COMP (1001 or 1901) and Distinction in one INFO, ISYS or SOFT unit. N May not be counted with INFO 2005.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>NETS 2008 Computer System Organisation</td>
<td>4</td>
<td>Q SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)]. N May not be counted with NETS 2908 or COMP (2001 or 2901).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>NETS 2908 Computer System Organisation (Adv)</td>
<td>4</td>
<td>Q SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)] and Distinction in one NETS or SOFT unit of study. N May not be counted with NETS 2008 or COMP (2001 or 2901).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>NETS 2009 Network Organisation</td>
<td>4</td>
<td>Q SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)]. N May not be counted with NETS 2909.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>NETS 2909 Network Organisation (Adv)</td>
<td>4</td>
<td>Q SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)] and Distinction in one NETS or SOFT unit of study. N May not be counted with NETS 2009.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>SOFT 2001 Concurrent Programming</td>
<td>4</td>
<td>0, SOFT (1002 or 1902) or COMP (1002 or 1902). N May not be counted with SOFT 2901.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Unit of study</td>
<td>CP</td>
<td>A</td>
<td>P</td>
<td>Q</td>
<td>C</td>
<td>N</td>
<td>Session</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>----</td>
<td>----</td>
<td>----</td>
<td>-----</td>
<td>-----</td>
<td>-------</td>
<td>---------</td>
</tr>
<tr>
<td>SOFT 3001 Concurrent Programming (Adv)</td>
<td>4</td>
<td>Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 2004 Software Development Methods 1</td>
<td>4</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Winter</td>
</tr>
<tr>
<td>SOFT 2904 Software Development Methods 1 (Adv)</td>
<td>4</td>
<td>Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

**B: Senior units of study**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A</th>
<th>P</th>
<th>Q</th>
<th>C</th>
<th>N</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 3002 Artificial Intelligence</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 3902 Artificial Intelligence (Advanced)</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 3111 Algorithms 2</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 3811 Algorithms 2 (Advanced)</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFO 3005 Organisational Database Systems</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFO 3905 Organisational Database Systems (Adv)</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULT 3004 Computer Graphics</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULT 3904 Computer Graphics (Advanced)</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULT 3018 Multimedia Interaction (Adv)</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULT 3918 Multimedia Interaction (Advanced)</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULT 3919 Digital Media</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3007 Network Protocols</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3907 Network Protocols (Advanced)</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3009 Operating Systems</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3909 Operating Systems (Advanced)</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3016 Computer and Network Security</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3916 Computer and Network Security (Advanced)</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3017 Network Programming and Distributed Apps</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3917 Network Prog &amp; Distributed Apps (Adv)</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
For a major in Geography, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

### Junior units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>Assumed knowledge</th>
<th>Prerequisite</th>
<th>Qualifying</th>
<th>Corequisite</th>
<th>Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 1001</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>GEOG 1002</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

### Intermediate units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>Assumed knowledge</th>
<th>Prerequisite</th>
<th>Qualifying</th>
<th>Corequisite</th>
<th>Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 2001</td>
<td>8</td>
<td>36 credit points of Junior units of study, including GEOG 1001 or ENVI 1001 or 1002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>GEOG 2002</td>
<td>8</td>
<td>36 credit points of Junior units of study, including GEOG 1001 or ENVI 1001 or 1002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>GEOG 2101</td>
<td>8</td>
<td>36 credit points of Junior units of study, including GEOG 1001 or ENVI 1001 or 1002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>GEOG 2102</td>
<td>8</td>
<td>36 credit points of Junior units of study, including GEOG 1001 or ENVI 1001 or 1002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>GEOG 2201</td>
<td>8</td>
<td>36 credit points of Junior units of study, including GEOG 1001 or ENVI 1001 or 1002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>GEOG 2202</td>
<td>8</td>
<td>36 credit points of Junior units of study, including GEOG 1001 or ENVI 1001 or 1002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

### Senior units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>Assumed knowledge</th>
<th>Prerequisite</th>
<th>Qualifying</th>
<th>Corequisite</th>
<th>Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 3002</td>
<td>12</td>
<td>GEOG (2001 or 2002 or 2101 or 2302 or 2303).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>GEOG 3101</td>
<td>12</td>
<td>GEOG 2001 or 2002 or 2101 or 2302 or 2303 and GEOG 2102 or 2201 or 2202.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

### Geography

For a major in Geography, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

- **Junior units of study**
  - GEOG 1001
  - GEOG 1002

- **Intermediate units of study**
  - GEOG 2001
  - GEOG 2002
  - GEOG 2101
  - GEOG 2102

- **Senior units of study**
  - GEOG 3002
  - GEOG 3101
Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 3102 Sustainable Cities and Resource Regions</td>
<td>12</td>
<td>p GEOG 2102 or 2201 or 2202.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARS 3003 Coastal Depositional Environments</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARS 3006 Coastal Morphodynamics</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points from Geology or Geography units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARS 3103 GIS Simulation Modelling</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points from Intermediate Science including at least 8 credit points from Geology or Geography units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MARS 3104 Coastal Zone Management</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points from Intermediate Science including at least 8 credit points from Geology or Geography units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Geology

For a major in Geology, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

- **Junior units of study**
  - GEOL 1001 Earth and its Environment 6 A No previous knowledge of Geology assumed. N GEOL 1501. 1
  - GEOL 1002 Earth Processes and Resources 6 A No previous knowledge of Geology assumed. N GEOL 1501. 2

- **Intermediate units of study**
  - GEOL 2001 Geological Hazards and Solutions 8 P GEOL 1002 or ENVI 1001. A candidate who has completed 24 credit points of Junior units of study in Physics and Chemistry and who has not taken Junior Geology or ENVI 1001, may apply under section 1 (4) for permission to enrol in GEOL 2001. N OVL 2409. 1
  - GEOL 2003 Fossils and Time 4 P 24 credit points of Science units of study. N CIVL 2409. 2
  - GEOL 2004 Environmental Geology and Climate Change 4 P 24 credit points of Science units of study. 1

- **Senior units of study**
  - GEOS 3003 Structural Geology: The Dynamic Crust 6 P GEOL 2002 or CIVL 2409. N May not be counted with GEOL 3101. 1
  - GEOS 3006 Geophysics, Imaging, Oil/Ore Production 6 P 16 credit points of Intermediate Science units of study or CIVL 2409. N May not be counted with GEOG 3202. 2
  - GEOS 3008 Regolith-Sediment Geochemistry 6 P 16 credit points of Intermediate Science units of study or CIVL 2409. 2
  - GEOS 3009 Mineral Deposits & Spacial Data Analysis 6 P 16 credit points of Intermediate Science units of study or CIVL 2409. N May not be counted with GEOL 3101. 2
  - GEOS 3011 Remote Sensing: Imaging the Earth 6 P 16 credit points of Intermediate Science units of study or CIVL 2409. N May not be counted with GEOL 3101. 1
  - GEOS 3013 Marine Geophysical Data Analysis 6 P MARS (2001 and 2002) or 16 credit points from Intermediate Science units of study or CIVL 2409. N May not be counted with GEOL 3101. 1
  - MARS 3005 Marine Geophysical Data Analysis 6 P MARS (2001 and 2002) or 16 credit points from Intermediate Science units of study or CIVL 2409. N May not be counted with GEOL 3101. 1
  - MARS 3006 Dynamics of Ocean Basins and Margins 6 A Prior completion of MARS 3005 is highly recommended. P MARS (2001 and 2002) or 16 credit points from Intermediate Science units of study or CIVL 2409. N May not be counted with GEOL 3101. 1
  - MARS 3008 Energy: Science, Engineering & Economics 6 P MARS (2001 and 2002) or 16 credit points from Intermediate Science units of study or CIVL 2409. N May not be counted with GEOL 3101. 1
  - MARS 3010 Coastal Oceanography & Sediment Dynamics 6 P MARS (2001 and 2002) or 16 credit points from Intermediate Science units of study or CIVL 2409. N May not be counted with GEOL 3101. 1

Geophysics

For a major in Geophysics, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

- **Senior units of study**
  - GEOS 3003 Structural Geology: The Dynamic Crust 6 P GEOL 2002 or CIVL 2409. N May not be counted with GEOL 3101. 1
  - GEOS 3004 Geophysics, Imaging, Oil/Ore Production 6 P 16 credit points of Intermediate Science units of study or CIVL 2409. N May not be counted with GEOL 3101. 2
Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOS 3006 Mineral Deposits &amp; Spacial Data Analysis</td>
<td>6</td>
<td>p 16 credit points of Intermediate Science units of study or CIVL 2409.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with GEOL 3103.</td>
<td>2</td>
</tr>
<tr>
<td>GEOS 3007 Remote Sensing: Imaging the Earth</td>
<td>6</td>
<td>p 16 credit points of Intermediate Science units of study or CIVL 2409.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with GEOL 3101.</td>
<td>1</td>
</tr>
<tr>
<td>GEOS 3008 Field Geology and Geophysics</td>
<td>6</td>
<td>p GEOL 2002.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with GEOL 3103.</td>
<td>2</td>
</tr>
<tr>
<td>MARS 3005 Marine Geophysical Data Analysis</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with GEOP 3201.</td>
<td>1</td>
</tr>
<tr>
<td>MARS 3006 Dynamics of Ocean Basins and Margins</td>
<td>6</td>
<td>A Prior completion of MARS 3005 is highly recommended. p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with GEOP 3201.</td>
<td>1</td>
</tr>
<tr>
<td>MARS 3008 Energy: Science, Engineering &amp; Economics</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with GEOL 3102.</td>
<td>1</td>
</tr>
<tr>
<td>MARS 3105 Coastal Oceanography &amp; Sediment Dynamics</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with GEOL 3104.</td>
<td>2</td>
</tr>
<tr>
<td>MARS 3106 Physical Marine Habitat</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with GEOL 3102.</td>
<td>2</td>
</tr>
</tbody>
</table>

History and Philosophy of Science

For a major in History and Philosophy of Science, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

- **Intermediate units of study**
  - HPSC 2001 What Is This Thing Called Science? 4 p 24 credit points of Junior units of study. 2
  - HPSC 2002 The Birth of Modern Science 4 p 24 credit points of Junior units of study. 1, Summer

- **Senior units of study**
  - HPSC 3001 History of Physical Sciences and Maths 6 p HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. 1
  - HPSC 3002 History of Biological/Medical Sciences 6 p HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. 2
  - HPSC 3003 Social Relations of Science 4 p HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. 2
  - HPSC 3005 History/Philosophy of Medicine 4 A Assumed knowledge of HPSC (2001 and 2002). P At least 24 credit points of Intermediate or Senior units of study. 1
  - HPSC 3007 Science and Ethics 4 p HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. 1
  - HPSC 3010 History of the Human Sciences 4 p HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. 1
  - HPSC 3102 History of the Biomedical Sciences 12 p HPSC (2001 and 2002). NB: Available to Bachelor of Medical Science students only. 1,2
  - HPSC 3103 Philosophy of the Biological Sciences 4 p HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. 2
  - HPSC 3104 Medicine, Sex and Gender 4 p HPSC (2001 and 2002) or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. N May not be counted with WMST 2006. 2
  - HPSC 3105 Philosophy of Physics 4 p HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. N May not be counted with PHTL 3212. 2
  - HPSC 3106 Philosophy of Mathematics 4 p HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. N May not be counted with PHTL 3219. 2

Immunobiology

For a major in Immunobiology, the minimum requirement is:
(i) IMMU3002
(ii) a minimum of 12 credit points from the elective units of study listed in this subject area.

- **Intermediate units of study**
  - IMMU 3001 Introductory Immunology 4 A Junior Biology and Junior Chemistry. P 24 credit points of Junior units of study from any of the science discipline areas. N May not be counted with BMED 2506. NB: This is a prerequisite unit of study for IMMU 3002. The completion of MBLG (2001 or 2101 or 2901) is highly recommended. 1
### Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Senior Core units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMMU 3002 Immunochemistry</td>
<td>12</td>
<td>A Intermediate Biochemistry and Molecular Biology and Genetics.</td>
<td>p IMMU 2001 and 8 credit points of Intermediate units of study from Biochemistry or Biology or Microbiology or Molecular Biology and Genetics or Pharmacology or Physiology.</td>
<td>N May not be counted with BMED 3003.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Senior Elective units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCHM 3001 Mol Biology and Structural Biochemistry</td>
<td>12</td>
<td>P Distinction in a total of at least 16 credit points from Intermediate MBLG and BCHM units. For BMedSc students: 32 credit points of Intermediate BMED units including Distinctions in BMED (2501, 2502 and 2504).</td>
<td>N May not be counted with BCHM 3901.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCHM 3901 Mol Biology and Structural Biochem (Adv)</td>
<td>12</td>
<td>P Distinction in a total of at least 16 credit points from Intermediate MBLG and BCHM units. For BMedSc students: 32 credit points of Intermediate BMED units including Distinctions in BMED (2501, 2502 and 2504).</td>
<td>N May not be counted with BCHM 3001.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCHM 3002 Cellular and Medical Biochemistry</td>
<td>12</td>
<td>P A total of at least 16 credit points of Intermediate MBLG and BCHM units. For BMedSc students 32 credit points of Intermediate BMED units including BMED (2501, 2502 and 2504).</td>
<td>N May not be counted with BCHM 3902, 3004 or 3904.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCHM 3902 Cellular and Medical Biochemistry (Adv)</td>
<td>12</td>
<td>P Distinction in a total of at least 16 credit points from Intermediate MBLG and BCHM units. For BMedSc students: 32 credit points of Intermediate BMED units including Distinctions in BMED (2501, 2502 and 2504).</td>
<td>N May not be counted with BCHM 3002, 3004 and 3904.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 3018 Applications of Recombinant DNA Tech</td>
<td>6</td>
<td>P MBLG (2001/2901 and 2002/2902) or 16 credit points of Intermediate Biology including BIOL (2005 or 2905). For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2502.</td>
<td>N May not be counted with BIOL 3918, 3103 or 3903.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 3918 Applications of Recombinant DNA Tech Adv</td>
<td>6</td>
<td>P Distinction in average in MBLG (2001/2901 and 2002/2902) or in 16 credit points of Intermediate Biology including BIOL (2005 or 2905). For BMedSc students: 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should contact the unit Executive Officer.</td>
<td>N May not be counted with BIOL (3018, 3103 or 3903).</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 3026 Developmental Genetics</td>
<td>6</td>
<td>P MBLG (2001/2901 and 2002/2902) or 16 credit points of Intermediate Biology including BIOL (2005 or 2905). For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2502.</td>
<td>N May not be counted with BIOL (3926 or 3929).</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 3926 Developmental Genetics (Advanced)</td>
<td>6</td>
<td>P Distinction in average in MBLG (2001/2901 and 2002/2902) or 16 credit points of Intermediate Biology including BIOL (2005 or 2905). For BMedSc students: 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should contact the unit Executive Officer.</td>
<td>N May not be counted with BIOL (3026 or 3929).</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 3027 Bioinformatics and Genomics</td>
<td>6</td>
<td>P MBLG (2001 or 2101 or 2901) or 16 credit points of Intermediate Biology including BIOL (2001 or 2901 or 2004 or 2904 or 2005 or 2905 or 2006 or 2906). For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2502.</td>
<td>N May not be counted with BIOL 3927.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 3927 Bioinformatics and Genomics (Advanced)</td>
<td>6</td>
<td>P Distinction in average in MBLG (2001 or 2101 or 2901) or Distinction in average in 16 credit points of Intermediate Biology including BIOL (2001 or 2901 or 2004 or 2904 or 2005 or 2905 or 2006 or 2906). For BMedSc students: 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should contact the unit Executive Officer.</td>
<td>N May not be counted with BIOL 3027.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPAT 3001 Cell Pathology A</td>
<td>12</td>
<td>p ANAT 2021; or BCHM 2022 or 2902; or BIOL 2005 or 2006 or 2905 or 2906; or both PCOL 2001 and (2002 or 2003); or PHSI 2002. For BMedSc: 32 credit points from Intermediate BMED units of study.</td>
<td>NB: Department permission required for enrolment. Entry requires Departmental permission: only a small number of students can be accommodated in the laboratory facilities. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPAT 3101 Pathological Basis of Human Disease</td>
<td>12</td>
<td>p ANAT 2021; or BCHM (2001 or 2002 or 2101 or 2002 or 2901 or 2902); or MBLG (2001 or 2101 or 2901); or BIOL (2001 or 2002 or 2005 or 2006 or 2101 or 2102 or 2105 or 2106 or 2901 or 2902 or 2005 or 2006); or HPSC (2001 or 2002); or MCR (2001 or 2003 or 2901); or PCOL 2001; or PHSI 2001. For BMedSc: 32 credit points from Intermediate BMED units of study.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCR 3001 General and Medical Microbiology</td>
<td>12</td>
<td>P MBLG (2001/2101 or 2901) or [12 credit points of Intermediate Microbiology (MICR) (2011 and 2012)] or MCR 2909. For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2506.</td>
<td>N May not be counted with MCR 3901.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MCR 3901 General and Medical Microbiology (Adv)</td>
<td>12</td>
<td>P MBLG (2101 or 2901 or 2001) or 12 credit points of Intermediate Microbiology units: including one Distinction, or MCR (2011 and 2012) including one Distinction, or Distinction in MCR 2909. For BMedSc: 32 credit points of Intermediate BMED units including Distinction in BMED 2506.</td>
<td>N May not be counted with MCR 3001.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHSI 3004 Human Cellular Physiology</td>
<td>12</td>
<td>p For BMedSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2502 and 2504). For others: PHSI (2001 or 2101 or 2901) and PHSI (2002 or 2102 or 2902) and either MBLG (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901).</td>
<td>N May not be counted with PHSI 3904.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSI 3904 (Advanced)</td>
<td>12</td>
<td>p</td>
<td>For BMEDSc: 32 credit points of Intermediate BMED units including BMED (2501 and T2502 and 2504). For others: PHSI (2001 or 2101 or 2901) and PHSI (2002 or 2102 or 2902) and either MBLG (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901). N May not be counted with PHSI 3004. NB: Department permission required for enrolment. Permission is required for enrolment. Available to selected students who have achieved an average of at least 65 in the prerequisite units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Information Systems**

For a major in Information Systems, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

- **Junior units of study**
  - ISYS 1003 Foundations of Information Technology 6 N May not be counted with INFO 1000 or INF5 1000. 1,2

- **Intermediate units of study**
  - INFO 2000 Systems Analysis and Design 4 Q ISYS 1003 or INFO 1000 or INF5 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or SOFT (1001 or 1901) or COMP (1001 or 1901). N May not be counted with INFO 2900. 1, Summer
  - INFO 2900 System Analysis and Design Advanced 4 Q ISYS 1003 or INFO 1000 or INF5 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or SOFT (1001 or 1901) or COMP (1001 or 1901) and Distinction in one INFO, ISYS or SOFT unit. N May not be counted with INFO 2900. 1
  - INFO 2005 Database Management, Introductory 4 Q ISYS 1003 or INFO 1000 or INF5 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or SOFT (1001 or 1901) or COMP (1001 or 1901). N May not be counted with INFO 2905. 2
  - INFO 2905 Database Management, Introductory (Adv) 4 Q ISYS 1003 or INFO 1000 or INF5 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or SOFT (1001 or 1901) or COMP (1001 or 1901) and Distinction in one INFO, ISYS or SOFT unit. N May not be counted with INFO 2905. 2
  - ISYS 2006 Information Systems in Organisations 4 A Use of basic PC tools such as spreadsheets, Internet, email and word processing software. p Credit in one of ISYS 1003 or INF5 1000 or INFO 1000. NB: Enrolment Restriction: Entry is restricted to students who have a credit or better in one of the qualifying units. 1

- **Senior units of study**
  - INFO 3005 Organisational Database Systems 4 P INFO (2000 or 2900) and INFO (2005 or 2905) and Distinction in an INFO, ISYS or SOFT unit at 2000 level or above. N May not be counted with COMP (3005 or 3905) or INFO 3005. 1
  - INFO 3905 Organisational Database Systems (Adv) 4 P INFO (2000 or 2900) and INFO (2005 or 2905) and Distinction in an INFO, ISYS or SOFT unit at 2000 level or above. N May not be counted with COMP (3005 or 3905) or INFO 3005. 1
  - ISYS 3000 Information Systems Management 4 P ISYS 2007 or INFO 2007. 2
  - ISYS 3012 Project Management and Practice 4 P INFO (2000 or 2900). 1
  - ISYS 3015 Analytical Methods for IS Professionals 4 p [ARIN 1000 or ENGL (1050 or 1005) or LNGS (1001 or 1002 or 1005) or ECOF (1001 or 1002)] and 16 credit points of intermediate or senior units of study, including ISYS 2006 and (ISYS 2007 or INFO 2007) and INFO (2000 or 2900). NB: Enrolment Restriction: Entry is restricted to students who have a credit or better in at least one of the Prerequisite units. 1
  - ISYS 3113 Arts Informatics Systems 4 p INFO (2000 or 2900) and INFO (2005 or 2905) and [(ARIN 1000 or ENGL (1050 or 1005) or LNGS (1001 or 1002 or 1005) or ECOF (1001 or 1002)]. 1
  - ISYS 3207 Information Systems Project S P ISYS 3012 and (ISYS 3015 or ARIN 2000). 2

**Marine Science**

For a major in Marine Science, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

- **Intermediate units of study**
  - MARS 2001 Introductory Marine Science A 4 p 24 credit points of Junior units of study from Science Discipline Areas. This is a qualifying unit of study for Senior Marine Science units. Some Senior electives may have additional prerequisites. 1
  - MARS 2002 Introductory Marine Science B 4 p 24 credit points of Junior units of study from Science Discipline Areas. This is a qualifying unit for Senior Marine Science units. Some Senior electives may have additional prerequisites. N May not be counted with GEOG 2002. 2

- **Senior units of study**
  - BIOL 3011 Ecophysiology 6 P 16 credit points of Intermediate Biology including BIOL (2002 or 2003 or 2006 or 2902 or 2903 or 2906). N May not be counted with BIOL 3911. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. 1
  - BIOL 3011 Ecophysiology (Advanced) 6 P Distinction average in 16 credit points of Intermediate Biology including BIOL (2002 or 2003 or 2006 or 2902 or 2903 or 2906). These requirements may be varied and students with lower averages should consult the unit Executive Officer. N May not be counted with BIOL 3011. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. 1
Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3013</td>
<td>6</td>
<td>A MATH 2002.</td>
<td>p 16 credit points of Intermediate Biology, including BIOL (2001 or 2002 or 2003 or 2004 or 2001 or 2002 or 2003 or 2004).</td>
<td>N May not be counted with BIOL 3913.</td>
<td>N May not be counted with BIOL 3913.</td>
<td>N May not be counted with BIOL 3913.</td>
<td>N May not be counted with BIOL 3913.</td>
</tr>
<tr>
<td>BIOL 3913</td>
<td>6</td>
<td>A MATH 2002.</td>
<td>p Distinction average in 16 credit points of Intermediate Biology including BIOL (2001 or 2002 or 2003 or 2004 or 2001 or 2002 or 2003 or 2004). These requirements may be varied and students with lower averages should consult the unit Executive Officer.</td>
<td>N May not be counted with BIOL 3013.</td>
<td>N May not be counted with BIOL 3013.</td>
<td>N May not be counted with BIOL 3013.</td>
<td>N May not be counted with BIOL 3013.</td>
</tr>
<tr>
<td>MARS 3003</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Biology including at least 8 credit points from Geology or Geography units of study.</td>
<td>N May not be counted with GEOG 3001.</td>
<td>N May not be counted with GEOG 3001.</td>
<td>N May not be counted with GEOG 3001.</td>
<td>N May not be counted with GEOG 3001.</td>
<td>N May not be counted with GEOG 3001.</td>
</tr>
<tr>
<td>MARS 3004</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Biology including at least 8 credit points from Geology or Geography units of study.</td>
<td>N May not be counted with GEOG 3001.</td>
<td>N May not be counted with GEOG 3001.</td>
<td>N May not be counted with GEOG 3001.</td>
<td>N May not be counted with GEOG 3001.</td>
<td>N May not be counted with GEOG 3001.</td>
</tr>
<tr>
<td>MARS 3005</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Biology including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
</tr>
<tr>
<td>MARS 3006</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Biology including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
</tr>
<tr>
<td>MARS 3008</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Biology including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
<td>N May not be counted with GEOG 3221.</td>
</tr>
<tr>
<td>MARS 3102</td>
<td>12</td>
<td>P MARS (2001 and 2002) and 16 credit points of Intermediate Biology including BIOL (2001 or 2002 or 2003 or 2004 or 2001 or 2002 or 2003 or 2004).</td>
<td>N May not be counted with BIOL 3023, 3024 or 3024 or 3024.</td>
<td>N May not be counted with BIOL 3023, 3024 or 3024.</td>
<td>N May not be counted with BIOL 3023, 3024 or 3024.</td>
<td>N May not be counted with BIOL 3023, 3024 or 3024.</td>
<td>N May not be counted with BIOL 3023, 3024 or 3024.</td>
</tr>
<tr>
<td>MARS 3103</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Biology including at least 8 credit points from Geology or Geography units of study.</td>
<td>N May not be counted with GEOG 3102.</td>
<td>N May not be counted with GEOG 3102.</td>
<td>N May not be counted with GEOG 3102.</td>
<td>N May not be counted with GEOG 3102.</td>
<td>N May not be counted with GEOG 3102.</td>
</tr>
<tr>
<td>MARS 3104</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Biology including at least 8 credit points from Geology or Geography units of study.</td>
<td>N May not be counted with GEOG 3102.</td>
<td>N May not be counted with GEOG 3102.</td>
<td>N May not be counted with GEOG 3102.</td>
<td>N May not be counted with GEOG 3102.</td>
<td>N May not be counted with GEOG 3102.</td>
</tr>
<tr>
<td>MARS 3105</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Biology including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td>N May not be counted with GEOG 3104.</td>
<td>N May not be counted with GEOG 3104.</td>
<td>N May not be counted with GEOG 3104.</td>
<td>N May not be counted with GEOG 3104.</td>
<td>N May not be counted with GEOG 3104.</td>
</tr>
<tr>
<td>MARS 3106</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Biology including at least 8 credit points from Geology or Geography units of study.</td>
<td>N May not be counted with GEOG 3104.</td>
<td>N May not be counted with GEOG 3104.</td>
<td>N May not be counted with GEOG 3104.</td>
<td>N May not be counted with GEOG 3104.</td>
<td>N May not be counted with GEOG 3104.</td>
</tr>
</tbody>
</table>

Mathematics

For a major in Mathematics, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

- Junior units of study

| MATH 1011 | 3  | A HSC Mathematics. | N May not be counted with MATH (1001 or 1901 or 1906). | 1 |
| MATH 1012 | 3  | A HSC Mathematics. | N May not be counted with MATH (1002 or 1902). | 2 |
| MATH 1013 | 3  | A HSC Mathematics. | N May not be counted with MATH (1003 or 1903). | 2 |
| MATH 1015 | 3  | A HSC Mathematics. | N May not be counted with MATH (1005 or 1905 or 1906). | 1 |
| MATH 1001 | 3  | A HSC Mathematics. | N May not be counted with MATH (1011 or 1901 or 1906). | 1, Summer |
| MATH 1002 | 3  | A HSC Mathematics. | N May not be counted with MATH 1012 or 1012. | 1, Summer |
| MATH 1003 | 3  | A HSC Mathematics. | N May not be counted with MATH (1013 or 1903 or 1907). | 2, Summer |
| MATH 1004 | 3  | A HSC Mathematics. | N May not be counted with MATH 1904 or MATH 1911. | 2, Summer |
| MATH 1005 | 3  | A HSC Mathematics. | N May not be counted with MATH (1005 or 1905) or ECMT Junior units of study or STAT (1021 or 1022). | 2, Summer |
| MATH 1901 | 3  | A HSC Mathematics. | N May not be counted with MATH (1001 or 1901 or 1906). | 1 |
| MATH 1902 | 3  | A HSC Mathematics. | N May not be counted with MATH (1002 or 1902). | 2 |
| MATH 1903 | 3  | A HSC Mathematics. | N May not be counted with MATH (1903 or 1907). | 2 |
| MATH 1904 | 3  | A HSC Mathematics. | N May not be counted with MATH (1904 or MATH 1911). | 2 |
| MATH 1905 | 3  | A HSC Mathematics. | N May not be counted with MATH (1005 or 1905) or ECMT Junior units of study or STAT (1021 or 1022). | 2 |
### Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1906</td>
<td>Mathematics (Special Studies Program) A</td>
<td>3</td>
<td>p UAI of at least 98.5 and result in Band E4 HSC Mathematics Extension 2; by invitation.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 1907</td>
<td>Mathematics (Special Studies Program) B</td>
<td>3</td>
<td>p Distinction in MATH 1906; by invitation.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

#### Intermediate units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 2001</td>
<td>Vector Calculus and Complex Variables</td>
<td>4</td>
<td>P MATH (1001 or 1901 or 2002) and (1003 or 1903 or 2001) and (1004 or 1904 or 2004)</td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td>MATH 2002</td>
<td>Matrix Applications</td>
<td>4</td>
<td>P MATH (1001 or 1901 or 2002) and (1003 or 1903 or 2001) and (1004 or 1904 or 2004)</td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td>MATH 2003</td>
<td>Introduction to Mathematical Computing</td>
<td>4</td>
<td>p MATH (1001 or 1901 or 2002) and (1003 or 1903 or 2001) and (1004 or 1904 or 2004)</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 2004</td>
<td>Lagrangian Dynamics</td>
<td>4</td>
<td>p MATH (1001 or 1901 or 2002) and (1003 or 1903 or 2001) and (1004 or 1904 or 2004)</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2005</td>
<td>Fourier Series &amp; Differential Equations</td>
<td>4</td>
<td>p MATH (1001 or 1901 or 2002) and MATH (1003 or 1903 or 2001) and (1004 or 1904 or 2004)</td>
<td></td>
<td></td>
<td>2, Summer</td>
</tr>
<tr>
<td>MATH 2006</td>
<td>Nonlinear Systems and Chaos Introduction</td>
<td>4</td>
<td>p MATH (1001 or 1901 or 2002) and (1003 or 1903 or 2001) and (1004 or 1904 or 2004)</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2007</td>
<td>Analysis</td>
<td>4</td>
<td>p MATH (1001 or 1901 or 2002) and (1003 or 1903 or 2001)</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2008</td>
<td>Introduction to Modern Algebra (Advanced)</td>
<td>4</td>
<td>P MATH 2002 or 2902.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2009</td>
<td>Graph Theory</td>
<td>4</td>
<td>P 6 credit points of Junior Mathematics (at the Distinction level in Life Sciences units).</td>
<td></td>
<td></td>
<td>2, Summer</td>
</tr>
<tr>
<td>MATH 2010</td>
<td>Optimisation</td>
<td>4</td>
<td>P MATH (1001 or 1901 or 2002) and (1003 or 1903 or 2001)</td>
<td></td>
<td></td>
<td>2, Summer</td>
</tr>
<tr>
<td>MATH 2011</td>
<td>Topics in Discrete Mathematics</td>
<td>4</td>
<td>A HSC Mathematics Extension 1.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 2033</td>
<td>Financial Mathematics 1</td>
<td>4</td>
<td>p MATH (1001 or 1901 or 2002) and MATH (1003 or 1903 or 2001) and (1004 or 1904 or 2004)</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 2901</td>
<td>Vector Calculus and Complex Variables (Advanced)</td>
<td>4</td>
<td>p MATH (1001 or 1901 or 2002) and (1003 or 1903 or 2001) and (1004 or 1904 or 2004)</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 2902</td>
<td>Linear Algebra (Advanced)</td>
<td>4</td>
<td>P 12 credit points of Junior Mathematics, including MATH 1902 or Credit in 1002.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 2903</td>
<td>Intro to Mathematical Computing (Advanced)</td>
<td>4</td>
<td>p MATH (1001 or 1901 or 2002) and (1003 or 1903 or 2001) and (1004 or 1904 or 2004)</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 2904</td>
<td>Lagrangian Dynamics (Advanced)</td>
<td>4</td>
<td>p MATH 2901 or Credit in MATH 1001.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2905</td>
<td>Mathematical Methods (Advanced)</td>
<td>4</td>
<td>p MATH 2901 or Credit in MATH 1001.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2906</td>
<td>Nonlinear Systems and Chaos (Advanced)</td>
<td>4</td>
<td>P MATH (1901 or 1906 or Credit in 1001) and (1902 or Credit in 1002) and (1903 or 1907 or Credit in 1003).</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2907</td>
<td>Analysis (Advanced)</td>
<td>4</td>
<td>P MATH (1901 or 1906 or Credit in 1001) and (1902 or Credit in 1002) and (1903 or 1907 or Credit in 1003).</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2908</td>
<td>Introduction to Modern Algebra (Advanced)</td>
<td>4</td>
<td>P MATH 2902.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2913</td>
<td>Financial Mathematics 1 (Advanced)</td>
<td>4</td>
<td>P MATH (1901 or 1906 or Credit in 1001) and MATH (1902 or Credit in 1002) and (1903 or 1907 or Credit in 1003) and (1905 or Credit in 1005).</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

#### Senior units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 3001</td>
<td>Topology</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3002</td>
<td>Rings and Fields</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics (strongly advise MATH 2002 or 2902, 2008 or 2908).</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3003</td>
<td>Ordinary Differential Equations</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics (strongly advise MATH 2002 or 2902, 2008 or 2908).</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3005</td>
<td>Logic</td>
<td>4</td>
<td>P (for all but BCST students) 8 credit points of Intermediate Mathematics; (for BCST students) 8 credit points of Intermediate Mathematics or 12 credit points of Junior Mathematics at Advanced level.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3006</td>
<td>Geometry</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics (strongly advise MATH 1902 or Credit in 1002).</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3007</td>
<td>Coding Theory</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics (strongly advise MATH 2002 or 2902).</td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
### Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 3008 Real Variables</td>
<td>4</td>
<td>p</td>
<td>8 credit points of Intermediate Mathematics (strongly advise MATH 2001 or 2007 or 2901 or 2907).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3009 Number Theory</td>
<td>4</td>
<td>p</td>
<td>8 credit points of Intermediate Mathematics.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3010 Information Theory</td>
<td>4</td>
<td>p</td>
<td>8 credit points of Intermediate Mathematics (strongly advise MATH 2001 or 2901 and some probability theory).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3015 Financial Mathematics 2</td>
<td>4</td>
<td>p</td>
<td>8 credit points of Intermediate Mathematics including MATH 2033 or 2933 (and strongly advise MATH 2010 and STAT (2001 or 2901)). N May not be counted with MATH 3933.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3016 Mathematical Computing I</td>
<td>4</td>
<td>P</td>
<td>8 credit points of Intermediate Mathematics and one of MATH 1001 or 1003 or 1901 or 1903 or 1906 or 1907. N May not be counted with MATH 3916.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3018 Partial Differential Equations and Waves</td>
<td>4</td>
<td>p</td>
<td>MATH (2001 or 2901) and MATH (2005 or 2905). N May not be counted with MATH 3921.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3019 Signal Processing</td>
<td>4</td>
<td>p</td>
<td>MATH (2001 or 2901) and MATH (2005 or 2905). N May not be counted with MATH 3919.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3020 Nonlinear Systems and Biomathematics</td>
<td>4</td>
<td>p</td>
<td>8 credit points of Intermediate Mathematics (strongly advise MATH 2006 or 2906 or 2908 or 3003) and one of MATH (1001 or 1003 or 1901 or 1903). N May not be counted with MATH 3920.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3024 Elementary Cryptography and Protocols</td>
<td>4</td>
<td>p</td>
<td>12 credit points of Intermediate Mathematics. Strongly advise MATH 2008 or 2908 or 2918.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3901 Metric Spaces (Advanced)</td>
<td>4</td>
<td>p</td>
<td>12 credit points of Intermediate Mathematics (strongly advise MATH 2907). N May not be counted with MATH 3001.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3902 Algebra I (Advanced)</td>
<td>4</td>
<td>p</td>
<td>12 credit points of Intermediate Mathematics (strongly advise MATH 2902). N May not be counted with MATH 3002.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3903 Differential Geometry (Advanced)</td>
<td>4</td>
<td>P</td>
<td>12 credit points of Intermediate Mathematics (strongly advise MATH 2001 or 2901, with MATH 3001 or 3901).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3904 Complex Variable (Advanced)</td>
<td>4</td>
<td>P</td>
<td>12 credit points of Intermediate Mathematics (strongly advise MATH 2001 or 2901, with MATH 3001 or 3901).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3906 Group Representation Theory (Advanced)</td>
<td>4</td>
<td>p</td>
<td>12 credit points of Intermediate Mathematics (strongly advise MATH 3902). NB: This unit is only offered in odd years only.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3908 Nonlinear Analysis (Advanced)</td>
<td>4</td>
<td>p</td>
<td>12 credit points of Intermediate Mathematics (strongly advise MATH 3901).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3909 Lebesgue Int and Fourier Analysis (Adv)</td>
<td>4</td>
<td>P</td>
<td>12 credit points of Intermediate Mathematics (strongly advise MATH 2907 and MATH 3901).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3912 Combinatorics (Advanced)</td>
<td>4</td>
<td>p</td>
<td>12 credit points of Intermediate Mathematics (strongly advise MATH 2902).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3914 Fluid Dynamics (Advanced)</td>
<td>4</td>
<td>P</td>
<td>MATH (2901 or credit in 2001) and MATH (2905 or credit in 2005).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3915 Mathematical Methods (Advanced)</td>
<td>4</td>
<td>P</td>
<td>MATH (2901 or 2905 or 2907 or 3921) or Credit in MATH (2005 or 3018).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3916 Mathematical Computing I (Advanced)</td>
<td>4</td>
<td>p</td>
<td>8 credit points of Intermediate Mathematics and one of MATH 1903 or 1907 or Credit in MATH 1003. N May not be counted with MATH 3016.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3917 Hamiltonian Dynamics (Advanced)</td>
<td>4</td>
<td>P</td>
<td>MATH 2904 or Credit in MATH 2004.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3919 Signal Processing (Advanced)</td>
<td>4</td>
<td>P</td>
<td>MATH 2905 or Credit in MATH 2005. N May not be counted with MATH 3019.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3920 Nonlinear Systems &amp; Biomathematics (Adv)</td>
<td>4</td>
<td>p</td>
<td>8 credit points of Intermediate Mathematics (strongly advise MATH 2908 or 3003) and one of MATH 1903 and 1905 or 1903 and 1904 or Credit in (MATH 1003 and 1005) or MATH (1003 and 1004). N May not be counted with MATH 3020.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3921 P D E And Waves (Advanced)</td>
<td>4</td>
<td>p</td>
<td>MATH (2901 or credit in 2001) and (2905 or credit in 2005). N May not be counted with MATH 3018.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 3925 Public Key Cryptography (Advanced)</td>
<td>4</td>
<td>p</td>
<td>12 credit points from Intermediate or senior mathematics. Strongly recommend MATH 3902.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 3933 Financial Mathematics 2 (Advanced)</td>
<td>4</td>
<td>p</td>
<td>8 credit points of Intermediate Mathematics including MATH 2933 or Credit in MATH 2033 (and strongly advise MATH 2010 and STAT (2001 or 2901)). N May not be counted with MATH 3015.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

### Medicinal Chemistry

For a major in Medicinal Chemistry, the minimum requirement is 24 credit points from Senior units of study listed in this subject area. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.
Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCOL 3901 Molecular Pharmacology &amp; Toxicology Adv</td>
<td>12</td>
<td>P Distinction average in PCOL 2001 and PCOL (2002 or 2003); or in 32 credit points from Intermediate BMED units of study.</td>
<td>N May not be counted with PCOL 3001.</td>
<td>NB: Department permission required for enrolment. The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Entry to this unit requires Departmental permission.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Microbiology

For a major in Microbiology, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

### Intermediate units of study

The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIRC 2001 Introductory Microbiology</td>
<td>8</td>
<td>P 6 credit points of Junior Chemistry.</td>
<td>Q 6 credit points of Junior Biology.</td>
<td>N May not be counted with MIRC (2004 or 2002).</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MIRC 2002 Applied Microbiology</td>
<td></td>
<td>P MIRC (2001 or 2901).</td>
<td>N May not be counted with MIRC (2004 or 2002).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MIRC 2003 Theoretical Microbiology A</td>
<td>4</td>
<td>Q 6 credit points of Junior Biology.</td>
<td>N May not be counted with MIRC (2001 or 2901).</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MIRC 2901 Introductory Microbiology (Advanced)</td>
<td>8</td>
<td>Q 6 credit points of Junior Chemistry and Distinction in 6 credit points of Junior Biology.</td>
<td>N May not be counted with MIRC (2001 or 2003).</td>
<td>NB: It is highly recommended that students complete 12 credit points of Junior Biology and MBLG (2001 or 2101 or 2901).</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MIRC 2902 Applied Microbiology (Advanced)</td>
<td>8</td>
<td>O. Distinction in MIRC (2001 or 2901).</td>
<td>N May not be counted with MIRC (2002 or 2004).</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

### Senior units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIRC 3001 General and Medical Microbiology</td>
<td>12</td>
<td>P MBLG (2001 or 2101 or 2901) and [12 credit points of Intermediate MICR units or MIRC (2011 and 2012) or MIRC 2909]. For BMEdSc students: 32 credit points of Intermediate BMED units including BMED 2506.</td>
<td>N May not be counted with MIRC 3501.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MIRC 3002 Molecular/Environmental Microbiology</td>
<td>12</td>
<td>P 12 credit points of Intermediate Microbiology and MBLG (2101 or 2001 or 2901).</td>
<td>N May not be counted with MIRC (3902, 3004 or 3904).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MIRC 3901 General and Medical Microbiology (Adv)</td>
<td>12</td>
<td>P MBLG (2101 or 2001 or 2901) and [12 credit points of Intermediate MICR units including one Distinction, or MIRC (2011 and 2012) including one Distinction, or Distinction in MIRC 2909]. For BMEdSc: 32 credit points of Intermediate BMED units including Distinction in BMED 2506.</td>
<td>N May not be counted with MIRC 3901.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MIRC 3902 Molecular/Environmental Microbiology Adv</td>
<td>12</td>
<td>P 12 credit points of Intermediate Microbiology including one Distinction, and MBLG (2101 or 2001 or 2901).</td>
<td>N May not be counted with MIRC (3002, 3004 or 3904).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

Molecular Biology and Genetics

Molecular Biology and Genetics units of study are highly recommended to be studied in conjunction with all Life Science subject areas. They are particularly relevant to students intending to major in Biology, Biochemistry and Microbiology. There is no major available in this subject area.

### Intermediate units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MBLG 2001 Molecular Biology and Genetics A</td>
<td>8</td>
<td>P 12 credit points of Junior Chemistry.</td>
<td>Q BIOL (1001 or 1901) except for students co enrolled in BCHM 2011, or with permission of the unit Coordinator.</td>
<td>N May not be counted with AGCH 2001 or BCHM (2001 or 2101 or 2901) or MBLG (2101 or 2001 or 2901).</td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td>MBLG 2101 Molecular Biology &amp; Genetics A (Theory)</td>
<td>4</td>
<td>P 12 credit points of Junior Chemistry.</td>
<td>Q BIOL (1001 or 1901) or by permission of the unit Coordinator.</td>
<td>N May not be counted with AGCH 2001 or BCHM (2001 or 2101 or 2901) or MBLG (2101 or 2001 or 2901).</td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td>MBLG 2901 Molecular Biology and Genetics A (Adv)</td>
<td>8</td>
<td>P 12 credit points of Junior Chemistry.</td>
<td>Q BIOL(1001 or 1901) except for students co enrolled in BCHM 2011.</td>
<td>N May not be counted with AGCH 2001 or BCHM (2001 or 2101 or 2901) or MBLG (2001 or 2101).</td>
<td>NB: Entry requires a Distinction in one of the Qualifying or Prerequisite units of study, or permission of the unit Coordinator.</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MBLG 2002 Molecular Biology and Genetics B</td>
<td>8</td>
<td>P MBLG 2001.</td>
<td>N May not be counted with BIOL 2005 or 2105 or MBLG 2102 or 2002.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MBLG 2102 Molecular Biology &amp; Genetics B (Theory)</td>
<td>4</td>
<td>P MBLG (2001 or 2101).</td>
<td>N May not be counted with BIOL (2005, 2105 or 2905), or MBLG (2002 or 2002).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MBLG 2902 Molecular Biology and Genetics B (Adv)</td>
<td>8</td>
<td>Q Distinction or better in MBLG (2001 or 2901). This requirement may be varied and students with lower marks should consult the unit Executive Officer.</td>
<td>N May not be counted with BIOL (2005 or 2105 or 2905 or MBLG 2002 or 2102).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
### Nanoscience and Technology

For a major in Nanoscience and Technology, students are advised to complete:

(i) Junior units: 12 credit points of non terminating units in each of Chemistry, Mathematics and Physics, and MECH 2300; and

(ii) Intermediate units: 16 credit points of Intermediate Physics and Chemistry, and AERO 2300, MATH 2005 and MECH 3300.

Students must complete:

(iii) Senior units: a minimum of 24 credit points in at least two subject areas from the following electives:

#### Senior elective units of study

<table>
<thead>
<tr>
<th>Subject</th>
<th>Code</th>
<th>Credit Points</th>
<th>Prerequisite</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM</td>
<td>3101</td>
<td>12</td>
<td>CHEM (3001 or 2101 or 2301 or 2901) and CHEM (2302 or 2902). N May not be counted with CHEM (3311,3601,3602,3901 or 3903), but may be counted with CHEM 3201.</td>
<td>1</td>
</tr>
<tr>
<td>CHEM</td>
<td>3901</td>
<td>12</td>
<td>CHEM (3001 or 2101 or 2301 or 2901) and CHEM (2302 or 2902). N May not be counted with CHEM (3901 or 3903), but may be counted with CHEM 3201.</td>
<td>1</td>
</tr>
<tr>
<td>CHEM</td>
<td>3102</td>
<td>12</td>
<td>CHEM (3001 or 2101 or 2301 or 2901) and CHEM (2302 or 2902). N May not be counted with CHEM (3601,3602,3902 or 3903), but may be counted with CHEM 3202.</td>
<td>2</td>
</tr>
<tr>
<td>CHEM</td>
<td>3902</td>
<td>12</td>
<td>CHEM (3001 or 2101 or 2301 or 2901) and CHEM (2302 or 2902). N May not be counted with CHEM (3102,3601,3602 or 3903). NB: Department permission required for enrolment. The number of places in this unit of study is limited and entry is by invitation. Students in the Faculty of Science Talented Student Program are automatically eligible.</td>
<td>2</td>
</tr>
<tr>
<td>MECH</td>
<td>3110</td>
<td>4</td>
<td>AERO 2300 Mechanics of Solids 1 and MATH 2005.</td>
<td>1</td>
</tr>
<tr>
<td>MECH</td>
<td>3610</td>
<td>2</td>
<td>30 credit points of second year units of study.</td>
<td>2</td>
</tr>
<tr>
<td>PHYS</td>
<td>4310</td>
<td>6</td>
<td>MECH 3300 Materials 2. N MECH 4315 Advanced Aerospace Materials.</td>
<td>2</td>
</tr>
<tr>
<td>PHYS</td>
<td>3003</td>
<td>4</td>
<td>A 8 credit points of Intermediate Mathematics. N May not be counted with PHYS 3003.</td>
<td>1</td>
</tr>
<tr>
<td>PHYS</td>
<td>3903</td>
<td>4</td>
<td>A 16 credit points of Intermediate Mathematics. N May not be counted with PHYS (3903 or 3200).</td>
<td>1</td>
</tr>
<tr>
<td>PHYS</td>
<td>3803</td>
<td>4</td>
<td>A 16 credit points of Intermediate Mathematics. N May not be counted with PHYS 3804.</td>
<td>1</td>
</tr>
<tr>
<td>PHYS</td>
<td>3804</td>
<td>4</td>
<td>A 16 credit points of Intermediate Mathematics. N May not be counted with PHYS 3803.</td>
<td>2</td>
</tr>
<tr>
<td>PHYS</td>
<td>3008</td>
<td>4</td>
<td>A 8 credit points of Intermediate Mathematics. N May not be counted with PHYS 3009 or 3008.</td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS</td>
<td>3908</td>
<td>4</td>
<td>A 16 credit points of Intermediate Mathematics. N May not be counted with PHYS (3008 or 3009 or 3909).</td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS</td>
<td>3009</td>
<td>8</td>
<td>A 8 credit points of Intermediate Mathematics. N May not be counted with PHYS (3008 or 3009 or 3908).</td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS</td>
<td>3909</td>
<td>8</td>
<td>A 16 credit points of Intermediate Mathematics. N May not be counted with PHYS (3008 or 3009 or 3908).</td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS</td>
<td>3101</td>
<td>4</td>
<td>PHYS (3008 or 3908 or 3909). N May not be counted with PHYS 3102 or 3801 or 3802.</td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS</td>
<td>3801</td>
<td>4</td>
<td>PHYS (3908 or 3909).</td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS</td>
<td>3102</td>
<td>8</td>
<td>PHYS (3008 or 3009 or 3908 or 3909). N May not be counted with PHYS (3101 or 3801 or 3802).</td>
<td>1,2</td>
</tr>
</tbody>
</table>
For a major in Neuroscience, students are required to complete:

- **Junior units of study**
  - i) 12 credit points of Junior units of study from the Science Subject Area of Mathematics; and
  - ii) 24 credit points from Junior units of study from the Science Subject Areas of Biology, Chemistry, Computer Science, Physics or Psychology.

- **Intermediate elective units of study**

At least 24 credit points from the following units of study (ANAT 2003 is particularly recommended).

### Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 3802 Experimental Physics D (Advanced)</td>
<td>8</td>
<td>P PHYS (3908 or 3909).</td>
<td>N May not be counted with PHYS (3101 or 3102 or 3801).</td>
<td></td>
<td></td>
<td>1,2</td>
<td></td>
</tr>
</tbody>
</table>

**Neuroscience**

For a major in Neuroscience, students are required to complete:

- **Junior units of study**
  - i) 12 credit points of Junior units of study from the Science Subject Area of Mathematics; and
  - ii) 24 credit points from Junior units of study from the Science Subject Areas of Biology, Chemistry, Computer Science, Physics or Psychology.

- **Intermediate elective units of study**

At least 24 credit points from the following units of study (ANAT 2003 is particularly recommended).

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 2003 Concepts in Neuroanatomy</td>
<td>4</td>
<td>A Background in basic mammalian biology.</td>
<td>P 12 credit points of Junior Biology or Junior Psychology.</td>
<td>N: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MBLG 2001 Molecular Biology and Genetics A</td>
<td>8</td>
<td>P 12 credit points of Junior Chemistry. Q BIOL (1001 or 1901) except for students co enrolled in BCHM 2011, or with permission of the unit Coordinator. N May not be counted with AGCH 2001 or BCHM (2001 or 2101 or 2901) or MBLG (2101 or 2901).</td>
<td></td>
<td></td>
<td></td>
<td>1, Summer</td>
<td></td>
</tr>
<tr>
<td>MBLG 2101 Molecular Biology &amp; Genetics A (Theory)</td>
<td>4</td>
<td>P 12 credit points of Junior Chemistry. Q BIOL (1001 or 1901) or by permission of the unit Coordinator. N May not be counted with AGCH 2001 or BCHM (2001 or 2101 or 2901) or MBLG (2001 or 2901).</td>
<td></td>
<td></td>
<td></td>
<td>1, Summer</td>
<td></td>
</tr>
<tr>
<td>MBLG 2901 Molecular Biology and Genetics A (Adv)</td>
<td>8</td>
<td>P 12 credit points of Junior Chemistry. Q BIOL (1001 or 1901) except for students co enrolled in BCHM 2011. N May not be counted with AGCH 2001 or BCHM (2001 or 2101 or 2901) or MBLG (2001 or 2901).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PCOL 2001 Pharmacology Fundamentals</td>
<td>4</td>
<td>P 6 credit points of Junior Chemistry and 6 credit points of Junior Biology. N May not be counted with PCOL 2003.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PCOL 2002 Intro Pharmacology: Drugs and People</td>
<td>4</td>
<td>P 6 credit points of Junior Chemistry and 6 credit points of Junior Biology. N May not be counted with PCOL 2003.</td>
<td>N: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Students are strongly advised to complete PCOL 2001 before enrolling in PCOL 2002.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PCOL 2003 Pharmacology: Drugs and Society</td>
<td>8</td>
<td>P 6 credit points of Junior Biology and 6 credit points of Junior Chemistry. N May not be counted with PCOL 2002.</td>
<td>N: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Students are strongly advised to complete PCOL 2001 before enrolling in PCOL 2003.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PHSI 2001 Basic Physiology A</td>
<td>4</td>
<td>P 6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, Mathematics, Physics, Psychology units of study. N May not be counted with PHSI (2101 or 2901).</td>
<td>N: Students taking combined degrees or with passes in units not listed should consult the department if they do meet the prerequisites. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PHSI 2101 Integrated Physiology A</td>
<td>8</td>
<td>P 6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, Mathematics, Physics, Psychology units of study. N May not be counted with PHSI (2001 or 2901).</td>
<td>N: Students taking combined degrees or with passes in units not listed should consult the department if they do meet the prerequisites. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PHSI 2901 Integrated Physiology A (Advanced)</td>
<td>8</td>
<td>P 6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, Mathematics, Physics, Psychology units of study. N May not be counted with PHSI (2001 or 2101).</td>
<td>N: Department permission required for enrolment. Permission is required for enrolment. Available to selected students who have achieved at least 65 in half of their Junior units of study, including students in combined degrees or with passes in units not listed. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PHSI 2002 Basic Physiology B</td>
<td>4</td>
<td>P 6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, Mathematics, Physics, Psychology units of study. N May not be counted with PHSI (2102 or 2902).</td>
<td>N: Students taking combined degrees or with passes in units not listed should consult the department if they do meet the prerequisites. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PHSI 2102 Integrated Physiology B</td>
<td>8</td>
<td>P 6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, Mathematics, Physics, Psychology units of study. N May not be counted with PHSI (2002 or 2902).</td>
<td>N: Students taking combined degrees or with passes in units not listed should consult the department if they do meet the prerequisites. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PHSI 2902 Integrated Physiology B (Advanced)</td>
<td>8</td>
<td>P 6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, Mathematics, Physics, Psychology units of study. N May not be counted with PHSI (2002 or 2102).</td>
<td>N: Department permission required for enrolment. Permission is required for enrolment. Available to selected students who have achieved at least 65 in half of their Junior units of study, including students in combined degrees or with passes in units not listed. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PSYC 2111 Learning, Neuroscience and Perception</td>
<td>4</td>
<td>Q PSTC 1001 and 1002 (Note: 16 credit points of Intermediate Psychology is required for Honours entry).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 2112 Psychological Statistics</td>
<td>4</td>
<td>Q: PSYC 1001 and 1002 (Note: 16 credit points of Intermediate Psychology is required for Honours entry).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PSYC 2113 Cognitive Processes &amp; Social Psychology</td>
<td>4</td>
<td>Q: PSYC 1001 and 1002 (Note: 16 credit points of Intermediate Psychology is required for Honours entry).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PSYC 2114 Personality and Individual Differences</td>
<td>4</td>
<td>Q: PSYC 1001 and 1002 (Note: 16 credit points of Intermediate Psychology is required for Honours entry).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

- Senior elective units of study
At least 28 credit points from the following units of study.

**PCOL 3002 Neuro- and Cardiovascular Pharmacology**
- P: PCOL 2001 and PCOL (2002 or 2003); or 32 credit points from Intermediate BMED units of study.
- N: May not be counted with PCOL 3902.
- NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

**PCOL 3902 Neuro & Cardiovascular Pharmacology Adv**
- P: Distinction average in PCOL 2001 and PCOL (2002 or 2003); or in 32 credit points from 2 Intermediate BMED units of study.
- N: May not be counted with PCOL 3902.
- NB: Department permission required for enrolment. The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Entry to this unit requires Departmental permission.

**PHSI 3001 Neuroscience**
- P: For BMedSc: at least 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: PHSI (2101 or 2001 or 2901) or ANAT 2003; and (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901); plus at least 8 credit points of Intermediate Science units of study.
- N: May not be counted with PHSI 3901.
- NB: A minimum of 8 credit points of Intermediate Physiology and/or Anatomy is recommended.

**PHSI 3901 Neuroscience (Advanced)**
- P: For BMedSc: at least 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: PHSI (2101 or 2001 or 2901) or ANAT 2003; and (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901); plus at least 8 credit points of Intermediate Science units of study.
- N: May not be counted with PHSI 3001.
- NB: Department permission required for enrolment. A minimum of 8 credit points of Intermediate Physiology and/or Anatomy is recommended. Permission required for enrolment. Available to selected students who have achieved a mark of at least 65 in the prerequisite units of study.

**PHSI 3002 Neuroscience - Cellular and Integrative**
- P: For BMedSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: 16 credit points of Intermediate Science units of study from Anatomy and Histology, Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Microbiology, Molecular Biology and Genetics, Pharmacology, Physics, Physiology, Psychology or Statistics.
- N: May not be counted with PHSI 3902.
- NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

**PHSI 3902 Neuroscience - Cellular & Integrative Adv**
- P: For BMedSc: 32 credit points of intermediate BMED units including BMED (2501 and 2503 and 2505). For others: Credit or better in PHSI 3001; and 16 credit points of Intermediate Science units of study from Anatomy and Histology, Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Microbiology, Molecular Biology and Genetics, Pharmacology, Physics, Physiology, Psychology or Statistics.
- N: May not be counted with PHSI 3002.
- NB: Department permission required for enrolment. Permission required for enrolment. Available to selected students who have achieved a mark of at least 65 in the prerequisite units of study. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

**PSYC 3203 Abnormal Psychology**
- P: PSYC 2111 and PSYC (2113 or 2114).
- NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major.

**PSYC 3204 Behavioural Neuroscience**
- P: 8 credit points of Intermediate Psychology including PSYC 2111.
- NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major.

**PSYC 3209 Learning and Motivation**
- P: PSYC (2111 and 2112).
- NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major.

**PSYC 3210 Perceptual Systems**
- P: PSYC (2111 and 2112).
- NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major.

**PSYC 3215 Cognitive Neuroscience & Neuropsychology**
- P: Two of PSYC (2111,2112,2113).
- NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major.

**Pharmacology**
For a major in Pharmacology, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

- Intermediate units of study
The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

**PCOL Pharmacology Fundamentals**
- P: 6 credit points of Junior Chemistry and 6 credit points of Junior Biology.
- NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

**PCOL Intro Pharmacology: Drugs and People**
- P: 6 credit points of Junior Chemistry and 6 credit points of Junior Biology.
- N: May not be counted with PCOL 2003.
- NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Students are strongly advised to complete PCOL 2001 before enrolling in PCOL 2002.
### Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Senior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PCOL 2003 Pharmacology: Drugs and Society</strong></td>
<td>8</td>
<td>P 6 credit points of Junior Biology and 6 credit points of Junior Chemistry.</td>
<td>N May not be counted with PCOL 2002.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Students are strongly advised to complete PCOL 2001 before enrolling in PCOL 2003.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>PCOL 3001 Molecular Pharmacology and Toxicology</strong></td>
<td>12</td>
<td>P PCOL 2001 and PCOL (2002 or 2003); or 32 credit points from Intermediate BMED units of study.</td>
<td>N May not be counted with PCOL 3901.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>PCOL 3002 Neuro &amp; Cardiovascular Pharmacology</strong></td>
<td>12</td>
<td>P PCOL 2001 and PCOL (2002 or 2003); or 32 credit points from Intermediate BMED units of study.</td>
<td>N May not be counted with PCOL 3902.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>PCOL 3901 Molecular Pharmacology &amp; Toxicology Adv</strong></td>
<td>12</td>
<td>P Distinction average in PCOL 2001 and PCOL(2002or2003);or32creditpointsfrom Intermediate BMED units of study.</td>
<td>N May not be counted with PCOL 3001.</td>
<td>NB: Department permission required for enrolment. The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Entry to this unit requires Departmental permission.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>PCOL 3902 Neuro &amp; Cardiovascular Pharmacology Adv</strong></td>
<td>12</td>
<td>P Distinction average in PCOL 2001 and PCOL(2002 or 2003); or in 32 credit points from Intermediate BMED units of study.</td>
<td>N May not be counted with PCOL 3002.</td>
<td>NB: Department permission required for enrolment. The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Entry to this unit requires Departmental permission.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

**Physics**

For a major in Physics, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHYS 1001 Physics 1 (Regular)</strong></td>
<td>6</td>
<td>A HSC Physics MATH(1001/1901,1002/1902,1003/1903). MATH 1005/1905 would also be useful.</td>
<td>N May not be counted with PHYS (1002 or 1901).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>PHYS 1002 Physics 1 (Fundamentals)</strong></td>
<td>6</td>
<td>A No assumed knowledge of Physics MATH(1001/1901,1002/1902,1003/1903). MATH 1005/1905 would also be useful.</td>
<td>N May not be counted with PHYS (1001 or 1901).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>PHYS 1003 Physics 1 (Technological)</strong></td>
<td>6</td>
<td>A HSC Physics of PHYS (1001 or 1002 or 1901 or 1902 or 1903). MATH (1001/1901,1002/1902,1003/1903). MATH 1005/1905 would also be useful.</td>
<td>N May not be counted with PHYS (1001 or 1901).</td>
<td>1,2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PHYS 1004 Physics 1 (Environmental &amp; Life Science)</strong></td>
<td>6</td>
<td>A HSC Physics of PHYS (1001 or 1002 or 1901 or 1902 or 1903). MATH (1001/1901,1002/1902,1003/1903). MATH 1005/1905 would also be useful.</td>
<td>N May not be counted with PHYS (1004 or 1902).</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PHYS 1500 Astronomy</strong></td>
<td>6</td>
<td>A No assumed knowledge of Physics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>PHYS 1901 Physics IA (Advanced)</strong></td>
<td>6</td>
<td>A MATH (1001/1901,1002/1902,1003/1903). MATH 1005/1905 would also be useful.</td>
<td>p UAI of at least 95, or HSC Physics result in Band 6, or PHYS 1902, or Distinction or better in PHYS 1003/1903.</td>
<td>N May not be counted with PHYS (1001 or 1002).</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>PHYS 1902 Physics IB (Advanced)</strong></td>
<td>6</td>
<td>A MATH (1001/1901,1002/1902,1003/1903). MATH 1005/1905 would also be useful.</td>
<td>p UAI of at least 95, or HSC Physics result in Band 6, or PHYS 1901, or Distinction or better in PHYS 1001,1002 or an equivalent unit.</td>
<td>N May not be counted with PHYS (1003 or 1004).</td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

**Intermediate units of study**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHYS 2001 Physics 2A</strong></td>
<td>8</td>
<td>A MATH (1001/1901 and 1002/1902 and 1003/1903). MATH 1005/1905 would also be useful.</td>
<td>p 12 credit points of Junior Physics (excluding PHYS 1500 and 1600).</td>
<td>N May not be counted with PHYS (2101 or 2103 or 2901).</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>PHYS 2002 Physics 2B</strong></td>
<td>8</td>
<td>A MATH (1001/1901 and 1002/1902 and 1003/1903). MATH 1005/1905 would also be useful.</td>
<td>p PHYS (1003 or 1004 or 1902) and PHYS (1001 or 1002 or 1901 or 2001 or 2901).</td>
<td>N May not be counted with PHYS (2102 or 2104 or 2902).</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>PHYS 2105 Physics for Medical Sciences</strong></td>
<td>4</td>
<td>P 12 credit points of Junior Physics, excluding PHYS (1500 &amp; 1600).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PHYS 2901 Physics 2A (Advanced)</strong></td>
<td>8</td>
<td>A MATH (1901/1901 and 1902/1902 and 1903/1903). MATH 1905/1905 would also be useful.</td>
<td>P PHYS 1901 (or credit or better in PHYS 1001 or 1002) and PHYS 1902 (or credit or better in PHYS 1003 or 1004).</td>
<td>N May not be counted with PHYS (2001 or 2101 or 2103).</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>PHYS 2902 Physics 2B (Advanced)</strong></td>
<td>8</td>
<td>A MATH (1001/1901 and 1002/1902 and 1003/1903). MATH 1005/1905 would also be useful.</td>
<td>P PHYS 1902 (or credit or better in PHYS 1003 or 1004) and PHYS [(1901 or 2901) or credit or better in PHYS (1001 or 1002 or 2001)].</td>
<td>N May not be counted with PHYS (2002 or 2102 or 2104).</td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

**B Senior units of study**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PHYS 3003 Quantum Mechanics and Relativity</strong></td>
<td>4</td>
<td>A 6 credit points of Intermediate Mathematics.</td>
<td>P 16 credit points of Intermediate Physics.</td>
<td>N May not be counted with PHYS (3903 or 3200).</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
### Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 3004 Condensed Matter Physics and Photonics</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P: 16 credit points of Intermediate Physics.</td>
<td>N: May not be counted with PHYS 3004.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHYS 3005 Topics in Modern Physics A</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P: 16 credit points of Intermediate Physics.</td>
<td>N: May not be counted with PHYS 3905 or 3105 or 3106 or 3107 or 3108 or 3109.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHYS 3006 Topics in Modern Physics B</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P: 16 credit points of Intermediate Physics.</td>
<td>N: May not be counted with PHYS 3906 or 3105 or 3106 or 3107 or 3108 or 3109.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHYS 3008 Experimental Physics A</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P: 16 credit points of Intermediate Physics.</td>
<td>N: May not be counted with PHYS 3908 or 3009 or 3909.</td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS 3009 Experimental Physics B</td>
<td>8</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P: 16 credit points of Intermediate Physics.</td>
<td>N: May not be counted with PHYS 3908 or 3009 or 3909.</td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS 3101 Experimental Physics C</td>
<td>4</td>
<td>p PHYS (3008 or 3009 or 3908 or 3909).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS 3102 Experimental Physics D</td>
<td>8</td>
<td>p PHYS (3008 or 3009 or 3908 or 3909).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS 3301 Scientific Computing</td>
<td>4</td>
<td>p 16 credit points of Intermediate units of study in Science Subject Areas.</td>
<td></td>
<td></td>
<td>N: May not be counted with PHYS 3931.</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHYS 3302 Scientific Visualisation</td>
<td>4</td>
<td>P 16 credit points of Intermediate units of study in Science Subject Areas.</td>
<td></td>
<td></td>
<td>N: May not be counted with PHYS 3933.</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHYS 3903 Quantum Mechanics and Relativity (Adv)</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>p PHYS (2901 and 2902) or [Credit or better in PHYS (2001 or 2101) and Credit or better in PHYS (2002 or 2102)].</td>
<td>N: May not be counted with PHYS 3003 or 3200.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHYS 3904 Condensed Matter Physics &amp; Photonics Adv</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P PHYS (2901 and 2902) or [Credit or better in PHYS (2001 or 2101) and Credit or better in PHYS (2002 or 2102)].</td>
<td>N: May not be counted with PHYS 3004.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHYS 3905 Topics in Modern Physics A (Advanced)</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>p PHYS (2901 and 2902) or [Credit or better in PHYS (2001 or 2101) and Credit or better in PHYS (2002 or 2102)].</td>
<td>N: May not be counted with PHYS 3005 or 3105 or 3106 or 3107 or 3108 or 3109.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHYS 3906 Topics in Modern Physics B (Advanced)</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P PHYS (2901 and 2902) or [Credit or better in PHYS (2001 or 2101) and Credit or better in PHYS (2002 or 2102)].</td>
<td>N: May not be counted with PHYS 3006 or 3105 or 3106 or 3107 or 3108 or 3109.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHYS 3908 Experimental Physics A (Advanced)</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P PHYS (2901 and 2902) or [Credit or better in PHYS (2001 or 2101) and Credit or better in PHYS (2002 or 2102)].</td>
<td>N: May not be counted with PHYS 3008 or 3009 or 3909.</td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS 3909 Experimental Physics B (Advanced)</td>
<td>8</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P PHYS (2901 and 2902) or [Credit or better in PHYS (2001 or 2101) and Credit or better in PHYS (2002 or 2102)].</td>
<td>N: May not be counted with PHYS 3008 or 3009 or 3909.</td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS 3901 Experimental Physics C (Advanced)</td>
<td>4</td>
<td>p PHYS (3908 or 3909).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS 3902 Experimental Physics D (Advanced)</td>
<td>8</td>
<td>p PHYS (3908 or 3909).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS 3903 Special Project A (Advanced)</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P PHYS (2901 and 2902) or [Credit or better in PHYS (2001 or 2101) and Credit or better in PHYS (2002 or 2102)].</td>
<td>N: May not be counted with PHYS 3103 or 3104 or 3804.</td>
<td>NB: Enrolling students should contact the Senior Physics coordinator to arrange a suitable project and supervisor.</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHYS 3904 Special Project B (Advanced)</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P PHYS (2901 and 2902) or [Credit or better in PHYS (2001 or 2101) and Credit or better in PHYS (2002 or 2102)].</td>
<td>N: May not be counted with PHYS 3103 or 3104 or 3803.</td>
<td>NB: Enrolling students should contact the Senior Physics coordinator to arrange a suitable project and supervisor.</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHYS 3931 Scientific Computing (Advanced)</td>
<td>4</td>
<td>p 16 credit points at a level of Credit or better of Intermediate units of study in Science Subject Areas.</td>
<td></td>
<td></td>
<td>N: May not be counted with PHYS 3301.</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHYS 3933 Scientific Visualisation (Advanced)</td>
<td>4</td>
<td>P 16 credit points at a level of Credit or better of Intermediate units of study in Science Subject Areas.</td>
<td></td>
<td></td>
<td>N: May not be counted with PHYS 3303.</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHYS 3200 Quantum Physics</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P: 16 credit points of Intermediate Physics.</td>
<td>N: May not be counted with PHYS 3003 or 3903.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHYS 3105 Astrophysics</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P: 16 credit points of Intermediate Physics.</td>
<td>N: May not be counted with PHYS 3005 or 3006 or 3905 or 3906.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHYS 3106 Plasma Physics</td>
<td>4</td>
<td>A: 8 credit points of Intermediate Mathematics.</td>
<td>P: 16 credit points of Intermediate Physics.</td>
<td>N: May not be counted with PHYS 3005 or 3006 or 3905 or 3906.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Unit of study</td>
<td>CP</td>
<td>A: Assumed knowledge</td>
<td>P: Prerequisite</td>
<td>Q: Qualifying</td>
<td>C: Corequisite</td>
<td>N: Prohibition</td>
<td>Session</td>
</tr>
<tr>
<td>---------------</td>
<td>----</td>
<td>----------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>----------------</td>
<td>----------------</td>
<td>---------</td>
</tr>
<tr>
<td>PHYS 3107 Modern Optics</td>
<td>4</td>
<td>8 credit points of Intermediate Mathematics.</td>
<td>16 credit points of Intermediate Physics.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHYS 3108 Nuclear and Particle Physics</td>
<td>4</td>
<td>8 credit points of Intermediate Mathematics.</td>
<td>16 credit points of Intermediate Physics.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

**Physiology**

For a major in Physiology, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

### Intermediate units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSI 2001 Basic Physiology A</td>
<td>4</td>
<td>6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, 1 Mathematics, Physics, Psychology units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHSI 2101 Integrated Physiology A</td>
<td>8</td>
<td>6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, 1 Mathematics, Physics, Psychology units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHSI 2901 Integrated Physiology A (Advanced)</td>
<td>8</td>
<td>6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, 1 Mathematics, Physics, Psychology units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHSI 2002 Basic Physiology B</td>
<td>4</td>
<td>6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, 1 Mathematics, Physics, Psychology units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHSI 2102 Integrated Physiology B</td>
<td>8</td>
<td>6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, 1 Mathematics, Physics, Psychology units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHSI 2902 Integrated Physiology B (Advanced)</td>
<td>8</td>
<td>6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, 1 Mathematics, Physics, Psychology units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

### Senior units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSI 3001 Neuroscience</td>
<td>12</td>
<td>For BMedSc: at least 32 credit points of Intermediate BMED units including BMED 1 (2501 and 2503 and 2505). For others: PHSI (2101 or 2001 or 2901) or ANAT 2003; and MBLG (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901); plus at least 8 credit points of Intermediate Science units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHSI 3901 Neuroscience (Advanced)</td>
<td>12</td>
<td>For BMedSc: at least 32 credit points of Intermediate BMED units including BMED 1 (2501 and 2503 and 2505). For others: PHSI (2101 or 2001 or 2901) or ANAT 2003; and MBLG (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901); plus at least 8 credit points of Intermediate Science units of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHSI 3002 Neuroscience Cellular and Integrative</td>
<td>12</td>
<td>For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: 16 credit points of Intermediate Science units of study from Anatomy and Histology, Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Microbiology, Molecular Biology and Genetics, Pharmacology, Physics, Physiology, Psychology or Statistics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHSI 3902 Neuroscience Cellular &amp; Integrative Adv</td>
<td>12</td>
<td>For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: Credit or better in PHSI 3001; and 16 credit points of Intermediate Science units of study from Anatomy and Histology, Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Microbiology, Molecular Biology and Genetics, Pharmacology, Physics, Physiology, Psychology or Statistics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
### Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHSI 3003</td>
<td>12</td>
<td>A PHSI (2001 or 2101 or 2901) and BCHM (2002 or 2102 or 2902). For others: PHSI (2001 or 2101 or 2901) and BCHM (2001 or 2101 or 2901) plus at least 8 credit points of Intermediate Science units of study.</td>
<td>P For BMEDSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: PHSI (2002 or 2102 or 2902) and MBLG (2001 or 2101 or 2901) plus at least 8 credit points of Intermediate Science units of study.</td>
<td>N May not be counted with PHSI 3903. N May not be counted with PHSI 3903.</td>
<td>NB: A minimum of 8 credit points of Intermediate Physiology and BCHM (2002 or 2102 or 2902) are strongly recommended. Permission required for enrolment. Available to selected students who have achieved a mark of at least 65 in the prerequisite units of study.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PHSI 3903</td>
<td>12</td>
<td>A PHSI (2001 or 2101 or 2901) and BCHM (2002 or 2102 or 2902). For others: PHSI (2001 or 2101 or 2901) and PHSI (2002 or 2102 or 2902) and MBLG (2001 or 2101 or 2901) plus at least 8 credit points of Intermediate Science units of study.</td>
<td>P For BMEDSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: PHSI (2002 or 2102 or 2902) and MBLG (2001 or 2101 or 2901) plus at least 8 credit points of Intermediate Science units of study.</td>
<td>N May not be counted with PHSI 3903. N May not be counted with PHSI 3903.</td>
<td>NB: Department permission required for enrolment. A minimum of 8 credit points of Intermediate Physiology and BCHM (2002 or 2102 or 2902) are strongly recommended. Permission required for enrolment. Available to selected students who have achieved a mark of at least 65 in the prerequisite units of study.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PHSI 3004</td>
<td>12</td>
<td>P For BMEDSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2502 and 2504). For others: PHSI (2001 or 2101 or 2901) and PHSI (2002 or 2102 or 2902) and MBLG (2001 or 2101 or 2901) plus at least 8 credit points of Intermediate Science units of study.</td>
<td>P For BMEDSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2502 and 2504). For others: PHSI (2001 or 2101 or 2901) and PHSI (2002 or 2102 or 2902) and MBLG (2001 or 2101 or 2901) plus at least 8 credit points of Intermediate Science units of study.</td>
<td>N May not be counted with PHSI 3904. N May not be counted with PHSI 3904.</td>
<td>NB: Department permission required for enrolment. Permission is required for enrolment. Available to selected students who have achieved an average of at least 65 in the prerequisite units of study.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>PHSI 3904</td>
<td>12</td>
<td>P For BMEDSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2502 and 2504). For others: PHSI (2001 or 2101 or 2901) and PHSI (2002 or 2102 or 2902) and MBLG (2001 or 2101 or 2901) plus at least 8 credit points of Intermediate Science units of study.</td>
<td>P For BMEDSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2502 and 2504). For others: PHSI (2001 or 2101 or 2901) and PHSI (2002 or 2102 or 2902) and MBLG (2001 or 2101 or 2901) plus at least 8 credit points of Intermediate Science units of study.</td>
<td>N May not be counted with PHSI 3904. N May not be counted with PHSI 3904.</td>
<td>NB: Department permission required for enrolment. Permission is required for enrolment. Available to selected students who have achieved an average of at least 65 in the prerequisite units of study.</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

### Psychology

For a major in Psychology, the minimum requirement is 16 credit points of Intermediate and 32 credit points from Senior units of study listed in this subject area.

- **Junior units of study**
  - PSYC 1001 Psychology 1001
  - PSYC 1002 Psychology 1002

- **Intermediate units of study**
  - PSYC 2111 Learning, Neuroscience and Perception
  - PSYC 2112 Psychological Statistics
  - PSYC 2113 Cognitive Processes & Social Psychology
  - PSYC 2114 Personality and Individual Differences

- **Senior units of study**
  - PSYC 3201 Statistics and Psychometrics
  - PSYC 3202 History and Philosophy of Psychology
  - PSYC 3203 Abnormal Psychology
  - PSYC 3204 Behavioural Neuroscience
  - PSYC 3205 Cognition, Language and Thought
  - PSYC 3206 Developmental Psychology
  - PSYC 3208 Intelligence
  - PSYC 3209 Learning and Motivation
  - PSYC 3210 Perceptual Systems
  - PSYC 3211 Psychological Assessment & Organisational

---

**NB:** Department permission required for enrolment. Available to selected students who have achieved an average of at least 65 in the prerequisite units of study.
Table I: Bachelor of Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Psychology</td>
<td>4</td>
<td>P</td>
<td>8 credit points of Intermediate Psychology including PSYC 2113.</td>
<td>NB: NB: 32 credit points of Senior (third year) Psychology is required for a Psychology Major.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication and Counselling</td>
<td>4</td>
<td>P</td>
<td>PSYC (2113 and 2114).</td>
<td>NB: NB: 32 credit points of Senior (third year) Psychology is required for a Psychology Major.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Soil Science**

For a major in Soil Science, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

- **Intermediate units of study**
  - Soil Properties and Processes
    - SOIL 2001
  - Soil Resources and Conservation
    - SOIL 2002

- **Senior units of study**
  - Environmental Soil Science A
    - SOIL 3001
  - Environmental Soil Science B
    - SOIL 3002

**Statistics**

For a major in Statistics, the minimum requirement is 24 credit points from Senior units of study listed in this subject area.

- **Intermediate units of study**
  - Data Analysis
    - STAT 2002
  - Estimation Theory
    - STAT 2003
  - Hypothesis Testing
    - STAT 2004
  - Introduction to Probability (Advanced)
    - STAT 2901
  - Estimation Theory (Advanced)
    - STAT 2903

- **Senior units of study**
  - Distribution Theory and Inference
    - STAT 3001
  - Applied Linear Models
    - STAT 3002
  - Time Series Analysis (Advanced)
    - STAT 3003
  - Time Series Analysis
    - STAT 3903
  - Design of Experiments (Advanced)
    - STAT 3904
  - Design of Experiments
    - STAT 3905
  - Sampling Theory and Categorical Data
    - STAT 3906
  - Statistical Theory (Advanced)
    - STAT 3901
  - Linear Models (Advanced)
    - STAT 3902
  - Markov Processes (Advanced)
    - STAT 3905
  - Multivariate Analysis (Advanced)
    - STAT 3907

**Study in other faculties**

A total of 48 credit points of units of study from non Science discipline areas may be counted towards the BSc degree. Students should consult the Handbooks from other faculties to determine any prerequisites, corequisites or other requirements relating to enrolment in units of study offered by departments in these faculties. Students may not enrol in General Statistical Methods 1 (STAT 1021) or General Statistical Methods 2 (STAT 1021) or Econometrics or any other unit of study deemed to be mutually exclusive with units of study listed in this Table. Students enrolled in the combined BSc/BCom program may enrol in Econometrics IA (ECMT 1010).
### Table IA: Bachelor of Science (Bioinformatics)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
</table>

#### A. Junior units of study
Candidates are required to enrol in and complete:
- (i) 12 credit points from Junior units of study in the Science Subject Area of Mathematics; and
- (ii) 12 credit points from Junior units of study in each of the Science Subject Areas of Biology, Chemistry and Computer Science.

#### B. Intermediate units of study
Candidates are required to enrol in and complete:
- (i) SOFT (2004 or 2904) and at least 4 credit points of Intermediate units of study in the Science Subject Area of Computer Science;
- (ii) MBLG (2001 or 2901);
- (iii) at least 16 credit points from MBLG (2002 or 2102 or 2902) or from other Intermediate units of study from the Science Subject Areas of Biochemistry, Biology, Microbiology or Pharmacology; and
- (iv) a further 16 credit points of additional units of study at the Intermediate level chosen from the Science Subject Areas of Computer Science, Computational Science, Statistics or from the following Mathematics units of study: MATH 2002/2902, MATH 2003/2903, MATH 2006/2906, MATH 2010.

#### C. Senior units of study
Candidates are required to enrol in and complete:
- (i) BINF 3001 Bioinformatics Project and at least 4 credit points of Senior units of study in the Science Subject Area of Computer Science;
- (ii) 24 credit points of Senior units of study in the Science Subject Areas of Biology, Biochemistry, Microbiology and/or Pharmacology; and
- (iii) a further 12 credit points of additional units of study at the Senior level chosen from the Science Subject Areas of Computer Science, Computational Science, Statistics or from the following Mathematics and Physics units of study: MATH 3007, MATH 3010, MATH 3016/3916, MATH 3020/3920, PHYS 3301/3931, PHYS 3303/3933.

#### Unit of study CP A: Assumed knowledge P: Prerequisite Q: Qualifying C: Corequisite N: Prohibition Session
- BINF Bioinformatics Project 8 P SOFT (2004 or 2904) and 16 credit points from intermediate Biology, Biochemistry, Microbiology, Molecular Biology and Genetics and/or Pharmacology. N 2
  - 3001

### Table IB: Bachelor of Science (Environmental)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
</table>

#### A. Junior units of study
Candidates are required to enrol in and complete:
- (i) ENVI 1001 and ENVI 1002;
- (ii) 12 credit points of Junior units of study from the Science Subject Area of Biology;
- (iii) 12 credit points of Junior units of study from the Science Subject Area of Chemistry; and
- (iv) 12 credit points of Junior units of study from the Science Subject Area of Mathematics.

#### B. Intermediate units of study
Candidates are required to enrol in and complete:
- (i) ENVI 2001 and 2002.
- (ii) 32 credit points of Junior or Intermediate units of study from the Science Subject Areas of Agricultural Chemistry, Biology, Chemistry, Geography, Geology and Geophysics, Marine Science, Microbiology, Physics, and Soil Science. Units of study in History and Philosophy of Science may be taken on approval of the Chair of the Program Committee for Environmental Science.

#### C. Senior units of study
Candidates are required to enrol in and complete:
- (i) ENVI 3001 and ENVI 3002; and
- (ii) 24 credit points of Senior or Intermediate units of study from the Science Subject Areas of Agricultural Chemistry, Biology, Chemistry, Geography, Geology and Geophysics, Marine Science, Microbiology, Physics, and Soil Science. Units of study in History and Philosophy of Science may be taken on approval of the Chair of the Program Committee for Environmental Science.
### Table IB: Bachelor of Science (Environmental) (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGCH Rural Environmental Chemistry 3012</td>
<td>4</td>
<td>P AGCH 2002 or ENV12001 and 2002.</td>
<td>NB: This unit is offered to students enrolled in BSc(Environmental), BLSc and subject to numbers, may be available to BSc Agr. A maximum quota of 30 may exist. Contact Professor Kennedy.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>CHEM Chemistry 3A (Environmental) 3601</td>
<td>4</td>
<td>P CHEM (1102 or 1902) and ENV12002.</td>
<td>N May not be counted with CHEM (3101, 3102, 3201, 3202, 3311, 3901, 3902 or 3903). NB: This unit of study is available to students in the Bachelor of Science (Environmental) only.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>CHEM Chemistry 3B (Environmental) 3602</td>
<td>4</td>
<td>p CHEM (1102 or 1902) and ENV12002.</td>
<td>N May not be counted with CHEM (3101, 3102, 3201, 3202, 3311, 3901, 3902 or 3903). NB: This unit of study is available to students in the Bachelor of Science (Environmental) only.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHYS Energy and the Environment 3600</td>
<td>4</td>
<td>p ENV12002 or 12 credit points of Junior Physics.</td>
<td>NB: This unit of study is available to students in the Bachelor of Science (Environmental) only.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

### Table IC: Bachelor of Science (Marine Science)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Junior units of study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candidates are required to enrol in and complete:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(i) 12 credit points of Junior units of study from the Science Subject Area of Biology;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) 12 credit points of Junior units of study from the Science Subject Areas of Geography and/or Geology;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iii) 12 credit points of Junior units of study from the Science Subject Area of Mathematics;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(iv) 6 credit points of Junior units of study from the Science Subject Area of Physics (excluding PHYS 1500); and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(v) CHEM 1001 or 101.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some study of Biology, Chemistry, Mathematics or Physics at the Advanced level is recommended but not compulsory.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B: Intermediate units of study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candidates are required to enrol in and complete:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(ii) 16 credit points of Intermediate units of study from the Science Subject Area of Biology (students in this course may take any Intermediate Biology unit of study which requires 12 credit points of Junior Chemistry as a prerequisite, provided they have passed at least 6 credit points of Junior Chemistry and at least 6 credit points of Junior Physics); and</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some study of Biology, Chemistry, Mathematics or Physics at the Advanced level is recommended but not compulsory.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### C. Senior units of study

#### Bachelor of Science (Marine Science)

Candidates majoring in Marine Science are required to enrol in and complete:

(i) at least 12 credit points of Intermediate or Senior units of study from the Science Subject areas of Biology, Environmental Science, Geography, Geology, Geophysics, Marine Science or Tropical Marine Network Program (NTMP) units.

NB: No more than 30 credit points of NTMP units may count toward the degree.

#### Bachelor of Science (Marine Science) Tropical Marine Science

Approved candidates majoring in Tropical Marine Science are required to enrol in and complete:

(i) at least 36 credit points from Senior units of study from MARS, BIOL, and/or NTMP units from this table of which at least 18 credit points must be from NTMP units; and

(ii) at least 12 credit points of Intermediate or Senior units of study from the Science Subject areas of Biology, Environmental Science, Geography, Geology, Geophysics, Marine Science or NTMP units.

NB: No more than 30 credit points of NTMP units may count toward the degree.
<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BIOL 3013</strong> Marine Biology</td>
<td>6</td>
<td>A MARS 2002.</td>
<td>p 16 credit points of Intermediate Biology, including BIOL (2001 or 2002 or 2003 or 2004 or 2091 or 2902 or 2903 or 2904).</td>
<td>N May not be counted with BIOL 3913.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>BIOL 3913</strong> Marine Biology (Advanced)</td>
<td>6</td>
<td>A MARS 2002.</td>
<td>p Distinction average in 16 credit points of Intermediate Biology including BIOL (2001 or 2002 or 2003 or 2004 or 2901 or 2902 or 2903 or 2904). These requirements may be varied and students with lower averages should consult the unit Executive Officer.</td>
<td>N May not be counted with BIOL 3013.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>MARS 3003</strong> Coastal Depositional Environments</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study.</td>
<td>N May not be counted with GEOG 3001.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>MARS 3004</strong> Coastal Morphodynamics</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study.</td>
<td>N May not be counted with GEOG 3001.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>MARS 3005</strong> Marine Geophysical Data Analysis</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td>N May not be counted with GEOG 3001.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>MARS 3006</strong> Dynamics of Ocean Basins and Margins</td>
<td>6</td>
<td>A Prior completion of MARS 3005 is highly recommended.</td>
<td>p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td>N May not be counted with GEOG 3001.</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>MARS 3008</strong> Energy: Science, Engineering &amp; Economics</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td>N May not be counted with GEOL 3102.</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>MARS 3102</strong> Marine Ecology</td>
<td>12</td>
<td>p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study.</td>
<td>N May not be counted with BIOL 3023,3923,3024 or 3924.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>MARS 3103</strong> GIS Simulation Modelling</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study.</td>
<td>N May not be counted with GEOG 3001.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>MARS 3104</strong> Coastal Zone Management</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study.</td>
<td>N May not be counted with GEOG 3102.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>MARS 3105</strong> Coastal Oceanography &amp; Sediment Dynamics</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409.</td>
<td>N May not be counted with GEOL 3104.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>MARS 3106</strong> Physical Marine Habitat</td>
<td>6</td>
<td>p MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study.</td>
<td>N May not be counted with GEOG 3104.</td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>NTPM 3001</strong> Coral Reef Ecosystems</td>
<td>6</td>
<td>A General concepts in Biology.</td>
<td>p MARS (2003 and 2001) plus 16 credit points from Intermediate Science units of study.</td>
<td>NR: Department permission required for enrolment.</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>NTPM 3002</strong> Marine Biotechnology</td>
<td>6</td>
<td>A General concepts in Biology.</td>
<td>p MARS (2003 and 2001) plus 16 credit points from Intermediate Science units of study.</td>
<td>NR: Department permission required for enrolment.</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>NTPM 3003</strong> Fisheries Biology and Management</td>
<td>6</td>
<td>A General concepts in Biology.</td>
<td>p MARS (2003 and 2001) plus 16 credit points from Intermediate Science units of study.</td>
<td>NR: Department permission required for enrolment.</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>NTPM 3004</strong> Aquaculture</td>
<td>6</td>
<td>A General concepts in Biology.</td>
<td>p MARS (2003 and 2001) plus 16 credit points from Intermediate Science units of study.</td>
<td>NR: Department permission required for enrolment.</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>NTPM 3005</strong> Coastal Management</td>
<td>6</td>
<td>A General concepts in Biology.</td>
<td>p MARS (2003 and 2001) plus 16 credit points from Intermediate Science units of study.</td>
<td>NR: Department permission required for enrolment.</td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>NTPM 3006</strong> Coastal Oceanography</td>
<td>6</td>
<td>A General concepts in Biology.</td>
<td>p MARS (2003 and 2001) plus 16 credit points from Intermediate Science units of study.</td>
<td>NR: Department permission required for enrolment.</td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
### A. Junior units of study

Candidates are required to enrol in and complete:

(i) (a) BIOL (1001 or 1901) and BIOL (1904 or 1905); and

(ii) 12 credit points of Junior units of study from the Science subject area of Mathematics (it is recommended that students take units requiring HSC Maths Extension 1 or 2 and include some statistics in their choice of Mathematics units of study); and

(iii) 12 credit points of other Junior units of study from BSc units of study (Table I). It is recommended that the extra 12 credit points be selected from Junior units of study in Physics or in Computer Science.

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>Assumed knowledge</th>
<th>Prerequisite</th>
<th>Qualifying</th>
<th>Corequisite</th>
<th>Prohibition</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL Living Systems Molecular</td>
<td>6</td>
<td>A HSC 2 unit Biology or BIOL 1901 or equivalent. NB: This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL Human Biology Molecular</td>
<td>6</td>
<td>A 2 unit HSC Biology or BIOL 1901 or equivalent. NB: This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM Chemistry 1A Molecular</td>
<td>6</td>
<td>P UAI of at least 93 and HSC Chemistry result in band 5 or 6, or Distinction or better in a University level Chemistry unit, or by invitation. NB: Department permission required for enrolment. This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM Chemistry 1A Mol (Special Studies Prog)</td>
<td>6</td>
<td>P UAI of at least 98.7 and HSC Chemistry result in band 6, or Distinction or better in a University level Chemistry unit, or by invitation. Students in the Faculty of Science Talented Students Program are automatically eligible. C Recommended concurrent unit of study: 6 credit points of Junior Mathematics. N May not be counted with CHEM (1001 or 1101 or 1901 or 1903 or 1906 or 1909). NB: Department permission required for enrolment. Entry is by invitation. This unit of study is deemed to be an Advanced unit of study. This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM Chemistry 1 Life Sciences A</td>
<td>6</td>
<td>P UAI of at least 93 and HSC Chemistry result in band 5 or 6, or Distinction or better in a University level Chemistry unit, or by invitation. C Recommended concurrent units of study: 6 credit points of Junior Mathematics. N May not be counted with CHEM (1002 or 1102 or 1902 or 1904 or 1908). NB: This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM Chemistry 1 Life Sciences B</td>
<td>6</td>
<td>P CHEM (1907 or 1908) or equivalent. C Recommended concurrent units of study: 6 credit points of Junior Mathematics. N May not be counted with CHEM (1001 or 1101 or 1901 or 1903 or 1905 or 1909). NB: This unit of study is available to students enrolled in the Bachelor of Medical Science, the Bachelor of Science (Molecular Biology and Genetics), the Bachelor of Science (Nutrition) and the Bachelor of Science (Molecular Biotechnology) only.</td>
<td></td>
<td></td>
<td>Summer</td>
<td></td>
</tr>
</tbody>
</table>

### B. Intermediate units of study

In order to proceed to the Intermediate year, candidates for the BSc(Molecular Biology and Genetics) must achieve a Credit average in Junior units of study. Candidates who fail to maintain the required credit average will be transferred to candidature for the Bachelor of Science degree in their next year of enrolment with full credit for the units of study completed as Bachelor of Science (Molecular Biology & Genetics) candidates. Candidates who fail to achieve the required average across all units of study attempted in the year in which they have otherwise completed the requirements for the degree will be awarded the Bachelor of Science.

In the Intermediate year candidates are required to enrol in and complete:

(i) MBLG (2001 or 2901) and (2002 or 2902);

(ii) CHEM 2903;

(iii) MICR 2909; and

(iv) 16 Credit points of Intermediate science units of study (BCHM 2002 or 2902 and BIOL 2006 or 2906 are preferred options).

Note: At least 16 credit points must be completed from Intermediate Advanced units of study.

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>Assumed knowledge</th>
<th>Prerequisite</th>
<th>Qualifying</th>
<th>Corequisite</th>
<th>Prohibition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM Chemistry Life Sciences</td>
<td>8</td>
<td>P 12 credit points of Junior Mathematics. Candidates for the BSc (Molecular Biology &amp; Genetics) must achieve a credit average in Junior units of study. Candidates for the BSc (Molecular Biotechnology) and the Bachelor of Medical Science must achieve a credit average in Junior units of study and a distinction average in Junior Chemistry units of study. Q CHEM (1902 or 1904 or 1909). N May not be counted with CHEM (2001 or 2101 or 2301 or 2311 or 2312 or 2502 or 2901). NB: This unit of study is available to students enrolled in the Bachelor of Medical Science, the Bachelor of Science (Molecular Biology and Genetics) and the Bachelor of Science (Molecular Biotechnology) only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICR Fundamental and Applied</td>
<td>8</td>
<td>P 12 credit points of Junior Chemistry and BIOL 1901 and (1904 or 1905). N May not be counted with MICR (2001,2901,2902,2903,2003 or 2004). NB: This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Session</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer</td>
<td>2</td>
</tr>
</tbody>
</table>
Table ID: Bachelor of Science (Molecular Biology and Genetics) (continued)

C. Senior units of study

In order to proceed to the Senior year, candidates for the BSc(Molecular Biology and Genetics) must achieve a Credit average in Intermediate units of study. Candidates who fail to maintain the required credit average will be transferred to candidature for the Bachelor of Science degree in their next year of enrolment with full credit for the units of study completed as Bachelor of Science (Molecular Biology & Genetics) candidates. Candidates who fail to achieve the required average across all units of study attempted in the year in which they have otherwise completed the requirements for the degree will be awarded the Bachelor of Science.

In the Senior year candidates are required to enrol in and complete:

(i) Semester 1 core units of study:
   (a) BCHM3001 or 3901; and
   (b) BIOL (3018 or 3918) and (3027 or 3927); and
(ii) Semester 2 elective units of study:

Select 24 credit points from BCHM (3004 or 3904), BIOL (3025 or 3925), CHEM 3903, MICR (3004 or 3904).

NOTE: At least 24 credit points must be completed from Senior Advanced units of study and in July semester enrolment must include a unit of study which incorporates the seminar and discussion program.

Other suitable options incorporating molecular biology and genetics would be considered by the Program Committee.

Table IE: Bachelor of Science (Molecular Biotechnology)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
</table>

A. Junior units of study

Candidates are required to enrol in and complete:

(i) at least 12 credit points of Junior units of study from the Science Subject Area of Biology;
(ii) CHEM 1908 and CHEM 1909 or at least 12 credit points of Junior units of study from the Science Subject Area of Chemistry;
(iii) at least 12 credit points of Junior units of study from the Science Subject Area of Mathematics; and
(iv) at least 12 credit points of elective units of study.

B. Intermediate units of study

Candidates are required to enrol in and complete 48 credit points of Intermediate units of study including:

(i) MOBT 2001 and MOBT 2002;
(ii) MBLG (2001 or 2901) and MBLG (2002 or 2902);
(iii) CHEM 2311 and 2312) or CHEM 2903; and
(iv) at least 8 credit points chosen from Intermediate units of study in the Subject Areas of: Animal Science, Biochemistry, Biological Sciences, Chemical Engineering, Chemistry, Computer Science, Crop Sciences, Information Systems, Mathematics and Statistics, Microbiology, Nutrition, and Pharmacology.
UNDERGRADUATE TABLES AND UNITS OF STUDY

Table IE: Bachelor of Science (Molecular Biotechnology) (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 2311 Chemistry 2 (Biological Sciences) Theory</td>
<td>4</td>
<td>P</td>
<td>12 credit points of Junior Chemistry.</td>
<td>CHEM 2311.</td>
<td>NB: This unit of study is available to students in the Bachelor of Medical Science and the Bachelor of Science (Molecular Biotechnology) only.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CHEM 2312 Chemistry 2 (Biological Sciences) Prac</td>
<td>4</td>
<td>P</td>
<td>12 credit points of Junior Chemistry.</td>
<td>CHEM 2311.</td>
<td>NB: This unit of study is available to students in the Bachelor of Medical Science and the Bachelor of Science (Molecular Biotechnology) only.</td>
<td>1, 2</td>
<td></td>
</tr>
<tr>
<td>CHEM 2903 Chemistry Life Sciences (Advanced)</td>
<td>8</td>
<td>P</td>
<td>12 credit points of Junior Mathematics. Candidates for the BSc (Molecular Biology &amp; Genetics) must achieve a credit average in Junior units of study. Candidates for the BSc (Molecular Biotechnology) and the Bachelor of Medical Science must achieve a credit average in Junior units of study and a distinction average in Junior Chemistry units of study.</td>
<td>CHEM (1902 or 1904 or 1909).</td>
<td>NB: This unit of study is available to students in the Bachelor of Medical Science, the Bachelor of Science (Molecular Biology and Genetics) and the Bachelor of Science (Molecular Biotechnology) only.</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

C. Senior units of study

Candidates are required to enrol in and complete 48 credit points of Senior units of study including:

(i) MOBT 3001 and MOBT 3002;
(ii) at least 6 credit points from one of: AGCH 3024, BCHM 3098, BIOL 3027, CHEM 3311; and
(iii) 24 credit points from Senior units of study, which must include at least 12 credit points from the Subject areas of: Agricultural Chemistry, Animal Science, Biochemistry, Biological Sciences, Chemical Engineering, Chemistry, Computer Science, Crop Sciences, Information Systems, Mathematics and Statistics, Microbiology, Nutrition, and Pharmacology.

Table IF: Bachelor of Science (Nutrition)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
</table>
| A. Junior units of study

Candidates are required to enrol in and complete:

(i) BIOL (1001 or 1001) and BIOL (1002 or 1002 or 1003 or 1903);
(ii) Life Sciences Chemistry [CHEM (1908 and 1909) or [CHEM (1101 or 1901 or 1903) and CHEM (1102 or 1902 or 1904)];
(iii) 12 credit points from Junior units of study from the Science Subject Area of: Mathematics; and
(iv) 12 credit points of other Junior units of study from the Science Subject Areas of: Computer Science, Physics or Psychology.

B. Intermediate units of study

In order to proceed to the Intermediate year, candidates for the BSc(Nutrition) must achieve a WAM of 60 in Junior year. Candidates who fail to maintain the required credit average will be transferred to candidature for the Bachelor of Science degree in their next year of enrolment with full credit for the units of study completed as Bachelor of Science (Nutrition) candidates. Candidates who fail to achieve the required average across all units of study attempted in the year in which they have otherwise completed the requirements for the degree will be awarded the Bachelor of Science.

In the Intermediate year candidates are required to enrol in and complete:

(i) NUTR 2901 and 2902;
(ii) MBLG (2001 or 2001) and BCHM (2002 or 2902);
(iii) PHSI2001 and 2002; and
(iv) MICR 2111 and 2012 or at least 8 credit points of Intermediate units of study (4 credit points each semester) from the Science Subject Areas of: Agriculture, Chemistry, or Pharmacology.

NUTR 2901 Introductory Food Science (Advanced) | 8 | P | BIOL (1001 or 1901) and (1002 or 1003 or 1902 or 1903) and CHEM (1101 or 1901 or 1903 or 1909) and CHEM (1102 or 1902 or 1904 or 1908). | NUTR 2901. | 1 |

NUTR 2902 Introductory Nutritional Science (Adv) | 8 | P | NUTR 2901. | 2 |
### Table IF: Bachelor of Science (Nutrition) (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICR 2011 (Nutrition) Introductory Microbiology</td>
<td>4 P</td>
<td>BIOL (1001 or 1901) and BIOL (1002 or 1003 or 1902 or 1903) and 6 credit points of Junior Chemistry.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>MICR 2012 (Nutrition) Applied Microbiology</td>
<td>4 P</td>
<td>MICR 2011.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**NB:** This unit of study is available to students enrolled in the Bachelor of Science (Nutrition) only.

**C. Senior units of study**

In order to proceed to the Senior year, candidates for the BSc(Nutrition) must achieve a WAM of 65 in Intermediate year. Candidates who fail to maintain the required credit average will be transferred to candidature for the Bachelor of Science degree in their next year of enrolment with full credit for the units of study completed as Bachelor of Science (Nutrition) candidates. Candidates who fail to achieve the required average across all units of study attempted in the year in which they have otherwise completed the requirements for the degree will be awarded the Bachelor of Science.

In the Senior year candidates are required to enrol in and complete:

1. NUTR 3901 and 3902;
2. BCHM 3002 or 3002;
3. AGCH (3025 and 3026) or 12 credit points from the following Senior units of study: BCHM 3001, BCHM 3901, MICR 3001, PHSI3001 or PHSI 3001.

**NB:** This unit of study is available to students enrolled in the Bachelor of Science (Nutrition) only.

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>NUTR 3901 Nutrition in Individuals (Advanced)</td>
<td>12 P</td>
<td>NUTR 2902.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>NUTR 3901 Nutrition in Populations (Advanced)</td>
<td>12 P</td>
<td>NUTR 2902.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**D. Honours units of study**

Candidates for the Honours degree must achieve minimum grades of Credit in Senior units of study

1. Honours year by coursework: Candidates are required to enrol in and complete: NUTR 4001; and NUTR 4002
2. Honours year by research: Candidates are required to enrol in and complete: NUTR 4101, 4102, 4103 and 4104.

### Table II: Law units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAWS 1006 Legal Institutions</td>
<td>6</td>
<td>NB: Unit is part of the Combined Law program.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>LAWS 1010 Torts</td>
<td>6 P</td>
<td>Legal Institutions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>LAWS 1008 Legal Research</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Summer</td>
<td></td>
</tr>
<tr>
<td>LAWS 1002 Contracts</td>
<td>8 P</td>
<td>Legal Institutions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2, Summer</td>
</tr>
<tr>
<td>LAWS 1003 Criminal Law</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
<td></td>
</tr>
<tr>
<td>LAWS 3000 Federal Constitutional Law</td>
<td>10 P</td>
<td>Legal Institutions.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>LAWS 3002 Law, Lawyers and Justice</td>
<td>10 NB: Unit is part of the Combined Law program for re enrolling students in 2003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

### Table III: Bachelor of Information Technology

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOFT 1001 Software Development 1</td>
<td>6 A</td>
<td>HSC Mathematics Extension 1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2, Summer</td>
</tr>
<tr>
<td>SOFT 1901 Software Development 1 (Adv)</td>
<td>6 A</td>
<td>HSC Mathematics Extension 1.</td>
<td>Q</td>
<td>UAI at least that for acceptance into BSc(Adv) degree program.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 1002 Software Development 2</td>
<td>6 Q</td>
<td>SOFT (1001 or 1901) or COMP (1001 or 1901).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2, Summer</td>
</tr>
<tr>
<td>SOFT 1902 Software Development 2 (Adv)</td>
<td>6 Q</td>
<td>SOFT (1001 or 1901) or COMP (1001 or 1901) and Distinction in one of these.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>SOFT 2001 Concurrent Programming</td>
<td>4 Q</td>
<td>SOFT (1002 or 1902) or COMP (1002 or 1902).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>SOFT 2901 (Adv)</td>
<td>4 Q</td>
<td>SOFT (1002 or 1902) or COMP (1002 or 1902) and Distinction in one of these, or in any SOFT unit at 2000 level or above.</td>
<td></td>
<td></td>
<td>N</td>
<td>May not be counted with SOFT 2901.</td>
<td>2</td>
</tr>
</tbody>
</table>

**NB:** Department permission required for enrolment in Session 1.
### Table III: Bachelor of Information Technology (continued)

#### Table III(i) Foundation Electives

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Software Development Methods 1</strong></td>
<td>4</td>
<td>Q SOFT (1002 or 1902) or COMP (1002 or 1902). N May not be counted with SOFT 2904 or COMP (2004 or 2904).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td><strong>Software Development Methods 1 (Adv)</strong></td>
<td>4</td>
<td>Q SOFT (1002 or 1902) or COMP (1002 or 1902) and Distinction in one of these, or any SOFT unit at 2000 level or above. N May not be counted with SOFT 2004 or COMP (2004 or 2904).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

#### Table III(ii) Intermediates units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Languages and Logic</strong></td>
<td>4</td>
<td>Q SOFT (1002 or 1902) or COMP (1002 or 1902) and MATH (1004 or 1904 or 2009 or 2011). N May not be counted with COMP 2903.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Languages and Logic (Advanced)</strong></td>
<td>4</td>
<td>Q SOFT (1002 or 1902) or COMP (1002 or 1902) and MATH (1004 or 1904 or 2009 or 2011) and Distinction in one COMP, SOFT or MATH unit of study. N May not be counted with COMP 2003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Algorithms</strong></td>
<td>4</td>
<td>Q SOFT (1002 or 1902) or COMP (1002 or 1902). MATH (1004 or 1904 or 2009 or 2011). N May not be counted with COMP (2811 or 2002 or 2902).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Algorithms (Advanced)</strong></td>
<td>4</td>
<td>Q SOFT (1002 or 1902) or COMP (1002 or 1902) and Distinction in one COMP, SOFT or MATH unit. MATH (1004 or 1904 or 2009 or 2011). N May not be counted with COMP (2111 or 2002 or 2902).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Systems Analysis and Design</strong></td>
<td>4</td>
<td>Q ISYS 1003 or INFO 1000 or INF 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)], or SOFT (1001 or 1901) or COMP (1001 or 1901). N May not be counted with INFO 2900.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td><strong>System Analysis and Design Advanced</strong></td>
<td>4</td>
<td>Q ISYS 1003 or INFO 1000 or INF 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)], or SOFT (1001 or 1901) or COMP (1001 or 1901) and Distinction in one INFO, ISYS or SOFT unit.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Database Management, Introductory</strong></td>
<td>4</td>
<td>Q ISYS 1003 or INFO 1000 or INF 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)], or SOFT (1001 or 1901) or COMP (1001 or 1901). N May not be counted with INFO 2905.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Database Management, Introductory (Adv)</strong></td>
<td>4</td>
<td>Q ISYS 1003 or INFO 1000 or INF 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)], or SOFT (1001 or 1901) or COMP (1001 or 1901) and Distinction in one INFO, ISYS or SOFT unit. N May not be counted with INFO 2905.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Information Systems in Organisations</strong></td>
<td>4</td>
<td>A Use of basic PC tools such as spreadsheets, Internet, email and word processing software. p Credit in one of ISYS 1003 or INF 1000 or INFO 1000. NB: Enrolment Restriction: Entry is restricted to students who have a credit or better in one of the qualifying units.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Distributed Information Systems</strong></td>
<td>4</td>
<td>Q ISYS 2006 and INFO (2000 or 2900). N May not be counted with INFO 2007.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Computer System Organisation</strong></td>
<td>4</td>
<td>Q SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)], or SOFT (1001 or 1901) or COMP (1001 or 1901). N May not be counted with NETS 2909 or COMP (2001 or 2901).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Computer System Organisation (Adv)</strong></td>
<td>4</td>
<td>Q SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)], or Distinction in one NETS or SOFT unit of study.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Network Organisation</strong></td>
<td>4</td>
<td>Q SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)]. N May not be counted with NETS 2909.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

#### Table III(iii) Junior and Intermediate IT related Electives

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Financial Accounting Concepts</strong></td>
<td>6</td>
<td>N Terminating unit. Cannot be counted with ACCT 1001 and ACCT 1002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Management Accounting Concepts</strong></td>
<td>6</td>
<td>N Terminating unit. Cannot be counted with ACCT 1001 and ACCT 1002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>History and Theory of Informatics</strong></td>
<td>6</td>
<td>C ISYS 1003. NB: Available to BA Informatics, BCST and BIT students only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Commercial Transactions A</strong></td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.2</td>
</tr>
<tr>
<td><strong>Commercial Transactions B</strong></td>
<td>6</td>
<td>P CLAW 1001.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Computational Science in MATLAB</strong></td>
<td>3</td>
<td>A HSC Mathematics. N May not be counted with COSC 1901.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Computational Science in MATLAB (Adv)</strong></td>
<td>3</td>
<td>A HSC Mathematics. P UAI of at least 90, or COSC 1902, or a distinction or better in COSC 1002, SOFT (1001, 1902,1901 or 1902). N May not be counted with COSC 1001.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Computational Science in C</strong></td>
<td>3</td>
<td>A HSC Mathematics. N May not be counted with COSC 1902.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
### Table III: Bachelor of Information Technology (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>COSC 1902 Computations in C (Adv)</td>
<td>3</td>
<td>A HSC Mathematics.</td>
<td>p UAI of at least 90, or COSC 1901, or a distinction or better in COSC 1001, SOFT (1001, 1002, 1901 or 1902).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>DECO 1001 Digital Image Representation and Design</td>
<td>3</td>
<td>NB: Department permission required for enrolment. Digital Media stream in the BDesign.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>DECO 1002 Web based Design Information Systems</td>
<td>4</td>
<td>A DECO 1001 or equivalent.</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>DECO 1003 CAD Modelling</td>
<td>4</td>
<td>NB: Department permission required for enrolment. Digital Media stream in the BDesign.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>DECO 1004 Understanding Design</td>
<td>3</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 1101 Foundations of Computer Systems</td>
<td>6</td>
<td>A HSC Maths extension 1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Summer</td>
</tr>
<tr>
<td>ELEC 1102 Foundations of Electronic Circuits</td>
<td>6</td>
<td>A HSC Physics 2 units, MATH 1001 Differential Calculus.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>INFNS 1000 Business Information Systems Foundations</td>
<td>6</td>
<td>P None.</td>
<td></td>
<td></td>
<td></td>
<td>N ISYS 1003.</td>
<td>2</td>
</tr>
<tr>
<td>ISYS 1003 Foundations of Information Technology</td>
<td>6</td>
<td>N May not be counted with INFO 1000 or INF 100.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.</td>
</tr>
<tr>
<td>MATH 1011 Life Sciences Calculus</td>
<td>3</td>
<td>A HSC Mathematics.</td>
<td>N May not be counted with MATH (1001 or 1901 or 1906).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 1012 Life Sciences Algebra</td>
<td>3</td>
<td>A HSC Mathematics.</td>
<td>N May not be counted with MATH (1002 or 1902).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 1013 Differential and Difference Equations</td>
<td>3</td>
<td>A HSC Mathematics.</td>
<td>N May not be counted with MATH (1003 or 1906 or 1907).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 1015 Life Science Statistics</td>
<td>3</td>
<td>A HSC Mathematics.</td>
<td>N May not be counted with MATH (1005 or 1905) or STAT (1021 or 1022) or ECMT Junior units of study.</td>
<td></td>
<td></td>
<td></td>
<td>1,</td>
</tr>
<tr>
<td>MATH 1001 Differential Calculus</td>
<td>3</td>
<td>A HSC Mathematics Extension 1.</td>
<td>N May not be counted with MATH 1011 or 1901 or 1906.</td>
<td></td>
<td></td>
<td></td>
<td>Summer</td>
</tr>
<tr>
<td>MATH 1901 Differential Calculus (Advanced)</td>
<td>3</td>
<td>A HSC Mathematics Extension 2 or result in Band E4 of HSC Mathematics Extension 1.</td>
<td>N May not be counted with MATH (1011 or 1001 or 1906).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 1092 Linear Algebra</td>
<td>3</td>
<td>A HSC Mathematics Extension 1.</td>
<td>N May not be counted with MATH 1902 or 1012.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 1003 Linear Algebra (Advanced)</td>
<td>3</td>
<td>A HSC Mathematics Extension 2 or result in Band E4 of HSC Mathematics Extension 1.</td>
<td>N May not be counted with MATH (1002 or 1012).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 1004 Integral Calculus and Modelling</td>
<td>3</td>
<td>A HSC Mathematics Extension 2 or result in Band E4 of HSC Mathematics Extension 1.</td>
<td>N May not be counted with MATH (1001 or 1006).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 1904 Integral Calculus and Modelling Advanced</td>
<td>3</td>
<td>A HSC Mathematics Extension 2 or result in Band E4 of HSC Mathematics Extension 1.</td>
<td>N May not be counted with MATH (1002 or 1012).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 1004 Discrete Mathematics</td>
<td>3</td>
<td>A HSC Mathematics Extension 1.</td>
<td>N May not be counted with MATH 1904 or MATH 2011.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 1904 Discrete Mathematics (Advanced)</td>
<td>3</td>
<td>A HSC Mathematics Extension 2 or result in Band E4 of HSC Mathematics Extension 1.</td>
<td>N May not be counted with MATH (1004 or 1906).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 1005 Statistics</td>
<td>3</td>
<td>A HSC Mathematics.</td>
<td>N May not be counted with MATH (1905 or 1015) or ECMT Junior units of study or STAT (1021 or 1022).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 1905 Statistics (Advanced)</td>
<td>3</td>
<td>A HSC Mathematics Extension 2 or result in Band E3 or better of HSC Mathematics Extension 1.</td>
<td>N May not be counted with MATH (1005 or 1015) or ECMT Junior units of study or STAT (1021 or 1022).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

#### Intermediate units of study

<p>| CLAW 2006 Legal Issues for ecommerce               | 8  | P 48 credit points at level 1000. |   |               |               |               | 1,2     |
| DECO 2001 3D Modelling and Photorealism            | 4  | NB: Department permission required for enrolment. |               |               |               |               | 1       |
| DECO 2002 Interactive Multimedia Design            | 4  | NB: Department permission required for enrolment. |               |               |               |               | 1       |
| DECO 2003 Knowledge Based Design                   | 4  | A SOFT 1001 or equivalent. |               |               |               |               | 1       |
| DECO 2004 Product Modelling                        | 4  | A INFO 2005 and DECO 1003. |               |               |               |               | 2       |
| DECO 2005 Computer Supported Collaborative Design  | 4  |               |               |               |               |               | 2       |
| DECO 2601 Design Grammars                         | 4  | A DECO 2003 and either COMP 1001 or SOFT 1001. | NB: Department permission required for enrolment. |   |               |               | 2       |
| DECO 2602 Evolutionary Design                      | 4  | A COMP 1001 or SOFT 1001. | NB: Department permission required for enrolment. |   |               |               | 2       |
| DECO 2603 Agents in Design                         | 4  | A COMP 1001 or SOFT 1001. | NB: Department permission required for enrolment. |   |               |               | 1       |
| ELEC 2101 Circuit Analysis                        | 4  | A ELEC 1102 Foundations of Electronic Circuits. | N ELEC 2001 Electrical and Electronic Engineering and ELEC 2003 Electrical and Electronic Engineering A. |   |               |               | 1       |</p>
<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC 2401 Introductory Electronics</td>
<td>4</td>
<td>A ELEC 1102 Foundations of Electronic Circuits N ELEC 2001 Electrical and Electronic Engineering, and ELEC 2003 Electrical and Electronic Engineering A.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 2601 Microcomputer Systems</td>
<td>4</td>
<td>A ELEC 1101 Foundations of Computer Systems. N MECH 2701 Mechatronics 2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 2901 Vector Calculus and Complex Variables</td>
<td>4</td>
<td>P MATH (1001 or 1901 or 1906) and (1002 or 1902) and (1003 or 1903 or 1907). N May not be counted with MATH 2901.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td>MATH 2901 Vector Calculus and Complex Variables Var(Adv)</td>
<td>4</td>
<td>P MATH (1901 or 1906 or Credit in 1001) and (1902 or Credit in 1002) and (1903 or 1907 or Credit in 1003). N May not be counted with MATH 2001.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td>MATH 2002 Matrix Applications</td>
<td>4</td>
<td>P MATH (1002 or 1902) or Distinction in MATH 1012. N May not be counted with MATH 2902.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td>MATH 2002 Linear Algebra (Advanced)</td>
<td>4</td>
<td>P 12 credit points of Junior Mathematics, including MATH 1002 or Credit in 1002. N May not be counted with MATH 2002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MATH 2002 Lagrangian Dynamics</td>
<td>4</td>
<td>P MATH 2901 or 2901. N May not be counted with MATH 2904.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2004 Lagrangian Dynamics (Advanced)</td>
<td>4</td>
<td>P MATH 2901 or Credit in MATH 2001. N May not be counted with MATH 2004.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2005 Fourier Series &amp; Differential Equations</td>
<td>4</td>
<td>P MATH (1001 or 1901 or 1906) and MATH (1002 or 1902) and MATH (1003 or 1903 or 1907). N May not be counted with MATH 2905.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2, Summer</td>
</tr>
<tr>
<td>MATH 2006 Mathematical Methods (Advanced)</td>
<td>4</td>
<td>P MATH 2901 or Credit in MATH 2001. N May not be counted with MATH 2005.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2006 Nonlinear Systems and Chaos Introduction</td>
<td>4</td>
<td>P MATH (1001 or 1906 or Credit in 1001) and (1002 or Credit in 1002) and (1903 or 1907 or Credit in 1003). N May not be counted with MATH 2906.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2007 Analysis</td>
<td>4</td>
<td>P MATH (1001 or 1901 or 1906) and (1003 or 1903 or 1907) or Distinction in MATH 1011 and 1013. N May not be counted with MATH 2907.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2007 Analysis (Advanced)</td>
<td>4</td>
<td>P MATH (1901 or 1906 or Credit in 1001) and (1903 or 1907 or Credit in 1003) (MATH 2901 or 2001 strongly advised), N May not be counted with MATH 2007.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2008 Introduction to Modern Algebra 2018</td>
<td>4</td>
<td>P MATH 2002 or 2902. N May not be counted with MATH 2908 or 2918.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MATH 2009 Graph Theory</td>
<td>4</td>
<td>P 6 credit points of Junior Mathematics (at the Distinction level in Life Sciences units).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2, Summer</td>
</tr>
<tr>
<td>MATH 2010 Optimisation</td>
<td>4</td>
<td>P MATH (1001 or 1901 or 1906) and (1002 or 1902). N May not be counted with Econometrics 3510 Operations Research A.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2, Summer</td>
</tr>
<tr>
<td>MATH 2011 Topics in Discrete Mathematics</td>
<td>4</td>
<td>P HSC Mathematics Extension 1. P 6 credit points of Junior Mathematics. N May not be counted with MATH (1004 or 1904).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>STAT 2001 Statistical Distributions</td>
<td>4</td>
<td>P MATH (1001 or 1901 or 1906 or Credit in 1001) and [MATH (1005 or 1905 or 1915) or MATH (1004 or 1904)]. N May not be counted with STAT 2901.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>STAT 2001 Introduction to Probability (Advanced)</td>
<td>4</td>
<td>P MATH (1903 or 1907 or Credit in 1003) and MATH (1905 or Credit in 1005). N May not be counted with STAT 2001.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>STAT 2002 Data Analysis</td>
<td>4</td>
<td>P MATH 1005 or 1905 or 1915 (or STAT 1021 for Arts students).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>STAT 2003 Estimation Theory</td>
<td>4</td>
<td>P STAT 2001 or 2901. N May not be counted with STAT 2903.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>STAT 2003 Estimation Theory (Advanced)</td>
<td>4</td>
<td>P STAT 2901 or Credit in STAT 2001. N May not be counted with STAT 2003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>STAT 2004 Hypothesis Testing</td>
<td>4</td>
<td>P STAT 2002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
### Table III: Bachelor of Information Technology (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 3027</td>
<td>6</td>
<td>P MBLG(2001 or 2101 or 2901) or 16 credit points of intermediate Biology including BIOL (2001 or 2901 or 2004 or 2904 or 2005 or 2905 or 2006 or 2906). For IBMedSc students: 32 credit points of Intermediate BMED units including BMED 2902. N May not be counted with BIOL 3927.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>COMP 3002</td>
<td>4</td>
<td>P [SOFT (2004 or 2904) or COMP (2004 or 2904)] and COMP (2003 or 2903) and 8 credit points 2000-level MATH and/or STAT and/or ECMT.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>COMP 3902</td>
<td>4</td>
<td>P [SOFT (2004 or 2904) or COMP (2004 or 2904)] and COMP (2003 or 2903) and 8 credit points 2000-level MATH and/or STAT and/or ECMT and Distinction in a COMP, SOFT or MATH unit at 2000-level or above. N May not be counted with COMP 3002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>COMP 3111</td>
<td>4</td>
<td>A MATH 2009. P COMP (2111 or 2811 or 2002 or 2902) and MATH (1004 or 1904 or 2009 or 2011) and MATH (1005 or 1905). N May not be counted with COMP (3811 or 3001 or 3901).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>COMP 3811</td>
<td>4</td>
<td>P MATH (1004 or 1904 or 2009 or 2011) and MATH (1005 or 1905). Also Distinction in a COMP, SOFT or MATH intermediate unit. Q COMP (2002 or 2902 or 2111 or 2811). N May not be counted with COMP (3111 or 3001 or 3901).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>COMP 3116</td>
<td>4</td>
<td>P [SOFT (2004 or 2904) or COMP (2004 or 2904)] and COMP (2003 or 2903). N May not be counted with COMP (3816 or 3006 or 3906).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A in 2003</td>
</tr>
<tr>
<td>COMP 3816</td>
<td>4</td>
<td>P [SOFT (2004 or 2904) or COMP (2004 or 2904) and COMP (2003 or 2903) and Distinction in a COMP, SOFT or MATH unit at 2000-level or above. N May not be counted with COMP (3116 or 3906).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A in 2003</td>
</tr>
<tr>
<td>COSC 3601</td>
<td>4</td>
<td>A Some familiarity is assumed with Unix and a programming language (eg, C or Fortran). P At least one of SOFT (2004 or 2904) or COMP (2004 or 2904) or PHYS (3301 or 3901) or MATH 2903 or MATH (3016 or 3916). NB: Not available in 2003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A in 2003</td>
</tr>
<tr>
<td>EBUS 3001</td>
<td>4</td>
<td>A COMP 1002 Introductory Computer Science or SOFT 1002 Software Development 2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>EBUS 3002</td>
<td>4</td>
<td>A EBUS 3001 introduction to E-Commerce Systems and (SOFT 2004 Software Development Methods 1 or COMP 2004 Programming Practice).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 3303</td>
<td>4</td>
<td>A ELEC 2301 Signals and Systems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 3401</td>
<td>4</td>
<td>A ELEC 2401 Introductory Electronics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 3402</td>
<td>4</td>
<td>A ELEC 3401 Electronic Devices and Circuits.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 3403</td>
<td>4</td>
<td>A ELEC 3401 Electronic Devices and Circuits.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 3502</td>
<td>4</td>
<td>A ELEC 2301 Signals and Systems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 3503</td>
<td>4</td>
<td>A ELEC 2301 Signals and Systems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 3601</td>
<td>4</td>
<td>A ELEC 2601 Microcomputer Systems, or COMP 2001 Computer Systems, or NETS 2008 Computer Systems Organisation, or NETS 2908 Computer Systems Organisation (adv) or MECH 2701 Mechatronics 2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 5603</td>
<td>4</td>
<td>A ELEC 2601 Microcomputer Systems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 5701</td>
<td>4</td>
<td>N Prohibition: ENGG 2003 Introduction to Engineering Management.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>INFO 3005</td>
<td>4</td>
<td>P INFO (2000 or 2900) and INFO (2005 or 2905). N May not be counted with INFO 3905 or COMP (3005 or 3905).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>INFO 3905</td>
<td>4</td>
<td>P INFO (2000 or 2900) and INFO (2005 or 2905) and Distinction in an INFO, ISYS or SOFT unit at 2000-level or above. N May not be counted with COMP (3005 or 3905) or INFO 3005.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>INF 3000</td>
<td>8</td>
<td>P INF 2000 or ACCT 2003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A in 2003</td>
</tr>
<tr>
<td>INF 3005</td>
<td>8</td>
<td>P INF 2005 or ACCT 2003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>INF 3010</td>
<td>8</td>
<td>P INF 2000 or ACCT 2003. N ACCT 3005.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>INF 3015</td>
<td>8</td>
<td>P INF 2000 or ACCT 2003 and at least 48 credit points.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>INF 3020</td>
<td>8</td>
<td>P One of INF 1000, ISYS 1003 and INFO 1000. Also at least 48 credit points.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Unit of study</td>
<td>CP</td>
<td>A: Assumed knowledge</td>
<td>P: Prerequisite</td>
<td>Q: Qualifying</td>
<td>C: Corequisite</td>
<td>N: Prohibition</td>
<td>Session</td>
</tr>
<tr>
<td>--------------</td>
<td>----</td>
<td>---------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>----------------</td>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>ISYS 3000 Information Systems Management</td>
<td>4</td>
<td>P ISYS 2007 or INFO 2007.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ISYS 3012 Project Management and Practice</td>
<td>4</td>
<td>P INFO (2000 or 2900).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ISYS 3015 Analytical Methods for IS Professionals</td>
<td>4</td>
<td>P [ARIN1000 or ENGL (1050 or 1005) or LNGS (1001 or 1002 or 1005) or ECOF (1001 or 1002)] and 16 credit points of intermediate or senior units of study, including ISYS 2006 and (ISYS 2007 or INFO 2007) and INFO (2000 or 2900).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ISYS 3113 Arts Informatics Systems</td>
<td>4</td>
<td>P INFO (2000 or 2900) and INFO (2005 or 2905) and [(ARIN 1000 or ENGL (1050 or 1005) or LNGS (1001 or 1002 or 1005) or ECOF (1001 or 1002)].</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MARS 3103 GIS Simulation Modelling</td>
<td>6</td>
<td>P MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study.</td>
<td></td>
<td>N May not be counted with GEOG3102.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MAIH 3002 Rings and Fields</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics (strongly advise MATH 2002 or 2902, with 2008 or 2908).</td>
<td></td>
<td>N May not be counted with MATH 3902.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MAIH 3902 Algebra I (Advanced)</td>
<td>4</td>
<td>P 12 credit points of Intermediate Mathematics (strongly advise MATH 2902).</td>
<td></td>
<td>N May not be counted with MATH 3002.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MAIH 3905 Logic</td>
<td>4</td>
<td>P (for all but BCST students) 8 credit points of Intermediate Mathematics; (for BCST students) 8 credit points of Intermediate Mathematics or 12 credit points of Junior Mathematics at Advanced level.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MAIH 3907 Coding Theory</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics (strongly advise MATH 2002 or 2902).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MAIH 3909 Number Theory</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MAIH 3910 Information Theory</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics (strongly advise MATH 2001 or 2901 and some probability theory).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MAIH 3916 Mathematical Computing I</td>
<td>4</td>
<td>P 8 credit points of Intermediate Mathematics and one of MATH 1001 or 1003 or 1901 or 1903 or 1906 or 1907.</td>
<td></td>
<td>N May not be counted with MATH 3916.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MAIH 3919 Signal Processing</td>
<td>4</td>
<td>P MATH 2001 or 2901 and MATH (2005 or 2905).</td>
<td></td>
<td>N May not be counted with MATH 3919.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MAIH 3919 Signal Processing (Advanced)</td>
<td>4</td>
<td>P MATH 2905 or Credit in MATH 2005.</td>
<td></td>
<td>N May not be counted with MATH 3919.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MAIH 3924 Elementary Cryptography and Protocols</td>
<td>4</td>
<td>P 12 credit points of Intermediate Mathematics. Strongly advise MATH 2008 or 2908 or 2918.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MAIH 3925 Public Key Cryptography (Advanced)</td>
<td>4</td>
<td>P 12 credit points from Intermediate or senior mathematics. Strongly recommend MATH 3902.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MULT 3004 Computer Graphics</td>
<td>4</td>
<td>P COMP (2111 or 2811 or 2002 or 2902) and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and MATH (1002 or 1902).</td>
<td></td>
<td>N May not be counted with MULT 3904 or COMP (3004 or 3904).</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MULT 3904 Computer Graphics (Advanced)</td>
<td>4</td>
<td>P COMP (2111 or 2811 or 2002 or 2902) and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and MATH (1002 or 1902) and Distinction in a MULT or SOFT unit at 2000 level or above.</td>
<td></td>
<td>N May not be counted with MULT 3004 or COMP (3004 or 3904).</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>MULT 3918 Multimedia Interaction (Advanced)</td>
<td>4</td>
<td>P SOFT (2004 or 2904) or COMP (2004 or 2904).</td>
<td></td>
<td>N May not be counted with MULT 3918.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MULT 3920 Multimedia Authoring and Production</td>
<td>4</td>
<td>P SOFT (2004 or 2904) or COMP (2004 or 2904) and Distinction in a MULT or SOFT unit at 2000 level or above.</td>
<td></td>
<td>N May not be counted with MULT 3920.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MULT 3921 Digital Media</td>
<td>4</td>
<td>P COMP (2111 or 2811 or 2002 or 2902) and MATH (1001 or 1901) and MATH (1002 or 1902) and MATH (1003 or 1903).</td>
<td></td>
<td>N May not be counted with MULT 3921.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MULT 3919 Digital Media (Advanced)</td>
<td>4</td>
<td>P COMP (2111 or 2811 or 2002 or 2902) and MATH (1001 or 1901) and MATH (1002 or 1902) and MATH (1003 or 1903) and Distinction in a MULT or SOFT unit at 2000 level or above.</td>
<td></td>
<td>N May not be counted with MULT 3919.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MULT 3027 Object Oriented Techniques in Multimedia</td>
<td>4</td>
<td>P SOFT (2001 or 2901) and MULT (3018 or 3918).</td>
<td></td>
<td>N May not be counted with MULT 3927.</td>
<td></td>
<td>N/A in 2003</td>
<td></td>
</tr>
<tr>
<td>MULT 3927 0 0 Techniques in Multimedia (Advanced)</td>
<td>4</td>
<td>P SOFT (2001 or 2901) and MULT (3018 or 3918) and Distinction in a MULT or SOFT unit at 2000 level or above.</td>
<td></td>
<td>N May not be counted with MULT 3027.</td>
<td></td>
<td>N/A in 2003</td>
<td></td>
</tr>
<tr>
<td>MULT 3028 Multimedia Authoring and Production</td>
<td>4</td>
<td>P MULT (3018 or 3918).</td>
<td></td>
<td>N May not be counted with MULT 3928.</td>
<td></td>
<td>N/A in 2003</td>
<td></td>
</tr>
<tr>
<td>MULT 3928 Multimedia Authoring &amp; Production (Adv)</td>
<td>4</td>
<td>P MULT (3018 or 3918) and Distinction in a MULT or SOFT unit at 2000 level or above.</td>
<td></td>
<td>N May not be counted with MULT 3028.</td>
<td></td>
<td>N/A in 2003</td>
<td></td>
</tr>
<tr>
<td>NETS 3007 Network Protocols</td>
<td>4</td>
<td>P [(NETS (2008 or 2908) and NETS (2009 or 2909)] or ELEC 2601] and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and SOFT (2004 or 2904).</td>
<td></td>
<td>N May not be counted with NETS 3907 or COMP (3007 or 3907).</td>
<td></td>
<td>N/A in 2003</td>
<td></td>
</tr>
<tr>
<td>NETS 3907 Network Protocols (Advanced)</td>
<td>4</td>
<td>P [(NETS (2008 or 2908) and NETS (2009 or 2909)] or ELEC 2601] and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and SOFT (2004 or 2904) and Distinction in a NETS or SOFT unit at 2000 level or above.</td>
<td></td>
<td>N May not be counted with NETS 3007 or COMP (3007 or 3907).</td>
<td></td>
<td>N/A in 2003</td>
<td></td>
</tr>
</tbody>
</table>
Table III: Bachelor of Information Technology (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>NETS 3009 Operating Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[NETS (2008 or 2908) or ELEC 2601] and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and SOFT(2001 or 2901). N May not be counted with NETS 3009 or COMP (3009 or 3909).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3009 Operating Systems (Advanced)</td>
<td>4</td>
<td>p [NETS (2008 or 2908) or ELEC 2601] and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and SOFT(2001 or 2901) and Distinction in a NETS or SOFT unit at 2000 level or above.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with NETS 3009 or COMP (3009 or 3909).</td>
<td></td>
</tr>
<tr>
<td>NETS 3016 Computer and Network Security</td>
<td></td>
<td>A STAT (1004 and 1005).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>[NETS (2008 or 2908) and NETS (2009 or 2909)] or ELEC 2601 and [SOFT (2004 or 2004) or COMP (2004 or 2904)]. N May not be counted with NETS 3916 or ELEC 5610.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3016 Computer and Network Security (Advanced)</td>
<td>4</td>
<td>p [NETS (2008 or 2908) and NETS (2009 or 2909)] or ELEC 2601 and [SOFT (2004 or 2004) or COMP (2004 or 2904)] and Distinction in a NETS or SOFT unit at 2000 level or above.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with NETS 3016 or ELEC 5610.</td>
<td></td>
</tr>
<tr>
<td>NETS 3017 Network Programming and Distributed Apps</td>
<td>4</td>
<td>p [NETS (2008 or 2908) and NETS (2009 or 2909)] or ELEC 2601 and [SOFT (2004 or 2004) or COMP (2004 or 2904)] and SOFT (2001 or 2001). N May not be counted with NETS 3917 or ELEC 3604.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3017 Network Prog &amp; Distributed Apps (Adv)</td>
<td>4</td>
<td>p [NETS (2008 or 2908) and NETS (2009 or 2909)] or ELEC 2601 and [SOFT (2004 or 2004) or COMP (2004 or 2904)] and SOFT (2001 or 2001) and Distinction in a NETS or SOFT unit at 2000 level or above.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with NETS 3017 or ELEC 3604.</td>
<td></td>
</tr>
<tr>
<td>PHYS 3303 Scientific Computing</td>
<td>4</td>
<td>p 16 credit points of Intermediate units of study in Science Subject Areas. N May not be counted with PHYS 3931.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 3303 Scientific Visualisation</td>
<td>4</td>
<td>p 16 credit points of Intermediate units of study in Science Subject Areas. N May not be counted with PHYS 3933.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3101 Object Oriented Software Design</td>
<td>4</td>
<td>p [SOFT (2001 or 2001) and INFO (2000 or 2900) and INFO (2005 or 2905) and [SOFT (2004 or 2004) or COMP (2004 or 2004)]. N May not be counted with SOFT 3901 or COMP (3008 or 3908).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3801 Object Oriented Software Design (Adv)</td>
<td>4</td>
<td>p [SOFT (2001 or 2001) and INFO (2000 or 2000) and INFO (2005 or 2005) and [SOFT (2004 or 2004) or COMP (2004 or 2004)] and Distinction in a SOFT or INFO unit at 2000 level or above.</td>
<td></td>
<td></td>
<td></td>
<td>N May not be counted with SOFT 3101 or COMP (3008 or 3908).</td>
<td></td>
</tr>
<tr>
<td>SOFT 3102 User Interface Design and Programming</td>
<td>4</td>
<td>A No assumed knowledge.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3102 User Interface Design Programming (Adv)</td>
<td>4</td>
<td>A No assumed knowledge.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3103 Software Validation and Verification</td>
<td>4</td>
<td>p [SOFT (2004 or 2004) or COMP (2004 or 2004)] and Distinction in a SOFT or INFO unit at 2000 level or above. N May not be counted with SOFT 3102 or COMP (3102 or 3802).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3803 Software Validation &amp; Verification (Adv)</td>
<td>4</td>
<td>p [SOFT (2004 or 2004) or COMP (2004 or 2004)] and Distinction in a SOFT or INFO unit at 2000 level or above. N May not be counted with SOFT 3103.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3104 Software Development Methods 2</td>
<td>4</td>
<td>p [SOFT (2004 or 2004) or COMP (2004 or 2004)] and Distinction in a SOFT or INFO unit at 2000 level or above. N May not be counted with SOFT 3104 or COMP (3100 or 3800).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3804 Software Development Methods 2 (Adv)</td>
<td>4</td>
<td>p [SOFT (2004 or 2004) or COMP (2004 or 2004)] and Distinction in a SOFT or INFO unit at 2000 level or above. N May not be counted with SOFT 3104 or COMP (3100 or 3800).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3105 Distributed Software Systems</td>
<td>4</td>
<td>p [SOFT (2004 or 2004) or COMP (2004 or 2004)] and Distinction in a SOFT or INFO unit at 2000 level or above. N May not be counted with SOFT 3055.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3805 Distributed Software Systems (Advanced)</td>
<td>4</td>
<td>p [SOFT (2004 or 2004) or COMP (2004 or 2004)] and Distinction in a SOFT or INFO unit at 2000 level or above. N May not be counted with SOFT 3105.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 3001 Distribution Theory and Inference</td>
<td>4</td>
<td>p MATH (1003 or 1903 or 1907) and STAT (2003 or 2903). N May not be counted with STAT 3901.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 3001 Statistical Theory (Advanced)</td>
<td>4</td>
<td>p MATH(2001 or 2901) and STAT 2903. N May not be counted with STAT 3001.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 3002 Applied Linear Models</td>
<td>4</td>
<td>p STAT 2004 (or STAT 1022 for Arts students) and MATH (1002 or 1902). N May not be counted with STAT 3902.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 3002 Linear Models (Advanced)</td>
<td>4</td>
<td>p STAT 2004 and (STAT 2903 or Credit in 2003) and (MATH 2002 or 2902). N May not be counted with STAT 3002.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 3003 Time Series Analysis</td>
<td>4</td>
<td>p STAT (2003 or 2903). N May not be counted with STAT 3903.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 3003 Time Series Analysis (Advanced)</td>
<td>4</td>
<td>p STAT 2903 or credit better in STAT 2903. N May not be counted with STAT 3003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 3004 Design of Experiments</td>
<td>4</td>
<td>p STAT (3002 or 3902). N May not be counted with STAT 3904.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 3004 Design of Experiments (Advanced)</td>
<td>4</td>
<td>p STAT 3902 or credit better in STAT 3902. N May not be counted with STAT 3004.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 3005 Applied Stochastic Processes</td>
<td>4</td>
<td>p MATH (1003 or 1903 or 1907) and STAT (2001 or 2901). N May not be counted with STAT 3905.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NB: This unit may be offered every year.
### Table III: Bachelor of Information Technology (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 3905 Markov Processes (Advanced)</td>
<td>4</td>
<td>p STAT 2901 or (Credit in STAT 2001 and MATH (1003 or 1903 or 1907)). May not be counted with STAT 3005.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>STAT 3906 Sampling Theory and Categorical Data</td>
<td>4</td>
<td>p STAT 2003 or 2903.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>STAT 3907 Multivariate Analysis (Advanced)</td>
<td>4</td>
<td>P STAT 3902 and either STAT (3001 or 3901).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NR: This unit is only offered in odd years.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Honours units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4021 Interactability and Optimisation</td>
<td></td>
<td>Unavailable in 2003. Details may change.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4022 Computational Geometry</td>
<td></td>
<td>Unavailable in 2003. Details may change.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4301 Computer Control System Design</td>
<td>4</td>
<td>A ELEC 3302 Fundamentals of Feedback Control.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 4302 Image Processing and Computer Vision</td>
<td>4</td>
<td>A ELEC 2301 Signals and Systems, and ELEC 4303 Digital Signal Processing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 4402 Integrated Circuit Design</td>
<td>4</td>
<td>A ELEC 3401 Electronic Devices and Circuits.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 4403 Electronic Design</td>
<td>6</td>
<td>A ELEC 2301 Signals and Systems, ELEC 3302 Fundamentals of Feedback Control, and ELEC 3401 Electronic Devices and Circuits.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N ELEC 4401 Electronic Design.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NR: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4501 Data Communication Networks</td>
<td>4</td>
<td>P Assumed Knowledge: ELEC 3502 Random Signals and Communications, and ELEC 3503 Introduction to Digital Communications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A in 2003</td>
</tr>
<tr>
<td>ELEC 4502 Digital Communication Systems</td>
<td>4</td>
<td>A ELEC 3502 Random Signals and Communications, and ELEC 3503 Introduction to Digital Communications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 4503 Error Control Coding</td>
<td>4</td>
<td>A ELEC 3502 Random Signals and Communications, and ELEC 3503 Introduction to Digital Communications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 4601 Computer Design</td>
<td>4</td>
<td>A ELEC 3403 Switching Devices and Electronics, and ELEC 3601 Digital Systems Design.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N MECH 4730 Computers in Real Time Instrumentation and Control.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4602 Real Time Computing</td>
<td>4</td>
<td>A ELEC 3601 Digital Systems Design and COMP 3100 Software Engineering.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 4604 Engineering Software Requirements</td>
<td>4</td>
<td>A COMP 3100 Software Engineering or SOFT 3104 Software Development Methods 2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 4701 Project Management</td>
<td>4</td>
<td>A ENGG 2003 Introduction to Engineering Management or ELEC 3701 Management for Engineers.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 5501 Advanced Communication Networks</td>
<td>4</td>
<td>A NETS 3007 Network Protocols or ELEC 3604 Internet Engineering.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 5502 Satellite Communication Systems</td>
<td>4</td>
<td>A ELEC 3502 Random Signals and Communications, ELEC 3503 Introduction to Digital Communications and ELEC 4502 Digital Communication Systems.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 5503 Optical Communication Systems</td>
<td>4</td>
<td>A ELEC 3402 Communications Electronics, ELEC 3502 Random Signals and Communications, and ELEC 3503 Introduction to Digital Communications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 5504 Cellular Radio Engineering</td>
<td>4</td>
<td>A ELEC 3502 Random Signals and Communications, and ELEC 3503 Introduction to Digital Communications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 5505 Advanced Digital Transmissions</td>
<td>4</td>
<td>P Assumed Knowledge: ELEC 3502 Random Signals and Communications, and ELEC 3503 Introduction to Digital Communications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A in 2003</td>
</tr>
<tr>
<td>ELEC 5506 Optical Networks</td>
<td>4</td>
<td>A ELEC 3502 Random Signals and Communications, and ELEC 3503 Introduction to Digital Communications.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 5601 Advanced Real Time Computing</td>
<td>4</td>
<td>A ELEC 4602 Real Time Computing.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NR: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 5603 Biologically Inspired Signal Processing</td>
<td>4</td>
<td>NR: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 5604 Adaptive Pattern Recognition</td>
<td>4</td>
<td>NR: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 5606 Multimedia Systems and Applications</td>
<td>4</td>
<td>A NETS 3007 Network Protocols or ELEC 3504 Data Communications and Internet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N ELEC 3604 Internet Engineering.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>NR: Department permission required for enrolment. Permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 5610 Computer and Network Security</td>
<td>4</td>
<td>A (ELEC 3604 Internet Engineering and ELEC 4501 Data Communication Networks) or ELEC 3504 Data Communications and the Internet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 5611 Advanced Computer Engineering</td>
<td>4</td>
<td>A ELEC 4601 Computer Design.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NR: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFO 4000 Research Preparation</td>
<td></td>
<td>Unavailable in 2003. Details may change.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MILT 4020 Multimedia Retrieval &amp; Delivery</td>
<td></td>
<td>Unavailable in 2003. Details may change.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MULT 4029 Multimedia Agents &amp; CSCW Technology</td>
<td></td>
<td>Unavailable in 2003. Details may change.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 4024 Network Performance</td>
<td></td>
<td>Unavailable in 2003. Details may change.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table III: Bachelor of Information Technology (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>NETS Distributed Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N ETS Design Computer Networks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 4107 Software Architecture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT Program Analysis and Reengineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Table III(v) Senior and Honours Projects</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BINF Bioinformatics Project</td>
<td>8</td>
<td>P SOFT (2004 or 2904) and 16 credit points from intermediate Biology, Biochemistry, Microbiology, Molecular Biology and Genetics and/or Pharmacology.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COSC 3701 Computational Science Project</td>
<td>8</td>
<td>A Able to program in a standard language. P 16 credit points of intermediate level natural sciences plus at least one of COSC (1001 or 1901 or 1002 or 1902) or SOFT (1001 or 1901) or MATH (2003 or 2903) or PHYS (2001 or 2901 or 2002 or 2902).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFO 3600</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFO 4900</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFS 3900 Business Information Systems Project</td>
<td>8</td>
<td>P Department permission and at least 48 credit points.</td>
<td></td>
<td></td>
<td></td>
<td>NA in 2003</td>
<td></td>
</tr>
<tr>
<td>ISYS 3207 Information Systems Project</td>
<td>8</td>
<td>P ISYS 3012 and (ISYS 3015 or ARIN 2000).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3200 Software Development Project</td>
<td>8</td>
<td>P [SOFT (2004 or 2904) or COMP (2004 or 2904)] and SOFT (2001 or 2901) and 8 credit points from BIT table III(ii) and 8 credit points from BIT table I(iv).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3700 Software Development Project (Advanced)</td>
<td>8</td>
<td>P [SOFT (2004 or 2904) or COMP (2004 or 2904)] and SOFT (2001 or 2901) and 8 credit points from BIT table III(ii) and 8 credit points from BIT table I(iv) and Distinction in a 2000 or 3000 level unit from COMP, INFO, MULT, NETS, or SOFT.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table IMIA: Bachelor of Information Technology Majors

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Major in Principles of Computer Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Junior units of study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAIH Linear Algebra</td>
<td>3</td>
<td>A HSC Mathematics Extension 1. N May not be counted with MATH 1902 or 1012.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAIH 1005 Statistics</td>
<td>3</td>
<td>A HSC Mathematics N May not be counted with MATH (1905 or 1015) or ECMT Junior units of study or STAT (1021 or 1022).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 1001 Software Development 1</td>
<td>6</td>
<td>A HSC Mathematics Extension 1. N May not be counted with SOFT 1901 or COMP (1001 or 1901).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 1002 Software Development 2</td>
<td>6</td>
<td>Q SOFT (1001 or 1901) or COMP (1001 or 1901). N May not be counted with SOFT 1902 or COMP (1002 or 1902).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Intermediate units of study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The unit of study MATH 1004 or MATH 19041 may be substituted for MATH 2011 in the core.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 2003 Languages and Logic</td>
<td>4</td>
<td>Q [SOFT (1002 or 1902) or COMP (1002 or 1902)] and MATH (1004 or 1904 or 2009 or 2111). N May not be counted with COMP 2903.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 2111 Algorithms 1</td>
<td>4</td>
<td>Q SOFT (1002 or 1902) or COMP (1002 or 1902). C MATH (1004 or 1904 or 2009 or 2111). N May not be counted with COMP (2111 or 2002 or 1902).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAIH 2009 Graph Theory</td>
<td>4</td>
<td>P 6 credit points of Junior Mathematics (at the Distinction level in Life Sciences units).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 2001 Concurrent Programming</td>
<td>4</td>
<td>Q SOFT (1002 or 1902) or COMP (1002 or 1902). N May not be counted with SOFT 2901.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 2004 Software Development Methods 1</td>
<td>4</td>
<td>Q SOFT (1002 or 1902) or COMP (1002 or 1902). N May not be counted with SOFT 2904 or COMP (2004 or 2904).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Core Senior units of study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In 2003 students should take an additional Elective Senior unit of study to replace COMP 3116 (which is not available).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 3002 Artificial Intelligence</td>
<td>4</td>
<td>P [SOFT (2004 or 2904) or COMP (2004 or 2904)] and COMP (2003 or 2903) and 8 credit 1 points 2000 level MATH and/or STAT and/or ECMT. N May not be counted with COMP 3902.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table 11 IA: Bachelor of Information Technology Majors (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 3111 Algorithms 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>A MATH 2009.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>p COMP (2111 or 2811 or 2002 or 2902) and MATH (1004 or 1904 or 2009 or 2011) and MATH (1005 or 1905).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N May not be counted with COMP (3811 or 3001 or 3901).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 3116 Programming Languages</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>P [SOFT (2004 or 2904) or COMP (2004 or 2904)] and COMP (2003 or 2903).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N May not be counted with COMP (3816 or 3006 or 3906).</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Elective Senior units of study**

Students are required to complete 12 credit points from the elective units, or other mutually exclusive units such as their Advanced equivalents.

- MATH 3005 Logic: 4 points. May not be counted with COMP (3800 or 3900). N May not be counted with COMP (3900 or 3901).
- MATH 3007 Coding Theory: 4 points. May not be counted with COMP (3900 or 3901).
- MATH 3010 Information Theory: 4 points. May not be counted with COMP (3900 or 3901).
- MATH 3024 Elementary Cryptography and Protocols: 4 points. May not be counted with COMP (3900 or 3901).
- MATH 3925 Public Key Cryptography (Advanced): 4 points. May not be counted with COMP (3900 or 3901).

**Elective Honours units of study**

- COMP 4023 Knowledge, Discovery and Data Mining: Unavailable in 2003. Details may change.

**ii) Major in Information Systems**

Students are required to complete all the core units, or other mutually exclusive units such as their Advanced equivalents.

**B Core Intermediate units of study**


**Core Senior units of study**


**Elective Senior units of study**

Students are required to complete 8 credit points from the elective units, or other mutually exclusive units such as their Advanced equivalents.


**iii) Major in Multimedia Technology**

Students are required to complete all the core units, or other mutually exclusive units such as their Advanced equivalents.

**Core Junior units of study**

- MATH 1001 Differential Calculus: 3 points. May not be counted with MATH 1011 or 1901 or 1906.
Table 11 IA: Bachelor of Information Technology Majors (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH Linear Algebra 1002</td>
<td>3</td>
<td>HSC Mathematics Extension 1.</td>
<td>N</td>
<td>May not be counted with MATH 1902 or 1012.</td>
<td>1</td>
<td>Summer</td>
<td></td>
</tr>
<tr>
<td>MATH Integral Calculus and Modelling 1003</td>
<td>3</td>
<td>HSC Mathematics Extension 2 or MATH 1001.</td>
<td>N</td>
<td>May not be counted with MATH 1013 or 1901 or 1903.</td>
<td>2</td>
<td>Summer</td>
<td></td>
</tr>
<tr>
<td>SOFT Software Development 1001</td>
<td>6</td>
<td>HSC Mathematics Extension 1.</td>
<td>N</td>
<td>May not be counted with SOFT 1901 or COMP (1001 or 1901).</td>
<td>1,2</td>
<td>Summer</td>
<td></td>
</tr>
<tr>
<td>SOFT User Interface Design and Applied</td>
<td>6</td>
<td>SOFT (1001 or 1901 or 1001 or 1901)</td>
<td>N</td>
<td>May not be counted with SOFT 1902 or COMP (1002 or 1902).</td>
<td>1,2</td>
<td>Summer</td>
<td></td>
</tr>
</tbody>
</table>

**Core Intermediate units of study**

The unit of study MATH 3019 or MATH 3919 may be substituted for ELEC 2301 in the core.

| COMP Algorithms 1 2111                      | 4  | SOFT (1002 or 1902) or COMP (1002 or 1902). | Q | MATH (1004 or 1904 or 2009 or 2011). | N | May not be counted with COMP (2811 or 2002 or 2902). | 1 | |
| ELEC 2301 Signals and Systems               | 4  | MATH 1001 Differential Calculus, and MATH 1002 Linear Algebra, and MATH 1003 Integral Calculus and Modelling. | Q | MATH 3019 Signal Processing and MATH 3919 Signal Processing (Adv.). | N | May not be counted with SOFT 2901. | 2 | |
| SOFT Concurrent Programming 2001             | 4  | SOFT (1002 or 1902) or COMP (1002 or 1902). | N | May not be counted with SOFT 2904 or COMP (2004 or 2904). | 1 | Summer |
| SOFT Software Development Methods 2004       | 4  | SOFT (1002 or 1902) or COMP (1002 or 1902). | N | May not be counted with COMP (2004 or 2904). | 1 | Summer |

**Core Senior units of study**

Students are required to complete 16 credit points from the elective units or other mutually exclusive units such as their Advanced equivalents.

| MULT Multimedia Interaction 3018            | 4  | SOFT (2004 or 2904) or COMP (2004 or 2904). | P | COMP (2111 or 2811 or 2002 or 2902) and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and MATH (1002 or 1902). | N | May not be counted with MATH 3918. | 1 | |
| MULT Digital Media 3019                     | 4  | COMP (2111 or 2811 or 2002 or 2902) and MATH (1001 or 1901) and MATH (1002 or 1902) and MATH (1003 or 1903). | N | May not be counted with MULT 3919. | 1 | |

**Elective Senior units of study**

Students are required to complete 16 credit points: from the elective units or other mutually exclusive units such as their Advanced equivalents.

| MULT Computer Graphics 3004                 | 4  | COMP (2111 or 2811 or 2002 or 2902) and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and MATH (1002 or 1902). | P | MATH (1004 or 1904 or 2009 or 2011). | N | May not be counted with MATH 3918. | 2 | |
| MULT Object Oriented Techniques in Multimedia 3027 | 4  | SOFT (2001 or 2901) and MULT (3018 or 3918). | P | MATH (1004 or 1904 or 2009 or 2011). | N | May not be counted with MATH 3927. | N/A in 2003 |
| MULT Multimedia Authoring and Production 3028 | 4  | MULT (3018 or 3918). | P | [SOFT (2004 or 2904) or COMP (2004 or 2904)] and MATH (1004 or 1904 or 2009 or 2011). | N | May not be counted with MULT 3928. | N/A in 2003 |
| PHYS Scientific Visualisation 3303          | 4  | 16 credit points of Intermediate units of study in Science Subject Areas. | P | [SOFT (2004 or 2904) or MATH (1002 or 1902)] and PHYS 3933. | N | May not be counted with PHYS 3933. | 2 | |
| SOFT User Interface Design and Programming 3102 | 4  | No assumed knowledge. | P | [SOFT (2004 or 2904) or COMP (2004 or 2904)]. | N | May not be counted with MULT 3902. | 1 | |
| SOFT Software Development Project 3200      | 8  | [SOFT (2004 or 2904) or COMP (2004 or 2904)] and SOFT (2001 or 2901) and 8 credit points from BIT table HI(i) and 8 credit points from BIT table ITI(iv). | P | MATH (1004 or 1904 or 2009 or 2011). | N | May not be counted with SOFT 3700. | 1,2 |

**Elective Honours units of study**

| ELEC Adaptive Pattern Recognition 5604       | 4  | NB: Department permission required for enrolment. | A | ELEC 2903 Signals and Systems, and ELEC 4303 Digital Signal Processing. | N | May not be counted with COMP (2811 or 2002 or 2902). | 2 | |
| ELEC Multimedia Systems and Applications 5606 | 4  | NETS 3007 Network Protocols or ELEC 3504 Data Communications and Internet. | A | NETS 3007 Network Protocols or ELEC 3504 Data Communications and Internet. | N | May not be counted with ELEC 4303 Internet. | 1 | |

**(iv) Major in Networks & Systems**

Students are required to complete all the core units, or other mutually exclusive units such as their Advanced equivalents.

| NETS Computer System Organisation 2008        | 4  | SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)]. | Q | SOFT (1001 or 1901) or COMP (1001 or 1901). | N | May not be counted with NETS 2908 or COMP (2001 or 2901). | 1 | |
| NETS Network Organisation 2009                | 4  | SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)]. | Q | SOFT (1001 or 1901) or COMP (1001 or 1901). | N | May not be counted with NETS 2909. | 2 | |
| SOFT Concurrent Programming 2001              | 4  | SOFT (1002 or 1902) or COMP (1002 or 1902). | Q | SOFT (1002 or 1902) or COMP (1002 or 1902). | N | May not be counted with SOFT 2901. | 2 | |
### Undergraduate Tables and Units of Study

#### Table II IA: Bachelor of Information Technology Majors (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Senior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3007 Network Protocols</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3009 Operating Systems</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3016 Computer and Network Security</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 3017 Network Programming and Distributed Apps</td>
<td>4</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Elective Senior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3105 Distributed Software Systems</td>
<td>4</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3200 Software Development Project</td>
<td>8</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 3502 Random Signals and Communications</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 3503 Introduction to Digital Communications</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Elective Honours units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4501 Data Communication Networks</td>
<td>4</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4502 Digital Communication Systems</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4503 Error Control Coding</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4601 Computer Design</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4501 Advanced Communication Networks</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4502 Satellite Communication Systems</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4503 Optical Communication Systems</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4504 Cellular Radio Engineering</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4505 Advanced Digital Transmissions</td>
<td>4</td>
<td>P</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4506 Optical Networks</td>
<td>4</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 4024 Network Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 4025 Distributed Systems</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NETS 4026 Design Computer Networks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(v) Major in Software Development

Students are required to complete all the core units, or other mutually exclusive units such as their advanced equivalents.

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOFT 1001 Software Development 1</td>
<td>6</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 1002 Software Development 2</td>
<td>6</td>
<td>Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 2001 Concurrent Programming</td>
<td>4</td>
<td>Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 2004 Software Development Methods 1</td>
<td>4</td>
<td>Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFO 2000 Systems Analysis and Design</td>
<td>4</td>
<td>Q</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Table IIIA: Bachelor of Information Technology Majors (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INFO 2005</strong> Database Management,  Introductory</td>
<td>4</td>
<td>q</td>
<td>ISYS 1003 or INFO 1000 or INF5 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or [SOFT (1001 or 1901) and COMP (1001 or 1901)].</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td><strong>Core Senior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 3101 Object Oriented Software Design</td>
<td>4</td>
<td>p</td>
<td>SOFT [2001 or 2901] and INFO [2000 or 2900] and INFO [2005 or 2905] and [SOFT (2004 or 2904) or COMP (2004 or 2904)].</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SOFT 3104 Software Development Methods 2</td>
<td>4</td>
<td>p</td>
<td>[SOFT (2004 or 2904) or COMP (2004 or 2904)] and SOFT (2001 or 1901).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SOFT 3200 Software Development Project</td>
<td>8</td>
<td>p</td>
<td>[SOFT (2004 or 2904) or COMP (2004 or 2904)] and SOFT (2001 or 2901) and 8 credit points from BIT table III(ii) and 8 credit points from BIT table II IV.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td><strong>Elective Senior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students are required to complete 8 credit points from the elective units, or other mutually exclusive units such as their advanced equivalents.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFO 3005 Organisational Database Systems</td>
<td>4</td>
<td>p</td>
<td>INFO [2000 or 2900] and INFO [2005 or 2905].</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BSYS 3012 Project Management and Practice</td>
<td>4</td>
<td>p</td>
<td>INFO [2000 or 2900].</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SOFT 3102 User Interface Design and Programming</td>
<td>4</td>
<td>a</td>
<td>No assumed knowledge.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SOFT 3103 Software Validation and Verification</td>
<td>4</td>
<td>p</td>
<td>[SOFT (2004 or 2904) or COMP (2004 or 2904)].</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>SOFT 3105 Distributed Software Systems</td>
<td>4</td>
<td>p</td>
<td>[SOFT (2004 or 2904) or COMP (2004 or 2904)] and SOFT (2001 or 2901).</td>
<td></td>
<td></td>
<td></td>
<td>N/A in 2003</td>
</tr>
<tr>
<td><strong>Elective Honours units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students are required to complete 12 credit points from the elective units, or other mutually exclusive units such as their advanced equivalents.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 4602 Real Time Computing</td>
<td>4</td>
<td>a</td>
<td>ELEC 3601 Digital Systems Design and COMP 3100 Software Engineering.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 4604 Engineering Software Requirements</td>
<td>4</td>
<td>a</td>
<td>COMP 3100 Software Engineering or SOFT 3104 Software Development Methods 2.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 4704 Software Project Management</td>
<td>4</td>
<td>a</td>
<td>(COMP 3100 Software Engineering and COMP 3205 Product Development Project) or (INFO 2000 Systems Analysis and Design and SOFT 2004 Software Development Methods 1).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SOFT 4107 Software Architecture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Unavailable in 2003. Details may change.</td>
</tr>
<tr>
<td>SOFT 4108 Program Analysis and Re engineering</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Unavailable in 2003. Details may change.</td>
</tr>
<tr>
<td>(vi) Major in Digital Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Students are required to complete all the core units, or other mutually exclusive units such as their advanced equivalents.</td>
</tr>
<tr>
<td>Students are required to complete all the core units, or other mutually exclusive units such as their advanced equivalents.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Core Junior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 1101 Foundations of Computer Systems</td>
<td>6</td>
<td>a</td>
<td>HSC Maths extension 1.</td>
<td></td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td>SOFT 1001 Software Development 1</td>
<td>6</td>
<td>a</td>
<td>HSC Mathematics Extension 1.</td>
<td></td>
<td></td>
<td></td>
<td>1,2, Summer</td>
</tr>
<tr>
<td>SOFT 1002 Software Development 2</td>
<td>6</td>
<td>q</td>
<td>SOFT (1001 or 1901) or COMP (1001 or 1901).</td>
<td></td>
<td></td>
<td></td>
<td>1,2, Summer</td>
</tr>
<tr>
<td><strong>Core Intermediate units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 2601 Microcomputer Systems</td>
<td>4</td>
<td>a</td>
<td>ELEC 1101 Foundations of Computer Systems.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>SOFT 2001 Concurrent Programming Methods 2</td>
<td>4</td>
<td>q</td>
<td>SOFT (1002 or 1902) or COMP (1002 or 1902).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>SOFT 2004 Software Development Methods 1</td>
<td>4</td>
<td>q</td>
<td>SOFT (1002 or 1902) or COMP (1002 or 1902).</td>
<td></td>
<td></td>
<td></td>
<td>1, Summer</td>
</tr>
<tr>
<td><strong>Core Senior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 3601 Digital Systems Design</td>
<td>4</td>
<td>a</td>
<td>ELEC 2601 Microcomputer Systems, or COMP 2001 Computer Systems, or NETS 2008 Computer Systems Organisation, or NETS 2908 Computer Systems Organisation (adv) or MECH 2701 Mechatronics 2.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 3603 Introduction to Computing Systems</td>
<td>4</td>
<td>a</td>
<td>ELEC 2601 Microcomputer Systems.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Core Honours units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students are required to complete 12 credit points from the elective units, or other mutually exclusive units such as their advanced equivalents.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELEC 3401 Electronic Devices and Circuits</td>
<td>4</td>
<td>a</td>
<td>ELEC 2401 Introductory Electronics.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 3403 Switching Devices and Electronics</td>
<td>4</td>
<td>a</td>
<td>ELEC 3401 Electronic Devices and Circuits.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
Table IIIA: Bachelor of Information Technology Majors (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Conquisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>NETS 3009 Operating Systems</td>
<td>4</td>
<td>p</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>ELEC 4402 Integrated Circuit Design</td>
<td>4</td>
<td>a</td>
<td>ELEC 3401 Electronic Devices and Circuits.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 4601 Computer Design</td>
<td>4</td>
<td>a</td>
<td>ELEC 3403 Switching Devices and Electronics, and ELEC 3601 Digital Systems Design.</td>
<td>N</td>
<td>MECH 4730 Computers in Real time Instrumentation and Control.</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 5606 Multimedia Systems and Applications</td>
<td>4</td>
<td>a</td>
<td>NETS 3007 Network Protocols or ELEC 3504 Data Communications and Internet.</td>
<td>N</td>
<td>ELEC 3604 Internet Engineering.</td>
<td>N NB: Department permission required for enrolment. Permission required for enrolment.</td>
<td>1</td>
</tr>
<tr>
<td>ELEC 5610 Computer and Network Security</td>
<td>4</td>
<td>a</td>
<td>(ELEC 3604 Internet Engineering and ELEC 4501 Data Communication Networks) or ELEC 3504 Data Communication Networks or ELEC 3504 Data Communication Networks (Advance).</td>
<td>N</td>
<td>NETS 3016 Computer and Network Security. NETS 3916 Computer and Network Security (Advance).</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>ELEC 5611 Advanced Computer Engineering</td>
<td>4</td>
<td>a</td>
<td>ELEC 4601 Computer Design.</td>
<td>N</td>
<td></td>
<td>N NB: Department permission required for enrolment.</td>
<td>2</td>
</tr>
</tbody>
</table>

(vii) Major in Computational Science

Students are required to complete all the core units, or other mutually exclusive units such as their advanced equivalents.

<table>
<thead>
<tr>
<th>Core Senior units of study</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>MAIH 3016 Mathematical Computing I</td>
<td>4</td>
<td>p 8 credit points of Intermediate Mathematics and one of MATH 1001 or 1003 or 1901 or 1903 or 1906 or 1907.</td>
<td>N May not be counted with MATH 3916.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHYS 3301 Scientific Computing</td>
<td>4</td>
<td>p 16 credit points of Intermediate units of study in Science Subject Areas.</td>
<td>N May not be counted with PHYS 3911.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHYS 3303 Scientific Visualisation</td>
<td>4</td>
<td>p 16 credit points of Intermediate units of study in Science Subject Areas.</td>
<td>N May not be counted with PHYS 3933.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Elective Senior units of study</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>BOL 3023 Ecological Methods</td>
<td>6</td>
<td>p 16 credit points of Intermediate Biology including BIOL (2001 or 2002 or 2902 or 2004 or 2904):</td>
<td>N May not be counted with BIOL 3923.</td>
<td></td>
<td>N NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td>. . . 2</td>
</tr>
<tr>
<td>BOL 3027 Bioinformatics and Genomics</td>
<td>6</td>
<td>p MBLG (2001 or 2101 or 2901) or 16 credit points of Intermediate Biology including BIOL (2001 or 2001 or 2004 or 2904 or 2905 or 2006 or 2906). For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2502.</td>
<td>N May not be counted with BIOL 3927.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>BINF 3301 Bioinformatics Project</td>
<td>8</td>
<td>p SOFT (2004 or 2904) and 16 credit points from intermediate Biology, Biochemistry, Microbiology, Molecular Biology and Genetics and/or Pharmacology.</td>
<td>N May not be counted with COMP 3206.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>COSC 3601 Parallel Computing</td>
<td>4</td>
<td>a Some familiarity is assumed with Unix and a programming language (eg, C or Fortran).</td>
<td>p At least one of SOFT (2004 or 2904) or COMP (2004 or 2904) or PHYS (3301 or 3901) or MATH 2903 or MATH (3016 or 3916).</td>
<td>N NB: Not available in 2003.</td>
<td></td>
<td>NA in 2003</td>
</tr>
<tr>
<td>COSC 3701 Computational Science Project</td>
<td>8</td>
<td>a Able to program in a standard language.</td>
<td>p 16 credit points of intermediate level natural sciences plus at least one of COSC (1001 or 1901 or 1002 or 1902) or SOFT (1001 or 1901) or MATH (2003 or 2903) or PHYS (2001 or 2901 or 2002 or 2902).</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>GEOP 3201 Modelling Earth Processes</td>
<td>12</td>
<td>p 6 credit points of Junior Mathematics and 16 credit points of Intermediate Science units of study.</td>
<td>N May not be counted with GEOP 3001,3002 and 3004.</td>
<td></td>
<td></td>
<td>NA in 2003</td>
</tr>
<tr>
<td>MAIH 3003 Ordinary Differential Equations</td>
<td>4</td>
<td>p 8 credit points of Intermediate Mathematics (strongly advise MATH 2002 or 2902, with 2001 or 2001).</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MAIH 3018 Partial Differential Equations and Waves</td>
<td>4</td>
<td>p MATH (2001 or 2901) and MATH (2005 or 2905).</td>
<td>N May not be counted with MATH 3921.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MAIH 3019 Signal Processing</td>
<td>4</td>
<td>p MATH (2001 or 2901) and MATH (2005 or 2905).</td>
<td>N May not be counted with MATH 3919.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>MLTI 3004 Computer Graphics</td>
<td>4</td>
<td>p COMP (2111 or 2811 or 2002 or 2902) and [SOFT (2004 or 2904) or COMP (2004 or 2904) and MATH (1002 or 1902).</td>
<td>N May not be counted with MULI 3904 or COMP (3004 or 3904).</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>STAT 3002 Applied Linear Models</td>
<td>4</td>
<td>p STAT 2004 (or STAT 1002 for Arts students) and MATH (1002 or 1902).</td>
<td>N May not be counted with STAT 3902.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>STAT 3003 Time Series Analysis</td>
<td>4</td>
<td>p STAT (2003 or 2903).</td>
<td>N May not be counted with STAT 3903.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>STAT 3004 Design of Experiments</td>
<td>4</td>
<td>p STAT (3002 or 3902).</td>
<td>N May not be counted with STAT 3904.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
</tbody>
</table>
### Table IV: Bachelor of Medical Science

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Junior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Biology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1001 Concepts in Biology</td>
<td>6</td>
<td>A HSC 2 unit Biology. Students who have not undertaken an HSC biology course are strongly advised to complete a biology bridging course before lectures commence. N May not be counted with BIOL (1901 or 1903).</td>
<td>1, Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1002 Living Systems</td>
<td>6</td>
<td>A HSC 2 unit Biology. Students who have not undertaken an HSC biology course are strongly advised to complete a biology bridging course before lectures commence. N May not be counted with BIOL (1902 or 1903).</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1003 Human Biology</td>
<td>6</td>
<td>A HSC 2 unit Biology. Students who have not undertaken an HSC biology course are strongly advised to complete a biology bridging course before lectures commence. N May not be counted with BIOL (1903 or 1905) or EDUH 1016.</td>
<td>2, Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1901 Concepts in Biology (Advanced)</td>
<td>6</td>
<td>P UAI of at least 93 and HSC Biology result in the 90th percentile or better, or Distinction or better in a University level Biology unit, or by invitation. N May not be counted with BIOL (1001 or 1500).</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1902 Living Systems (Advanced)</td>
<td>6</td>
<td>P UAI of at least 93 and HSC Biology result in the 90th percentile or better, or Distinction or better in a University level Biology unit, or by invitation. N May not be counted with BIOL (1002 or 1904 or 1905 or 1907). NB: Department permission required for enrolment.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 1903 Human Biology (Advanced)</td>
<td>6</td>
<td>P UAI of at least 93 and HSC Biology result in the 90th percentile or better, or Distinction or better in a University level Biology unit, or by invitation. N May not be counted with BIOL (1003 or 1904 or 1905 or 1909) or EDUH 1016. NB: Department permission required for enrolment.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Chemistry</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 1001 Fundamentals of Chemistry 1A</td>
<td>6</td>
<td>A There is no assumed knowledge of chemistry for this unit of study, but students who have not undertaken an HSC chemistry course are strongly advised to complete a chemistry bridging course before lectures commence. N May not be counted with CHEM 1101 or 1901 or 1903 or 1905 or 1909.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 1002 Fundamentals of Chemistry IB</td>
<td>6</td>
<td>P CHEM (1001 or 1101) or equivalent. N May not be counted with CHEM (1102 or 1902 or 1904 or 1907 or 1908).</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 1101 Chemistry 1A</td>
<td>6</td>
<td>A HSC Chemistry and Mathematics c Recommended concurrent units of study: 6 credit points of Junior Mathematics. N May not be counted with CHEM (1001 or 1901 or 1903 or 1905 or 1909 or 1906).</td>
<td>1,2, Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 1102 Chemistry IB</td>
<td>6</td>
<td>Q CHEM 1101 or a Distinction in CHEM 1001 or equivalent. c Recommended concurrent units of study: 6 credit points of Junior Mathematics including MATH (1003 or 1903). N May not be counted with CHEM (1002 or 1902 or 1904 or 1907 or 1908).</td>
<td>1,2, Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 1901 Chemistry 1A (Advanced)</td>
<td>6</td>
<td>P UAI of at least 93 and HSC Chemistry result in band 5 or 6, or Distinction or better in a University level Chemistry unit, or by invitation. N May not be counted with CHEM (1001 or 1101 or 1901 or 1903 or 1905 or 1906 or 1909). NB: Department permission required for enrolment.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 1902 Chemistry IB (Advanced)</td>
<td>6</td>
<td>P CHEM (1901 or 1903) or Distinction in CHEM 1101 or equivalent. c Recommended concurrent unit of study: 6 credit points of Junior Mathematics including MATH (1003 or 1903). N May not be counted with CHEM (1102 or 1902 or 1904 or 1907 or 1908).</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 1903 Chemistry 1A (Special Studies Program)</td>
<td>6</td>
<td>P UAI of at least 98.7 and HSC Chemistry result in band 6, or Distinction or better in a University level Chemistry unit, or by invitation. Students in the Faculty of Science Talented Students Program are automatically eligible. c Recommended concurrent unit of study: 6 credit points of Junior Mathematics. N May not be counted with CHEM (1001 or 1101 or 1901 or 1903 or 1905 or 1906 or 1909). NB: Department permission required for enrolment. Entry is by invitation. This unit of study is deemed to be an Advanced unit of study.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 1904 Chemistry IB (Special Studies Program)</td>
<td>6</td>
<td>P Distinction in CHEM 1903. c Recommended concurrent units of study: 6 credit points of Junior Mathematics including MATH (1003 or 1903). N May not be counted with CHEM (1002 or 1102 or 1902 or 1904 or 1907 or 1908). NB: Department permission required for enrolment. Entry is by invitation. This unit of study is deemed to be an Advanced unit of study.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 1908 Chemistry 1 Life Sciences A (Advanced)</td>
<td>6</td>
<td>P UAI of at least 93 and HSC Chemistry result in band 5 or 6, or Distinction or better in a University level Chemistry unit, or by invitation. C Recommended concurrent units of study: 6 credit points of Junior Mathematics. N May not be counted with CHEM (1002 or 1102 or 1902 or 1904 or 1907 or 1908). NB: Department permission required for enrolment. This unit of study is available to students enrolled in the Bachelor of Medical Science, the Bachelor of Science (Nutrition) and the Bachelor of Science (Molecular Biotechnology) only.</td>
<td>1, Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 1909 Chemistry 1 Life Sciences B Mol (Adv)</td>
<td>6</td>
<td>P CHEM (1907 or 1908) or equivalent. C Recommended concurrent units of study: 6 credit points of Junior Mathematics. N May not be counted with CHEM (1001 or 1101 or 1901 or 1903 or 1905 or 1906 or 1909). NB: This unit of study is available to students enrolled in the Bachelor of Medical Science, the Bachelor of Science (Molecular Biology and Genetics), the Bachelor of Science (Nutrition) and the Bachelor of Science (Molecular Biotechnology) only.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Computer Science</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 1001 Software Development 1</td>
<td>6</td>
<td>A HSC Mathematics Extension 1. N May not be counted with SOFT 1901 or COMP (1001 or 1901).</td>
<td>1,2, Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOFT 1002 Software Development 2</td>
<td>6</td>
<td>Q SOFT (1001 or 1901) or COMP (1001 or 1901). N May not be counted with SOFT 1902 or COMP (1002 or 1902).</td>
<td>1,2, Summer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unit of study</td>
<td>CP</td>
<td>A: Assumed knowledge</td>
<td>P: Prerequisite</td>
<td>Q: Qualifying</td>
<td>C: Corequisite</td>
<td>N: Prohibition</td>
<td>Session</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>----</td>
<td>---------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>----------------</td>
<td>----------------</td>
<td>---------</td>
</tr>
<tr>
<td>Software Development 1 (Adv)</td>
<td>6</td>
<td>HSC Mathematics Extension 1.</td>
<td>UAI at least that for acceptance into BSc(Adv) degree program.</td>
<td>N May not be counted with SOFT 1001 or COMP (1001 or 1901).</td>
<td>NB: Department permission required for enrolment. NB: Entry requires departmental permission, except for students in BSc(Adv), BCST(Adv) or BIT degrees.</td>
<td>1,2</td>
<td>Summer</td>
</tr>
<tr>
<td>Software Development 2 (Adv)</td>
<td>6</td>
<td>SOFT (1001 or 1901) or COMP (1001 or 1901) and Distinction in one of these.</td>
<td>N May not be counted with SOFT 1002 or COMP (1002 or 1902).</td>
<td></td>
<td></td>
<td>1,2</td>
<td>Summer</td>
</tr>
</tbody>
</table>

### Mathematics

| MATH 1001: Differential Calculus | 3  | HSC Mathematics Extension 1. | N May not be counted with MATH 1011 or 1901 or 1906. | N May not be counted with MATH 1002 or 1902. | | | 1, Summer |
| MATH 1002: Linear Algebra        | 3  | HSC Mathematics Extension 1. | N May not be counted with MATH 1902 or 1912. | | | | 1, Summer |
| MATH 1003: Integral Calculus and Modelling | 3 | HSC Mathematics Extension 2 or MATH 1001. | N May not be counted with MATH 1903 or 1909 or 1997. | | | | 2, Summer |
| MATH 1004: Discrete Mathematics  | 3  | HSC Mathematics Extension 1. | N May not be counted with MATH 1904 or MATH 2011. | | | | 2, Summer |
| MATH 1005: Statistics            | 3  | HSC Mathematics. | N May not be counted with MATH (1905 or 1015) or ECMT Junior units of study or STAT (1021 or 1022). | | | | 2, Summer |
| MATH 1011: Life Sciences Calculus (1011) | 3 | HSC Mathematics. | N May not be counted with MATH 1003 or 1903. | | | | 2 |
| MATH 1012: Life Sciences Algebra  | 3  | HSC Mathematics. | N May not be counted with MATH 1002 or 1902. | | | | 2 |
| MATH 1013: Differential and Difference Equations | 3 | HSC Mathematics. | N May not be counted with MATH 1003 or 1903 or 1907. | | | | 2 |
| MATH 1015: Life Science Statistics (1015) | 3 | HSC Mathematics. | N May not be counted with MATH (1005 or 1905) or STAT (1021 or 1022) or ECMT Junior units of study. | | | | 1, Summer |
| MATH 1016: Differential Calculus (Advanced) | 3 | HSC Mathematics Extension 2 or result in Band E4 of HSC Mathematics Extension 1. | N May not be counted with MATH 1011 or 1901 or 1906. | | | | 1 |
| MATH 1017: Linear Algebra (Advanced) | 3 | HSC Mathematics Extension 2 or result in Band E4 of HSC Mathematics Extension 1. | N May not be counted with MATH 1002 or 1902. | | | | 1 |
| MATH 1018: Integral Calculus and Modelling Advanced | 3 | HSC Mathematics Extension 2 or Credit or better in MATH 1001/1901. | N May not be counted with MATH (1003 or 1903 or 1907). | | | | 2 |
| MATH 1019: Discrete Mathematics (Advanced) | 3 | HSC Mathematics Extension 2 or result in Band E4 of HSC Mathematics Extension 1. | N May not be counted with MATH 1004 or MATH 2011. | | | | 2 |
| MATH 1020: Statistics (Advanced) | 3 | HSC Mathematics Extension 2 or result in Band E3 or better of HSC Mathematics Extension 1. | N May not be counted with MATH 1005 or 1905 or STAT (1021 or 1022). | | | | 2 |
| MATH 1021: Mathematics (Special Studies Program) A | 3 | UAI of at least 98.5 and result in Band E4 HSC Mathematics Extension 2; by invitation. | N May not be counted with MATH (1001 or 1011 or 1901). | | | | 1 |
| MATH 1022: Mathematics (Special Studies Program) B | 3 | Distinction in MATH 1006; by invitation. | N May not be counted with MATH (1003 or 1903 or 1903). | | | | 2 |

### Physics

| PHYS 1001: Physics 1 (Regular)   | 6  | HSC Physics MATH (1001/1901,1002/1902,1903/1903). MATH 1005/1905 would also be useful. | N May not be counted with PHYS (1002 or 1003). | | | | 1 |
| PHYS 1002: Physics 1 (Fundamentals) | 6 | No assumed knowledge of Physics MATH (1001/1901,1002/1902,1903/1903). MATH 1005/1905 would also be useful. | N May not be counted with PHYS (1001 or 1901). | | | | 1 |
| PHYS 1003: Physics 1 (Technological) | 6 | HSC Physics or PHYS (1001 or 1002 or 1901 or equivalent). MATH (1001/1901,1002/1902,1903/1903). MATH 1005/1905 would also be useful. | N May not be counted with PHYS (1004 or 1902). | | | | 1,2 |
| PHYS 1004: Physics 1 (Environmental & Life Science) | 6 | HSC Physics or PHYS (1001 or 1002 or 1901 or equivalent). MATH (1001/1901,1002/1902,1903/1903). MATH 1005/1905 would also be useful. | N May not be counted with PHYS (1003 or 1902). | | | | 2 |
| PHYS 1005: Physics IA (Advanced) | 6 | MATH (1001/1901,1002/1902,1903/1903). MATH 1005/1905 would also be useful. | P: UAI of at least 95, or HSC Physics result in Band 6, or PHYS 1902, or Distinction or better in PHYS 1003,1904 or an equivalent unit. | | | | 1 |
| PHYS 1006: Physics IB (Advanced) | 6 | MATH (1001/1901,1002/1902,1903/1903). MATH 1005/1905 would also be useful. | P: UAI of at least 95, or HSC Physics result in Band 6, or PHYS 1901, or Distinction or better in PHYS 1001,1902 or an equivalent unit. | | | | 2 |

### Psychology

| PSYC 1001: Psychology 1001 | 6 | N May not be counted with PHYS (1003 or 1904). | | | | 1, Summer |
| PSYC 1002: Psychology 1002 | 6 | | | | | 2, Summer |
Table IV: Bachelor of Medical Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B. Intermediate units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>■ Core units of study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMED 2501 Cells and Cell Communication</td>
<td>6</td>
<td>P 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMED 2502 Genes and Genetic Engineering</td>
<td>6</td>
<td>P 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMED 2503 Regulation of the Internal Environment</td>
<td>8</td>
<td>P 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology.</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMED 2504 Digestion, Absorption and Metabolism</td>
<td>6</td>
<td>P 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMED 2505 Interaction with External Environment</td>
<td>6</td>
<td>P 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMED 2506 Microbes and Body Defence Systems</td>
<td>8</td>
<td>P 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology.</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>C. Senior units of study</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Students may complete their Senior year by taking 48 credit points of Senior core units from this table. They may, however, elect to take 36 credit points of Senior core units and another Intermediate or Senior elective unit. Details of recommended units offered in the Faculty of Science may be found in Table I and Table ID. Students should consult the relevant faculty handbook for units from other faculties. Units which may NOT be taken as electives are listed with the unit descriptions later in this chapter.

■ Core units of study

**Anatomy and Histology**

| ANAT 3001 Microscopy and Histochemistry                                       | 12 | P ANAT 2001. For BMedSc students: 32 credit points of Intermediate BMED units including BMED (2503, 2504, and 2505). NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. | 1             |               |                |                |         |
| ANAT 3002 Cells and Development                                               | 12 | A (i) an understanding of the basic structure of vertebrates; (ii) an understanding of elementary biochemistry and genetics. P ANAT 2001. For BMedSc students: 32 credit points of Intermediate BMED units including BMED (2503, 2504, and 2505). N May not be counted with ANAT 3003. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. | 2             |               |                |                |         |
| ANAT 3005 Topographical Anatomy                                               | 12 | P BMED (2101 and 2102) or 32 credit points of Intermediate BMED units including BMED (2503 and 2504 and 2505). N May not be counted with ANAT (3004 or 3008). NB: This unit of study is available to students enrolled in the Bachelor of Medical Science only. | 2             |               |                |                |         |

**Biochemistry**

| BChM 3001 Mol Biology and Structural Biochemistry                            | 12 | P A total of at least 16 credit points of Intermediate MBLG and BCHM units. For BMedSc students: 32 credit points of Intermediate BMED units including BMED (2501, 2502 and 2504). N May not be counted with BChM 3901. | 1             |               |                |                |         |
| BChM 3901 Mol Biology and Structural Biochem (Adv)                           | 12 | p Distinction in a total of at least 16 credit points from Intermediate MBLG and BCHM units. For BMedSc students: 32 credit points of Intermediate BMED units including Distinctions in BMED (2501, 2502 and 2504). N May not be counted with BChM 3001. | 1             |               |                |                |         |
| BChM 3002 Cellular and Medical Biochemistry                                  | 12 | p A total of at least 16 credit points of Intermediate MBLG and BCHM units. For BMedSc students: 32 credit points of Intermediate BMED units including BMED (2501, 2502 and 2504). N May not be counted with BChM (3902, 3004 or 3904). | 2             |               |                |                |         |
| BChM 3902 Cellular and Medical Biochemistry (Adv)                            | 12 | p Distinction in a total of at least 16 credit points from Intermediate MBLG and BCHM units. For BMedSc students: 32 credit points of Intermediate BMED units including Distinctions in BMED (2501, 2502 and 2504). N May not be counted with BChM (3002, 3004 and 3904). | 2             |               |                |                |         |
| BChM 3098 Functional Genomics and Proteomics                                 | 6  | P MBLG (2001 or 2901) or at least 32 credit points of Intermediate BMED units including BMED (2501 and 2502 and 2504). NB: Recommended unit of study for all molecular biotechnology third year students. | 1             |               |                |                |         |

**Biology**

<p>| BIOL 3018 Applications of Recombinant DNA Tech                               | 6  | P MBLG (2001/2901 and 2002/2902) or 16 credit points of Intermediate Biology including BIOL (2005 or 2905). For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2502. N May not be counted with BIOL (3918, 3103 or 3903). | 1             |               |                |                |         |
| BIOL 3918 Applications of Recombinant DNA Tech Adv                          | 6  | P Distinction in average in MBLG (2001/2901 and 2002/2902) or in 16 credit points of Intermediate Biology including BIOL (2005 or 2905). For BMedSc students: 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should contact the unit Executive Officer. N May not be counted with BIOL (3018, 3103 or 3903). | 1             |               |                |                |         |
| BIOL 3025 Evolutionary Genetics &amp; Animal Behaviour                          | 6  | P 16 credit points from MBLG (2001 or 2901 or 2002 or 2902) and intermediate level Biology units. For BMedSc students 32 credit points of Intermediate BMED units including BMED 2502. N May not be counted with BIOL (3925 or 3928). | 2             |               |                |                |         |</p>
<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BIOC 3925</strong> Evolutionary Gen. &amp; Animal Behaviour Adv</td>
<td>6</td>
<td>P Distinction average in 16 credit points from MBLG (2001, 2002 or 2003) and Intermediate Biology units. For BMedSc students 32 credit points of Intermediate BMED units including distinction in BMED 2502. These requirements may be varied and students with lower averages should consult the unit Executive Officer. N May not be counted with BIOC (3025 or 3928).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>BIOC 3026</strong> Developmental Genetics</td>
<td>6</td>
<td>P MBLG (2001, 2002 or 2003) or 16 credit points of Intermediate Biology units including BIOC (2005 or 2005). For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2502. N May not be counted with BIOC (3926 or 3929).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>BIOC 3926</strong> Developmental Genetics (Advanced)</td>
<td>6</td>
<td>P Distinction average in MBLG (2001, 2002 or 2003) or 16 credit points of Intermediate Biology including BIOC (2005 or 2005). For BMedSc students 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should consult the unit Executive Officer. N May not be counted with BIOC (3026 or 3929).</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>BIOC 3027</strong> Bioinformatics and Genomics</td>
<td>6</td>
<td>P MBLG(2001 or 2101 or 2901) or 16 credit points of Intermediate Biology units including BIOC (2001 or 2001 or 2004 or 2004 or 2005 or 2005 or 2006 or 2006). For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2502. N May not be counted with BIOC 3927.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>BIOC 3927</strong> Bioinformatics and Genomics (Advanced)</td>
<td>6</td>
<td>P Distinction in MBLG (2001 or 2101 or 2901) or Distinction average in 16 credit points of Intermediate Biology units including BIOC (2001 or 2001 or 2004 or 2004 or 2005 or 2005 or 2006). For BMedSc students: 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should consult the unit Executive Officer. N May not be counted with BIOC 3027.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>BIOC 3928</strong> Evolutionary Genetics Molecular (Adv)</td>
<td>6</td>
<td>P Distinction average in 16 credit points of Intermediate Biology including BIOC 2905 or 2901 in MBLG (2001, 2002 or 2003). For BMedSc students: 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should consult the unit Executive Officer. N May not be counted with BIOC (3025 or 3925). Note: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) and the Bachelor of Medical Science only.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**Cell Pathology**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPAT 3001</strong> Cell Pathology A</td>
<td>12</td>
<td>P ANAT 2002; or BCHM 2002 or 2902; or BIOC 2005 or 2006 or 2905 or 2906; or both PCOL 2001 and (2002 or 2003); or PHSI 2002. For BMedSc: 32 credit points from Intermediate BMED units of study. NB: Department permission required for enrolment. Entry requires Departmental permission: only a small number of students can be accommodated in the laboratory facilities. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**Pathological Basis of Human Disease**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPAT 3101</strong> Pathological Basis of Human Disease</td>
<td>12</td>
<td>P ANAT 2001; or BCHM (2001 or 2002 or 2101 or 2102 or 2901 or 2902); or MBLG (2001 or 2101 or 2901); or BIOC (2001 or 2002 or 2005 or 2006 or 2101 or 2102 or 2105 or 2106 or 2901 or 2902 or 2005 or 2906); or HPSC (2001 or 2002); or MIBG (2001 or 2003 or 2901); or PCOL 2001; or PHSI 2001. For BMedSc: 32 credit points from Intermediate BMED units of study. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**Immunology**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BMED 3003</strong> Immunology</td>
<td>12</td>
<td>P 32 credit points of Intermediate BMED units including BMED 2506. N May not be counted with MMU 3002.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**Infectious Diseases**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BMED 3004</strong> Infectious Diseases</td>
<td>12</td>
<td>P 32 credit points of Intermediate BMED units including BMED 2506. N May not be counted with MMU 3002.</td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**Microbiology**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MICR 3001</strong> General and Medical Microbiology</td>
<td>12</td>
<td>P MBLG (2001 or 2101 or 2901) and [12 credit points of Intermediate MICR units or 1 MICR (2011 and 2012) or MICR 2909]. For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2506. N May not be counted with MICR 3901.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

**MICR 3901** General and Medical Microbiology (Adv) | 12 | P MBLG(2101or2901or2901)and(2creditpointsfoIntermediateMICRunits including one Distinction, or MICR (2011 and 2012) including one Distinction, or Distinction in MICR 2909. For BMedSc: 32 credit points of Intermediate BMED units including Distinction in BMED 2506. N May not be counted with MICR 3001. | | | | 1 |

**MICR 3003** Molecular Biology of Pathogens | 12 | P 32 credit points of Intermediate BMED units including BMED 2506. N May not be counted with MICR 3903. NB: It is strongly recommended that students also enrol in MICR 3001. | | | | 2 |

**MICR 3903** Molecular Biology of Pathogens Advanced | 12 | P 32 credit points of Intermediate BMED units including Distinction or better in BMED 2506. N May not be counted with MICR 3003. NB: It is strongly recommended that students also enrol in MICR 3001. | | | | 2 |

**Pharmacology**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PCOL 3001</strong> Molecular Pharmacology and Toxicology</td>
<td>12</td>
<td>P PCOL 2001 and PCOL (2002 or 2003); or 32 credit points from Intermediate BMED units of study. N May not be counted with PCOL 3901. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
### Table IV: Bachelor of Medical Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCOL 3901</td>
<td>12</td>
<td>P Distinction average in PCOL 2001 and PCOL(2002 or 2003); or 32 credit points from Intermediate BMED units of study.</td>
<td>N May not be counted with PCOL 3001.</td>
<td>NB: Department permission required for enrolment. The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Entry to this unit requires Departmental permission.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PCOL 3002</td>
<td>12</td>
<td>P PCOL 2001 and PCOL (2002 or 2003); or 32 credit points from Intermediate BMED units of study.</td>
<td>N May not be counted with PCOL 3002.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PCOL 3902</td>
<td>12</td>
<td>P Distinction average in PCOL 2001 and PCOL(2002 or 2003); or in 32 credit points from Intermediate BMED units of study.</td>
<td>N May not be counted with PCOL 3002.</td>
<td>NB: Department permission required for enrolment. The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Entry to this unit requires Departmental permission.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Physiology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHSI 3001</td>
<td>12</td>
<td>P For BMEdSc: at least 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: PHSI (2101 or 2001 or 2901) or ANAT 2003; and MBLG (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901); plus at least 8 credit points of Intermediate Science units of study.</td>
<td>N May not be counted with PHSI 3901.</td>
<td>NB: A minimum of 8 credit points of Intermediate Physiology and/or Anatomy is recommended.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHSI 3901</td>
<td>12</td>
<td>P For BMEdSc: at least 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: PHSI (2101 or 2001 or 2901) or ANAT 2003; and MBLG (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901); plus at least 8 credit points of Intermediate Science units of study.</td>
<td>N May not be counted with PHSI 3901.</td>
<td>NB: Department permission required for enrolment. A minimum of 8 credit points of Intermediate Physiology and/or Anatomy is recommended. Permission required for enrolment. Available to selected students who have achieved a mark of at least 65 in the prerequisite units of study.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHSI 3002</td>
<td>12</td>
<td>p For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: Credit or better in PHSI 3001; and 16 credit points of Intermediate Science units of study from Anatomy and Histology, Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Microbiology, Molecular Biology and Genetics, Pharmacology, Physics, Physiology, Psychology or Statistics.</td>
<td>N May not be counted with PHSI 3902.</td>
<td>NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHSI 3902</td>
<td>12</td>
<td>p For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: Credit or better in PHSI 3001; and 16 credit points of Intermediate Science units of study from Anatomy and Histology, Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Microbiology, Molecular Biology and Genetics, Pharmacology, Physics, Physiology, Psychology or Statistics.</td>
<td>N May not be counted with PHSI 3902.</td>
<td>NB: Department permission required for enrolment. Permission required for enrolment. Available to selected students who have achieved a mark of at least 65 in the prerequisite units of study. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.</td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>PHSI 3003</td>
<td>12</td>
<td>A PHSI (2001 or 2101 or 2001) and BCHM (2002 or 2102 or 2902).</td>
<td>p For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: PHSI (2002 or 2102 or 2902) and MBLG (2001 to 2101 or 2901) plus at least 8 credit points of Intermediate Science units of study.</td>
<td>N May not be counted with PHSI 3903.</td>
<td>NB: A minimum of 8 credit points of Intermediate Physiology and BCHM (2002 or 2102 or 2902) are strongly recommended.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHSI 3903</td>
<td>12</td>
<td>A PHSI (2001 or 2101 or 2001) and BCHM (2002 or 2102 or 2902).</td>
<td>p For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: PHSI (2002 or 2102 or 2902) and MBLG (2001 to 2101 or 2901) plus at least 8 credit points of Intermediate Science units of study.</td>
<td>N May not be counted with PHSI 3903.</td>
<td>NB: Department permission required for enrolment. A minimum of 8 credit points of Intermediate Physiology and BCHM (2002 or 2102 or 2902) are strongly recommended. Permission required for enrolment. Available to selected students who have achieved a mark of at least 65 in the prerequisite units of study.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHSI 3004</td>
<td>12</td>
<td>P For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2504). For others: PHSI (2001 or 2101 or 2901) and PHSI (2002 or 2102 or 2902) or MBLG (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901).</td>
<td>N May not be counted with PHSI 3904.</td>
<td>NB: Department permission required for enrolment. Permission required for enrolment. Available to selected students who have achieved an average of at least 65 in the prerequisite units of study.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>PHSI 3904</td>
<td>12</td>
<td>P For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2504). For others: PHSI (2001 or 2101 or 2901) and PHSI (2002 or 2102 or 2902) and either MBLG (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901).</td>
<td>N May not be counted with PHSI 3904.</td>
<td>NB: Department permission required for enrolment. Permission required for enrolment. Available to selected students who have achieved an average of at least 65 in the prerequisite units of study.</td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

### D. Honours units of study

Where Honours units of study are designated A, B, C, D the units should be taken in that order, whether a student enrols full time, part time or rai year.

**Anatomy**

- **ANAT 4011** Anatomy Honours A
  - NB: Department permission required for enrolment.
  - Session: 1.2
Table IV: Bachelor of Medical Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANAT 4012 Anatomy Honours B</td>
<td>12</td>
<td>C ANAT 4011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>ANAT 4013 Anatomy Honours C</td>
<td>12</td>
<td>C ANAT 4012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>ANAT 4014 Anatomy Honours D</td>
<td>12</td>
<td>C ANAT 4013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>Biochemistry</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCHM 4011 Biochemistry Honours A</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BCHM 4012 Biochemistry Honours B</td>
<td>12</td>
<td>C BCHM 4011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BCHM 4013 Biochemistry Honours C</td>
<td>12</td>
<td>c BCHM 4012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BCHM 4014 Biochemistry Honours D</td>
<td>12</td>
<td>C BCHM 4013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>Biology (Genetics)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 4011 Biology Honours A</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BIOL 4012 Biology Honours B</td>
<td>12</td>
<td>C BIOL 4011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BIOL 4013 Biology Honours C</td>
<td>12</td>
<td>C BIOL 4012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BIOL 4014 Biology Honours D</td>
<td>12</td>
<td>c BIOL 4013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>Cell Pathology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPAT 4011 Cell Pathology Honours A</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>CPAT 4012 Cell Pathology Honours B</td>
<td>12</td>
<td>C CPAT 4011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>CPAT 4013 Cell Pathology Honours C</td>
<td>12</td>
<td>C CPAT 4012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>CPAT 4014 Cell Pathology Honours D</td>
<td>12</td>
<td>c CPAT 4013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>Histology and Embryology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Students should enrol in Anatomy Honours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Immunology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMED 4011 Immunology Honours A</td>
<td>12</td>
<td>NB: Department permission required for enrolment. Immunology Honours is available to approved students from any degree program. Intending candidates should contact the Department.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BMED 4012 Immunology Honours B</td>
<td>12</td>
<td>C BMED 4011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BMED 4013 Immunology Honours C</td>
<td>12</td>
<td>C BMED 4012.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BMED 4014 Immunology Honours D</td>
<td>12</td>
<td>C BMED 4013.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>Infectious Diseases</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMED 4021 Infectious Diseases Honours A</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BMED 4022 Infectious Diseases Honours B</td>
<td>12</td>
<td>c BMED 4021.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BMED 4023 Infectious Diseases Honours C</td>
<td>12</td>
<td>c BMED 4022.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BMED 4024 Infectious Diseases Honours D</td>
<td>12</td>
<td>C BMED 4023.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>Microbiology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICR 4011 Microbiology Honours A</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>MICR 4012 Microbiology Honours B</td>
<td>12</td>
<td>C MICR4011.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>MICR 4013 Microbiology Honours C</td>
<td>12</td>
<td>C MICR4012.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>MICR 4014 Microbiology Honours D</td>
<td>12</td>
<td>C MICR4013.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>Pharmacology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCOL 4011 Pharmacology Honours A</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PCOL 4012 Pharmacology Honours B</td>
<td>12</td>
<td>C PCOL 4011.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PCOL 4013 Pharmacology Honours C</td>
<td>12</td>
<td>C PCOL 4012.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
</tbody>
</table>
### Table IV: Bachelor of Medical Science (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCOL Pharmacology Honours D 4014</td>
<td>12</td>
<td>C PCOL 4013.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>Physiology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHSI Physiology Honours A 4011</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHSI Physiology Honours B 4012</td>
<td>12</td>
<td>C PHSI 4011.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHSI Physiology Honours C 4013</td>
<td>12</td>
<td>C PHSI 4012.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHSI Physiology Honours D 4014</td>
<td>12</td>
<td>C PHSI 4013.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
</tbody>
</table>

### Table V: Bachelor of Science in Media and Communications

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>■ Junior units of study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENGL 1005 Language and Image</td>
<td>6</td>
<td>N ENGL 1050.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>MECO 1001 Introduction to Media Studies 1</td>
<td>6</td>
<td>NB: Available to BA(Media and Comm) and BSc (Media &amp; Commun) students only.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>■ Senior units of study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GOVT 2303 Media Politics</td>
<td>8</td>
<td>P Two GOVT 1000 level units of study or MECO 2003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>N/A in 2003</td>
</tr>
<tr>
<td>MECO 2001 Radio Broadcasting</td>
<td>8</td>
<td>P 12 junior credit points of Media &amp; Communications units; ENGL 1050 or 1005 or LNGS 1005.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MECO 2002 Writing for Print Media</td>
<td>8</td>
<td>P 12 junior credit points of Media &amp; Communications units; ENGL 1050 or 1005 or LNGS 1005.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MECO 2003 Media Relations and Advertising</td>
<td>8</td>
<td>P 12 junior credit points of Media &amp; Communications units; ENGL 1050 or 1005 or LNGS 1005.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MECO 3001 Video Production</td>
<td>8</td>
<td>P 12 junior credit points of MECO units; ENGL 1050 or 1005 or LNGS 1005.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MECO 3004 Online Media Production</td>
<td>8</td>
<td>P MECO 3001.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MECO 3005 Media Globalisation</td>
<td>8</td>
<td>P 12 junior credit points of MECO units; ENGL 1050 or LNGS 1005.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MECO 3701 Media and Communications Internship</td>
<td>8</td>
<td>P MECO 3002 and MECO 3003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MECO 3702 Internship Project</td>
<td>8</td>
<td>P MECO 3002 &amp; MECO 3003.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table VI: Honours units of study

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Chemistry Honours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGCH 4021 Agricultural Chemistry Honours A</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>AGCH 4022 Agricultural Chemistry Honours B</td>
<td>12</td>
<td>C AGCH 4021.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>AGCH 4023 Agricultural Chemistry Honours C</td>
<td>12</td>
<td>C AGCH 4022.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>AGCH 4024 Agricultural Chemistry Honours D</td>
<td>12</td>
<td>C AGCH 4023.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>Anatomy and Histology Honours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANAT 4011 Anatomy Honours A</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>ANAT 4012 Anatomy Honours B</td>
<td>12</td>
<td>C ANAT 4011.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>ANAT 4013 Anatomy Honours C</td>
<td>12</td>
<td>C ANAT 4012.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>ANAT 4014 Anatomy Honours D</td>
<td>12</td>
<td>C ANAT 4013.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>Unit of study</td>
<td>CP</td>
<td>A: Assumed knowledge</td>
<td>P: Prerequisite</td>
<td>Q: Qualifying</td>
<td>C: Corequisite</td>
<td>N: Prohibition</td>
<td>Session</td>
</tr>
<tr>
<td>---------------</td>
<td>----</td>
<td>---------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>---------------</td>
<td>---------------</td>
<td>---------</td>
</tr>
<tr>
<td>Biochemistry Honours</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BCHM 4011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCHM 4012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCHM 4013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BCHM 4014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biology Honours</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>BIOL 4011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 4012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 4013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOL 4014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemistry Honours</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>CHEM 4011</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 4012</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 4013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 4014</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computational Science Honours</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>COSC 4001</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COSC 4002</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COSC 4003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COSC 4004</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Science Honours</td>
<td>12</td>
<td>NB: Department permission required for enrolment.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>COMP 4301</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4302</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4303</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4304</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4305</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4306</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4307</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4308</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4309</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4400</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4401</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4402</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4403</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4404</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COMP 4601</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*NB: Department permission required for enrolment.*
<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 4602 Advances in Computer Science</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>COMP 4603 Advances in Computer Science</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>COMP 4604 Advances in Computer Science</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>INFO 4300 Information Systems</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>INFO 4306 Database Systems</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>INFO 4901 Research Preparation</td>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>INFO 4902 Research Project</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>INFO 4999 Computer Science Honours</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>CPAT 4011 Cell Pathology Honours A</td>
<td>12</td>
<td></td>
<td></td>
<td>A: Assumed knowledge</td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>CPAT 4012 Cell Pathology Honours B</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>C: CPAT 4011.</td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>CPAT 4013 Cell Pathology Honours C</td>
<td>12</td>
<td></td>
<td></td>
<td>c: CPAT 4012.</td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>CPAT 4014 Cell Pathology Honours D</td>
<td>12</td>
<td></td>
<td></td>
<td>c: CPAT 4013.</td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOG 4011 Geography Honours A</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOG 4012 Geography Honours B</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>C: GEOG 4011.</td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOG 4013 Geography Honours C</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>C: GEOG 4012.</td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOG 4014 Geography Honours D</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>C: GEOG 4013.</td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOL 4011 Geology Honours A</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOL 4012 Geology Honours B</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>C: GEOL 4011.</td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOL 4013 Geology Honours C</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>C: GEOL 4012.</td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOL 4014 Geology Honours D</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>C: GEOL 4013.</td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOP 4011 Geophysics Honours A</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOP 4012 Geophysics Honours B</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>C: GEOP 4011.</td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOP 4013 Geophysics Honours C</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>C: GEOP 4012.</td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>GEOP 4014 Geophysics Honours D</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td>C: GEOP 4013.</td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>HPSC 4101 Philosophy of Science</td>
<td>6</td>
<td>P: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPSC 4102 History of Science</td>
<td>6</td>
<td>p: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HPSC 4103 Sociology of Science</td>
<td>6</td>
<td>P: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>HPSC 4104 Recent Topics in HPS</td>
<td>6</td>
<td>P: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>Unit of study</td>
<td>CP</td>
<td>A: Assumed knowledge</td>
<td>P: Prerequisite</td>
<td>Q: Qualifying</td>
<td>C: Corequisite</td>
<td>N: Prohibition</td>
<td>Session</td>
</tr>
<tr>
<td>---------------</td>
<td>----</td>
<td>----------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>--------------</td>
<td>--------------</td>
<td>---------</td>
</tr>
<tr>
<td>HPSC 4105 HPS Research Methods</td>
<td>1,2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>HPSC 4106 Research Project A</td>
<td>1,2</td>
<td>P Available only to students admitted to HPS Honours and Graduate Diploma in Science (History and Philosophy of Science), or by special permission.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>HPSC 4107 Research Project B</td>
<td>1,2</td>
<td>P Available only to students admitted to HPS Honours and Graduate Diploma in Science (History and Philosophy of Science). C Must be taken in conjunction with HPSC 4107 Research Project B in the following semester. NB: Department permission required for enrolment.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>HPSC 4999 History &amp; Philosophy of Science Honours</td>
<td>1,2</td>
<td>p Available only to students admitted to HPS Honours. NB: Department permission required for enrolment.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

**Immunology Honours**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMED 4011 Immunology Honours A</td>
<td>1,2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>BMED 4012 Immunology Honours B</td>
<td>1,2</td>
<td>C BMED 4011, NB: Immunology Honours is available to approved students from any degree program. Intending candidates should contact the Department.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>BMED 4013 Immunology Honours C</td>
<td>1,2</td>
<td>C BMED 4012, NB: Immunology Honours is available to approved students from any degree program. Intending candidates should contact the Department.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>BMED 4014 Immunology Honours D</td>
<td>1,2</td>
<td>c BMED 4013, NB: Immunology Honours is available to approved students from any degree program. Intending candidates should contact the Department.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

**Information Systems Honours**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISYS 4301 A Information Systems Honours A</td>
<td>1,2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>ISYS 4302 Information Systems Honours B</td>
<td>1,2</td>
<td>C ISYS 4301.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>ISYS 4303 C Information Systems Honours C</td>
<td>1,2</td>
<td>c ISYS 4302.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>ISYS 4304 D Information Systems Honours D</td>
<td>1,2</td>
<td>C ISYS 4303.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

**Marine Sciences Honours**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MARS 4011 Marine Sciences Honours A</td>
<td>1,2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MARS 4012 Marine Sciences Honours B</td>
<td>1,2</td>
<td>C MARS 4011.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MARS 4013 Marine Sciences Honours C</td>
<td>1,2</td>
<td>C MARS 4012.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MARS 4014 Marine Sciences Honours D</td>
<td>1,2</td>
<td>C MARS 4013.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

**Pure Mathematics Honours**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 4301 Pure Mathematics Honours A</td>
<td>1,2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MATH 4302 Pure Mathematics Honours B</td>
<td>1,2</td>
<td>c MATH 4301.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MATH 4303 Pure Mathematics Honours C</td>
<td>1,2</td>
<td>c MATH 4302.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MATH 4304 Pure Mathematics Honours D</td>
<td>1,2</td>
<td>c MATH 4303.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

**Applied Mathematics Honours**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 4401 A Applied Mathematics Honours A</td>
<td>1,2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MATH 4402 B Applied Mathematics Honours B</td>
<td>1,2</td>
<td>C MATH 4401.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MATH 4403 C Applied Mathematics Honours C</td>
<td>1,2</td>
<td>C MATH4402.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MATH 4404 D Applied Mathematics Honours D</td>
<td>1,2</td>
<td>C MATH 4403.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

**Molecular Biotechnology Honours**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>MOBT 4011 Honours A</td>
<td>1,2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MOBT 4012 Honours B</td>
<td>1,2</td>
<td>C MOBT 4011.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MOBT 4013 Honours C</td>
<td>1,2</td>
<td>C MOBT 4012.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>MOBT 4014 Honours D</td>
<td>1,2</td>
<td>C MOBT 4013.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>
## Table VI: Honours units of study (continued)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>CP</th>
<th>A: Assumed knowledge</th>
<th>P: Prerequisite</th>
<th>Q: Qualifying</th>
<th>C: Corequisite</th>
<th>N: Prohibition</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Microbiology Honours</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICR 4011 Microbiology Honours A</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NB: Department permission required for enrolment.</td>
<td>1,2</td>
</tr>
<tr>
<td>MICR 4012 Microbiology Honours B</td>
<td>12</td>
<td></td>
<td>C MICR 4011.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>MICR 4013 Microbiology Honours C</td>
<td>12</td>
<td></td>
<td>C MICR 4012.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>MICR 4014 Microbiology Honours D</td>
<td>12</td>
<td></td>
<td>C MICR 4013.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td><strong>Nutrition Honours Clinical</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUTR 4001 Clinical Nutritional Science A</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NB: Department permission required for enrolment.</td>
<td>1</td>
</tr>
<tr>
<td>NUTR 4002 Clinical Nutritional Science B</td>
<td>24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NB: Department permission required for enrolment.</td>
<td>2</td>
</tr>
<tr>
<td><strong>Nutrition Honours Research</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NUTR 4101 Nutrition Research A</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NB: Department permission required for enrolment.</td>
<td>1,2</td>
</tr>
<tr>
<td>NUTR 4102 Nutrition Research B</td>
<td>12</td>
<td></td>
<td>C NUTR 4101.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>NUTR 4103 Nutrition Research C</td>
<td>12</td>
<td></td>
<td>C NUTR 4102.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>NUTR 4104 Nutrition Research D</td>
<td>12</td>
<td></td>
<td>C NUTR 4103.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td><strong>Pharmacology Honours</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCOL 4011 Pharmacology Honours A</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NB: Department permission required for enrolment.</td>
<td>1,2</td>
</tr>
<tr>
<td>PCOL 4012 Pharmacology Honours B</td>
<td>12</td>
<td></td>
<td>C PCOL 4011.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PCOL 4013 Pharmacology Honours C</td>
<td>12</td>
<td></td>
<td>C PCOL 4012.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PCOL 4014 Pharmacology Honours D</td>
<td>12</td>
<td></td>
<td>C PCOL 4013.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td><strong>Physiology Honours</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHSI 4011 Physiology Honours A</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NB: Department permission required for enrolment.</td>
<td>1,2</td>
</tr>
<tr>
<td>PHSI 4012 Physiology Honours B</td>
<td>12</td>
<td></td>
<td>C PHSI 4011.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHSI 4013 Physiology Honours C</td>
<td>12</td>
<td></td>
<td>C PHSI 4012.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHSI 4014 Physiology Honours D</td>
<td>12</td>
<td></td>
<td>C PHSI 4013.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td><strong>Physics Honours</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHYS 4011 Physics Honours A</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NB: Department permission required for enrolment.</td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS 4012 Physics Honours B</td>
<td>12</td>
<td></td>
<td>C PHYS 4011.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS 4013 Physics Honours C</td>
<td>12</td>
<td></td>
<td>C PHYS 4012.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PHYS 4014 Physics Honours D</td>
<td>12</td>
<td></td>
<td>c PHYS 4013.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td><strong>Psychology Honours</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSYC 4011 Psychology Honours A</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NB: Department permission required for enrolment.</td>
<td>1,2</td>
</tr>
<tr>
<td>PSYC 4012 Psychology Honours B</td>
<td>12</td>
<td></td>
<td>C PSYC 4011.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PSYC 4013 Psychology Honours C</td>
<td>12</td>
<td></td>
<td>c PSYC 4012.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>PSYC 4014 Psychology Honours D</td>
<td>12</td>
<td></td>
<td>C PSYC 4013.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td><strong>Soil Science Honours</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOIL 4021 Soil Science Honours A</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NB: Department permission required for enrolment.</td>
<td>1,2</td>
</tr>
<tr>
<td>SOIL 4022 Soil Science Honours B</td>
<td>12</td>
<td></td>
<td>C SOIL 4021.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>SOIL 4023 Soil Science Honours C</td>
<td>12</td>
<td></td>
<td>C SOIL 4022.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>SOIL 4024 Soil Science Honours D</td>
<td>12</td>
<td></td>
<td>C SOIL 4023.</td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td><strong>Mathematical Statistics Honours</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STAT 4021 Mathematical Statistics Honours A</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NB: Department permission required for enrolment.</td>
<td>1,2</td>
</tr>
<tr>
<td>Unit of study</td>
<td>CP</td>
<td>A: Assumed knowledge</td>
<td>P: Prerequisite</td>
<td>Q: Qualifying</td>
<td>C: Corequisite</td>
<td>N: Prohibition</td>
<td>Session</td>
</tr>
<tr>
<td>--------------</td>
<td>----</td>
<td>----------------------</td>
<td>----------------</td>
<td>--------------</td>
<td>----------------</td>
<td>----------------</td>
<td>---------</td>
</tr>
<tr>
<td>STAT 4202 Mathematical Statistics Honours B</td>
<td>12</td>
<td>C STAT 4201.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>STAT 4203 Mathematical Statistics Honours C</td>
<td>12</td>
<td>C STAT 4202.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
<tr>
<td>STAT 4204 Mathematical Statistics Honours D</td>
<td>12</td>
<td>c STAT 4203.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,2</td>
</tr>
</tbody>
</table>
The units of study in this section generally are organised alphabetically by department or school, except for those listed below.

COMP, INFO, ISYS, NETS, MULT and SOFT can be found under the Information Technologies entry.

NTMP can be found under the Marine Science entry.

STAT can be found under the Mathematics and Statistics entry.

### Aerospace, Mechanical and Mechatronic Engineering

The School of Aerospace, Mechanical and Mechatronic Engineering is part of the Faculty of Engineering. In addition to providing professional training in aerospace, mechanical and mechatronic engineering, units of study in the School are available to students in the Faculty of Science who meet any prerequisite requirements for a particular unit.

### Agricultural Chemistry and Soil Science

#### Agricultural Chemistry

Studies in the disciplines of Agricultural Chemistry and Soil Science are offered by the School of Land, Water and Crop Sciences in the Faculty of Agriculture.

Units of study in Agricultural Chemistry for Science students cover aspects of chemistry and biochemistry which are relevant in basic and applied biological sciences including agriculture, the environment and food science. Emphasis is placed on the chemistry of molecules of biological, agricultural and environmental significance both naturally occurring (eg, in foods and natural fibres), and chemically synthesised (eg, insecticides and herbicides). The biochemistry is planned around the relationship between living organisms and their environment and includes sections on the metabolism of inorganic and synthetic materials by animals, plants and microorganisms.

The units of study available are: AGCH 2001 Molecular Processes in Ecosystems (6 credit points Intermediate); AGCH 3025 and AGCH 3026, Chemistry and Biochemistry of Foods A and B respectively (6 credit points Senior each); AGCH 3020, AGCH 3021 and AGCH 3022, Chemistry and Biochemistry of Ecosystems A, B and C respectively (4 credit points Senior each); AGCH 3024 Chemistry and Biochemistry of Foods (6 credit points Senior); and Agricultural Chemistry Honours. The unit of study AGCH 3012 is only available to students enrolled in the Bachelor of Science (Environmental) and students seeking further information should consult the relevant Tables earlier in this chapter as well as degree information in chapter 2 of this handbook.

### AGCH 2001 Molecular Processes in Ecosystems

6 credit points. Dr Lees, Dr Caldwell (Coordinator). Session: 1. Classes: 4 lec & 4 prac/wk. Prerequisite: BIOL (1002 or 1902). Students who have not satisfied the prerequisites in Biology may enrol with SOIL 2001 as a conquisite. Qualifier: CHEM 1002 or equivalent. Examination: One 3hr exam, prac, assignments.

This is an introductory unit of study consisting of aspects of chemistry and biochemistry relevant in studies of basic and applied biological sciences including agriculture and the environment. The unit of study introduces students to biophysical, biological and environmental chemistry. Lecture topics include: energy in the biosphere; the interaction of radiation and matter; solutions of neutral solutes and electrolytes; emulsions, foams and gels; the biological chemistry of carbohydrates, lipids, amino acids and proteins (including enzymes); nucleic acids; the metabolism of simple sugars, fatty acids and amino acids; the mechanisms of energy release and transduction; the basic pathway of carbon fixation in photosynthesis. Emphasis is given to the theory, principles and practice of the basic analytical techniques which underpin the more advanced instrumental methods used in many laboratory based disciplines.

### AGCH 3025 Chemistry and Biochemistry of Foods A

6 credit points. Dr Edith Lees. Session: 1. Classes: 3 lec, 1 tut/wk, 24 hr prac. Prerequisite: 8 credit points of Intermediate units in Agriculture, Chemistry, Chemistry or Biochemistry. Examination: May not be counted with AGCH (3003, 3005, 3017, 3024). Assessment: One 2hr exam, one 1 hr theory of prac exam, assignment, prac reports.

This unit of study aims to give students an understanding of the constituents of foods and fibres. The lecture topics cover:

- the chemistry, biochemistry and processing behaviour of major food constituents oligosaccharides, polysaccharides, lipids and proteins;
- the relationship between molecular structure of constituents and their functionality in foods;
- natural fibres and gel forming biopolymers uses in foods, importance in dietary fibre and commercial products; enzymes in foods and food processing;
- wheat flour doughs and protein chemistry during baking and cooking;
- anti nutritional and toxic constituents of plants and foods; and
- flavour chemistry

The laboratory exercises aim to give students an understanding of global food systems and global food security. In the lecture/ laboratory/workshop component topics covered will include the sustainable production of major food crops; the role of genetically modified crops in food sustainability and quality; principles and methods in food quality control and assessment; chemical and biochemical aspects of food quality in relation to food processing and nutritional values.

The laboratory exercises aim to give students an understanding of the methods used in the analysis of foods and other biological materials, and will include:

- analysis of carbohydrates including starch and dietary fibre;
- spectroscopic, enzymic, and chromatographic methods.

### AGCH 3026 Chemistry and Biochemistry of Foods B

6 credit points. Dr Edith Lees. Session: 1. Classes: 2 lec/seminar/ workshop/wk; site visits: 24 hr prac. Prerequisite: AGCH 3025. Examination: May not be counted with AGCH (3003, 3005). Assessment: Oral presentations (2), written assignments (2), 1 hr theory of prac exam, prac reports.

This unit of study aims to give students an understanding of global food systems and global food security. In the lecture/ seminar/workshop component topics covered will include the sustainable production of major food crops; the role of genetically modified crops in food sustainability and quality; principles and methods in food quality control and assessment; chemical and biochemical aspects of food quality in relation to food processing and nutritional values.

The laboratory exercises aim to give students an understanding of the methods used in the analysis of foods and other biological materials, and will include:

- analysis and examination of protein functionality in foods;
- spectroscopic, enzymic, and chromatographic methods.

### AGCH 3020 Chemistry & Biochemistry of Ecosystems A

4 credit points. Prof. Kennedy (Coordinator), Dr Caldwell, Dr Lees, Prof. Copeland. Session: 2. Classes: 3 lec & 1 tut/wk. Prerequisite: AGCH (2001 or 2002) or G (2001 or 2101 or 2202 or 2301 or 2302 or 2902) or BCHM (2002 or 2902) or ENV (2001 or 2002). Examination: May not be counted with AGCH (3001 or 3004). Assessment: One 2 hr exam (60%), assignments and quizzes (40%).

This unit of study aims to give students an understanding of the chemical and biochemical processes in ecosystems. The lecture topics cover:

- the biological carbon cycle bioenergetics of autotrophy and heterotrophy, photosynthesis, fermentation, eutrophication;
• the mineral nutrient cycles, uptake and utilization by organisms; pH balancing;
• the biological nitrogen cycle ammonification, nitrification of ammonia, denitrification of nitrate, nitrogen fixation, ammonia and nitrogen assimilation;
• the biological sulphur cycle sulphate assimilation, sulphate reduction and dissimilation in soil and water;
• the role of the nitrogen and sulphur cycles in the acidification of ecosystems; effects of acidification on plants and animals;
• pesticides and herbicides, modes of action, metabolism and detoxification; environmental chemistry and fate of pesticides; the design of new pesticides and means of pest control;
• heavy metals and plants, mechanisms of tolerance, hyperaccumulators, halophytes.

The tutorials are designed to provide students with an insight into environmental issues and methods for monitoring and remediation of contaminants including heavy metals and pesticides.

AGCH 3021 Chemistry & Biochemistry of Ecosystems B
4 credit points. Prof. Kennedy (Coordinator), Dr Caldwell, Prof. Copeland.
May not be counted with AGCH 3001 or 3004. Assessment:
Laboratory reports and assignment.

This unit of study aims to give students an understanding of the practical skills required for chemical and biochemical methods of analysis used in environmental chemistry. The laboratory exercises will include:
• o sample preparation;
• o analyses of environmental samples for organic and inorganic nutrients, products and contaminants including heavy metals and pesticides;
• o experience with gas, liquid and ion chromatography, atomic absorption spectroscopy, electrochemical methods, mass spectrometry and the use of immunoassays (ELISA).

AGCH 3022 Chemistry & Biochemistry of Ecosystems C
4 credit points. Prof. Kennedy (Coordinator), Dr Caldwell, Dr Lees, Prof. Copeland.
Prohibition:
May not be counted with AGCH (3001 or 3004). Assessment:
Oral & written reports.

This unit of study will focus on chemical and biological factors involved in the generation of the enhanced greenhouse effect and its impact on rural ecosystems. Practical solutions will be sought by students, employing a field theory relating the generation of molecular action in ecosystems to the dissipation of solar energy to outer space. Relevant case studies will involve fieldwork at research centres and field sites in eastern Australia.

AGCH 3024 Chemistry and Biochemistry of Foods
6 credit points. Assoc Prof Copeland. Session: 1. Classes: 3 lec & 1 tut/wk, 8 credit pracs. Prerequisite: MBLG 2001 (2001 and 2002) or BCHM 2002 or 2902. Prohibition:
May not be counted with AGCH (3003 or 3005 or 3017 or 3025).
Assessment:
One 3hr exam (50%), One major assignment (25%), Practical Reports (25%).

This unit of study aims to give students an understanding of the constituents of foods and fibres. The lecture topics cover: the chemistry, biochemistry and processing behaviour of major food constituents - polysaccharides, polyols, mono- and disaccharides, lipids and proteins; the relationship between molecular structure of constituents and their functionality in foods; natural fibres and gel forming biopolymers uses in foods, importance in dietary fibre and commercial products; enzymes in foods and food processing; wheat flour doughs and protein chemistry during baking and cooking; flavour chemistry and the chemistry and biochemistry of anti nutritional and toxic constituents of plants and foods.

The practical exercises in this unit of study will focus on the characterisation of food hydrocolloids in terms of particle size distribution, molecular weight distribution, and molecular structure. Each practical will incorporate a tutorial introducing the background to the characterisation technique employed. Particular emphasis will be placed on the development of practical skills and critical thinking about the implications of experimental data. Students should emerge with a good understanding of the fundamental basis of hydrocolloid characterisation, some familiarity with a broad range of commonly used techniques, and good skills in assessment and processing of experimental data.

The tutorials will provide an introduction to each of the practical exercises, and will also cover topical issues in food science, including food quality, food labelling and food security and genetically modified foods.

AGCH 3012 Rural Environmental Chemistry
4 credit points. Prof. I.R. Kennedy. Session: 1. Classes: 1 two hour tutorial and laboratory session per week. A 6 day fieldtrip held in Orientation week. Prerequisite: AGCH 2002 or ENVI 2001 and 2002. Assessment:
Report on excursion, Data analysis exercises.

NB: This unit is offered to students enrolled in BSc(Environmental), BPHWE and, subject to numbers, may be available to BScAgr. A maximum quota of 30 may exist. Contact Professor Kennedy.

This unit of study is based on a field excursion to areas such as the Namoi Valley near Narrabri, and the Macquarie Marshes in the Macquarie Valley, where agriculture based on irrigation has been developed. The elemental aspects of soil formation and profiling will be examined and the extent of environmental impacts of these agricultural enterprises and human settlement assessed. Observations will be made in the field and samples of water, sediment and soil brought back for analysis at the University, covering tests such as pH, oxygen content, redox potential, salt content, nutrient content, water and solute transport and pesticide content. An interactive computer exercise will be used to foster knowledge gained from this excursion and its associated sample analyses.

Agricultural Chemistry Honours

The fourth year unit of study in Agricultural Chemistry aims to:
provide students with problem solving and communication skills required by professional chemists in enterprises concerned with agricultural production and processing, foods and beverages, and environmental science; enable students to learn to work independently in a laboratory environment; familiarise students with the research literature and methodology of biological chemistry; and provide a basis for students who wish to proceed to postgraduate research.

Candidates should consult the Department as soon as possible after results in Senior unit of study are obtained. The unit of study consists of a research project (with submission of a dissertation), two essays, an oral presentation and attendance at specialist lectures and seminars in agricultural, biological and environmental chemistry. The essays and oral presentation are selected from a list of topics in basic and applied biological and environmental chemistry, and food science. Projects are usually available in one of the following areas of current research interest in the Department: carbohydrate and nitrogen metabolism in plants, biological nitrogen fixation in legumes and associated cation exchange capacity, nitrogen, phosphorus, potassium and other aspects of food science, cereal chemistry and biochemistry.

Soil Science

The Soil Science units of study aim primarily at giving students an introduction to the three major branches of soil science, namely soil physics, soil chemistry, and pedology, and at providing the basis for a professional career in each of these divisions for students wishing to specialise.

The introductory unit of study is particularly relevant for students interested in the environmental and geological sciences and in land use management.

SOIL 201 Soil Properties and Processes
8 credit points. Dr Cattle. Session: 1. Classes: 3 lec, 1 tut, 3hr prac/wk, and 1 day of fieldwork. Prerequisite: CHEM 1002 or equivalent and 12 credit points of Junior Mathematics or PHYS 1003 or 1004. Assessment:
One 3hr written exam, one 2hr prac exam, quizzes and prac exercises.

This unit of study is concerned with the fundamental properties of soil, the factors of soil formation, and the processes that operate in the soil system. The components of the unit of study are pedology, soil physics and soil chemistry. These components are synthesised by reference to common soil profiles. The study of soil in the field starts with field description and assessment of essential characteristics. The physics of water and gas movement, temperature, density, swelling and strength are considered. Soil chemistry includes properties of organic matter, cation exchange capacity, nitrogen, phosphorus, potassium and...
Acidity. Common soil types of New South Wales are studied in relation to their formation, properties and classification.

Textbooks


FitzPatrick EA. Micromorphology of Soils. Chapman & Hall, 1984

Reference books

8 credit points. Dr Singh. Session: 2. Classes: 4 lec & 3hr prac/wk; 5 acidity. Common soil types of New South Wales are studied in relation to their formation, properties and classification.

Classifications.


Classification.

Pedology

This soil science specialisation trains people for careers in professional soil science and extension. It provides an excellent background for entry into all aspects of soil science research ranging from physics through mineralogy and chemistry to pedology. Increasing emphasis is being given to aspects of soil sustainability and environmental soil science in order that graduates can meet the growing national demands in this area. This unit of study covers advanced soil chemistry and methods of soil analysis.

Soil Chemistry: The lecture topics include the structure and chemistry of inorganic components, surface charge of soil minerals, chemistry of soil organic matter, ion exchange, ion sorption, soil solution solid phase equilibria and redox chemist of soils.

Methods: Topics to be covered will include the use of algorithms and simulation modelling in soil science, techniques for soil structural assessment, techniques for dating the age of soil materials, and the use of electron microscopy and X ray based techniques in soil science. Practicals will involve the writing of computer programs for modelling applications, soil structural assessment of samples using image analysis, radiocarbon dating of field samples, and the use of electron microscopy and X ray diffraction to identify soil constituents.

Reference books


Soil Science Honours

The honours program consists of several parts:

(i) supplementary lectures and seminars;
(ii) topics of study selected from Agricultural Chemistry, Biometry, Botany, Geology, Physical Chemistry, Mathematics, Soil Mechanics, Soil Microbiology, etc;
(iii) a small amount of field work performed under direction; and
(iv) a project in one branch of soil science.

H Anatomy and Histology

The Department of Anatomy and Histology teaches topographical and neuroanatomy, histology and cell biology, developmental biology and physical anthropology to students in the Faculties of Science, Medicine and Dentistry.

Location

The Department is in the Anderson Stuart Building. The Department Office is on the ground floor, Room S254.

Noticeboards

The noticeboards are situated next to the Department Office, Room S254, and near Rooms W225 and S431. Students are advised to consult the noticeboard regularly. Timetables for lectures and practical classes will be posted, where possible, in the week before the beginning of each semester.

Advice on units of study and enrolment

Students wishing to enrol in units of study in Anatomy and Histology must consult the Departmental advisers in the Enrolment Centre during re enrolment week prior to enrolling in the units of study. Information will be available at this time on the units of study offered by the Department and on the advisability of various combinations of subjects.

Registration

All students should register with the Department. Please consult the Departmental noticeboards for details.
Vaccinations
All students studying gross anatomy or neurosciences who may also be exposed to human tissues or fluids should contact the University Health Service regarding vaccinations.

Protective Clothing
All students studying gross anatomy or neurosciences must wear a laboratory coat or gown in tutorial rooms and a gown in dissection rooms and must wear gloves when handling cadaveric material.

ANAT2001 Principles of Histology
4 credit points. A/Prof Byrne. Session: 1. Summer. Classes: 4hr/wk, usually 2 lec & 2 prac. Prerequisite: 12 credit points of Junior Biology or Junior Psychology. Assessment: One 1 hr exam, one 1 hr prac exam, 2 theory quizzes, 2 prac quizzes.

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit of study covers the principles of cell biology and study of the structure of cells, tissues and organ systems at the light and electron microscopic levels. Instruction also includes a focus on practical applications of histological techniques and analysis for research.

Textbooks

Histology Practical Book (consult Departmental noticeboards)

Reference Books

The histology text and practical book are to be purchased before the first practical class

ANAT2002 Comparative Primate Anatomy
4 credit points. Dr Denise Donlon. Session: 2. Classes: 4hr/wk, usually 2 lec & 2 prac. Assumed knowledge: Knowledge of basic vertebrate biology. Prerequisite: 12 credit points of Junior Biology or Junior Psychology or Junior Archaeology. Assessment: One 1 hr theory exam (50%), one 1 hr prac exam (30%), quizzes and worksheets (20%).

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit of study covers the muscular-skeletal anatomy of the human body with particular emphasis on human evolution and comparisons with apes and fossil hominids. The topics covered include the versatility of the hand in manipulation and locomotion, bipedalism, climbing and brachiation in apes, and the changes in pelvic anatomy associated with bipedalism and their obstetric consequences.

Textbooks

ANAT3001 Microscopy and Histochemistry
6 credit points. A/Prof Andrew. Session: 2. Classes: 2hr/wk. Assumed knowledge: (i) an understanding of the basic structure of vertebrates; (ii) an understanding of elementary biochemistry and genetics. Prerequisite: ANAT 2001. For BMEd students: 32 credit points of Intermediate BMED units including BMED (2503, 2504, and 2505). Assessment: May not be counted with ANAT 3003. Assessment: Theory exam and practical assignments.

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit of study focuses on the peripheral distribution of the cranial nerves, their relationship to the special senses and special motor mechanisms that control animal development. Fertilization, cleavage, gastrulation and the formation of the primary germ layers are examined in a range of animals, mainly vertebrates. The parts played by inductive cell and tissue interactions in differentiation, morphogenesis and pattern formation are studied at cellular and molecular levels. The unit of study also covers the design of experimental procedures using appropriate molecular and cellular techniques to answer developmental questions.

Textbooks

ANAT3004 Cranial and Cervical Anatomy
6 credit points. A/Prof Jan Provins. Session: 2. Classes: 1 lec, 2hr dissection, 3 prac/tut. Prerequisite: ANAT 2001. Prohibition: May not be counted with ANAT 3005. Assessment: One 1.5hr theory exam, one 1 hr prac exam, one 2500 word essay, continuous assessment (10%).

NB: Not more than 12 credit points allowed from ANAT 3004, ANAT 3007 & ANAT 3008. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit of study focuses on the peripheral distribution of the cranial nerves in the head and neck regions of the body. Emphasis is placed on the functional components of the cranial nerves and their relationship to the special senses and special motor functions such as facial gesture and speech. Dissection classes enable students to develop their own approach to the understanding and organisation of subject material. Communication of key concepts and presentation of subject material in an academic context are encouraged and assessed in a major assignment.

Textbooks


ANAT3006 Forensic Osteology
6 credit points. Dr Donlon. Session: 1. Classes: 2 lec, 2hr tut & 2hr prac/ week. Assumed knowledge: Understanding of basic human musculoskeletal anatomy. Prerequisite: ANAT 2002 or 32 credit points of Intermediate BMED units including BMED (2503, 2504 and 2505).

Assessment: 1hr theory exam, 1/2 hr prac exam, practical reports and/or essays.

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.
Biochemistry

This unit of study aims to introduce students to the area of forensic osteology, which is the study of human skeletal remains within the legal context. Thus the unit of study aims to help students learn about human morphology and variation through the investigation and identification of human bones. It will also help students gain skills in observation and rigorous record taking and in analysis and interpretation. Production of case reports and practice in acting as ‘expert witness’ will improve students’ written and oral skills. An additional objective will be to assist students in learning to deal with legal and ethical issues.

Textbooks

ANAT 3007 Visceral Anatomy
6 credit points. Ms R Arnold, Session: 1, Classes: 2 hrs inc 4 & 8 hrs prac/wk. Assumed knowledge: Some knowledge of basic mammalian biology. Prerequisite: ANAT (2002 or 2003) or 32 credit points of Intermediate BiMED units including BiMED (2503, 2504 and 2505). Assessment: One 1.5hr theory exam, one 1 hr prac exam, one 1200 word essay.
NB: Not more than 12 credit points allowed from ANAT3004, ANAT 3007 & ANAT 3008. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.

This unit of study aims to provide an understanding of the anatomy of the viscera of the thorax, abdomen and pelvis. Structures covered include the heart and associated great vessels, lungs, mediastinum and the abdominal viscera, the alimentary organs and the genitourinary system. The structure of anterior thoracic and abdominal walls and pelvis along with the nerve supply to the viscera and relevant endocrine structures is also covered. Emphasis is placed on the relationship of structure to function especially with respect to the important functions of breathing, digestion, excretion and reproduction. Students will also be encouraged to relate their understanding of the structures studied to current research into these structures in related fields such as molecular biology and physiology.

ANAT 3008 Musculoskeletal Anatomy
6 credit points. Dr R Ward, Session: 2, Classes: 2 lec, 2 x2 hr tut/prac/wk. Assumed knowledge: Intermediate BiMED units including BiMED (2503 and 2504). Prerequisite: ANAT 3005. Prohibition: Not more than 12 credit points allowed from ANAT3004, ANAT 3007 and ANAT 3008. The completion of MBLG2001 (2001 or 2101) or 2901 is highly recommended.

This unit provides an opportunity for students to study the topographical and systems anatomy of the upper limb, lower limb and the back regions. Emphasis is placed upon the identification and description of structures and the correlation of structure with function. This includes for the upper limb, its role in manipulation, for the lower limb standing and walking and for the back flexible support and protection. Emphasis is also given to the innervation of the limbs. The unit also aims to develop the general skills of observation, description, drawing, writing and discussion as applying to biological structure.

Textbooks

ANAT 3005 Topographical Anatomy
12 credit points. AProf Jan Provis, Session: 2, Classes: 3 lec & 9 tut or prac/wk. Prerequisite: BiMED (2101 and 2102) or 32 credit points of Intermediate BiMED units including BiMED (2503 and 2504 and 2505). Prohibition: Not be counted with ANAT (3004 or 3008).
Assessment: One 3hr exam, one prac exam, one 2500w essay.
NB: This unit of study is available to students enrolled in the Bachelor of Medical Science only.

This unit of study comprises two strands of topographical anatomy head and neck anatomy and musculo skeletal anatomy. The anatomy of the head and neck region will be studied in one lecture, one tutorial and one dissection class per week. The unit also includes study of the human skull and upper vertebral column and the associated musculature; the anatomy and functional anatomy of the eye, ear, nose and sinuses; larynx and pharynx are also covered. Emphasis is given to the composition and distribution of the twelve cranial nerves. Musculoskeletal anatomy is covered in two lectures and two tutorials/practical sessions per week. The musculoskeletal system of the trunk and lower limb is studied with particular reference to posture and locomotion. This is contrasted with the structural specialisation of the upper limb for its manipulative and tactile functions.

Textbooks

Anatomy Honours and Graduate Diploma
This unit of study provides the opportunity for the student to do research on a project supervised by a member of staff. Assessment is based on a thesis summarising the results of the year’s research. To qualify for this unit of study the student must obtain an appropriate standard in Senior Anatomy or Histology or Neuroscience.

Histology Honours and Graduate Diploma
Histology Honours may be taken by students who have completed, to the required standard, at least one of the Senior semester units of study in Histology offered by the Department of Anatomy and Histology. Students who have taken only one of the semester units of study may be restricted to particular Honours projects that are related to that unit of study.

Anatomy and Histology Higher Degrees
The award courses of Master of Science and Doctor of Philosophy by research are offered by the Faculty of Science by the Department of Anatomy and Histology. The department also contributes to the teaching of the Graduate degrees in Applied Science (Neuroscience).

Biochemistry

The School introduces the fundamentals of biochemistry and molecular biology to Science students from an intermediate level. The discipline entails the fundamental principles governing the structure, function and interactions of biological molecules and leads to an understanding of the molecular nature of living systems.

The intermediate program in biochemistry includes Biochemistry (BCHM 2011 8 credit points) and Molecules, Metabolism and Cells (BCHM 2002 8 credit points) and a faculty unit of study Molecular Biology & Genetics A (MBLG 2001 8 credit points). For those students who have completed junior Biology and Chemistry, MBLG 2001 and BCHM 2002 together provide the basic program for (a) students who wish to do only one year’s study in the subject area and (b) for students who wish to continue on to the Senior units of study. An alternative intermediate program includes BCHM 2011 which more broadly introduces biochemistry and is recommended (together with intermediate chemistry and MBLG 2001) for those students interested in studying both Chemistry and Biochemistry. For those students who have not completed BIOL 1001 but have 12 credit points of Junior Chemistry the combination of BCHM 2011 and MBLG 2001 also allows students to progress to the Senior units of study.

The senior program consists of Molecular Biology and Structural Biochemistry (BCHM 3001 12 credit points), Functional Genomics and Proteomics (BCHM 3098 6 credit points) and Cellular and Medical Biochemistry (BCHM 3002 12 credit points). Taken together the combination of BCHM 3001 and BCHM 3002 constitute a major in Biochemistry. In addition BCHM 3098 links core biochemistry to recent innovations in biomedical science and biotechnology.

Advanced units of study based on the four one semester units of study, MBLG 2901, BCHM 2902, BCHM 3901 and BCHM 3902 are available to qualified students. Additional theory only Intermediate units of study are offered in MBLG 2101 (4 credit points) and BCHM 2102 (4 credit points).

The unit of study BCHM 3904 is only available to students in the Bachelor of Science (Molecular Biology and Genetics) degree and students seeking further information should consult the relevant Tables earlier in this chapter as well as degree information in chapter 2 of this handbook.

Advice on units of study
Students are strongly advised to discuss unit of study choices with members of staff present among faculty advisers during the enrolment period. This applies even to students enrolling in Junior units of study and who are contemplating taking Biochemistry in a subsequent year. Certain Junior units of study are recommended depending upon the related area of
Biochemistry in which a student may wish to study in their Senior year. School advisers listed in the handbook should be consulted during the period prior to enrolment and during orientation.

**Summer School**

This School offers some units of study in The Sydney Summer School. Consult The Sydney Summer School Web site for more information: www.summer.usyd.edu.au/

**Biochemistry Intermediate units of study**

**BCHM 2011 Biochemistry**

8 credit points. Dr Coller, Dr Hancock. Session: 1. Classes: 3 lec & 5 hr pracwk. Assumed knowledge: CHEM (1101 and 1102). Prerequisite: 12 credit points of Junior Chemistry. Corequisite: Recommended concurrent units of study: MBLG (2001 or2901) for progression to Senior Biochemistry, and/or Intermediate Chemistry. Assessment: One 3hr exam, one 2hr theory of prac exam, prac tasks.

**NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.**

This unit of study introduces biochemistry by describing the physical and chemical activities of proteins, the role carbohydrates and the functioning of membranes in cells. The biochemistry describes details of protein interactions with other cellular components and the relationship of protein structure and function. Techniques in protein chemistry and analysis, including protein purification techniques are introduced together with key experiments which reveal the physical basis of the functioning of proteins. This course complements the protein science presented in MBLG 2001 and BCHM 2002 and is ideally suited to students studying intermediate Chemistry together with Biochemistry. The practical course will nurture technical skills in bio-chemistry that will include protein preparation, the analysis of protein structure, protein interaction and functional assays.

**Textbooks**


**BCHM 2002 Molecules, Metabolism and Cells**

8 credit points. Dr Denyer, Dr Hancock, Biochemistry staff. Session: 2. Summer Classes: 3 lec & 5 pracwk & voluntary tutorials. Prerequisite: MBLG (2001 or 2901). Prohibition: May not be counted with AGCH 2001 or BCHM (2102 or 2002). Assessment: One 3hr exam, one 2hr theory of prac exam, prac tasks.

This unit of study aims to describe how cells work at the molecular level. The chemical reactions which occur inside cells is described in the first series of lectures, Cellular Metabolism. Aspects of the molecular architecture of cells which enable them to function and communicate are described in the second half of the unit. Reproduction and Cell Signalling. At every stage the unit of study relates how the function of each individual cell is coordinated and integrated with other cells, especially in humans.

Cellular Metabolism: How cells extract energy from fuel molecules like fatty acids and carbohydrates. The regulation of energy metabolism. How the body selects which fuels to use under different circumstances such as starvation and exercise. The metabolic interrelationships of the muscle, brain, adipose tissue and liver. The role of hormones in coordinating the regulation of fuel utilisation and the mobilisation of fuel stores. How cells lay down stores of fuels. The synthesis and storage of fat and carbohydrate. The digestion of fats, starches and sugars and the use of ingested materials to make new cellular components. Synthesis and use of biochemical building blocks. The strategies and mechanisms involved in biochemical reactions and the involvement of coenzymes and vitamins in biological inter conversions.


**Practical:** The practical component complements the theory component of BCHM 2002 by exposing students to experiments which investigate the effects of diet on the constituents of urine, the diagnosis of chronic disease using blood enzyme patterns, the measurement using radioactive tracers and the design of biochemical assays. During the unit of study, the generic skills developed in the practical component of MBLG 2001 will be nurtured by frequent use of computers and problem solving activities. However, student exposure to generic skills will be extended by the introduction of exercises designed to teach oral communication, instruction writing and feedback articulation skills. The techniques of radioisotope handling, enzyme and metabolic assay design, spectrophotometry and metabolic flux measurement will be taught as well as the basic laboratory abilities mastered in MBLG 2001.

**Textbooks**

Garrett RH, Grisham CM, Biochemistry, Saunders 1999

Resource Manual for Biochemistry 2 Practical Sessions, Sem 2

Study Resource for Biochemistry 2002 (Study Guides and Past Papers)

**BCHM 2102 Molecules, Metabolism and Cells**

Theory 4 credit points. Dr Denyer, Dr Hancock, Biochemistry staff. Session: 2. Summer Classes: 3 lec & 5 pracwk. Prerequisite: MBLG (2001 or 2101 or 2901). Prohibition: May not be counted with AGCH 2001 or BCHM (2002 or 2001). Assessment: One 3hr exam, one 2hr theory of prac exam, prac tasks.

This unit of study comprises just the lecture component of BCHM 2002.

**Textbooks**

Garrett RH & Grisham CM, Biochemistry, Saunders 1999


Study Resource for Biochemistry 2002 (Study Guides and Past Papers)

**BCHM 3001 Mol Biology and Structural Biochemistry**

12 credit points. Dr Easterbrook Smith, Mrs Johnston, Biochemistry staff. Session: 1. Classes: 4 lec & 8 pracwk. Prerequisite: A total of at least 16 credit points of Intermediate MBLG and BCHM units. For BMEDSc students: 32 credit points of Intermediate BMED units including BMED (2501, 2502 and 2504). Prohibition: May not be counted with BCHM 3001. Assessment: One 3hr exam, one 2hr theory of prac exam, prac work.

This unit of study is designed to build on the units of study MBLG 2001 and BCHM 2002. It provides comprehensive training in molecular biology (with emphasis on eukaryotic systems) and structural biochemistry.

The lectures are divided into two topic areas. The Molecular Biology section provides a thorough description of modern molecular biology, particularly the molecular basis of cell cycle control, the biochemistry of apoptosis, proteins that mediate gene expression, investigating promoter activity and enzyme action, the biochemical basis of differentiation of eukaryotic cells, the molecular basis of imprinting, the role of RNA in gene expression and molecular techniques for understanding regulation. The Structural Biochemistry section addresses the important areas of protein structure and protein folding in vivo, ligand binding, macromolecular interactions and examples of structure based drug design.

**Practical:** The practical component is designed to complement the lecture series and to provide students with experience in a wide range of techniques used in molecular biology and protein biochemistry laboratories. Practical classes run for an average of 8 hours over 2 days. Students are allocated to the Monday/Tuesday class or to the Wednesday/Thursday class according to their other subjects.

**Textbooks**

Lewin B.Genes VII. OUP. 2000

Brandon C. and Tooze J. Introduction to Protein Structure. 2nd edition, Garland

**BCHM 3002 Cellular and Medical Biochemistry**

12 credit points. Dr Easterbrook Smith, Mrs Johnston, Biochemistry staff. Session: 2. Classes: 4 lec & 8 pracwk. Prerequisite: A total of at least 16 credit points of Intermediate MBLG and BCHM units. For BMEdSc students: 32 credit points of Intermediate BMED units including BMED (2501, 2502 and 2504). Prohibition: May not be counted with BCHM (3002, 3004 or 3904). Assessment: One 3hr exam, one 2hr exam, prac tasks.

This unit of study is designed to build on the units of study MBLG 2001 and BCHM 2002. It involves the integration of
basic knowledge in Biochemistry and Molecular Biology to give an understanding at the molecular level, of the function of cells and the body as a whole.

The lectures are divided into several areas including: signal transduction and the molecular basis of cell-cell interactions, the biochemical basis of cancer, the molecular basis of diabetes, protein trafficking in eukaryotic cells, molecular immunology and its applications to cellular biochemistry, medical molecular biology, and links between intermediary metabolism and cellular biochemistry. The biochemical basis of some diseases, especially cancer and diabetes, will be used to illustrate many of these topics.

**Practical:** The practical component is designed to complement the lecture series and to provide students with experience in a wide range of techniques used in modern biochemistry laboratories. Practical classes run for an average of 8 hours over 2 days. Students are allocated to the Monday/Tuesday class or to the Wednesday/Thursday class according to their other subjects.

**Textbooks**


**BCHM 3004 Cellular and Medical Biochemistry Mol**

12 credit points. Dr S B Easterbrook Smith. Session: 2. Classes: 4 lec & 8 prac/wk. Prerequisite: A total of at least 16 credit points of Intermediate MBLG and BCHM units. Prohibition: May not be counted with BCHM (3002, 3902 or 3904). Assessment: One 3hr & one 2 hr exam, prac work.

This unit of study is the same as BCHM 3002, except for the addition of four special molecular biology and genetics discussion sessions.

**Textbooks**

As for BCHM 3002.

**BCHM 3005 Computational Biochemistry**


The behaviour of cells and organs is the result of large and complex networks of molecular processes. To fully appreciate how these molecular events result in physiological function at the cellular level, and in turn, at the tissue and organ levels, computational analysis is required.

This unit provides an introduction to the theory and techniques used to develop computational models of biochemical and cellular processes. The unit will cover the kinetics of single enzyme reactions, transport processes and ion channels; coupled enzymatic reactions; linear and branched arrays of reactions with positive and negative feedback and feed forward control; and the underlying numerical procedures used in solving arrays of nonlinear differential equations. Then a systematic development of computational analysis is required.

**Textbooks**

Mukerjea, PJ & Kuchel PW. Modelling Metabolism with Mathematica (prior to publication in 2003, available on line or as a CD from Dr Peter J. Mukerjea or Professor Philip W. Kuchel).

**BCHM 3098 Functional Genomics and Proteomics**

6 credit points. Dr K Downard. Session: 1. Classes: 3 lec & 1 tut/ wk, 4 workshops or major assignments. Prerequisite: MBLG (2001 or 2901) or at least 32 credit points of Intermediate BMED units including BMED (2501 and 2502) units. Assessment: One 3 hour theory exam, tutorials, and workshops/assignments.

**NB:** Recommended unit of study for all molecular biotechnology third year students.

This unit of study will introduce students to the emerging fields of functional genomics and proteomics and will focus on principles and methodologies associated with mapping of genomes, understanding gene function and expression, and identifying the structure and function of the proteins that these genes express. The course consists of four sections or modules on Functional Genomics, Structural Genomics, Proteomics, and Bioinformatics and Computational Biochemistry. Each section or module comprises approximately 10 lectures, tutorials and one day workshop or assignment and will cover the following areas: mapping and sequencing of the human genome, complexity of the human genome compared to prokaryotes, protein expression in eukaryotes and prokaryotes, levels and implications for proteome analysis and protein identification, introduction to functional genomics, Rosetta stone concept, gene technology including expressed sequence tags, serial analysis gene expression (SAGE), microbead technology, cDNA and oligonucleotide microarrays, statistical analysis and clustering methods, mutagenesis screens, two and three hybrid screening, experimental methods used in structural genomics x-ray and nmr spectroscopy, protein domains and organization, protein-protein interactions, global versus functional proteomics, protein recovery from cells and tissues, platforms and technologies for automated protein identification and quantitation, two dimensional gel electrophoresis, visualisation methods, robotic gel excision and blotting, mass spectrometry, mass maps and sequence tags, tandem mass spectrometry and protein sequencing, automation and sample handling, membranes and other supports, protein microarrays and protein chips, genome and protein databases, HTML and other Web based languages, tools for sequence identification and alignment, scoring factors, protein structure prediction, homology and other modelling methods, threading, visualisation tools and dynamic simulations of protein folding.

**Textbooks**

Gibson and Muse, A Primer in Genome Science, Sinauer Associates Inc., 2002

Pennington and Dunn (eds.) Proteomics from protein sequence to function, Springer Verlag 2001

**BCHM 3901 Mol Biology and Structural Biochem (Adv)**

12 credit points. Dr Easterbrook Smith, Ms Johnston, Biochemistry staff. Session: 1. Classes: 4 lec & 8 prac/wk & 4 seminars. Prerequisite: Distinction in a total of at least 16 credit points from Intermediate MBLG and BCHM units. For BMEdSc students: 32 credit points of Intermediate BMED units including Distinctions in BMED (2501, 2502 and 2504). Prohibition: May not be counted with BCHM 3001. Assessment: One 3hr exam, one 2hr exam, assignment, prac work.

The lecture and practical components of this unit of study are the same as for BCHM 3001. Qualified students will attend seminars/practical classes related to the topics covered in the core lectures in this unit of study.

**Textbooks**

Le win B. Genes VII, OUP, 2000


**BCHM 3902 Cellular and Medical Biochemistry (Adv)**

12 credit points. Dr Easterbrook Smith, Ms Johnston, Biochemistry staff. Session: 2. Classes: 4 lec & 8 prac/wk & 4 seminars. Prerequisite: Distinction in a total of at least 16 credit points from Intermediate MBLG and BCHM units. For BMEdSc students: 32 credit points of Intermediate BMED units including Distinctions in BMED (2501, 2502 and 2504). Prohibition: May not be counted with BCHM (3002, 3004 and 3004). Assessment: One 3hr exam, one 2hr exam, assignment, prac work.

The lecture and practical components of this unit of study are the same as for BCHM 3002. Qualified students will attend seminars/practical classes related to the topics covered in the core lectures in this unit of study.

**Textbooks**


**BCHM 3904 Cellular and Med Biochemistry Mol (Adv)**

12 credit points. Dr Easterbrook Smith, Ms Johnston, Biochemistry staff. Session: 2. Classes: 4 lec & 8hr/wk & 4 seminars. Prerequisite: Distinction in a total of at least 16 credit points from Intermediate MBLG and BCHM units. Prohibition: May not be counted with BCHM (3002 or 3004). Assessment: One 3hr exam, one 2hr exam, assignment, prac work.

**NB:** This unit of study is available to students in the Bachelor of Science (Molecular Biology and Genetics) only.

This unit of study is the same as BCHM 3002 except for the addition of seminars and discussions in this discipline.

**Textbooks**


**BCHM 3905 Computational Biochemistry (Advanced)**

4 credit points. Dr Peter Mulquiney, Prof Philip Kuchel. Session: N/A in 2003. Classes: Average 1.5 lec & 2.5 prac/wk. Assumed knowledge: 12 credit points of Junior Chemistry. Prerequisite: Credit average in 8 credit points of Intermediate Mathematics units of study. Strongly recommend two of the following: MATH (2001/2901, 2002/2902, 2003/2903, 2005/2905, 2006/2906). Prohibition: May not be counted with BCHM 3005. Assessment: Project report 50%, 2 hr exam 50%.
The behaviour of cells and organs is the result of large and complex networks of molecular processes. To fully appreciate how these molecular events result in physiological function at the cellular level, and in turn, at the tissue and organ levels, computational analysis is required. This unit provides an introduction to the theory and techniques used to develop computational models of biochemical and cellular processes. The unit will cover the kinetics of single enzyme reactions, transport processes and ion channels; coupled enzymatic reactions; linear and branched arrays of reactions with positive and negative feed back and feed forward control; and the underlying numerical procedures used in solving arrays of non-linear differential equations. Then a systematic development of metabolic control theory will be given. We will also cover techniques for parameter estimation and will finish the unit by examining models of a number of important biochemical and physiological processes such as: cardiac action potential wave propagation, calcium oscillations and waves, the regulation of gene expression, and cell signaling processes. A major component of assessment will be a project carried out in the second half of the unit.

Textbooks
Mulquiney, PJ & Kuchel PW, Modelling Metabolism with Mathematica (prior to publication in 2003, available on line or as a CD from Dr Peter J. Mulquiney or Professor Philip W. Kuchel).

Biochemistry Honours
Dr Crossley, Biochemistry Staff
An Honours program of study designed for those wishing to enter research or to undertake work leading to a higher degree is conducted in the fourth year.

The program runs from early February until mid November (mid year entry is not normally available). It provides the opportunity for research on a project supervised by a particular staff member, as well as the study of advanced and developing aspects of Biochemistry. During the year each student is required to write one essay, for which there is a choice of topics. Assessment of the year’s work is based largely on the student’s performance on the research project, and a written report on the project. During the second semester of the Senior Biochemistry units of study students are invited to apply for permission to enrol in the Honours units of study and are provided with a list of possible research projects. Potential research topics currently offered to students include:

- Anticancer drugs: synthesis and mechanism of action.
- Biochemistry of cellular signal transduction.
- The cause of diabetes and/or obesity.
- Structure and function of clusterin, a molecular chaperonin.
- X ray crystallography of proteins and drug DNA complexes.
- Metabolic pathways in boar spermatozoa.
- NMR studies of the solution structure of DNA binding proteins.
- NMR studies of membrane transport and metabolism in cells.
- Eukaryotic transcription factors.
- Bioavailability of trace elements and biochemical indicators of their nutritional status.
- The effect of fibre on blood and urinary estrogens.
- Proteomics.
- Bioinformatics.
- Protein structure modeling.
- Mass Spectroscopy.
- Genomics.
- Chromosome replication and cell division in bacteria.
- Molecular biology of humans and yeasts.
- Gene expression in transgenic mice.
- Nutrition and cardiovascular risk factors.
- Effects of dietary fatty acids on platelet function.
- Glycaemic index of foods; oligosaccharides in human milk.

Students must arrange to speak with potential supervisors. An application form is attached to the list of possible research projects provided to students or available from the Honours coordinator and they are asked to provide the names of at least four supervisors prior to enrolment. A decision on the Honours intake is made before Christmas. An attempt is made to assign students to the supervisor of their choice but this will not always be possible. In difficult cases there is further discussion with the student.

The usual requirement for acceptance into the Honours program is a pass at the Credit level in 12 credit points of Senior Biochemistry. Additionally, strong students with related training may be admitted by permission of the Head of School. It should be noted that the number of students accepted into the Honours program may be limited because of resource restrictions (eg, availability of a supervisor and/or laboratory space) and that, in the event of there being more applicants than resources will allow, offers will be made on the basis of academic merit.

The Honours unit of study codes are listed in the Honours Table at the end of this chapter.

Biological Sciences

Advice on units of study

Members of the Biological staff are normally present among Faculty Advisers during enrolment week. Any student needing advice before enrolling should make an appointment to see a Departmental adviser from the School of Biological Sciences.

Assistance during semester

The offices of Junior year Biology staff are on the 5th floor of Carslaw. Students can make appointments by signing the form on the door of the offices of members of the academic staff members. Students are strongly advised to get acquainted with the staff and to use this service.

Summer School: January-February.

This School offers some units of study in The Sydney Summer School. Consult The Sydney Summer School Web site for more information: www.summer.usyd.edu.au

BIOL 1001 Concepts in Biology


Assumed knowledge: HSC 2 unit Biology. Students who have not undertaken an HSC biology course are strongly advised to complete a biology bridging course before lectures commence. Prohibition: May not be counted with BIOL (1001 or 1500). Assessment: One 2.5hr exam, assignments, classwork.

Concepts in Biology is an introduction to the major themes of modern biology. Starting with interactions between organisms in biological communities, we move on to the diversity of microorganisms. This is followed by an introduction to introductory cell biology, which particularly emphasises how cells obtain and use energy, and leads into an introduction to molecular biology through the role of DNA in protein synthesis and development. The genetics of organisms is then discussed, leading to consideration of theories of evolution and the origins of the diversity of modern organisms. It is recommended that this unit of study be taken before all other Junior units of study in Biology.

Textbooks

BIOL 1901 Concepts in Biology (Advanced)

6 credit points. Dr D Hochuli. Session: 1. Classes: 3 lec & 3 hrs prac/wk. Prerequisite: UAI of at least 93 and HSC Biology result in the 90th percentile or better, or Distinction or better in a University level Biology unit, or by invitation. Prohibition: May not be counted with BIOL (1001 or 1500). Assessment: One 2.5hr exam, assignments, classwork.

NB: Department permission required for enrolment. Selected students may be invited to participate in a more demanding alternative component of Concepts in Biology. The content and nature of this component will be determined each year. Details and selection criteria are announced at the start of semester.

BIOL 1002 Living Systems

6 credit points. Session: 2. Classes: 3 lec & 3 prac/wk. Assumed knowledge: HSC 2 unit Biology. Students who have not undertaken an HSC biology course are strongly advised to complete a biology bridging course before lectures commence. Prohibition: May not be counted with BIOL (1002 or 1500). Assessment: One 2.5hr exam, assignments, classwork.

‘Living Systems’ deals with the biology of all sorts of organisms, from bacteria to large plants and animals, and emphasises the ways in which they can live in a range of habitats. The importance of energy in living systems, and how elements are used and recycled in biological communities, are described. The unit of study includes lectures and laboratory classes on the physiology of nutrition and growth, basic physiological processes of animals and plants, the ways in which organisms control and integrate their activities, and their reproduction. Finally, applications of knowledge of genetics and ecology to practical problems in agriculture and conservation are introduced. It is recommended that Concepts in Biology be taken before this unit of study. This unit of study, together with BIOL 1001 or 1901, provides entry to all Intermediate units of study in biology in the School of Biological Sciences.
Textbooks

BIOI 1902 Living Systems (Advanced)
6 credit points. Dr D Hochuli. Session: 2. Classes: 3 lec & 3 hrs prac/wk. Prerequisite: UAI of at least 93 and HSC Biology result in the 90th percentile or better, or Distinction or better in a University level Biology unit, or by invitation. Prohibition: May not be counted with BIOI (1902 or 1904 or 1905 or 1500). Assessment: One 2.5hr exam, assignments, classwork.

NB: Department permission required for enrolment.
Selected students may be invited to participate in a more demanding alternative component of Living Systems. The content and nature of this component will be determined each year. Details and selection criteria are announced in the first semester.

BIOI 1003 Human Biology
6 credit points. Session: 2. Summer. Classes: 2 lec, 1 session independent study & 3 prac/wk. Assumed knowledge: HSC ‘2’ unit Biology. Students who have not undertaken an HSC biology course are strongly advised to complete a biology bridging course before lectures commence. Prohibition: May not be counted with BIOI (1903 or 1500) or EDUH 1016. Assessment: One 2.5hr exam, assignment, classwork.

This unit of study provides an introduction to human evolution and ecology, cell biology, physiology and anatomy, through both lectures and practical work. It begins with human evolution, human population dynamics and the impact of people on the environment. The unit of study includes human nutrition, distribution of essential requirements to and from the cells, control of body functions and defence mechanisms. After discussion of reproduction and development, it concludes with some modern studies and research in biotechnology and human genetics. It is recommended that Concepts in Biology be taken before this unit of study. Enrolment may be restricted by the availability of places. This unit of study, together with BIOI 1001 or 1901, provides entry to Intermediate units of study in Biology, but the content of BIOI 1002/1902 is assumed knowledge for BIOL 2001,2002,2003 and 2004 and students entering from BIOI 1003 or 1903 will need to do some preparatory reading.

Textbooks

BIOI 1903 Human Biology (Advanced)
6 credit points. Dr D Hochuli. Session: 2. Classes: 2 lec, 1 session independent study & 3 hrs prac/wk. Prerequisite: UAI of at least 93 and HSC Biology result in the 90th percentile or better, or Distinction or better in a University level Biology unit, or by invitation. Prohibition: May not be counted with BIOI (1003 or 1904 or 1905 or 1500) or EDUH 1016. Assessment: One 2.5hr exam, assignment, classwork.

This unit is highly recommended to be used in conjunction with the Bachelor of Science (Molecular Biology and Genetics) or the Bachelor of Science (Biotechnology and Genetics). It is highly recommended that Concepts in Biology be taken before this unit of study. Enrolment may be restricted by the availability of places. This unit of study, together with BIOI 1001 or 1901, provides entry to Intermediate units of study in Biology, but the content of BIOI 1002/1902 is assumed knowledge for BIOL 2001,2002,2003 and 2004 and students entering from BIOI 1003 or 1903 will need to do some preparatory reading.

Textbooks

BIOI 1500 Biology Today
6 credit points. Dr B Okdroy. Session: 2. Classes: 1 lec, 2 tut & 3 hr project/wk. Assumed knowledge: No previous knowledge required. Prohibition: May not be counted with BIOI (1901,1902,1903,1904 or 1905 or 1500). EDUH 1016. May not be counted as a prerequisite for any Intermediate units of study in Biology. Assessment: One 2hr exam, report, oral presentation, quizzes, teamwork.

This unit begins with a discussion of the nature, scope and diversity of biology and why it is of increasing relevance in policy development in contemporary society. Six themes each of two weeks follow. They include marine ecology and fisheries, land use and terrestrial ecology, global warming, genetically modified foods, molecular genetics and human medicine, and evolution. The unit is very reliant on the use of the Internet to build up learning skills and knowledge about biology. We adopt a problem-based approach to learning. Students work in groups. There is no laboratory material.

Lectures and knowledge development
One lecture introduces the theme, and develops the scientific background. The lecture also raises social and political aspects and these usually form the basis of the problem to be investigated. Learning resources are made available through a dedicated Web site and are used for independent and cooperative research. The timetable includes Internet mediated discussions with experts and other students, tutorials, and debates.

Team work and generic skills
Students will work in small groups to research each topic. There is a heavy reliance on information available from the Internet. The unit includes a subcurriculum that promotes the development of Internet learning skills and which has been developed by the University of Sydney Library. The unit of study fosters independent research, cooperative work, skills in Internet learning, and communication skills as well as an understanding of the scope and relevance of contemporary biology.

Prohibition: May not be counted with BIOI 1904.
Prerequisite: May not be counted with BIOI 1904.

Assessment: One 2.5hr exam, assignments, classwork.

Textbooks
This unit of study provides a broad background to the diversity of animals through lectures and museum style displays. The material is presented within the conceptual framework of evolution and the principles and use of phylogeny and classification. It is suitable for students who are majoring in other areas of biology or other subjects but who wish to acquire an introduction to animal biology. The unit of study is designed to be taken with BIOL 2102 Vertebrates and their Origins Theory. The diversity, morphology and evolution of most invertebrate phyla are presented.

**BIOL 2002 Vertebrates and their Origins**

6 credit points. A/Prof M B Thompson, Dr E L May. Session: 2. Classes: 3 lec, 1 tut & 4 prac/wk. Prerequisite: BIOL 2001 Invertebrate Zoology Theory. May not be counted with BIOL (2002 or 2902). Prohibition: BIOL (1002 or 1902 or 1003 or 1903) or EDUH 1016 (for BEd (Secondary) (Human Movement and Health Education)).

- **Assessment:** One 2hr theory exam, one 2hr prac exam, 1 poster assignment, 1 essay, tutorial work.
- **Prohibition:** May not be counted with BIOL 2102 or 2902. Avoid 2 hr theory exam, one 2 hr prac exam, 1 poster assignment, 1 essay, tutorial work.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL 1002/1902 is assumed knowledge and students entering from BIOL 1003 or 1903 will need to do some preparatory reading.

This unit of study completes the grounding in the diversity of animals at the level of phylum introduced in BIOL 2001 Invertebrate Zoology by lectures, laboratory classes, and in the field with an intensive 3.5 day field trip. It focuses on vertebrates and invertebrate phyla not covered in BIOL 2001. Lectures and discussion groups further explore concepts of evolution, phylogeny biodiversity and animal function. This unit of study complements BIOL 2001 and should preferably be taken after that unit of study. It is a prerequisite for most animal modules in Senior Biology.

**BIOL 2902 Vertebrates and their Origins (Advanced)**

8 credit points. A/Prof M B Thompson, Dr E L May. Session: 2. Prerequisite: 12 credit points of Junior Chemistry. For students in the BSc (Marine Science) stream: MBLG 2001 or 2101 and 6 credit points of Junior Physics. Qualifier: BIOL 1001 (1003) and one of BIOL (1002 or 1902 or 1003 or 1903) or LWSC 1002 or EDUH 1016 (for BEd (Secondary) (Human Movement and Health Education)).

- **Assessment:** One 2hr theory exam, one 2hr prac exam, optional assignment.
- **Prohibition:** May not be counted with BIOL 2002.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL 1002/1902 is assumed knowledge and students entering from BIOL 1003 or 1903 will need to do some preparatory reading.

Qualified students will participate in alternative components of BIOL 2002 Vertebrates and their Origins. The content and nature of these components may vary from year to year.

**BIOL 2102 Vertebrates and their Origins Theory**

4 credit points. A/Prof M B Thompson and Dr E L May. Session: 2. Classes: 3 lec & 1 prac/wk. Qualifier: BIOL (1001 or 1901) and either BIOL (1002 or 1902 or 1003 or 1903) or LWSC 1002 or EDUH 1016 (for BEd (Secondary) (Human Movement and Health Education)).

- **Prohibition:** May not be counted with BIOL (2002 or 2902).

**Assessment:** One 2hr theory exam, one 2 hr prac exam, optional assignment.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL 1002/1902 is assumed knowledge and students entering from BIOL 1003 or 1903 will need to do some preparatory reading. Not a prerequisite for Senior units of study in Biology. Students taking this unit concurrently with (or following completion of) BIOL (2004 or 2904) must complete 16 hours of alternative work in one unit, in place of the core material common to both units.
BIOL 2903 Plant Anatomy and Physiology (Advanced)
8 credit points. Dr McGee. Session: 1. Qualifier: Distinction average in BIOL (1001 or 1901) and one of BIOL (1002,1902,1003,1903). These requirements may be varied and students with lower averages should consult the unit Executive Officer. Prohibition: May not be counted with BIOL 2003.
NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL 1002/1902 is assumed knowledge and students entering from BIOL 1003 or 1903 will need to do some preparatory reading.

Qualification: Students will participate in alternative components of BIOL 2003. The content and nature of these components may vary from year to year. Students may choose to do this unit concurrently with any unit they wish to do the alternative work.

The unit of study provides an integrated overview of plant ecology and plant diversity. It examines how plants and fungi live in their natural environment, how their functions are affected by environmental changes, and how these changes affect plant distribution. The rich diversity of plants is explored in relation to major evolutionary advances in their form and function. Practical aspects are covered in laboratory classes, audiovisual sessions, and a field trip. Each student is required to make a plant collection. This unit complements BIOL 2003 and leads up to plant modules in Senior Biology.

BIOL 2904 Plant Ecology and Diversity (Advanced)
8 credit points. Dr McGee. Session: 1. Qualifier: Distinction average in BIOL (1001 or 1901) and one of BIOL (1002,1902,1003,1903) or LWSC 1002 or EDUH 1016 (for BEd (Secondary) (Human Movement and Health Education)). Corequisite: MICR 2013 for BLWSc. Prohibition: May not be counted with BIOL 2904.
Assessment: One theory exam, 1 prac exam, one report, coursework.
NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL 1002/1902 is assumed knowledge and students entering from BIOL 1003 or 1903 will need to do some preparatory reading.

Qualification: Students will participate in alternative components of BIOL 2003. The content and nature of these components may vary from year to year. Corequisites for Senior units of study in Biology.

BIOL 2006 Cell Biology
4 credit points. Dr J Marc. Session: 1. Qualifier: Distinction average in BIOL (1001 or 1901) and one of BIOL (1002,1902,1003,1903). These requirements may be varied and students with lower averages should consult the unit Executive Officer. Prohibition: May not be counted with BIOL 2004.
NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL 1002/1902 is assumed knowledge and students entering from BIOL 1003 or 1903 will need to do some preparatory reading. Students taking this unit concurrently with (or following completion of) BIOL 2001 or 2901 must complete 32 hours of alternative work in one unit, in place of the core material common to both units and if taking the units concurrently, must elect at enrolment in which unit they wish to do the alternative work.

Qualification: Students will participate in alternative components of BIOL 2006. The content and nature of these components may vary from year to year. This is a core intermediate unit in the BSc (Molecular Biology and Genetics) award course. See prerequisites for senior units of study in Biology.

Textbooks

Qualifications: Students will participate in alternative components of BIOL 2006. The content and nature of these components may vary from year to year. This is a core intermediate unit in the BSc (Molecular Biology and Genetics) award course. See prerequisites for senior units of study in Biology.

Textbooks
UNDERGRADUATE TABLES AND UNITS OF STUDY


**BIOL 2007 Entomology Introductory**
8 credit points. Dr D Hochuli, Dr H Rose. Session: 2. Classes: 2 lec, 1 2 tut & 4 prac/wk. Prerequisite: 12 credit points of Junior Chemistry. For students in the BSc(Marine Science) stream: MBLG (2001 or 2101) and 6 credit points of Junior Chemistry and either an additional 6 credit points of Junior Chemistry or 6 credit points of Junior Physics. Qualifier: BIOL (1001 or 1901) and either BIOL (1002 or 1902 or 1003 or 1903) or EDUH 1016 (for BEd (Secondary) (Human Movement and Health Education)). Assessment: One 3 hr theory exam, assignments, insect collection. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL 1002 or 1902 is assumed knowledge and students entering from BIOL 1003 or 1903 will need to do some preparatory reading. See prerequisites for Senior units of study in Biology.

A general but comprehensive introduction to Insect Biology, this unit of study develops understanding of the scientific approach to insect structural diversity, identification, life histories, development, physiology, ecology, biogeography, principles of control, toxicology of insecticides and biology of major economic pests in NSW. Practicals give a working knowledge of major orders of insects economically important species, principles of collection, preservation and identification. Entomological data bases are introduced, and students do a library assignment and make and present a small collection of insects. Project work considers the use of insects in forensic investigations, insect plant interactions and insects as tools for environmental assessment.

**Biological Sciences**

**BIOL 3007 Entomology Introductory**
8 credit points. Dr D Hochuli, Dr H Rose. Session: 2. Classes: 2 lec, 1 2 tut & 4 prac/wk. Prerequisite: 12 credit points of Junior Chemistry. For students in the BSc(Marine Science) stream: MBLG (2001 or 2101) and 6 credit points of Junior Chemistry and either an additional 6 credit points of Junior Chemistry or 6 credit points of Junior Physics. Qualifier: BIOL (1001 or 1901) and either BIOL (1002 or 1902 or 1003 or 1903) or EDUH 1016 (for BEd (Secondary) (Human Movement and Health Education)). Assessment: One 3 hr theory exam, assignments, insect collection. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. The content of BIOL 1002 or 1902 is assumed knowledge and students entering from BIOL 1003 or 1903 will need to do some preparatory reading. See prerequisites for Senior units of study in Biology.

A general but comprehensive introduction to Insect Biology, this unit of study develops understanding of the scientific approach to insect structural diversity, identification, life histories, development, physiology, ecology, biogeography, principles of control, toxicology of insecticides and biology of major economic pests in NSW. Practicals give a working knowledge of major orders of insects economically important species, principles of collection, preservation and identification. Entomological data bases are introduced, and students do a library assignment and make and present a small collection of insects. Project work considers the use of insects in forensic investigations, insect plant interactions and insects as tools for environmental assessment.

**Selecting units of study**
Select your unit of study after checking (a) that you have passed the qualifying units of study stated for each unit of study, and (b) checking your timetable. You are strongly advised to check the most up to date information, including details of quotas in Marine modules, in the booklet: Information for Students Considering Senior Biology units of study, available from the School Office (Rm 1, The Cottage, A10, Science Road).

**Textbooks**
A list of textbooks and reference books is provided in the booklet: Information for Students Considering Senior Biology units of study.

**BIOL 3011 Ecophysiology**
6 credit points. Dr Seebacher, A/Prof Thompson, Dr McGhee. Session: 1. Classes: 4 lec and 8 prac/wk. Prerequisite: 16 credit points of Intermediate Biology including BIOL (2002 or 2003 or 2006 or 2002 or 2003 or 2006). Prohibition: May not be counted with BIOL 3911. Assessment: One 1.5 hr exam, field trip quiz, laboratory reports. NB: The completion of MBLG (2001 or 2101 or 2001) is highly recommended.

Ecophysiology covers physiological interactions between organisms and their environments. The range of environments inhabited by organisms is outlined and the influences of important environmental parameters including temperature, water, salt and pH are investigated. Physiological interactions among animals, plants and fungi are discussed. Animal examples will have an emphasis on vertebrates and on marine organisms.

**BIOL 3014 Terrestrial Vertebrates**
6 credit points. Dr Seebacher, A/Prof Thompson, Dr McGhee. Session: 1. Classes: 4 lec and 8 prac/wk. Prerequisite: Distinction average in 16 credit points of Intermediate Biology including BIOL (2002 or 2003 or 2006 or 2002 or 2003 or 2006). These requirements may be varied and students with lower averages should consult the unit Executive Officer. Prohibition: May not be counted with BIOL 3911. Assessment: One 1.5 hr exam, field trip quiz, laboratory reports, Independent project report. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

Ecophysiology (Advanced) shares most of the same lectures as BIOL 3011 Ecophysiology, but it includes an independent project in place of one or more components of the laboratory classes to the equivalent of 20% of Ecophysiology. The content and nature of the independent project may vary from year to year.

**BIOL 3012 Animal Physiology**
6 credit points. Dr Seebacher, A/Prof Thompson, Dr McGhee. Session: 1. Classes: 4 lec and 8 prac/wk. Prerequisite: 16 credit points of Intermediate Biology including BIOL (2002 or 2003 or 2006 or 2002 or 2003 or 2006). Prohibition: May not be counted with BIOL 3912. Assessment: One 1.5 hr exam, laboratory/ library reports. NB: The completion of MBLG (2001 or 2101 or 2001) is highly recommended.

Animal Physiology explores aspects of the physiology of animals and how physiology is influenced by environmental factors. The emphasis of the unit of study is vertebrate animals, although invertebrate examples will be used where appropriate. The unit of study is designed to complement Ecophysiology. The range of animals and how that is affected by body mass and locomotion.
**Biology 3012: Animal Physiology (Advanced)**

6 credit points. Dr Thompson. **Session:** 1. **Classes:** 4 lec & 8 prac/wk. **Prerequisite:** Distinction average in 16 credit points of Intermediate Biology including BIOL (2002 or 2003 or 2004 or 2005 or 2006 or 2009 or 2010 or 2012 or 2013 or 2014). These requirements may be varied and students with lower averages should consult the unit Executive Officer. **Prohibition:** May not be counted with BIOL 3015. **Assessment:** One 1.5 hr exam, laboratory reports, independent project report.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

Animal Physiology (Advanced) shares the same lectures as Animal Physiology, but it includes an independent project in place of one or more components of the laboratory classes to the equivalent of 30% of Animal Physiology. The content and nature of the independent project may vary from year to year.

**Biological Sciences**

**Biology 3013: Marine Biology**

6 credit points. **Session:** 1. **Classes:** 4 lec & 8 prac/wk. **Assumed knowledge:** MARS 2002. **Prerequisite:** 16 credit points of Intermediate Biology, including BIOL (2001 or 2002 or 2003 or 2004 or 2005 or 2006 or 2009 or 2010 or 2012 or 2013 or 2014). These requirements may be varied and students with lower averages should consult the unit Executive Officer. **Prohibition:** May not be counted with BIOL 3013. **Assessment:** Practical reports, paper criticisms and other assignments.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

We will examine in detail processes which are important for the establishment and maintenance of marine communities. Lectures will expose students to the key ideas, researchers and methodologies within selected fields of marine biology. Laboratory sessions will complement the lectures by providing students with hands on experience with the organisms and the processes that affect them. Students will develop critical analysis skills while examining the current literature.

**Biology 3014: Biology of Terrestrial Vertebrates**

6 credit points. **Session:** 1. **Classes:** 4 lec & 8 prac/wk. **Prerequisite:** 16 credit points of Intermediate Biology. **Prohibition:** May not be counted with BIOL 3014. **Assessment:** One 1.5 hr exam, laboratory report, seminar, one 1 hr practical examiner.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit of study will review the biology and evolution of terrestrial vertebrate fauna, with emphasis on ecological and behavioural adaptations to the Australian environment. The adaptive radiations of amphibians, reptiles, birds and mammals will be discussed. Conservation issues involved with these taxa will also be a focus of the course. The unit aims to provide an overview of the distinctive features of the Australian environment, and how those peculiarities have shaped the way that terrestrial vertebrates have evolved in this continent.

**Biology 3014: Biology of Terrestrial Vertebrates (Adv)**

6 credit points. **Session:** 1. **Classes:** 4 lec & 8 prac/wk. **Prerequisite:** Distinction average in 16 credit points of Intermediate Biology. These requirements may be varied and students with lower averages should consult the unit Executive Officer. **Prohibition:** May not be counted with BIOL 3014. **Assessment:** One 1.5 hr exam, laboratory report, seminar, one 1 hr prac exam.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

Compared to the associated unit of study BIOL 3014, the Advanced unit has less practical work but contains an independent research project.

**Biology 3015: Plant Systematics and Biogeography**

6 credit points. Dr Henwood, Dr Taylor. **Session:** 1. **Classes:** 4 lec & 8 prac/wk. **Prerequisite:** 16 credit points of Intermediate Biology including BIOL (2004 or 2008). **Prohibition:** May not be counted with BIOL 3015. **Assessment:** One 1.5 hr exam, assignments.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit of study will deal with the reproductive biology, biogeography and evolution of flowering plants. Students will be introduced to the latest methodologies and data sources employed in identifying evolutionary units (both past and present) and reconstructing their phylogenetic relationships. The general application of systematics for example in ecology and conservation will be considered.

**Biology 3015: Plant Systematics and Biogeography (Adv)**

6 credit points. Dr Henwood, Dr Taylor. **Session:** 1. **Classes:** 4 lec & 8 prac/wk. **Prerequisite:** Distinction average in 16 credit points of Intermediate Biology including BIOL (2004 or 2008). These requirements may be varied and students with lower averages should consult the unit Executive Officer. **Prohibition:** May not be counted with BIOL 3015. **Assessment:** One 1.5 hr exam, assignments.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

See BIOL 3015.

**Biology 3017: Fungal Biology**

6 credit points. Dr P McGee. **Session:** 1. **Classes:** 5 lec & 15 prac in a two week intensive program immediately prior to semester one (labs run from 17 to 28 February 2003), plus the equivalent of 30hrs self guided study during the semester. **Prerequisite:** 16 credit points of Intermediate Biology, or 6 credit points of Intermediate Biology and 8 Intermediate credit points of either Microbiology or Geography, or their equivalent. **Prohibition:** May not be counted with BIOL 3017. **Assessment:** One 2 hr take home exam, laboratory and written assignments.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

Students interested in fungal ecology, environmental and rehabilitation biology, fungal biodiversity, biological control and soil microbiology will study the structure and function of fungi. Emphasis will be placed on the benefit provided by fungi in symbiotic interactions with plants, mycorrhizal fungi and shoot borne endophytes. Physiological and ecological implications of the interactions will also be examined, emphasising the use of these interactions in vegetation restoration and biocontrol of pests and pathogens. Students will be encouraged to develop a deeper understanding of the area of Fungal Biology through independent study. Part of the learning material will be available on the Internet.

**Biology 3017: Fungal Biology (Advanced)**

6 credit points. Dr P McGee. **Session:** 1. **Classes:** 5 lec & 15 prac in a two week intensive program immediately prior to semester one (labs run from 17 to 28 February 2003), plus the equivalent of 30hrs self guided study during the semester. **Prerequisite:** Distinction average in 16 credit points of Intermediate Biology, or 6 credit points of Intermediate Biology and 8 Intermediate credit points of either Microbiology or Geography, or their equivalent. **Prohibition:** May not be counted with BIOL 3017. **Assessment:** One 2 hr take home exam, laboratory and written assignments.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

Qualified students will participate in alternative components of BIOL 3017 Fungal Biology. The content and nature of the components will vary each year, but will include individual research on a topic agreed on with the executive officer.

**Biology 3018: Applications of Recombinant DNA Tech**

6 credit points. Dr B Lyon, Prof Skurray. **Session:** 1. **Classes:** 4 lec & 8 prac/wk. **Prerequisite:** MBLG (2001/2002), or 16 credit points of Intermediate Biology including BIOL (2005 or 2009). For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2020. **Prohibition:** May not be counted with BIOL (3018.3103 or 3903). **Assessment:** One 2 hr exam, practical report, assignment.

A unit of study with lectures, practicals and tutorials on the application of recombinant DNA technology and the genetic manipulation of prokaryotic and eukaryotic organisms. Lectures cover the applications of molecular biology in healthcare and consider the impact and implications of genetic engineering. Topics include the cloning and expression of foreign genes in bacteria, yeast, animal and plant cells, novel human and animal therapeutics and vaccines including human gene therapy, new diagnostic techniques for human and veterinary disease, the transformation of animal and plant cells, the genetic engineering of animals and plants, and the environmental release of genetically modified (transgenic) organisms. Practical work may include nucleic acid isolation and manipulation, gene cloning and PCR amplification, DNA sequencing and computer analysis of gene sequences, immunological detection of proteins, and the genetic transformation and assay of plants.
Biology including BIOL (2003 or 2903 or 2006 or 2906). These 6 credit points. A/Prof Allaway. Session: 2. Classes: 4 lec & 8 pract/wk. Qualified students will participate in alternative components of BIOL 3018 Applications of Recombinant DNA Technology. The content and nature of these components may vary from year to year.

BIOL 3021 Plant Development
6 credit points. Dr Marc, A/Prof Overall. Session: 2. Classes: 4 lec & 8 pract/wk. Prerequisite: BIOL (2003 or 2903 or 2006 or 2906). These requirements may be varied and students with lower averages should consult the unit Executive Officer. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

Current topics in plant development are explored to the levels of plant cell biology and plant molecular biology. Subjects covered include the development of the plant body from embryo to a seedling, organogenesis at the shoot apical meristem, leaf development, differentiation of specialized cell types, signal transduction, plant hormones, developmental responses to the environment, role of extracellular matrix in plant development, development of polarity, and intercellular communication. Advances in the molecular basis of plant development are discussed. Practical work, which uses a variety of plant material including protoplasts, suspension cultures and Arabidopsis seedlings, involves a range of cellular and molecular techniques such as advanced light microscopy, immunochemistry, protein purification and characterisation, and the Green Fluorescent Protein technology. A one day workshop at research institutions in Canberra involves seminars and discussion groups.

BIOL 3931 Plant Development (Advanced)
6 credit points. Dr Marc, A/Prof Overall. Session: 2. Classes: 4 lec & 8 pract/wk. Prerequisite: BIOL (2003 or 2903 or 2006 or 2906). These requirements are the same as BIOL 3021. Assessment: One 2 hr exam, assignments, one essay. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

Qualified students will participate in alternative components of the unit of study and writing 20% of the total assessment. The students will be exempt from one standard exam and one assignment, but will instead conduct an independent practical or theoretical research project under the supervision of a member of the academic staff. The program includes formal presentation of the results of the project and writing an essay on a related topic.

BIOL 3022 Plant Physiology
6 credit points. A/Prof Allaway, A/Prof Sutton. Session: 2. Classes: 4 lec & 8 pract/wk. Prerequisite: BIOL (2003 or 2006 or 2903 or 2906). Prohibition: May not be counted with BIOL 3932. Assessment: One 2 hr exam, assignment reports. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

A unit of study of lectures, practical assignments and self guided computer based modules on the application of plant physiology. The unit will begin with a consideration of the physiology of photosynthesis using conventional techniques and will go on to the use of the pulse amplitude modulated (PAM) fluorometer. There will follow an in depth consideration of boundary layers in plants and the use of oxygen microelectrodes to measure photosynthesis, respiration and primary production, leading on to the use of gas exchange analysis, and the activity of Rubisco in leaves. Self guided modules applying knowledge of plant water relationship and plant nutrition to practical problems in Australian agriculture are included.

BIOL 3932 Plant Physiology (Advanced)
6 credit points. A/Prof Allaway. Session: 2. Classes: 4 lec & 8 pract/wk. Prerequisite: Distinction average in 16 credit points of Intermediate Biology including BIOL (2003 or 2006 or 2903 or 2906). These requirements may be varied and students with lower averages should contact the unit Executive Officer. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

Qualified students will participate in alternative components of BIOL 3022 Plant Physiology. The content and nature of these components may vary from year to year. Some assessment will be in an alternative form.

BIOL 3023 Ecological Methods
6 credit points. Dr Hochuli, Dr Holoway, Dr Wardie, Dr Dickman, Dr Chapman, Prof Underwood. Session: 2. Classes: 4 lec and 8 pract/wk. Prerequisite: 16 credit points of Intermediate Biology including BIOL (2001 or 2002 or 2003 or 2004 or 2009). Prohibition: May not be counted with BIOL 3923. Assessment: One 2 hr exam, laboratory reports. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

The unit of study will consider ecology as a theoretical, quantitative, experimental science concerned with the analysis of patterns of distribution, abundance, dynamics, demography and life histories of natural populations with an appraisal of the nature of scientific investigations, from a philosophical viewpoint and the practicalities of testing hypotheses in the real world. Application of ecological theory and methods to practical problems will be integral to the unit of study.

Lectures will be on sound philosophical and experimental principles and useful for the more informed management, conservation and utilization of natural populations and habitats. Practical classes will deal with practical methods of determining patterns of distribution and abundance, problems of sampling, estimation of ecological variables, and methods of statistical analysis of field data. Computer simulations and analyses will be used where appropriate. Students taking BIOL 3023 only do not take the field course and will undertake coursework separate from the other students.

BIOL 3923 Ecological Methods (Advanced)
6 credit points. Dr Hochuli, Dr Holoway, Dr Wardie, Dr Dickman, Prof Underwood. Session: 2. Classes: 4 lec and 8 pract/wk. Prerequisite: Distinction average in 16 credit points of Intermediate Biology including BIOL (2004 or 2009). Prohibition: May not be counted with BIOL 3023. Assessment: One 2 hr exam, laboratory reports, practical assignments.

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit of study has the same objectives as BIOL 3023 Ecological Methods, and is suitable for students who wish to pursue certain aspects in greater depth. Entry is restricted, and selection is made from the applicants on the basis of their previous performance. Students taking this unit of study will participate in alternative components to some elements of the standard course and will be required to pursue the objectives by more independent means. Specific details of this unit of study and assessment will be announced in meetings with students in week 1 of semester 2. This unit of study may be taken as a part of the BSc (Advanced) program.
assemblages. The relationships between experimental marine ecology and general ecological theory will be emphasised. The role of ecological science in management, conservation and exploitation of populations will be emphasised.

Terrestrial Ecology will consider the dynamics of ecological systems. Inter- and intra specific competition, herbivory and predation will all be examined. Relationships between behavioural strategies of insect and vertebrate herbivores and predators, and the exploitation and conservation of their resources will be a major focus. In addition, practical work will investigate natural and exploited habitats. A major emphasis will be on the relationships between ecological science and methods for management of populations, conservation and managed exploitation of animal and plant resources and the control of pests (including biological control).

Plant Ecology integrates experimental studies, quantitative sampling and theoretical models to examine the ecological processes that produce complex interactions in natural populations. The lectures will include the following topics: plants as modular individuals, demography, life history variation, reproductive ecology, dispersal, dormancy, recruitment, effects of neighbours, plant animal interactions, natural selection, ecological genetics, vegetation structure and diversity, succession and gap phase regeneration. Examples will be given on the role of genetics, demography and population structure in the conservation and management of plants.

BIOL 3924 Ecology (Advanced) 6 credit points. Dr Hochuli, Dr Holloway, Dr Wardle, Dr Dickman, Dr Chapman. Prerequisite: Distinction average in BIOL (2001/2002) or 16 credit points of Intermediate Biology including BIOL (2005 or 2006). For BMedSc students: 32 credit points of Intermediate BMED units including BMED 2502. Prohibition: May not be counted with BIOL 3925. Assessment: One 2 hr exam, laboratory reports, practical assignments. NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit has the same objectives as BIOL 3024 Ecology, and is suitable for students who wish to pursue certain aspects in greater depth. Entry is restricted and selection is made from the applicants on the basis of their previous performance. Students taking this unit of study will participate in alternatives to some elements of the standard unit and will be required to pursue the objectives by more independent means. Specific details of this unit of study and assessment will be announced in meetings with students in week 1 of semester two. This unit of study may be taken as part of the BSc (Advanced).

BIOL 3025 Evolutionary Genetics & Animal Behaviour 6 credit points. Dr Oldroyd. Session: 2. Classes: 4 lec & 8 prac/wk. Prerequisite: Distinction average in MBLG (2001 or 2002 or 2004 or 2005 or 2006) and intermediate level Biology units. For BMEdSc students 32 credit points of Intermediate BMED units including BMED 2502. Prohibition: May not be counted with BIOL (3925 or 3928). Assessment: One 2 hr exam, assignments, seminar. The unit covers the main themes of modern evolutionary theory including population genetics. In the practicals, students use molecular methods to quantify genetic variation in natural populations. Using these skills we will search for population subdivision and discuss how this can lead to speciation. Lectures will cover phylogenetics and how the evolution of traits can be tracked using the comparative method. We will consider how studies of sex ratios, sexual selection, kin selection, game theory and quantitative genetics can illuminate the mechanisms by which animals have evolved, and explain why they behave as they do. We will then consider if these themes have any relevance to human sociobiology. The unit also covers the role of genetics in conservation. There will be a field trip to collect organisms for population genetic analysis. There will be plenty of opportunity in the student seminars to examine the more controversial aspects of modern evolutionary thought.

BIOL 3925 Evolutionary Gen. & Animal Behaviour Adv 6 credit points. Dr Oldroyd. Session: 2. Classes: 4 lec & 8 prac/wk. Prerequisite: Distinction average in 16 credit points from MBLG (2001, 2002, 2004 or 2005) and intermediate level Biology units. For BMEdSc students 32 credit points of Intermediate BMED units including distinction in BMED 2502. These requirements may be varied and students with lower averages should consult the unit Executive Officer. Prohibition: May not be counted with BIOL (3025 or 3928). Assessment: One 2hr exam, assignments, seminar. Qualified students will participate in alternative components of BIOL 3025 Evolutionary Genetics and Animal Behaviour. The content and nature of these components may vary from year to year. Some assessment will be in an alternative format.

BIOL 3026 Developmental Genetics 6 credit points. Dr Saleeba, Dr Raphael, A/Prof Gillies. Session: 2. Classes: 4 lec & 6 prac/wk. Prerequisite: Distinction in MBLG (2001/2002 or 2001/2002) or 16 credit points of Intermediate Biology including BIOL (2005 or 2006). For BMEdSc students: 32 credit points of Intermediate BMED units including BMED 2502. Prohibition: May not be counted with BIOL (3926 or 3929). Assessment: One 2 hr exam, assignments. This unit discusses current understanding of developmental genetics with emphasis on molecular genetics. The developmental genetics of model plants and animals will be investigated. In particular, the molecular genetics of vertebrate development, pattern formation and gene expression. The study of mutants in development, plant specific processes such as root formation and flowering, will be covered making reference to modern techniques such as transgenics, recombinant DNA technology, and tissue specific expression analysis. Various methods of genetic mapping will be covered, as well as genetic counselling. Practical work complements the theoretical aspects and develops important genetic skills.

BIOL 3926 Developmental Genetics (Advanced) 6 credit points. Dr Saleeba, Dr Raphael, A/Prof Gillies. Session: 1. Classes: 4 lec & 6 prac/wk. Prerequisite: Distinction average in MBLG (2001/2002 and 2002/2003) or in 16 credit points of Intermediate Biology including BIOL (2005 or 2006). For BMEdSc students 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should contact the unit Executive Officer. Prohibition: May not be counted with BIOL (3026 or 3929). Assessment: One 2 hr exam, assignments. Qualified students will participate in alternative components to BIOL 3026 Developmental Genetics. The content and nature of these components may vary from year to year. Some assessment will be in an alternative format.

BIOL 3027 Bioinformatics and Genomics 6 credit points. Dr Firth, Dr Jermin, Dr Saleeba and others. Session: 1. Classes: 4 lec & 6 prac/wk. Prerequisite: Distinction average in MBLG (2001/2002 or 2002/2003) or 16 credit points of Intermediate Biology including BIOL (2001 or 2002 or 2004 or 2005 or 2006 or 2007 or 2008). For BMEdSc students: 32 credit points of Intermediate BMED units including BMED 2502. Prohibition: May not be counted with BIOL 3027. Assessment: One 2 hr exam, practical report, assignment. A unit of study of lectures, practical assignments and tutorials on the application of bioinformatics to the storage, retrieval and analysis of biological information, principally in the form of nucleotide and amino acid sequences. Although the main emphasis is on sequence data, other forms of biological information are considered, together with classical taxonomy and biodiversity.

The unit begins with the assembly and management of nucleotide sequence data and an introduction to the databases that are normally used for the storage and retrieval of biological data, and continues with signal detection and analysis of deduced products, sequence alignment, and database search. Phylogenetic reconstruction based on distance based methods, parsimony methods and maximum likelihood methods is described and students are introduced to the idea of tree space, phylogenetic uncertainty, and taught to evaluate phylogenetic trees and identify factors that will confound phylogenetic inference. Finally, whole genome analysis and comparative genomics are considered. The unit gives students an appreciation of the significance of bioinformatics in contemporary biological science by equipping them with skills in the use of software programs and databases for 'in silico' biology, and an awareness of the breadth of bioinformatics resources and applications.

BIOL 3927 Bioinformatics and Genomics (Advanced) 6 credit points. Dr Firth, Dr Jermin, Dr Saleeba and others. Session: 1. Classes: 4 lec & 6 prac/wk. Prerequisite: Distinction average in MBLG (2001 or 2101 or 2002) or Distinction average in 16 credit points of Intermediate Biology including BIOL (2001 or 2002 or 2004 or 2005 or 2006 or 2007 or 2008). For BMEdSc students: 32 credit points of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should contact the unit Executive Officer. Prohibition: May not be counted with BIOL 3027. Assessment: One 2hr exam, practical report, assignment. Qualified students will participate in alternative components of BIOL 3027 Bioinformatics and Genomics. The content and nature of these components may vary from year to year. Some assessment will be in an alternative format.
BIOL 3929 Evolutionary Genetics Molecular (Adv)
6 credit points. Dr Oldroyd. Session: 2. Classes: 4 lec & 8 prac/wk. Prerequisite: Distinction average in 16 credit points of Intermediate Biology including BIOL 2905 or in MBLG (2001/2901 and 2002/2902). For BMedSc of Intermediate BMED units including Distinction in BMED 2502. These requirements may be varied and students with lower averages should contact the unit Executive Officer. Prohibition: May not be counted with BIOL (3026 or 3925). Assessment: One 2hr exam, assignments, seminar and an essay based on discussion sessions.
NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) and the Bachelor of Medical Science only. This unit is the same as BIOL 3925 Evolutionary Genetics and Animal Behaviour (Advanced), except for the addition of topical seminars and discussions in this discipline.

BIOL 3929 Developmental Genetics Molecular (Adv)
6 credit points. Dr Saleeba, Dr Raphael, A/Prof Gillies. Session: 2. Classes: 4 lec & 8 prac/wk. Prerequisite: Distinction average in 16 credit points of Intermediate Biology including BIOL 2905 or in MBLG (2001/2901 and 2002/2902). Prohibition: May not be counted with BIOL (3026 or 3925). Assessment: One 2hr exam, assignments.

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) only. This unit is the same as BIOL 3926 Developmental Genetics (Advanced) except for the inclusion of topical items in this discipline.

Biology Honours
A single Honours program in Biology accommodates students who have completed 24 credit points of Senior Biology or equivalent. Information about qualifications for entry into Honours is available from the School Office (Science Road Cottage, A10).

During the Honours year the principles established in the first three years of the undergraduate course are further developed, and students are introduced to a wider field of biology and biological techniques. Students may elect to specialise in any of the aspects of biology that are studied in the School. Students who have signified their intention of entering Honours will be notified of acceptance after the publication of the second semester Senior examination results. Honours students are expected to start their academic year at the beginning of February or July.

With the permission of the Head of School and the Faculty of Science, students who have qualified to take Honours and passed 12 credit points of Junior Biology may take Biology Honours without having taken Intermediate or Senior Biology units in their study. The concession is intended for students who have majored in physics, chemistry or biochemistry and wish to study biophysics or plant physiology; they should first discuss their qualifications with Associate Professor R. L. Overall.

The Honours unit of study comprises:
(a) a project in which the student investigates a problem and presents oral and written accounts of his or her research.
(b) coursework units chosen from a program offered by the School.
(c) instruction in experimental design, and other technical instruction.

Please Note: Part (c) is run in the February semester and must be taken in the calendar year of first enrolment by all students. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

BIOD 3952 Pathological Basis of Human Disease
12 credit points. Prof. Hunt, Dr Gibbins, Dr Hambly, A/Prof. King. Session: 1. Classes: 1 tut & 11 prac/wk. Prerequisite: ANAT 2002; or BCHM 2002 or 2003; or BIOL 2005 or 2006 or 2005 or 2090; or both PCOL 2001 and (2002 or 2003); or PHSI 2002. For BMSc 32 credit points from Intermediate BMED units of study. Assessment: One 3hr exam, 4 prac reports.

NB: Department permission required for enrolment. Entry requires Departmental permission: only a small number of students can be accommodated in the laboratory facilities. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

The unit of study Cell Pathology is particularly suited to those interested in subsequently doing research in a challenging area of biology. This unit of study will provide students with insight into alterations in cellular processes in disease and injury and equip them to apply the concepts and methods of cell biology to the study of pathology. Subjects studied include inflammation, immunopathology, cellular immunology, molecular pathophysiology and cancer biology. This unit of study would not be useful for those wishing to pursue a career in diagnostic pathology.

Tutorials and directed reading will cover the general principles of pathology, emphasising the physiological, biochemical and genetic aspects and correlation of disturbed cell function with structural and ultrastructural changes.

Laboratory work is designed to illustrate particular aspects of pathology. A range of methods that will help in later development of this area will be used. These include flow cytometry, tissue culture, molecular biology and microscopy.

CPAT 3001 Pathological Basis of Human Disease
12 credit points. Prof. Hunt, Dr Gibbins, Dr Hambly, A/Prof. King, Dr Pamphlett and others. Session: 2. Classes: 3hr lec, 6 hrs self directed learning or museum sessions; & 3 hr microscopic specimen prac class/ wk (Total 12 hrs/wk). Prerequisite: ANAT 2001; or BCHM 2001 or 2002 or 2101 or 2102 or 2901 or 2902; or MBLG (2001 or 2101 or 2901); or BIOL (2001 or 2002 or 2005 or 2006 or 2101 or 2102 or 2106 or 2901 or 2902 or 2905 or 2906); or both PCOL 2001 and (2002 or 2003); or PHSI 2002. For BMSc 32 credit points from Intermediate BMED units of study. Assessment: Project Report (10%), Theory exam (60%), Practical exam (30%).

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

110

UNDERGRADUATE TABLES AND UNITS OF STUDY

Cell Pathology

Cell Pathology is taught by the Department of Pathology.

Students interested in CPAT 3001 Cell Pathology A are expected to meet with Professor Hunt or Associate Professor King before enrolling, preferably during the preceding year. The Department can cater only for a small number of students in CPAT 3001 and good performance in Junior and Intermediate units of study will be essential to ensure success in this unit. The Department of Pathology is located on Level 5 of the Blackburn Building (phone (02) 9351 2414).

CPAT 3001 Cell Pathology A
12 credit points. Prof. Hunt, Dr Gibbins, Dr Hambly, A/Prof. King. Session: 1. Classes: 1 tut & 11 prac/wk. Prerequisite: ANAT 2002; or BCHM 2002 or 2003; or BIOL 2005 or 2006 or 2090; or both PCOL 2001 and (2002 or 2003); or PHSI 2002. For BMSc 32 credit points from Intermediate BMED units of study. Assessment: One 3hr exam, 4 prac reports.

NB: Department permission required for enrolment. Entry requires Departmental permission: only a small number of students can be accommodated in the laboratory facilities. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

The unit of study Cell Pathology is particularly suited to those interested in subsequently doing research in a challenging area of biology. This unit of study will provide students with insight into alterations in cellular processes in disease and injury and equip them to apply the concepts and methods of cell biology to the study of pathology. Subjects studied include inflammation, immunopathology, cellular immunology, molecular pathophysiology and cancer biology. This unit of study would not be useful for those wishing to pursue a career in diagnostic pathology.

Tutorials and directed reading will cover the general principles of pathology, emphasising the physiological, biochemical and genetic aspects and correlation of disturbed cell function with structural and ultrastructural changes.

Laboratory work is designed to illustrate particular aspects of pathology. A range of methods that will help in later development of this area will be used. These include flow cytometry, tissue culture, molecular biology and microscopy.

CPAT 3101 Pathological Basis of Human Disease
12 credit points. Prof. Hunt, Dr Gibbins, Dr Hambly, A/Prof. King, Dr Pamphlett and others. Session: 2. Classes: 3hr lec, 6 hrs self directed learning or museum sessions; & 3 hr microscopic specimen prac class/ wk (Total 12 hrs/wk). Prerequisite: ANAT 2001; or BCHM 2001 or 2002 or 2101 or 2102 or 2901 or 2902; or MBLG (2001 or 2101 or 2901); or BIOL (2001 or 2002 or 2005 or 2006 or 2101 or 2102 or 2106 or 2901 or 2902 or 2905 or 2906); or both PCOL 2001 and (2002 or 2003); or PHSI 2002. For BMSc 32 credit points from Intermediate BMED units of study. Assessment: Project Report (10%), Theory exam (60%), Practical exam (30%).

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.
The Pathological Basis of Human Disease unit of study modules will provide a practical and theoretical background to the scientific basis of the pathogenesis of disease, including elements of forensic pathology. Areas covered in theoretical modules include: tissue responses to exogenous factors, adaptive responses to foreign agents, cardiovascular/pulmonary responses to disease, forensic science, neuropathology and cancer. Practical modules include disease specimen evaluation on a macroscopic and microscopic basis. The unit of study would be appropriate for those who intend to proceed to Honours research, to professional degrees or to careers in biomedicai areas such as hospital science. It fulfils the Pathology requirements for the Centre for Chiropractic at Macquarie University. Textbooks

■ Chemical Engineering

The Department of Chemical Engineering is part of the Faculty of Engineering. In addition to providing professional training in this branch of engineering it offers units of study to students enrolled in the Faculty of Science majoring particularly in Chemistry, but also Biochemistry, Physics or Mathematics. The most relevant units of study are CHNG 1101 Chemical Engineering 1A, CHNG 1102 Chemical Engineering 1B, CHNG 2101 Chemical Engineering 2A and CHNG 2102 Chemical Engineering 2B. Details regarding these units of study can be obtained from the Faculty of Engineering Handbook. The units of study are intended to give a science student some insight into the principles which control the design and performance of large scale industrial processing plants. As well as the above units of study, Faculty of Science students are invited to enrol in any other chemical engineering unit of study, provided they have the appropriate prerequisites.

Double Degree
Some BSc graduates, who have passed all four of the above units of study within the Department of Chemical Engineering, may obtain a Bachelor of Engineering degree in Chemical Engineering after an additional two years’ study, following the award of the BSc. Students wishing to undertake this option must apply through UAC and compete on the basis of academic merit. Further details regarding admission to the BE in Chemical Engineering may be obtained from the Engineering Faculty Office.

■ Chemistry

Chemistry Junior units of study
Dr Adrian George

The School of Chemistry offers a number of 6 credit point units of study to cater for the differing needs of students. These units of study are:
CHEM 1001 Fundamentals of Chemistry 1A
CHEM 1002 Fundamentals of Chemistry 1B
CHEM 1101 Chemistry 1A
CHEM 1102 Chemistry 1B
CHEM 1901 Chemistry 1A (Advanced)
CHEM 1902 Chemistry 1B (Advanced)
CHEM 1903 Chemistry 1A (Special Studies Program)
CHEM 1904 Chemistry 1B (Special Studies Program)
CHEM 1905, CHEM 1906 and CHEM 1907 are only available to students in the Bachelor of Science (Molecular Biology and Genetics)
CHEM 1908 is only available to students in the Bachelor of Medical Science, Bachelor of Science (Nutrition) and the Bachelor of Science (Molecular Biotechnology)
CHEM 1909 is only available to students in the Bachelor of Medical Science, Bachelor of Science (Molecular Biology and Genetics), Bachelor of Science (Nutrition) and Bachelor of Science (Molecular Biotechnology)

Students seeking further information about CHEM 1905, CHEM 1906, CHEM 1907, CHEM 1908 or CHEM 1909 should consult the relevant Tables earlier in this chapter as well as degree information in chapter 2 of this handbook. For full detail regarding all units of study, prescribed textbooks and reference books is available from the School of Chemistry and is contained in a booklet, Information for Students, distributed at the time of enrolment. Exercises are issued and tutorials are held at regular intervals for all units of study.

CHEM1001 Fundamentals of Chemistry 1A
6 credit points. Session: 1. Classes: 3 lec & 1 tut/wk & 3hrs prac/wk for 10 wks. Assumed knowledge: There is no assumed knowledge of chemistry for this unit of study, but students who have not undertaken an HSC chemistry course are strongly advised to complete a chemistry bridging course before lectures commence. Prohibition: May not be counted with CHEM 1101 or 1903 or 1905 or 1906 or 1909. Assessment: A theory examination is held at the end of the semester. Students are advised at the beginning of the semester about other factors contributing to assessment in the unit of study.

The aim of the unit of study is to provide those students whose chemical background is weak (or non-existent) with a good grounding in fundamental chemical principles together with an overview of the relevance of chemistry. There is no prerequisite or assumed knowledge for entry to this unit of study.

Lectures: A series of 39 lectures, three per week throughout the semester.

Practical: A series of 10 three hour laboratory sessions, one per week for 10 weeks of the semester. Textbooks
A booklet is contained in the booklet Information for Students distributed at enrolment. Further information can be obtained from the School.

CHEM 1002 Fundamentals of Chemistry 1B
6 credit points. Session: 2. Classes: 3 lec & 1 tut/wk & 3hrs prac/wk for 10 wks. Prerequisite: CHEM (1001 or 1101) or equivalent. Prohibition: May not be counted with CHEM (1102 or 1902 or 1904 or 1907 or 1908). Assessment: A theory examination is held at the end of the semester. Students are advised at the beginning of the semester about other factors contributing to assessment in the unit of study.

CHEM 1002 builds on CHEM 1001 to provide a sound coverage of inorganic and organic chemistry.

Lectures: A series of 39 lectures, three per week throughout the semester.

Practical: A series of 10 three hour laboratory sessions, one per week for 10 weeks of the semester. Textbooks
A booklet is contained in the booklet Information for Students distributed at enrolment. Further information can be obtained from the School.

CHEM 1101 Chemistry 1A
6 credit points. Session: 1,2. Summer. Classes: 3 lec & 1 tut/wk & 3hrs prac/wk for 10 wks. Assumed knowledge: HSC Chemistry and Mathematics. Corequisite: Recommended concurrent units of study: 6 credit points of Junior Mathematics. Prohibition: May not be counted with CHEM (1001 or 1901 or 1903 or 1905 or 1906 or 1909). Assessment: A theory examination is held at the end of the semester. Students are advised at the beginning of the semester about other factors contributing to assessment in the unit of study.

Chemistry 1A is built on a satisfactory prior knowledge of the HSC 2 unit Chemistry course. A brief revision of basic concepts of the high school course is given. Chemistry 1A covers chemical theory and physical chemistry.

Lectures: A series of 39 lectures, three per week throughout the semester.

Practical: A series of 10 three hour laboratory sessions, one per week for 10 weeks of the semester. Textbooks
A booklet is contained in the booklet Information for Students distributed at enrolment. Further information can be obtained from the School.

CHEM 1102 Chemistry 1B
6 credit points. Session: 1,2. Summer. Classes: 3 lec & 1 tut/wk & 3hrs prac/wk for 10 wks. Qualifier: CHEM 1101 or a Distinction in CHEM 1001 or equivalent. Corequisite: Recommended concurrent units of study: 6 credit points of Junior Mathematics including MATH (1003 or 1903). Prohibition: May not be counted with CHEM (1002 or 1902 or 1904 or 1907 or 1908). Assessment: A theory examination is held at the end of the semester. Students are advised at the beginning of the semester about other factors contributing to assessment in the unit of study.

Chemistry 1B is built on a satisfactory prior knowledge of Chemistry 1A and covers inorganic and organic chemistry. Chemistry 1B is an acceptable prerequisite for entry into Intermediate Chemistry units of study.

Lectures: A series of 39 lectures, three per week throughout the semester.

Practical: A series of 10 three hour laboratory sessions, one per week for 10 weeks of the semester.
CHEM 1901 Chemistry 1A (Advanced)

6 credit points. Session: 1. Classes: 3 lec & 1 tut/wk & 3hrs prac/wk for 10 wks. Prerequisite: UAI of at least 93 and HSC Chemistry result in band 5 or Distinction or better in a University level Chemistry unit, or by invitation. Corequisite: Recommended concurrent unit of study: 6 credit points of Junior Mathematics. Prohibition: May not be counted with CHEM (1001 or 1101 or 1903 or 1905 or 1906 or 1909). Assessment: A theory examination is held at the end of the semester. Students are advised at the beginning of the semester about other factors contributing to assessment in the unit of study.

NB: Department permission required for enrolment. Chemistry IA (Advanced) is restricted to students who have gained a Distinction in Chemistry IA (Advanced). The practical work syllabus for Chemistry IB (Special Studies Program) is very different from that for Chemistry IB (Advanced) and consists of special project based laboratory exercises. All other unit of study details are the same as those for Chemistry IB (Advanced).

Chemistry IB (Special Studies Program) is an acceptable prerequisite for entry into Intermediate Chemistry units of study.

CHEM 1904 Chemistry 1B (Special Studies Program)

6 credit points. Session: 2. Classes: 3 lec & 1 tut/wk & 3hrs prac/wk. Prerequisite: Distinction in CHEM 1903. Corequisite: Recommended concurrent units of study: 6 credit points of Junior Mathematics including MATH (1003 or 1903). Prohibition: May not be counted with CHEM (1002 or 1102 or 1902 or 1907 or 1908). NB: Department permission required for enrolment. Entry is by invitation. This unit of study is deemed to be an Advanced unit of study.

Entry to Chemistry IB (Special Studies Program) is restricted to students who have gained a Distinction in Chemistry IA (Special Studies Program). The practical work syllabus for Chemistry IB (Special Studies Program) is very different from that for Chemistry IB (Advanced) and consists of special project based laboratory exercises. All other unit of study details are the same as those for Chemistry IB (Advanced).

Textbooks

A list of recommended textbooks is contained in the booklet Information for Students distributed at enrolment. Further information can be obtained from the School.

CHEM 1902 Chemistry 1B (Advanced)

6 credit points. Session: 2. Classes: 3 lec & 1 tut/wk & 3hrs prac/wk for 10 wks. Qualifier: CHEM (1901 or 1903) or Distinction in CHEM 1101 or equivalent. Corequisite: Required concurrent unit of study: 6 credit points of Junior Mathematics including MATH (1003 or 1903). Prohibition: Not to be counted with CHEM (1002 or 1102 or 1904 or 1907 or 1908). A theory examination is held at the end of the semester. Students are advised at the beginning of the semester about other factors contributing to assessment in the unit of study.

NB: Department permission required for enrolment. Entry is by invitation. Chemistry IB (Advanced) is built on a satisfactory prior knowledge of Chemistry IA (Advanced) and covers inorganic and organic chemistry. Chemistry IB (Advanced) is an acceptable prerequisite for entry into Intermediate Chemistry units of study.

Lectures: A series of about 39 lectures, three per week throughout the semester.

Practical: A series of 10 three hour laboratory sessions, one per week for 10 weeks of the semester.

CHEM 1903 Chemistry 1A (Special Studies Program)

6 credit points. Session: 1. Classes: 3 lec & 1 tut/wk & 3hrs prac/wk. Prerequisite: UAI of at least 98.7 and HSC Chemistry result in band 6, or Distinction or better in a University level Chemistry unit, or by invitation. Corequisite: Recommended concurrent unit of study: 6 credit points of Junior Mathematics. Prohibition: May not be counted with CHEM (1001 or 1101 or 1901 or 1903 or 1905 or 1906 or 1909). Assessment: One 3hr closed book exam (65%), prac reports (10%), quizes (15%), essay based on discussion sessions (10%).

NB: Department permission required for enrolment. Entry is by invitation. This unit of study is deemed to be an Advanced unit of study. This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) only. This unit of study is the same as Chemistry 1901 except for the addition of 7 special molecular biology and genetics discussion sessions, which consist of topical seminars and discussions in this discipline. An essay based on these discussions is included as part of the assessment of the unit of study.

CHEM 1905 Chemistry 1A Molecular (Advanced)

6 credit points. Session: 1. Classes: 3 lec/tut & 3hr prac/wk & 7 discussion sessions. Prerequisite: UAI of at least 98.7 and HSC Chemistry result in band 6, or Distinction or better in a University level Chemistry unit, or by invitation. Corequisite: Recommended concurrent unit of study: 6 credit points of Junior Mathematics. Prohibition: May not be counted with CHEM (1001 or 1101 or 1901 or 1903 or 1905 or 1906 or 1909). Assessment: One 3hr closed book exam (65%), prac reports (10%), quizes (15%), essay based on discussion sessions (10%).

NB: Department permission required for enrolment. Entry is by invitation. This unit of study is the same as Chemistry 1901 except for the addition of 7 special molecular biology and genetics discussion sessions, which consist of topical seminars and discussions in this discipline. An essay based on these discussions is included as part of the assessment of the unit of study.

CHEM 1909 Chemistry 1 Life Sciences A Mol (Adv)

6 credit points. Session: 1. Classes: Total of 6hrs per week consisting on average of 3 lectures, 1 tutorial/discussion session and 2hrs of practical work. Prerequisite: UAI of at least 93 and HSC Chemistry result in band 5 or 6, or Distinction or better in a University level Chemistry unit, or by invitation. Corequisite: Recommended concurrent unit of study: 6 credit points of Junior Mathematics. Prohibition: May not be counted with CHEM (1001 or 1101 or 1901 or 1903 or 1905 or 1906 or 1909). Assessment: Exam 65%, 10% practical work, 15% essay, based on discussion sessions 10%.

NB: This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) only. Lectures (39 hr): A strong background in junior chemistry is essential for understanding molecular structures and processes. This unit of study provides the basis for understanding fundamental chemical processes and structures at the molecular level, with particular emphasis on how this applies to the life sciences. Topics to be covered include: atomic structure, chemical bonding and organic chemistry of functional groups with applications in life sciences.

Tutorials/Discussions (13 hr). These will provide aspects of problem solving and will include special lectures on aspects of molecular biology and genetics from external experts.

Practical: (30 hr): These will be designed to develop practical skills based on the theory presented in the lectures.
A booklist is contained in the booklet Information for Students distributed at enrolment. Further information can be obtained from the School.

**CHEM 1908 Chemistry 1 Life Sciences A (Advanced)** 6 credit points. **Session:** 1. **Summer.** **Classes:** Total of 8hrs per week consisting on average of 3 lectures, 1 tutorial session and 2hrs of practical work. **Prerequisite:** UAI of at least 93 and HSC Chemistry result in band 6 or, on Distinction or better in a University level Chemistry unit, or by invitation. **Corequisite:** Recommended concurrent units of study: 5 credit points of Junior Mathematics. **Prohibition:** May not be counted with CHEM (1002 or 1902 or 1904 or 1907). **Assessment:** A theory examination is held at the end of the semester. Students are advised at the beginning of the semester about other factors contributing to assessment in the unit of study.

**NB:** Department permission required for enrolment. This unit of study is available to students enrolled in the Bachelor of Medical Science, the Bachelor of Science (Nutrition) and the Bachelor of Science (Molecular Biotechnology) only.

Lectures (39 hr): A strong background in junior chemistry is essential for understanding molecular structures and processes. This unit of study provides the basis for understanding fundamental chemical processes and structures at an advanced level, with particular emphasis on how these apply to the life sciences. Topics to be covered include: atomic structure, chemical bonding and organic chemistry of functional groups with applications in life sciences.

Tutorials (13 hr): These will provide aspects of problem solving relevant to the theory.

**Practical:** Practical (30hr) These will be designed to develop practical skills based on the theory presented in the lectures

**Textbooks**
A booklist is contained in the booklet Information for Students distributed at enrolment. Further information can be obtained from the School.

**CHEM 2001 Chemistry 2 (Life Sciences)** 8 credit points. **Session:** 1. **Classes:** 4 lec & 4hr prac/wk. **Prerequisite:** 6 credit points of Junior Mathematics. **Qualifier:** CHEM (1102 or 1902 or 1904 or 1909). **Prohibition:** May not be counted with CHEM (2101 or 2301 or 2903 or 2311 or 2312 or 2502). **Assessment:** Theory (67%), lab exercises (33%).

This unit of study comprises approximately 51 lectures consisting of: Organic Reaction Mechanisms in Biological Systems; Chemical Analysis and Spectroscopy of Biomolecules; Chemistry of Biomaterials (biopolymers, metalloproteins, biominerals etc). Non compulsory tutorials will also be provided at a rate of one per week.

Additional information: The aim of this unit of study is to provide students interested in life sciences with the chemical knowledge required for an understanding of the subject.

**Practical:** Practical work entails 4 hours per week for 13 weeks during the semester. Students must ensure that one complete afternoon from 1pm to 5pm, free from other commitments, is available for this practical work.

**CHEM 2101 Chemistry 2A (Advanced)** 8 credit points. **Session:** 1. **Classes:** 4 lec & 4hr prac/wk. **Prerequisite:** 6 credit points of Junior Mathematics. **Qualifier:** CHEM (1102 or 1902 or 1904 or 1909). **Prohibition:** May not be counted with CHEM (2101 or 2301 or 2903 or 2311 or 2312 or 2502). **Assessment:** Theory (67%), lab exercises (33%).

This aim of this unit of study is to provide students interested in environmental science with the chemical knowledge required for an understanding of the area.

**Practical:** As for CHEM 2001.

**CHEM 2102 Chemistry 2B** 8 credit points. **Session:** 2. **Classes:** 4 lec & 4hr prac/wk. **Prerequisite:** 6 credit points of Junior Mathematics. **Qualifier:** CHEM (1102 or 1902 or 1904 or 1909 or 1612). **Prohibition:** May not be counted with CHEM (2201 or 2902). **Assessment:** Theory (67%), lab exercises (33%).

Lectures: This unit of study consists of 17 lectures in which the structure, bonding and properties of inorganic compounds and solid complexes will be presented; 17 lectures of physical chemistry on statistical thermodynamics and thermodynamics; and 17 lectures in organic chemistry which will include annie chemistry, electrophiophic substitution and the chemistry of aromatics, the chemistry of carboxyls, nucleophilic organometallic reagents and organic synthesis and synthetic methods.

Additional information: This is the main chemistry unit of study for students expecting to major in chemistry.

**Practical:** As for CHEM 2001.

**CHEM 2301 Chemistry 2A** 8 credit points. **Session:** 2. **Classes:** 4 lec & 4hr prac/wk. **Prerequisite:** 6 credit points of Junior Mathematics. **Qualifier:** CHEM (1102 or 1902 or 1904 or 1909 or 1612). **Prohibition:** May not be counted with CHEM (2201 or 2902). **Assessment:** Theory (67%), lab exercises (33%).

This aim of this unit of study is to provide students interested in environmental science with the chemical knowledge required for an understanding of the area.

**Practical:** As for CHEM 2001.

**CHEM 2302 Chemistry 2B** 8 credit points. **Session:** 2. **Classes:** 4 lec & 4hr prac/wk. **Prerequisite:** 6 credit points of Junior Mathematics. **Qualifier:** CHEM (1102 or 1902 or 1904 or 1909). **Prohibition:** May not be counted with CHEM (2202 or 2902). **Assessment:** Theory (67%), lab exercises (33%).

Lectures: This unit of study consists of 17 lectures in which the structure, bonding and properties of inorganic compounds and solid complexes will be presented; 17 lectures of physical chemistry on statistical thermodynamics and thermodynamics; and 17 lectures in organic chemistry which will include annie chemistry, electrophiophic substitution and the chemistry of aromatics, the chemistry of carboxyls, nucleophilic organometallic reagents and organic synthesis and synthetic methods.

Additional information: This is the main chemistry unit of study for students expecting to major in chemistry.

**Practical:** As for CHEM 2001.
Chemistry

NB: Department permission required for enrolment. Entry to this unit of study is by invitation. Students in the Faculty of Science Talented Students Program are automatically eligible. Lectures and tutorials: Lectures and tutorials in CHEM 2901 (Advanced) comprise two sets: Four lectures per week in common with any other Intermediate Chemistry unit of study, and one lecture per week of advanced lectures on topics that are complementary to the other units of study.

Additional information: The number of places in Chemistry 2901 (Advanced) is limited. Applications are invited from students with a high WAM and an excellent record in a Junior Chemistry unit of study. Places are restricted to students enrolled in the Faculty of Science except by permission of the Head of the School of Chemistry. Students in the Faculty of Science Talented Student Program who are enrolled in the BS or BSc(Adv) degree are normally automatically eligible. Students enrolled in other advanced degree programs within the Faculty are not normally admitted because of timetabling.

Practical: Practical work entails 4 hours per week during the semester. Students must be available 1pm 5pm Friday afternoons for laboratory work.

CHEM 2902 Chemistry 2B (Advanced) 8 credit points. Session: 2. Classes: 5 lec & 4hr prac/wk. Prerequisite: 6 credit points of Junior Mathematics. Qualifier: WAM greater than 80 and Distinction (100%) in CHEM (1101 or 1901 or 1903) and CHEM (1102 or 1902 or 1904 or 1909). Prohibition: May not be counted with CHEM (2202 or 2302). Assessment: Theory (56.7%), lab exercises (33.3%), Advanced Assignment (10%).

NB: Department permission required for enrolment. Entry is by invitation.

Lectures and tutorials: Lectures and tutorials in CHEM 2902 (Advanced) comprise two sets: 4 lectures and 1 tutorial per week in common with any other Intermediate Chemistry unit of study, and 1 lecture per week of advanced lectures on topics that are complementary to the other units of study.

Additional information: The number of places in Chemistry 2902 (Advanced) is limited. Normally entry to this unit of study is restricted to those students enrolled in Chemistry 2901. However, a student who has performed particularly well in another February semester Chemistry unit of study may be invited by the Head of School to enrol in Chemistry 2902 (Advanced). See the Intermediate Chemistry unit of study Coordinator for further information.

Practical: Practical work entails 4 hours per week during the semester. Students must be available 1pm 5pm Friday afternoons for laboratory work.

CHEM 2311 Chemistry 2 (Biological Sciences) Theory 4 credit points. Dr Robert Baker. Session: 1. Classes: 4 lec/wk. Prerequisite: 12 credit points of Junior Chemistry. Prohibition: May not be counted with CHEM (2001 or 2101 or 2301 or 2901 or 2903 or 2502). Assessment: 3 hr exam (60%), continuous assessment (20%).

NB: This unit of study is available to students in the Bachelor of Medical Science, the Bachelor of Science (Biological and Genetics), and the Bachelor of Science in Molecular Biology and Biotechnology only.

This unit of study aims to give students an understanding of the chemistry underlying biological systems. Lectures will cover the mechanisms of organic chemical reactions and their application to biological systems, the molecular basis of spectroscopic techniques used in biological chemistry, analytical chemistry of biological systems, biopolymers and biomolecules and topics from inorganic chemistry of relevance to biological systems (metalloproteins, biomineralisation, etc). There will also be 8 hours of compulsory tutorial workshops. Students must ensure that one complete afternoon from 1.00 pm to 5.00 pm, free from other commitments, is available for the practical work.

Textbooks

As for CHEM 2001

Chemistry Senior units of study

A/Prof. SH.Kable.

The School of Chemistry offers a number of units of study to cater for the differing needs of students. The following units of study are offered:

CHEM 3101 Chemistry 3A, 12 credit points
CHEM 3102 Chemistry 3B, 12 credit points
CHEM 3901 Chemistry 3A (Advanced), 12 credit points
CHEM 3902 Chemistry 3B (Advanced), 12 credit points
CHEM 3201 Chemistry 3 A Additional, 12 credit points
CHEM 3202 Chemistry 3B Additional, 12 credit points
CHEM 3311 is only available to students in the Bachelor of Science (Molecular Biotechnology) CHEM 3601 and CHEM 3602 are only available to students in the Bachelor of Science (Environmental) CHEM 3903 is only available to students in the Bachelor of Medical Science and the Bachelor of Science (Molecular Biology and Genetics).

Students seeking further information about CHEM 3311, CHEM 3601, CHEM 3602 or CHEM 3903 should consult the relevant Tables earlier in this chapter as well as the information in chapter 2 of this handbook.

Advice on units of study

A fully detailed information booklet on the units of study and textbooks is available from the School of Chemistry. AU students who intend to take Senior Chemistry units of study must register in the School of Chemistry during either the Wednesday or Thursday of the orientation period. Registration includes selection of Senior Chemistry modules, completion of a registration card and the taking of an I.D. photograph.

CHEM 3101 Chemistry 3A 12 credit points. Session: 1. Classes: 4 lec & 8hr prac/wk. Prerequisite: CHEM (2001 or 2101 or 2301 or 2901) and CHEM (2302 or 2502). Prohibition: May not be counted with CHEM (3311, 3601, 3602, 3901 or 3903), but may be counted with CHEM 3201. Assessment: Exam (67%), lab exercises (33%).

The lectures will be presented in modules (each module runs for a semester and comprises 13 lectures). A listing of the modules is available from the March Semester in 2002 is given below. There are some restrictions on the number of modules that a student can take from each area and during the seven lecture course on Chemical Laboratory Practices is compulsory. Further details can be obtained from the Senior Chemistry Handbook available from the School.

Inorganic Chemistry

• 311F Transition Metal Chemistry and Inorganic Reaction Mechanisms
• 312F Biological, Environmental and Industrial Chemistry of the Main Group
• 313F Organometallic Chemistry and Catalysis

Organic Chemistry

• 301F Spectroscopic Identification of Organic Compounds
• 302F Stereochemistry and Mechanism
• 304F Bioorganic Chemistry
Physical/Theoretical Chemistry
• 3PT1F Quantum Chemistry
• 3PT3F Chemical Dynamics
• 3PT5F Biophysical Chemistry

Cross Disciplinary
• 3CF2 Symmetry and Spectroscopy. This may be some interchange of modules between CHEM 3101 and CHEM 3102. As well, some modules may not be offered.

Practical: Practical work (8 hours/week) comprises sessions in the inorganic, organic and physical chemistry laboratories. Details can be obtained from the School of Chemistry.

Textbooks
See the Senior Chemistry handbook available from the School of Chemistry.

CHEM 3102 Chemistry 3B
12 credit points. 
Session: 2. 
Classes: 4 lec & 8 hr prac/wk. 
Prerequisite: Inorganic Chemistry (2001 or 2101 or 2301 or 2901) and CHEM (2302 or 2902). Prohibition: May not be counted with CHEM (3601, 3602 or 3902 or 3903), but may be counted with CHEM 3202. Assessment: Exam (67%), lab exercises (33%). 

The lectures will be presented in modules (each module runs for a semester and comprises 13 lectures). A listing of the module titles offered in the July Semester in 2002 is given below. There are some restrictions on the number of modules that a student can take from each area. The 7 lecture course on Chemical Laboratory Practices is compulsory for those students who did not attend in semester 1. Further details can be obtained from the Senior Chemistry Handbook available from the School.

Inorganic Chemistry
• 3I4J Biological and Environmental Chemistry of the Transition Elements
• 3I5J Inorganic Materials Chemistry
• 3I7J Forensic and Analytical Chemistry

Organic Chemistry
• 303J Heterocyclic Chemistry
• 305J Medicinal and Biological Chemistry
• 306J Free Radicals and Pericyclics in Synthesis and Nature
• 307J Synthetic Methods

Physical/Theoretical Chemistry
• 3PT4J Atmospheric and Photochemistry
• 3PT6J Polymer Chemistry
• 3PT7J Surfaces and Colloids
• 3PT8J Physical Chemistry of Materials

Cross Divisional
• 3C1J Supramolecular Chemistry

There may be some interchange of modules between Chemistry 3101 and Chemistry 3102. As well, some modules may not be offered.

Practical: As for CHEM 3101, but the last six weeks comprise workshops/tutorials and 3 hours of practical work per week.

Textbooks
See the Senior Chemistry handbook available from the School of Chemistry.

CHEM 3902 Chemistry 3B (Advanced)
12 credit points. 
Session: 2. 
Classes: 5 lec & 8 hr prac/wk. 
Prerequisite: Distinction or better in CHEM (2002 or 3101 or 3901); by invitation. Prohibition: May not be counted with CHEM (3102, 3602 or 3903). Assessment: As for CHEM 3B, plus a report on each Advanced module. Only the marks for the best 4 out of the total of 5 modules assessed contribute to a student’s final mark.

NB: Department permission required for enrolment. The number of places in this unit of study is limited and entry is by invitation. Students in the Faculty of Science Talented Student Program are automatically eligible.

Lectures: The requirements for Chemistry 3B (Advanced) are identical with those for Chemistry 3B, with the addition of a special module that is available only to Advanced students. This special module involves an inquiry into a major problem in contemporary chemistry. A member of staff guides the discussion and acts as a consultant. Advanced topics offered in July semester 2002 were:

- Antibiotic Resistance
- Climate chemistry.

Practical: As for CHEM 3101

Textbooks
See the Senior Chemistry handbook available from the School of Chemistry.

CHEM 3201 Chemistry 3A Additional
12 credit points. 
Session: 1. 
Classes: 4 lec & 8 hr prac/wk. 
Prerequisite: CHEM (2001 or 2101 or 2301 or 2502 or 2901) and CHEM (2302 or 2902). Prohibition: May not be counted with CHEM (3601, 3602 or 3903). Assessment: Exam (67%), lab exercises (33%).

Students taking this unit of study must be concurrently enrolled in or have previously completed either CHEM 3101 or CHEM 3901. The modules will be chosen from the modules listed for CHEM 3101 and the same selection rules as applicable to CHEM 3101 will apply to the selection of the additional 4 modules. Students cannot take modules already counted towards CHEM 3101 or 3901 or 3902 or 3202.

Practical: As for CHEM 3101

Textbooks
See the Senior Chemistry handbook available from the School of Chemistry.

CHEM 3202 Chemistry 3B Additional
12 credit points. 
Session: 2. 
Classes: 4 lec & 8 hr prac/wk. 
Prerequisite: CHEM (2001 or 2101 or 2301 or 2502 or 2901) and CHEM (2302 or 2902). Corequisite: CHEM (3102 or 3902). Prohibition: May not be counted with CHEM (3601, 3602 or 3903). Assessment: Exam (67%), lab exercises (33%).

Students taking this unit of study must be concurrently enrolled in or have previously completed either CHEM 3102 or CHEM 3902. The modules will be chosen from the modules listed for CHEM 3102 and the same selection rules as applicable to CHEM 3102 will apply to the selection of the additional 4 modules. Students cannot take modules already counted towards CHEM 3101 or 3102 or 3901 or 3902 or 3202.

Practical: As for CHEM 3101, but the last six weeks comprise a workshop in one of the Divisions

Textbooks
See the Senior Chemistry handbook available from the School of Chemistry.

CHEM 3311 Drug Design and Characterisation
6 credit points. 
Session: 2. 
Classes: 2 lec, 3 prac, 1 tut/week. 
Prerequisite: MOST (2001 and 2002) and (CHEM 2311 or 2901) or (CHEM 2311 or 2312) or (CHEM 2311 or 2901) or (CHEM 2311 or 2901). Prohibition: May not be counted with CHEM (3101, 3102, 3601, 3602, 3901, 3902 or 3903). Assessment: One 3hr exam. Continuous practical and workshop assessment.

NB: This unit of study is available to students in the Bachelor of Science (Molecular Biotechnology) only.

This unit of study comprises two lectures, one hour of workshops/tutorials and 3 hours of practical work per week. The lectures consist of two 13 lecture modules. The first module, titled 'Spectroscopic Identification of Medicinal Compounds' aims to provide the fundamental principles for identifying drugs and analysing their molecular structure by various spectroscopic techniques, including, mass spectrometry, NMR and infrared spectroscopies. The second module, 'Molecular Modelling in Medicinal Chemistry' provides the necessary basic theory to understand what constitutes molecular modelling packages used widely in rational drug design. Theories include Quantitative
Structure Activity Relationships (QSAR), the role of stereochemistry, computational methods in drug design, and theories of solvation and hydrogen bonding in biological chemistry. These modules are supported by one hour per week of tutorials and workshops. The laboratory program is structured as 10 four-hour practical sessions. The program has been designed to accentuate chemical techniques that are of most importance to drug design, both in the synthesis and analysis of compounds.

CHEM 3601 Chemistry 3A (Environmental) 4 credit points. Session: 1. Classes: 2lec and 2hr prac/workshop/wk. Prerequisite: CHEM (1102 or 1902) and ENVIL 2002. Prohibition: May not be counted with CHEM (3101, 3102, 3201, 3202, 3311, 3901, 3902 or 3903). Assessment: Exam (56%), prac reports (33%). NB: This unit of study is available to students in the Bachelor of Science (Environmental) only.

The aim of this unit of study is to provide students enrolled in the Environment BSc program with the advanced chemistry required for an understanding of the subject. The biological, environmental and industrial chemistry of the main group elements and their compounds will be considered, as well as spectroscopic identification of organic compounds. Further information is available from the Senior Chemistry Handbook.

CHEM 3602 Chemistry 3B (Environmental) 4 credit points. Session: 2. Classes: 2lec and 2hr prac/workshop/wk. Prerequisite: CHEM (1102 or 1902) and ENVIL 2002. Prohibition: May not be counted with CHEM (3101, 3102, 3201, 3202, 3311, 3901, 3902 or 3903). Assessment: Exam (67%), prac reports (33%). NB: This unit of study is available to students in the Bachelor of Science (Environmental) only.

The biological and environmental chemistry of the transition elements will be covered as well as atmospheric and photochemistry. Further information is available from the Senior Chemistry Handbook.

CHEM 3903 Chemistry 3 Life Sciences (Advanced) 12 credit points. Session: 2. Classes: 4lec & 6 prac/wk & 4 compulsory discussion sessions. Prerequisite: For BMedsic: 32 credit points of Intermediate BMedSc units and Credit average in CHEM (2311 and 2312). For BSc (Molecular Biology and Genetics); CHEM 2903. Prohibition: May not be counted with CHEM (3101, 3102, 3201, 3901, 3902 or 3903). Assessment: Exams (60%), prac reports (30%), assignment based on discussion sessions (10%). NB: This unit of study is available to students in the Bachelor of Medical Science and the Bachelor of Science (Molecular Biology and Genetics) only.

The aim of this unit of study is to provide students enrolled in the Molecular Biology and Genetics Degree Program with some advanced chemistry required for an understanding of the subject. The unit consists of modules dealing with the biological and environmental chemistry of the transition elements; medicinal and biological chemistry; biophysical chemistry plus one other module to be chosen from a variety of other options that are important for understanding chemical processes or techniques used in molecular biology and genetics. A list of modules and more detailed descriptions are given in the Senior Chemistry Handbook available from the School. A special practical component is designed to illustrate the principles given in the lectures. In addition, 4 seminars from specialists in molecular biology and genetics will be given to illustrate recent research in the area.

Chemistry Honours
A/Prof. D Ridley.

The Honours program in the School of Chemistry gives students the opportunity to get involved in a research program in an area that is of interest to them. It provides training in research techniques and experience using modern research instrumentation. The Honours program adds new dimension to the skills that the students have acquired during their undergraduate years and enhances their immediate employment prospects and, more significantly, their future career potential. All students with a sound record in Chemistry are encouraged to apply for entry to the Honours program. The School of Chemistry offers a wide range of possible projects in all areas of contemporary chemistry including Biological and Medicinal Chemistry, Synthesis and Catalysis, Physical and Theoretical Chemistry, Supramolecular Chemistry, Polymers and Colloids and Chemical Spectroscopy. Details of available projects are contained in the School's Honours Booklet that is available from the School's Information Desk. In the Honours year, each student undertakes a research project under the supervision of a member of staff; writes a diissis which explains the problem; outlines the research undertaken and the results obtained; attends advanced lecture courses, normally given by leaders in their field from overseas or Australia; attends research seminars and undertakes additional written assessment. Further information is available from the Honours Coordinator, from the Administrative Officer (Academic), or at www.chem.usyd.edu.au/honours.html.

Civil Engineering

The Department of Civil Engineering is part of the Faculty of Engineering. In addition to providing professional training in this branch of engineering it offers units of study to students enrolled in the Faculty of Science majoring in Mathematics, Physics, Chemistry, Geology, Computer Science or Soil Science. The most relevant units of study are CIVL 1051 Statics (5 credit points), CIVL 2201 Structural Mechanics (6 credit points), CIVL 2205 Introduction to Structural Design (4 credit points), and CIVL 2204 Introduction to Structural Concepts (4 credit points). Details regarding these units of study can be obtained from the Faculty of Engineering Handbook.

The above units of study are intended first to demonstrate the application of scientific principles in an engineering context so that the science student will gain an understanding of the engineering behaviour of materials and engineering structures. The second intention is to introduce the application of this understanding to the analysis and design of engineering structures.

As well as the above units of study, Faculty of Science students are invited to enrol in other civil engineering units of study, provided they have the appropriate prerequisites. Double Degree Some BSc graduates, who have passed all four of the above four units of study within the Department of Civil Engineering, may obtain a Bachelor of Engineering degree in Civil Engineering after an additional two years’ study, following the award of the BSc. Students wishing to undertake this option must apply through UAC and compete on the basis of academic merit. Prospective students are advised to discuss their plans with the Department of Civil Engineering before enrolment. Further details regarding admission to the BE in Civil Engineering may be obtained from the Engineering Faculty Office in the Engineering Faculty Building.

Computational Science

Computational Science is an interdisciplinary major offered within the BSc. It focuses on scientific problem solving using computers. It covers the formulation of problems, the use of software packages and programs to solve these problems computationally, simulations and modelling, mathematical and numerical analysis, high performance super computing, graphics, visualisation and programming.

Graduates with computational science skills are in strong and increasing demand in scientific research, industry, government and finance, particularly for their analytic and problem solving skills and their specific expertise in computing.

The major in Computational Science can include a wide range of electives to suit individual interests, selected from computationally oriented offerings from various departments and schools from across the Faculty. Table 1 lists the core Senior units and electives, as well as Junior options. COSC units are described below. For descriptions of other units see their separate entries under the contributing school or department.

COSC 1001 Computational Science in Matlab
4 credit points. Session: 2. Classes: one 1 hr lecture, one 2 hr practical. Assumed knowledge: HSC Mathematics. Prohibition: May not be counted with COSC 1901. Assessment: Two assignments (20%), practical work, including practical exam (40%), theory exam (40%). This unit of study focuses on scientific problem solving and data visualisation using computers and is complementary to COSC 1002. Students will learn how to solve problems arising in the natural sciences and mathematics using core features of the problem solving environment MATLAB, with a choice of problems from various areas of science at each stage. Emphasis will be placed on graphical display and visualisation of data and solutions to problems. No previous knowledge of programming is assumed.

Recommended references
COSC 1901  Computational Science in Matlab (Adv) 3 credit points. Session: 2 Classes: one 1hr lecture, one 2hr practical.  Assumed knowledge: HSC Mathematics. Prerequisite: UAI of at least 90, or COSC 1902, or a distinction or better in COSC 1002, SOFT (1001, 1002, 1901 or 1902).  Prohibition: May not be counted with COSC 1001.  Assessment: Two assignments (20%), practical work, including practical exam (40%), theory exam (40%).

This unit of study is the advanced version of COSC 1001 and is complementary to COSC 1902. The subject matter is very similar but more challenging problems will be covered and some additional programming and visualisation techniques will be used. The unit focuses on scientific problem solving and data visualisation using computers. Students will learn how to solve problems arising in the natural sciences and mathematics using core features of the problem solving environment MATLAB, with focus on problems arising from various areas of science at each stage. Emphasis will be placed on graphical display and visualisation of data and solutions to problems. No previous knowledge of programming is assumed.

Recommended reference

COSC 1002  Computational Science in C 3 credit points. Dr Mike Wheatland. Session: 2 Classes: one 1hr lecture, one 2hr practical.  Assumed knowledge: HSC Mathematics. Prerequisite: UAI of at least 90, or COSC 1901, or a distinction or better in COSC 1001, SOFT (1001, 1002, 1901 or 1902).  Prohibition: May not be counted with COSC 1902.  Assessment: Two assignments (20%), practical work, including practical exam (40%), theory exam (40%).

This unit of study focuses on scientific problem solving using computers and is complementary to COSC 1001. Students will learn how to solve problems arising in the natural sciences and mathematics using core features of the language C, with a choice of problems from various areas of science at each stage. No previous knowledge of programming is assumed.

Recommended reference


COSC 1902  Computational Science in C (Adv) 3 credit points. Dr Mike Wheatland. Session: 2 Classes: one 1hr lecture, one 2hr practical.  Assumed knowledge: HSC Mathematics. Prerequisite: UAI of at least 90, or COSC 1901, or a distinction or better in COSC 1001, SOFT (1001, 1002, 1901 or 1902).  Prohibition: May not be counted with COSC 1002.  Assessment: Two assignments (20%), practical work, including practical exam (40%), theory exam (40%).

This unit of study is the advanced version of COSC 1002 and is complementary to COSC 1901. The subject matter is very similar, but more challenging problems will be covered and some additional programming techniques will be used. The unit focuses on scientific problem solving using computers. Students will learn how to solve problems arising in the natural sciences and mathematics using core features of the language C, with a choice of problems from various areas of science at each stage. No previous knowledge of programming is assumed.

Recommended reference


COSC 3601  Parallel Computing 4 credit points. Session: NA in 2003. Classes: one 2hr lecture & one 2hr practical.  Assumed knowledge: Some familiarity is assumed with Unix and a programming language (eg, C or Fortran). Prerequisite: At least one of SOFT (2004 or 2004) or COMP (2004 or 2004) or PHYS (3301 or 3901) or MATH (3016 or 3916).  Assessment: Written exam of up to 2hrs and assignment work.

NB: Not available in 2003.

This unit of study introduces the student to basic concepts of parallel computing such as Amdahl's law. Superscalar and Symmetric Multiprocessor (SMP) architecture and strategies for obtaining maximum performance are covered. Programming tools will cover the use of Message Passing Interfaces (MPI), batch queue systems and Open Message Passing. Practical work will be done using the advanced computing facilities of the University of Sydney’s VISLAB.

COSC 3701  Computational Science Project 8 credit points. Prof Bernard Palthorpe. Session: 2 Classes: one 1 hr meeting with supervisor & 7hr project work/wk. 3 Introductory lectures given by supervisor.  Assumed knowledge: Able to program in a standard language. Prerequisite: 16 credit points of intermediate level natural sciences plus at least one of COSC (1001 or 1901 or 1002 or 1902) or SOFT (1001 or 1901) or MATH (2003 or 2903) or PHYS (2001 or 2901 or 2002 or 1902).  Assessment: Quality of proposal (10%), application (50%), and report (40%).

The assessment is done at a group level (each group comprises several students) for quality of proposal and application, and at the individual level for the report.

This unit of study is building on a real case scenario involving an IT company and its clients, employers and employees. The client (ie, a university researcher with an interest in Computational Science outside bioinformatics) see BINF 3001 (for bioinformatics projects) contacts the company with the aim to obtain a Computational Science application that will assist him/her in a pursuit of new avenues of research and service provision. Terms of reference are drafted with the project managers (ie, the academics responsible for delivering the unit of study) of the IT company, and are then presented to a small group of employees (ie, the students), who design and implement a plan of how to write and deliver the software.

N Environmental Science

The majority of the units of study listed below are only available to students in the Bachelor of Science (Environmental). Please consult degree information in chapter 2, the Tables earlier in this chapter, and the relevant Departments/Schools entries in this chapter for descriptions of other units of study required for this degree. Further information regarding the Bachelor of Science (Environmental) can be found on the Environmental Science Web site at www.usyd.edu.au/envsci.

Bachelor of Science (Environmental) Junior units of study

ENV11001  Global Geology 6 credit points. Session: 1 Classes: 3 lec & prac/tut/wk.  Assessment: One 2hr exam, class work.

NB: This unit of study is available to students in the Bachelor of Science (Environmental) and the Bachelor of Land & Water Science only.

The unit of study serves as an introduction to environmental geology by examining global geological processes and their controls on the human environment. The unit of study explores the origin of the Earth within the developing Solar System and traces the evolution of the Earth’s hydrosphere, atmosphere and biosphere through geological time. Other topics include plate tectonics, and the influence of volcanic activity, earthquakes and other geological hazards on human occupation of the planet. The unit of study includes an introduction to the study of the Earth’s mineral and energy resources.

Students considering enrolling in this unit of study should study the pamphlet on the Junior unit of study in Geology, which describes how to frame questions in the Geology degree.

ENV11002  Geomorphic Environments and Change 6 credit points. Session: 2 Classes: 3 lec & prac/tut/wk.  Assessment: One 2hr exam, class work.

NB: This unit of study is available to students in the Bachelor of Science (Environmental) and the Bachelor of Land & Water Science only.

This unit of study completes the introduction to environmental earth sciences by examining geographical scales of environmental concern, such as catchments, river basins, hydrology and land use. The unit then progresses on to the basic microbial and chemical aspects of the environment and how we can use these to benefit our environment. Students will begin to learn how to integrate information from related disciplines to understand relationships between the sciences and the environment and to produce solutions to environmental problems. This will be a continuing theme throughout the Environmental Science program.

Bachelor of Science (Environmental) Intermediate units of study

You must complete both Environmental Science Intermediate units of study (ENVT 2001 and ENVT 2002).

ENV20001  Biological Environmental Processes 8 credit points. Session: 1 Classes: 3 lec & prac.  Assessment: Quality of proposal (10%), application (50%), and report (40%).

The assessment is done at a group level (each group comprises several students) for quality of proposal and application, and at the individual level for the report.

This unit of study is building on a real case scenario involving an IT company and its clients, employers and employees. The client (ie, a university researcher with an interest in Computational Science outside bioinformatics) see BINF 3001 (for bioinformatics projects) contacts the company with the aim to obtain a Computational Science application that will assist him/her in a pursuit of new avenues of research and service provision. Terms of reference are drafted with the project managers (ie, the academics responsible for delivering the unit of study) of the IT company, and are then presented to a small group of employees (ie, the students), who design and implement a plan of how to write and deliver the software.
ENVI 2002 Physical Environmental Processes
8 credit points. Session: 2. Classes: 3 lec, 2 tut & 6 prac wk, field excursions. Prerequisite: ENVI11001 and ENVI11002. Assessment: One 2hr exam, prac assignments.
NB: This unit of study is available to students in the Bachelor of Science (Environmental) only.
Environmental Science 2 provides the integrated framework for understanding the natural environment in terms of its chemical, physical, biological, ecological and earth scientific components. This is used to identify and understand the impact of humans on our environments at scales from local rivers to global patterns of climate. ENVI 2001 concentrates on the biological, microbiological and earth science aspects of natural processes within the environment as well as how these are impacted upon by human activities. ENVI 2002 considers the physical and chemical aspects, from climate and hydrology through to geomorphology to pollution. Emphasis is on practical measurement and interpretation to provide professional training in the use of numerous relevant disciplines.

Bachelor of Science (Environmental) Senior units of study
You must complete both Environmental Science Senior units of study. Environmental Science 3 builds on foundations laid by the Intermediate Environmental Science units of study to provide the integration of scientific and other aspects of environmental problem solving and professional responsibilities.

ENVI 3001 Environmental Law and Planning
NB: This unit of study is available to students in the Bachelor of Science (Environmental) and the Bachelor of Science (Marine Science) only.
ENVI 3001 covers topics and issues in environmental ethics, law, resource economics, planning, regulation and management for the built and natural environments, and energy production and alternate processes. This is an intensive unit of study that examines issues not normally considered 'environmental' but which impact to a large degree on how we interact with our environment.

ENVI 3002 Environmental Assessment
NB: This unit of study is available to students in the Bachelor of Science (Environmental) and the Bachelor of Science (Marine Science) only.
ENVI 3002 covers all issues concerning environmental impact assessment, including topics in conservation, risk assessment and ecotoxicology, as well as providing an examination of the logical structure of environmental sampling. The latter introduces the theory of sampling design for measurements at different scales of biological systems, statistical analysis of data and the interpretation of magnitude and scale of environmental disturbances, with topics including the nature of variables, univariate and multivariate measures, correlation of environmental variables and interpretation of data.

ENVI 3003 Law and the Environment
4 credit points. Session: 1. Classes: 3 lecwk. Prerequisite: Entry by permission of Course Coordinator only. Prohibition: May not be counted with ENVI 3001. Assessment: Continual throughout semester.
NB: Department permission required for enrolment. This unit of study is available to Study Abroad students and students enrolled in the Bachelor of Science (Marine Science), Bachelor of Resource Economics and Bachelor of Land & Water Science only.
This unit encompasses the core material of ENVI 3001 and covers topics in environmental ethics, law, planning, regulation and management for the built and natural environments.

ENVI 3004 Environmental Impact Assessment
4 credit points. Session: 2. Classes: 3 lecwk. Prerequisite: Entry by permission of Course Coordinator only. Prohibition: May not be counted with ENVI 3003. Assessment: Continual throughout semester.
NB: Department permission required for enrolment. This unit of study is available to Study Abroad students and students enrolled in the Bachelor of Science (Marine Science), Bachelor of Resource Economics and Bachelor of Land & Water Science only.
This unit examines the core material provided in ENVI 3002 and covers topics in environmental impact and risk assessment.

Honours in the Bachelor of Science (Environmental)
Students of sufficient merit may be admitted to an Honours course in the Bachelor of Science (Environmental). In the Honours year, a student will undertake an interdisciplinary research exercise in association with one or more supervising members of the academic staff at the University of Sydney, write a thesis based upon the research, and attend advanced lecture units of study and seminars as required by their supervisor(s). The Honours year is not only rewarding but enjoyable as well, and marks the transition period where a student becomes a research collaborator.

Eligible students can choose to complete Honours in the following Science Subject Areas: Agricultural Chemistry, Biology, Chemistry, Geography, Geology, Marine Science, Microbiology, or Soil Science. (Please note that there are no Honours units of study entitled 'Environmental Science'.)

Geosciences
The School of Geosciences offers units of study in the three discipline areas of Geography, Geology and Geophysics. Students may take a major in any one of these three disciplines. The School is located within two buildings on the main campus' Eastern Avenue. The Edgeworth David Building houses staff with expertise in Geology and Geophysics as well as the office of the Head of School. Staff with expertise in Geography are located on the second floor of the Madsen Building. Students who wish to obtain additional advice about the units of study described below should approach departmental advisors during the enrolment week or the unit coordinators during semester. Further information is available on the Internet at www.es.usyd.edu.au, as well as in the Geosciences' student handbook which is available from the School's administrative offices.

Geography
Geography is a varied and versatile area of study covering a broad spectrum of knowledge. It was once concerned principally with the description of the earth's surface, but modern geography now embraces society's relationship with the earth within a scientific and highly structured framework. Students can enrol in units of study that focus on physical, human or environmental geography the three main sub disciplines of Geography. Physical geography deals with phenomena such as landscapes, plants and soil as elements of physical landscapes and the processes that control the formation and distribution of these phenomena. Human geography investigates the variety of spatial distributions of human populations as well as the social and economic issues they confront. Environmental geography is concerned with impacts of human land uses and resource exploitation on the natural physical environment and seeks to evaluate the relative contributions of human impacts and natural processes in environmental change.

Geography Junior units of study
Geography offers two Junior units of study: Geography 1001 in the February Semester and Geography 1002 in the July Semester. Entry into both these units of study does not require any prior knowledge. Both units of study consist of three lectures and three hours of laboratory work per week. Morning lectures are repeated in the afternoon.

GEOG1001 Biophysical Environments
6 credit points. Assoc. Prof. Short, Dr Gale. Session: 1. Classes: 3 lec & 3hr prac/wk. Assessment: One 2hr exam, 1500w report, prac assignments.
This unit of study provides an introduction to the earth's biophysical environments. It begins by considering the earth's place in the universe, its origin and its development, and the nature and evolution of the earth's structure. This is followed by an investigation of the evolution of the earth's physical environment and its development to its present stage over time. With this background, the unit of study goes on to examine the earth's hydrosphere and atmosphere and the major landforms produced by the interaction of atmospheric and ocean processes.
with the earth’s surface, including fluvial, arid, coastal and glacial systems. 

**Practical:** Field excursion one half day/sem

**GEOG1002 Human Environments**

6 credit points. Prof. Connell & Dr W Pritchard. Session: 2. Classes: 3 lec & 3hr prac/wk. Assessment: One 2hr exam, 2000w essay, prac exercises.

Human Environments develops understanding of processes and consequences among people and between people and their environments. Questions, challenges and issues that stem from the relationships and transformations in the built, natural, social and spatial environments are introduced and scrutinised. Social structures and development are explored and principles of human geography are presented through study of the location and distribution of economic activities with special reference to Australia and the Asia Pacific region.

**Geography Intermediate units of study**

Eight Intermediate Geography units of study are offered in the subject’s three sub disciplines. The streams and their units of study are:

- Physical Geography and Geomorphology: Geography 2001, 2002, 2302 and 2303
- Environmental Geography: 2101 and 2102
- Human Geography: 2201 and 2202

Each unit consists of lectures and assigned work (which may consist of tutorials, practicals, individual course work and/or field work). All students are required to attend compulsory one to three day field excursions associated with each unit of study that are held within the semester. Some units of study hold two to three such excursions.

Students who have completed the Junior Geography and Junior Environmental Science prerequisites may elect to do units of study in one or two of these streams:

To complete Intermediate Geography, a student is advised to select at least two Intermediate Geography units of study. A student would normally select two sequential units of study from one of the three streams (Physical Geography and Geomorphology, Environmental, Human). However, students may vary the sequence of units of study between streams and options within units of study, with the permission of the Head of Department. Not all units of study may be offered in any given year.

**GEOG 2001 Processes in Geomorphology**

8 credit points. Associate Professor D Dragovich and others. Session: 1. Classes: 3 lec & 5prac or fieldwork. Prerequisite: 36 credit points of Junior units of study, including GEOG 1001 or ENV11001 or 1002. Students enrolled in the Bachelor of Resource Economics should have 36 credit points from Junior units of study in Biology, Chemistry and Mathematics, Assessment: One 2hr exam and 1500w essay or prac papers.

This unit of study is concerned with the geomorphology of global environments, as mega landforms and the processes that shape them. The major focus is on continental scale landforms and the long term processes which shape the physical platform which is the home, workplace and exploitation surface of humankind.

**GEOG 2002 Fluvial and Coastal Geography**

8 credit points. Dr P Cowell & others. Session: 2. Classes: 3 lec & 5prac or fieldwork. Prerequisite: 36 credit points of Junior units of study, including GEOG 1001 or ENV11001 or 1002. Students enrolled in the Bachelor of Resource Economics should have 36 credit points from Junior units of study in Biology, Chemistry and Mathematics, Assessment: One 2hr exam, 1500w essay or prac reports.

This unit of study focuses on the geomorphology of global environments, as mega landforms and the processes that shape them. The major focus is on continental scale landforms and the long term processes which shape the physical platform which is the home, workplace and exploitation surface of humankind.

**GEOG 2101 Environmental Change and Human Response**

8 credit points. Associate Professor D Dragovich & Dr Chapman. Session: 1. Classes: 3 lec & 2prac & 2field. Prerequisite: 36 credit points of Junior units of study, including GEOG 1001 or 1002 or ENV1 1001 or 1002. Assessment: One 2hr exam, 2000w essay or prac reports.

This unit of study focuses on the geomorphology of global environments, as mega landforms and the processes that shape them. The major focus is on continental scale landforms and the long term processes which shape the physical platform which is the home, workplace and exploitation surface of humankind.

**GEOG 2201 Cultural and Economic Geography**

8 credit points. Prof. Connell, Dr W Pritchard. Session: 1. Classes: 3 lec & 5hr tut or prac or fieldwork/wk. Prerequisite: 36 credit points of Junior units of study, including GEOG 1001 or 1002 or ENV11002 or ECOP 1001 or 1002. Assessment: One 2hr exam, two 2000w essays, tut papers, prac and fieldwork reports.

NB: Other Information: As for GEOG 2001.

Environmental Geography stream: This unit of study focuses on the Environmental Geography and Resource Management stream which is designed to evaluate human interaction with the biophysical environment and use of the earth’s surface and its resources. Emphasis is upon human impacts on environments through social, economic and political processes and through deliberate decision making and management. Policy responses are considered at a range of scales. The unit of study examines the nature and characteristics of selected resource processes with reference to Australian (and, as appropriate, other national and international) contexts, and, on a more global and regional scale, focuses on the changing relationships between people and environments in tropical Asia and the Pacific.

**GEOG 2202 Urban and Political Geography**

8 credit points. Lecturers to be advised. Session: 2. Classes: 3 lec & 5hr tut or prac or fieldwork/wk. Prerequisite: 36 credit points of Junior units of study, including GEOG 1001 or 1002 or ENV11002 or ECOP 1001 or 1002. Assessment: One 2hr exam, two 2000w essays, tut papers, prac and fieldwork reports.

NB: Other Information: As for GEOG 2001.

This unit of study focuses on the urban environments and processes that underpin cultural and economic activity. Two themes dominate. Firstly cultural and economic activities are defined by multiple sets of spatial relations, and secondly, that economic and cultural processes and practice are by necessity, inter-related. These arguments provide the entry points for debate on the social construction of economic and cultural spaces, with specific attention to topics including urban change and gentrification; ethnicity; the geopolitics of global financial flows; and the development of industrial clusters. The unit also develops arguments relating to the economic and cultural geographies of food production and consumption.
environment. The unit will take a holistic view of the fluvial system, emphasising that stream characteristics are an outcome of interrelated variables operating at different scales within the catchment. It will include a description of catchment characteristics; water and sediment delivery, conveyance and influence on channel morphology; floods and floodplains; natural and anthropogenic channel change; groundwater issues; and estuarine sedimentation.

GEOG 2303 Fluvial and Groundwater Geomorphology 8 credit points. Dr M. Nene, Dr R.W. Vervoort. Session: 2. Classes: 3 lec, 3 prac & 2 fieldworkwk. Prerequisite: GEOG 2001 or 36 credit points of Junior study including GEOG 1001 or ENVI1001 or 1002. Students in the Bachelor of Resource Economics should have 36 credit points of study in Biology, Chemistry and Mathematics. Prohibition: May not be counted with GEOG 2002 or GEOG 2302. Assessment: One 2 hr theory exam, 1 essay, 2 projects.

NB: Other Information: as for GEOG 2001
This course will provide an introduction to fluvial processes, morphology and groundwater hydrology, with particular reference to the Australian environment. The course will take a holistic view of the fluvial system, emphasising that stream characteristics are the result of many factors operating at different scales across the entire catchment. An introduction in groundwater hydrology will introduce aquifer flow and water quality concepts as well as the interaction between aquifers and the over and underlying strata. A modelling project using MODFLOW will be given to study the effects of a contamination on a groundwater supply.

Geography Senior units of study
Geography offers seven Senior units of study in 3 streams namely, geomorphology, environmental geography and human geography. The streams and their units of study are:

Geomorphology

Geography 3001 and 3002
Environmental Geography 3101 and 3102
Human Geography 3201, 3202 and 3302

Each unit of study consists of three lectures and the equivalent of nine hours assigned work (which may consist of tutorials, practicals, individual coursework and/or fieldwork) per week. All students are required to attend compulsory one to three day field excursions associated with each unit of study which are held within the semester. Some units of study hold two to three such excursions.

Students who have completed the Intermediate Geography prerequisites may elect to do units of study in one or two of these streams.

To complete Senior Geography, a student must select two units of study. Each unit of study is 12 credit points. A student would typically select two sequential units of study from one of the three streams (Geomorphology, Environmental and Human). However, students may vary the sequence of units of study between streams and options within units of study with the permission of the Head of Department. Not all units of study may be offered in any given year.

Geography Senior unit of study Combinations

48 credit points

Students may elect to do four Senior units of study (12 credit points each) in the one year, giving a total of 48 credit points. Such students will be required to enrol in two of the Senior Geography Streams, Geomorphology, Environmental or Human. Those who have passed at least two of the Senior Geography units of study at Honours level may proceed to an appropriate unit of study in Geography Honours. Those choosing physical honours topics must have majored in the Geomorphology stream units of study.

GEOG 3002 Environmental Geomorphology 12 credit points. Assoc. Prof. D. Dragovich, Dr S. Gale. Session: 2. Classes: 3 lec & 6 prac or fieldwk. Prerequisite: GEOG 2001 or 2002 or 2101 or 2302 or 2303. Assessment: One 2 hr exam, 2 x 2500w essays, prac and field reports.

The first part of this unit deals with the effects of weathering on the pedosphere and the built environment, and considers the relationship between soil and landform. The second part investigates the environmental changes that have taken place since the end of the last glacial, the time when the world’s climates and environments first took on a recognisably modern form. It links its social and built environment, and considers the relationship between soil and landform. The second part investigates the environmental changes that have taken place since the end of the last glacial, the time when the world’s climates and environments first took on a recognisably modern form. It links to geographical and environmental processes.

GEOG 3101 Catchment Management 12 credit points. Lecturers to be advised. Session: 1. Classes: 3 lec & 1 tut & 8 prac or fieldwk. Prerequisite: GEOG 2001 or 2002 or 2101 or 2302 or 2303 and GEOG 2102 or 2201 or 2202. Assessment: One 2hr exam, two 1500w essays.

Sensor Environmental stream
The unit of study is concerned with understanding the functioning of river catchments from both natural science and social science perspectives, at a variety of scales. The catchment as a morphodynamic process response system is addressed with an emphasis on the relationships between processes and landform entities. Similarly, relationships within social, economic, and political systems are explored within the catchment context, with particular emphasis on the interactions between the social system and bio-physical system. Empirical context for the unit will primarily be drawn from the Murray Darling, Mekong, and Hawkesbury Nepean catchments. Fieldwork in the latter is integral to the unit of study.

GEOG 3201 Asia Pacific Field School 12 credit points. Prof. Connell. Session: 1. Classes: 28 lectures and 100 hours of tuts, prac and fieldwork. Prerequisite: GEOG 2101 or 2201 or 2202 or 2301 or 2302 or 2001 or 2202. Assessment: One 2hr exam, two 2000w essays, tut papers, prac and fieldwork reports.

The unit of study builds on key human geographic principles from the sub-disciplines of environmental, social, cultural and economic geography. The unit of study constitutes a field work school run over a five week period in January February, prior to the commencement of the semester. The Field School is held in Vanuatu and Fiji. It is run in close association with the University of the South Pacific, whose staff and students participate in some components of the course. It focuses on environmental and development issues in the context of rapid change, especially in the urban context.

GEOG 3202 Sustainable Cities and Resource Regions 12 credit points. Dr P. McManus, A/Prof Hirsch. Session: 1. Classes: 3 lec & 9 hrs tut or prac or field wk. Prerequisite: GEOG 2001 or 2002 or 2101 or 2201 or 2202. Assessment: One 2hr exam, two 2000w essays, tut papers, prac and fieldwork report/s.

Senior Social and Economic Geography Stream. This unit of study on urban and regional sustainability analysis involves an integrated series of lectures, practical work and field visits. It develops urban geography and environmental management themes introduced in second year geography, providing a set of conceptual and analytical tools for examining the social and environmental sustainability of ways in which we manage urban space and natural resources in their regional context. The first part of the unit focuses on themes in urban sustainability, including topics such as Utopian visions for cities, urban history, ecological footprint analysis, transregionalism, transcultural, urban form and urban policy with reference to sustainable futures. The second part of the unit examines rural resource regions, examining topics such as indigenous rights, resource peripheries, competing resource values, regional impacts and multipliers, with reference to examples including forestry, dams, mining and fisheries. The unit of study draws on Australian and international examples. Practical skills include the use of GIS and its applications in urban and regional studies.

GEOG 3203 Globalisation and Regions in Transition 12 credit points. Dr Prichard. Session: 2. Classes: 2 x 2hr lec, 1 tut & 3hr prac/wk & 2 x 2hrs field work. Prerequisite: GEOG (2102 or 2301 or 2302). Assessment: One 2hr exam, 2 x 2500w essays, prac and Human Geography Stream. The aim of this unit of study is to examine theoretical debates and empirical evidence relating to spatial differences in the modern world. Issues to be considered include the role of globalisation as both an agent of change and a point of challenge; contestation over the future of the nation state, and the roles of geographical scale as an organizing vehicle for social and economic processes. The unit will emphasize how these issues are being manifested both in Australia (with particular reference to Sydney) and in the Asia Pacific. Practical classes will focus on the development of research consultancy skills, and will involve students preparing material for in class presentations.

Geography Honours

Students contemplating Geography Honours will be invited to complete a preliminary registration form in the July Semester. Following the publication of the July semester Senior Geography stream units of study results, those eligible students who have preregistered will be invited to formally enrol. They are required to consult the Head of Geography as soon as possible after the
investigate geological processes and materials that are important units of study in Geology and uses a problem solving approach to work, field work.

This unit expands upon the concepts introduced during the Junior unit of study Chemistry and who has not taken Junior Geology or ENV11001, may completed 24 credit points of Junior units of study in Physics and wk.

4 lec & 2 prac or tut/wk.

The aim of this unit of study is to provide students with an understanding of how the Earth system works, its origin, plate tectonics, surface processes; evolution of life and geologic time. The crises in resources and fossil fuel and implications for our economy will be discussed and an assessment made of our own impact on the Earth together with the role of geologists in protecting and monitoring the environment. Students will learn techniques and types of observations used to decipher the history and evolution of the Earth, and dating sediments and rocks. Laboratory classes and a one day field trip in the Sydney region will involve exercises in observing and describing Earth materials and in interpreting Earth history from geological information, including fossils and maps.

The aim of this unit of study is to examine the chemical and physical processes involved in mineral formation, the interior of the Earth, volcanoes, and metamorphism. Lectures and laboratory sessions on mountain building processes and the formation of ore deposits will lead to an understanding of the driving forces in geology. Processes such as weathering, erosion and nature of sedimentary environments are related to the origin of the Earth. In addition to laboratory classes there is a weekend field excursion to the Hunter Valley. Students will be required to pay hostel accommodation for one night on the Hunter Valley excursion.

Geology and Geophysics Intermediate units of study

Intermediate and Senior Geology units of study build on the preceding junior units of study to present a balanced and wide ranging coverage of resource geology, environmental geology and marine geology. Geology and Geophysics offers four Intermediate units of study: Geology 2001 and Geology 2004 in the February Semester and Geology 2003 and 2203 in the July Semester. Each unit of study consists lectures and assigned work (which may consist of tutorials, practicals, individual course work and/or field work). All students taking Geology 2001 and 2203 are required to attend compulsory field excursions that are held within the semester.

Geology 2001 Geological Hazards and Solutions

8 credit points. Dr David Wynn. Session: 1. Classes: 4 lec & 2 prac or tut/wk. Prerequisite: GEOl 1002 or ENV11001. A candidate who has completed 24 credit points of Junior units of study in Physics and Chemistry and who has not taken Junior Geology or ENV11001, may apply under section 1 (4) for permission to enrol in GEOl 2001. Prohibition: CIVL 2409. Assessment: One 2hr theory, lab exam, class work, field work.

This unit builds on the concepts introduced during the Junior units of study in Geology and uses a problem solving approach to investigate geological processes and materials that are important in Asia, Australia, and the South West Pacific. The two main topics covered in the unit are a) the description, analysis, and remediation of sediments polluted by agricultural, industrial and urban practices; and b) the strategies used to identify, predict and mitigate the hazards associated with volcanism and earthquakes. The unit of study has an emphasis on interpreting the data collected during these investigations. In addition to lectures and practicals students are required to attend a compulsory field trip and may choose between two alternative field trips, either a) the New Zealand Field Trip which gives students a first hand experience of volcanism and seismic activity at an active plate margin; or b) the Rivers and Estuaries of Sydney which introduces students to the sampling and mapping techniques used to evaluate geochemical pollution and remediation strategies.

Geology 2003 Fossils and Time

4 credit points. Session: 2. Classes: 2 lec & 1 prac or tut/wk. Prerequisite: 24 credit points of Science units of study. Prohibition: CIVL 2409. Assessment: One 2hr theory, class work.

This palaeontology and stratigraphy unit of study is aimed at geoscientists, archaeologists, biologists, marine and environmental scientists who use fossils or stratigraphic data to determine ages, environments or evolutionary lineages. It provides an overview of fossil biodiversity, concentrating on invertebrate animals but also some groups of plants and microorganisms, with the emphasis on those groups that are most environmentally or stratigraphically useful. It also considers the main methods of stratigraphic correlation and age determination, concentrating on litho and bio stratigraphy but also covering the more modern techniques of chrono, magneto and sequence stratigraphy as well as radiometric age dating.

Geology 2004 Environmental Geology and Climate Change

4 credit points. Dr Hughes and Dr Gavan Birch. Session: 1. Classes: 3 lec/wk & fieldwork. Prerequisite: 24 credit points of Science units of study. Assessment: One 2hr exam and assignments.

The Earth sciences provide an essential framework for understanding environmental changes that arise from short term and long term geological processes. This unit of study introduces students to a range of geological phenomena that can impact detrimentally on society using examples drawn from the urban areas and national parks in New South Wales. These phenomena have a variety of impacts ranging from the level of nuisance to disastrous. As the welfare of much of the world's population is sensitive to climate change, a component of the course will include an examination of global climate change over a variety of timescales ranging from millions of years to tens of years. The record of recent climate change and projections of future climate change will be reviewed in the context of their natural and human causes.

Geology 2202 Geological Exploration & Resource Mgmt


This unit of study shall explore the geologic setting of Earth's natural resources, issues of equity in their extraction and use, and the environmental management of mining sites. An understanding of the common geological processes and environmental changes that arise from short term and long term geological processes is used as a basis to explore the basic physical, chemical and biological processes that formed sedimentary and metamorphic rocks, petroleum, coal and ore deposits in Australia. This unit of study also introduces students to geophysical techniques used in resource exploration and the economics of resource extraction. It will involve a compulsory six day excursion to the Canberra area to study geological objects in the field, including an appraisal of environmental contamination induced by mining activities and appropriate remedial actions.

Geology and Geophysics Senior units of study

To complete a major in Geology or in Geophysics students are required to complete a minimum of 24 credit points from the relevant subject area. Each unit of study consists of three lectures and the equivalent of nine hours of assigned work per week, which may comprise practical classes, seminars, individual course work and/or fieldwork. Some units of study have compulsory field excursions, commonly held in semester breaks.
**Field Geology and Geophysics**

6 credit points. Dr Geoff Clarke, Dr Patrice Rey, Dr Dietmar Muller, Dr Jock Keene. Session: 2. Classes: (weeks 7 -14) 12 hrs of lees & prac/wk. Prerequisite: 16 credit points of Intermediate Science units of study or CIVL 2409. Prohibition: May not be counted with GEOL 3101. Assessment: Practical work, a 2 hour computer based examination and an assignment.

This unit of study provides a comprehensive introduction to the computational manipulation and application of imaging techniques commonly used in the Earth Sciences, from the microscopic to macrosopic level. It includes an introduction to image analysis using mineral textures in common igneous and metamorphic rocks, and how this analysis can be used to understand the processes controlling their textural development. The application and interpretation of remote sensing techniques will also be covered in computer based practical exercises that use a mixture of Landsat thematic mapper, airborne radiometric and magnetic databases. The application of processed images in mineral exploration and tectonic analysis will be covered through integrated lectures and laboratory exercises.

**Geophysics, Imaging, Oil/Ore Production**

6 credit points. Prof Ian Mason. Session: 2. Classes: (weeks 7 -14) 12 hrs of lees & prac/wk. Prerequisite: 16 credit points of Intermediate Science units of study or CIVL 2409. Prohibition: May not be counted with GEOP 3202. Assessment: 2 hr theory exams, computer class work.

This unit examines the use of computerized geophysical techniques to map high value sites. Sites of interest from oil and gas fields through mine sites to archæological digs. Data sources include micro gravity surveying, magnetism and aero magnetism; radiometry, short and long range surveillance and tracking. The course is designed around the reality that while people, as much as data acquisition and reduction technology have been the core of modern geophysics; recent, major strides have been made in digital data acquisition and reduction. Lectures deal with the creation, inversion and application of 2D and 3D potential and wave fields. Lab classes extend skills in computer aided image processing.

**Remote Sensing: Imaging the Earth**

6 credit points. Dr Kevin Shakeshaft, Dr Patrice Rey, Dr Dietmar Muller, Dr Jock Keene. Session: 2. Classes: (weeks 7 -14) 12 hrs of lees & prac/wk. Prerequisite: 16 credit points of Intermediate Science units of study or CIVL 2409. Prohibition: May not be counted with GEOL 3101. Assessment: Practical work, a 2 hour computer based examination and an assignment.

This unit of study provides a comprehensive introduction to the computational manipulation and application of imaging techniques commonly used in the Earth Sciences, from the microscopic to macrosopic level. It includes an introduction to image analysis using mineral textures in common igneous and metamorphic rocks, and how this analysis can be used to understand the processes controlling their textural development. The application and interpretation of remote sensing techniques will also be covered in computer based practical exercises that use a mixture of Landsat thematic mapper, airborne radiometric and magnetic databases. The application of processed images in mineral exploration and tectonic analysis will be covered through integrated lectures and laboratory exercises.
will give students experience in the field identification of rocks and minerals, regional geology, stratigraphy, structure and rock relationships. Students will be required to pay the cost of hostel style accommodation during field work, which may involve camping.

Geology Honours
Dr Derek Wyman
Offered: February and July.
Suitably qualified students may take Honours in Geology. They are required to undertake a research project under the direction of a supervisor, submit a thesis embodying the results of the investigation and undertake such coursework as may be prescribed.

Students not eligible to take Honours may be given permission to enrol in the Graduate Diploma in Science.

Further details are available from the Head of School.

Geophysics Honours
Geophysics Honours
Offered: February and July
Suitably qualified students may take Honours in Geophysics. They are required to undertake a research project under the direction of a supervisor, submit a thesis embodying the results of the investigation and undertake such coursework as may be prescribed.

Students not eligible to take Honours may be given permission to enrol in the Graduate Diploma in Science.

Further details are available from the Head of School.

Geology & Geophysics Postgraduate Study
Details concerning fields of postgraduate study in Geology and Geophysics may be obtained from Assoc. Prof Jock Keen or the Head of School.

History and Philosophy of Science

History and Philosophy of Science allows students to stand back from the specialised concerns of their other subjects and gain some perspective on what science is, how it came to acquire its current form and how it fits into contemporary society. HPS is particularly relevant for students hoping to make careers in science policy, science administration, science education and science reporting. However, any student with a genuine interest in science will derive benefit from study in HPS.

Course Advice

An advisor will be available in the unit for History and Philosophy of Science during the enrolment period. The unit is located on Level 4 of the Carslaw Building. More detailed information on courses is available either in a handbook from the unit office or electronically via the unit Web site.

The unit for History and Philosophy of Science does not have first year units of study. Students interested in related topics should consider taking the unit Concepts and Issues in Physical Science (PHY1600) offered in the School of Physics. This unit serves as useful background for further studies in HPS and is offered as an Arts unit for all students, including students enrolled in the Faculty of Science.

HPSC 2001 What Is This Thing Called Science?
4 credit points. Dr Rachel Ankeny. Session: 2. Classes: 2 lec & 2 tut/wk.
Prerequisite: 24 credit points of Junior units of study. Assessment: Two in class tests, tutorial assignments. An introduction to the 'scientific method', to draw a line dividing science from non-science and to justify the high status generally accorded to scientific knowledge.

Textbooks
Chalmers, A. What is this thing called Science? (3rd ed) and Course Reader.

HPSC 2002 The Birth of Modern Science
4 credit points. Dr Katherine Neal. Session: 1. Summer. Classes: 2 lec & 2 tut/wk. Prerequisite: 24 credit points of Junior units of study. Assessment: Two in class tests, tutorial assignments. An introduction to the 'scientific revolution' of the seventeenth century, often described as the most important period in the history of science and as one of the most vital stages in human intellectual history.

Textbooks

History and Philosophy of Science Senior units of study

Students wishing to major in History and Philosophy of Science in either the BSc, BA or BLibStud must take 24 credit points from the following Senior units of study. HPSC 3102 is available to Bachelor of Medical Science students only.

HPSC 3001 History of Physical Sciences and Maths
Prerequisite: HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. Assessment: 2 in class tests. Short essays. Examines some of the major episodes in the social and scientific history of the physical and/or mathematical sciences, building upon the material covered in HPSC 2002.

Textbooks
Course Reader.

HPSC 3002 History of Biological/Medical Sciences
Prerequisite: HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. Assessment: Take home tests, tutorial work. Examines some of the major episodes in the social and scientific history of the biological and biomedical sciences.

Textbooks
Course reader.

HPSC 3003 Social Relations of Science
4 credit points. Dr Hans Pols. Session: 2. Classes: 1 lec & 1 tut/wk.
Prerequisite: HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. Assessment: Short essays, fieldwork reports, tutorial work. An introduction to sociological approaches to science as an institution and the study of social influences on the production of scientific knowledge.

Textbooks
Course reader.

HPSC 3005 History/Philosophy of Medicine
4 credit points. Dr Susan Hardy. Session: 1. Classes: 1 lec & 1 tut/wk.
Assumed knowledge: Assumed knowledge of HPSC (2001 and 2002).
Prerequisite: At least 24 credit points of Intermediate or Senior units of study. Assessment: Take home tests, tutorial work, essays. An introduction to some of the major episodes in the social and scientific history of medicine, from ancient Greece to the present day.

Textbooks
Course reader.

HPSC 3007 Science and Ethics
4 credit points. Dr Rachel Ankeny. Session: 1. Classes: 1 lec, 1 tut/wk.
Prerequisite: HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. Assessment: Short essays, tutorial work, take home tests. Focuses on the ethical issues arising in science. Students have the chance to compare the theories studied to the experience of working scientists.

Textbooks
Course reader.

HPSC 3100 Contemporary Issues in HPS
4 credit points. HPs Staff. Session: 1, 2. Classes: 1 lec, 1 tut/wk.
Prerequisite: HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. Assessment: Classwork, tutorial work, take home tests. An examination of one area of the recent literature in the history and philosophy of science.

Textbooks
Course reader

HPSC 3103 Philosophy of the Biological Sciences
4 credit points. Dr Rachel Ankeny. Session: 2. Classes: 1 lec & 1 tut/wk.
Prerequisite: HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. Assessment: Short essays, take home tests, tutorial work. The major philosophical debates in and about recent biological science, concentrating on genetics. Previous study in biology is not assumed.

Textbooks
Course reader
<table>
<thead>
<tr>
<th>Code</th>
<th>Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPSC 3104</td>
<td>Medicine, Sex and Gender 4 credit points. Dr Alison Bashford (Gender Studies). Session: 2. Classes: Seminars 3hr/wk. Individual student consultation as required. Prerequisite: HPSC (2001 and 2002) or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. Prohibition: May not be counted with WMST 2006. Assessment: Six 500 word assignments. Explores the ways biomedicalsex has shaped our understandings of gender roles and sexuality and how it is possible to understand biomedicine as a gendered and sexualised enterprise. The unit is organised historically, beginning with the emergence of modern medicine in the eighteenth century. Textbooks Course reader.</td>
</tr>
<tr>
<td>HPSC 3105</td>
<td>Philosophy of Physics 4 credit points. Dr Adrian Heathcote (Philosophy). Session: 2. Classes: 2 lec &amp; 1 tut/wk. Individual student consultation as required. Prerequisite: HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. Prohibition: May not be counted with PHIL 3212. Assessment: Take home tests. A discussion of the main philosophical issues arising from developments in physics in the past century. The course uses texts for non physicists and presupposes no more than an average high school background in mathematics and physics. Textbooks Course reader.</td>
</tr>
<tr>
<td>HPSC 3106</td>
<td>Philosophy of Mathematics 4 credit points. Dr Adrian Heathcote (Philosophy). Session: 2. Classes: 2 lec &amp; 1 tut/wk. Individual student consultation as required. Prerequisite: HPSC (2001 and 2002), or Credit or better in HPSC (2001 or 2002) and at least 24 credit points of Intermediate or Senior units of study. Prohibition: May not be counted with PHIL 3212. Assessment: Take home tests. An examination of contemporary problems in the philosophy of mathematics. We will look at the philosophies of mathematicians known as Nominalism, Platonism, Formalism and Constructivism while also touching on the reduction of mathematics to Set Theory and the significance of the Godel and Lob theorems. Textbooks Course reader.</td>
</tr>
<tr>
<td>HPSC 3107</td>
<td>History of the Biomedical Sciences 12 credit points. Dr Hans Pols &amp; HPS staff. Session: 1, 2. Classes: 4 lec, 4 tut &amp; 4 prac/wk. Prerequisite: HPSC (2001 and 2002). Assessment: Tutorial assignments, project reports, essays and take home tests. NB: Available to Bachelor of Medical Science students only. An introduction to some of the major episodes in the social and scientific history of biological and medical science. History and Philosophy of Science Honours An Honours course in HPS is available to students of sufficient merit who have satisfied the requirements for the degree of BSc or BA (with a major in HPS or another relevant area) and to students who have satisfied the requirements for the degree of BMedSci including the HPS options in the second and third years of study. The Honours course consists of 48 points of Honours level units of study, which must include HPSC 4106 Research Project A and HPSC 4107 Research Project B. In their final semester all students must also enrol in the zero credit point non assessable unit HPSC 4999. Students intending to proceed to Honours or to enrol in the Graduate Diploma in Science (HPS) are strongly advised to contact the unit towards the end of the previous academic year to discuss thesis topic and supervision. Note: Honours level (4000) units of study are available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science). Textbooks Course reader.</td>
</tr>
<tr>
<td>HPSC 4102</td>
<td>History of Science 6 credit points. HPS Staff. Session: 1, 2. Classes: One 2hr sem/wk. Prerequisite: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission. Assessment: Two essays, seminar participation. NB: Department permission required for enrolment. This unit explores major episodes in the history of science as well as introducing students to historiographic methods. Textbooks Course reader.</td>
</tr>
<tr>
<td>HPSC 4103</td>
<td>Sociology of Science 6 credit points. HPS staff. Session: 2. Classes: One 2hr sem/wk. Prerequisite: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission. Assessment: Essays, fieldwork report, seminar participation mark. NB: Department permission required for enrolment. This course builds upon earlier courses introducing the sociology of science with an exploration of recent approaches in the social studies of scientific knowledge. Specific topics include the 'strong program' sociologists of knowledge and their critique of traditional philosophy of science, the counter arguments of philosophers, anthropological approaches to science such as ethnemethodology and 'actor network' theory, and sociology of technology. Students evaluate the approaches by conducting their own research on specific cases. Textbooks Course reader.</td>
</tr>
<tr>
<td>HPSC 4104</td>
<td>Recent Topics in HPS 6 credit points. HPS Staff. Session: 1, 2. Classes: One 2hr sem/wk. Prerequisite: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission. Assessment: Two essays, seminar participation. NB: Department permission required for enrolment. An examination of one area of the contemporary literature in the history and philosophy of science. Textbooks Course reader.</td>
</tr>
<tr>
<td>HPSC 4106</td>
<td>Research Methods 6 credit points. Dr Rachel Arkeny. Session: 1. Classes: One 2hrsem/ wk. Prerequisite: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission. Assessment: Literature review, archival research project, seminar participation mark, short essays. NB: Department permission required for enrolment. An introduction to the research skills of history, philosophy and sociology of science. Students will learn to be conscious of their own introductions of interpretations, arguments and theories into their research and writing through comparative study of different schools in contemporary HPS. Textbooks Course reader.</td>
</tr>
<tr>
<td>HPSC 4107</td>
<td>Research Project B 12 credit points. HPS Staff. Session: 1, 2. Classes: Weekly individual supervision. Prerequisite: Available only to students admitted to HPS Honours and Graduate Diploma in Science (History and Philosophy of Science). Corequisite: Must be taken in conjunction with HPSC 4107 Research Project A in the following semester. Assessment: Conduct of research tasks as specified by the supervisor. NB: Department permission required for enrolment. Research into a topic in history and philosophy of science under the supervision of one or more members of the HPS staff. Textbooks Course reader.</td>
</tr>
<tr>
<td>HPSC 4999</td>
<td>History &amp; Philosophy of Science Honours 4 credit points. Dr Helen Briscoe (gender Studies). Session: 1, 2. Classes: Weekly individual supervision. Prerequisite: Available only to students admitted to HPS Honours and Graduate Diploma in Science (History and Philosophy of Science). Corequisite: HPSC 4999 (for Honours students only). Assessment: 15000 word thesis. NB: Department permission required for enrolment. Production of an original thesis of not more than 15,000wds under the supervision of one or more members of the HPS staff. Textbooks Course reader.</td>
</tr>
<tr>
<td>HPSC 4999</td>
<td>History &amp; Philosophy of Science Honours 4 credit points. Session: 1, 2. Prerequisite: Available only to students admitted to HPS Honours. NB: Department permission required for enrolment. All students in History and Philosophy of Science Honours must enrol in this non assessable unit of study in their final semester. Immunobiology Major Dr Helen Briscoe The Immunology unit of the Department of Medicine administers the Immunobiology Major. The Immunology unit is located in the Centenary Institute, Building 93, Royal Prince Alfred Hospital and Room 424 Blackburn Building D06. Further information from Dr Helen Briscoe, (phone (02) 9351 7308; email <a href="mailto:hbriscoe@med.usyd.edu.au">hbriscoe@med.usyd.edu.au</a>) and <a href="http://www.med.usyd.edu.au/medicine/immunology/">www.med.usyd.edu.au/medicine/immunology/</a></td>
</tr>
</tbody>
</table>
A Major in Immunobiology requires successful completion of 12 credit points of Senior study in Immunology plus 12 credit points from the elective Senior units of study in biochemistry, molecular biology and genetics, microbiology, pathology or physiology. Participants in the Immunobiology major will select an accompanying senior unit according to their particular interest. Concurrent study in these life science disciplines will add a depth of understanding in a particular aspect of immunology. Participants are invited to consult with Helen Briscoe and with elective unit of study coordinators before selecting concurrent study units and should note that a unit of study taken as part of the Immunobiology Major cannot count towards a major in another science discipline area.

### Immunology

The Immunology unit of the Department of Medicine offers Introductory Immunology (IMMU 2001) at Intermediate level, Immunology (IMMU 3002) at Senior level and Immunology Honours. The Immunology unit is located in the Centenary Institute, Building 93, Royal Prince Alfred Hospital and Room 424 Blackburn Building D06. Further information from Dr Helen Briscoe (phone (02) 9351 7308; email hbriscoe@med.usyd.edu.au) and www.med.usyd.edu.au/medicine/immunology/

**IMMU 2001 Introductory Immunology**

4 credit points. Session: 1. Classes: 20hrs lec, 12hrs prac, 20hrs/tut/ independent study. Assumed knowledge: Junior Biology and Junior Chemistry. Prerequisite: 24 credit points of Junior units of study from any of the science discipline areas. Prohibition: May not be counted with BMED 2506. Assessment: One 2hr theory exam (50%), one essay (20%), practical reports and tutorial contributions (30%). NB: This is a prerequisite unit of study for IMMU 3002. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit of study will provide an overview of the human immune system and essential features of immune responses. The lecture course begins with a study of the immune system as a basic research science (10 lectures). This includes the nature of the cells and molecules that recognise antigen and how these cells respond at the cellular and molecular levels. Practical and tutorial sessions will illustrate particular concepts introduced in the lecture program. A further 10 lectures and self directed learning sessions (directed reading and problem based learning tutorials) will integrate this fundamental information into studies of mechanisms of host defence against infection, transplantation and pregnancy, and dysfunction of the immune system including allergy, immunodeficiency and autoimmune diseases.

**IMMU 3002 Immunology**

12 credit points. Dr Helen Briscoe. Session: 2. Classes: 3 lec, 8 prac & 1 tut/wk. Assumed knowledge: Intermediate Biochemistry and Molecular Biology and Genetics. Prerequisite: IMMU 2001 and 8 credit points of intermediate units of study from Biochemistry or Biology or Microbiology or Molecular Biology and Genetics or Pharmacology or Physiology. Prohibition: May not be counted with BMED 3003. Assessment: Two 2hr theory exams: (50%); essay, practical reports and seminar: (50%). NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit of study will provide a comprehensive understanding of the components and functions of the immune system at the molecular and cellular levels; the mechanisms of pathological immune processes; immune system dysfunction; and, immunological techniques used in the life sciences in clinical diagnostic and research laboratories. The components of this study unit will be taught by immunologists in the Department of Medicine, with contributions from the Centenary Institute for Cancer Medicine & Cell Biology and other invited experts in the discipline.

### Immunology Honours

The Honours program in immunology provides the opportunity for full time research on a project proposed and supervised by a staff member expert in that field. Each Honours course will be taught by an immunologist from the Immunobiology major who will select an accompanying senior unit according to their particular interest. Concurrent study in these life science disciplines will add a depth of understanding in a particular aspect of immunology. Participants are invited to consult with Helen Briscoe and with elective unit of study coordinators before selecting concurrent study units and should note that a unit of study taken as part of the Immunobiology Major cannot count towards a major in another science discipline area.

Students are invited to apply for Honours enrolment during semester two of the year preceding Honours. Students should consult the Honours coordinator in the first instance. A list of possible research topics is provided, and students select projects of interest, speak with prospective supervisors and apply for permission to enrol, before the end of semester two. Within the constraints of availability, an attempt is made to assign students to projects of their choice.

Usually Honours candidates will have achieved at least a credit in IMMU 3002 or BMED 3003, will have taken senior study in biochemistry, biology, cell pathology, microbiology or physiology, and, for BSc candidates, gained a Major in Immunobiology, Biochemistry, Biology, Pathology or Physiology. Usually Honours candidates will have an overall SCIWAM of 65+.

### Information Technologies

The School of Information Technologies administers the disciplines of Information Systems and Computer Science, each of which is available as a major in the Bachelor of Science degree.

**Computer Science**

Computer Science is the scientific discipline which has grown out of the use of digital computers to manage and transform information. Computer Science is concerned with the design of computers, their applications in science, government and business, and the formal and theoretical properties which can be shown to characterise these applications. Teaching in Computer Science covers a diversity of topics such as Software Development, Networks and Systems, Multimedia Technologies and Principles of Computer Science.

The diversity of the discipline is demonstrated by current research interests in the School which include biomedical image processing, parallel and distributed computing, user adaptive systems and information visualisation. The School has a range of computers and specialised laboratories for its teaching and research.

Note that units of study beginning with COMP, MULT, NETS, SOFT and INFO (but not ISYS) can be counted as Computer Science. Each INFO unit may only be counted to one subject area (either Computer Science or Information Systems, but not both). Students who intend to major in Computer Science should pay particular attention to the prerequisites of each unit of study.

Students should note that entry to Honours requires an average of Credit or better in the Senior units of study.

**Information Systems**

Information Systems studies people and organisations to determine and deliver their technological needs. Hence Information Systems encompasses issues such as strategic planning, system development, system implementation, operational management, end user needs and education. Information Systems study is related to Computer Science but there is an important distinction in that Information System is about the architecture of computer systems and making them work for people, hence people are the focus of attention, whereas much of Computer Science is about developing and improving the performance of computers. The School performs IS research in a number of areas including natural language processing, data mining, knowledge management and workflow methods.

Students who wish to complete a major in Information Systems need to ensure that effective communication and critical analysis are important parts of the curriculum and that they are taught explicitly in one unit and preferably (but not both) are expected to be practised throughout all units of study. Intending Honours students need to complete at least 16 credit points of Information Systems units at Senior level. Note that units counting with both ISYS and INFO (but not COMP, MULT, NETS or SOFT) can be counted as Information Systems units.

**Other information**

The units of study offered by the School are described briefly below, and more fully in the School's Handbook which is available from the School Office (Room G71) in the Madsen Building. Students should consult details of units of study, registration procedures, textbooks, etc., on the School noticeboards and Web site www.it.usyd.edu.au. Those in doubt should seek advice from members of the School's academic staff.
understand how information is structured, linked and flowed in different situations, and to be able to customise an IT environment to streamline or share tasks. In addition, the course will emphasise the importance of documenting decisions and processes, and understanding the many social, ethical, and intellectual property issues that arise when creating and handling information.

Computer Science and Information Systems

Intermediate units of study

It is important to choose second year subjects appropriately to keep options open for further study. See www.it.usyd.edu.au for advice.

COMP 2903 Languages and Logic

4 credit points. Session: 2. Classes: Two 1 hr lecture, one 1 hr tutorial. Qualifier: [SOFT (1002 or 1902) or COMP (1002 or 1902)] and MATH (1004 or 1904 or 2009 or 2011) and Distinction in one COMP. Assessment: Written assignments, written exam. This unit of study is the advanced alternative to COMP 2303. Considerable emphasis is also put on the use of logic (both propositional and first order), which provides a powerful design tool for hardware implementations of automata.

COMP 2903 Languages and Logic (Advanced)

4 credit points. Session: 2. Classes: Two 1 hr lecture, one 1 hr tutorial. Qualifier: [SOFT (1002 or 1902) or COMP (1002 or 1902)] and MATH (1004 or 1904 or 2009 or 2011) and Distinction in one COMP. Assessment: Written assignments and exam. One of the worst things that can happen when implementing a large software system is to find, after months of hard work, that the underlying design is too inefficient, or is fundamentally flawed. Such situations can often be avoided through careful design using well understood structures, and an analysis of the time complexity and correctness of these designs.

This unit includes a formal introduction to the analysis of algorithms. Commonly used data structures such as lists, stacks, queues, priority queues, search trees, hash tables and graphs are all analysed according to a notion of asymptotic complexity. Design principles such as the greedy strategy, divide and conquer, and dynamic programming are covered, as well as efficient techniques for searching within graphs. There will be a programming project in which students will design an algorithmic solution to a problem, analyse its time complexity, and implement it.

COMP 2811 Algorithms 1

4 credit points. Session: 1. Classes: Two 1 hr lectures, one 1 hr tutorial. Qualifier: [SOFT (1002 or 1902) or COMP (1002 or 1902)] and MATH (1004 or 1904 or 2009 or 2011) and Distinction in one COMP. Assessment: Written assignments and exam. An advanced alternative to COMP 2111: covers material at an advanced and challenging level. See the description of COMP 2111 for more information.

INFO 2000 Systems Analysis and Design

4 credit points. Session: 1. Classes: Two 1 hr lectures, one 1 hr tutorial, one 1 hr practical; 1 unscheduled lab work with a CASE tool. Qualifier: [SYSS 1000 or INFO 1000 or INFS 1000 or COSC (1001 or 1901) and COSC (1002 or 1902) or SOFT (1001 or 1901) or COMP (1001 or 1901)]. Prohibition: May not be counted with INFO 2900. Assessment: Written and practical assignments + written exam. The syllabus covers data centre oriented, process oriented and object centred methodologies for requirements analysis and system
description to address organisational needs, including the
gathering of facts, diagnosis of problems, recommendation of
reliability, performance and data protection.

INFO 2900  System Analysis and Design Advanced
4 credit points. Session: 1. Classes: Two 1 hr lectures, one 1 hr tutorial, or one unscheduled lab. Prerequisite: INFO 2800. Qualifier: ISYS1003 or INFO 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or [SOFT (1001 or 1901) or COMP (1001 or 1901) and Distinction in one INFO, ISYS or SOFT unit]. Prohibition: May not be counted with INFO 2000. Assessment: Written and practical assignments + written exam.

An advanced alternative to INFO 2000; covers material at an
advanced and challenging level.

INFO 2005  Database Management, Introductory
4 credit points. Session: 2. Classes: 2 lec, 1 tut/wk; 1 unscheduled lab work. Prerequisite: LSYS 1000. Qualifier: ISYS 1003 or INFO 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or [SOFT (1001 or 1901) or COMP (1001 or 1901) and Distinction in one INFO, ISYS or SOFT unit]. Prohibition: May not be counted with INFO 2000. Assessment: Written and practical assignments plus written exam. The syllabus covers the use of databases through forms and through SQL (structured query language) and basic interfaces; good design of tables through normalisation. Use of a variety of data modelling techniques. A commercial strength PC based database
system will be used to develop practical skills.

INFO 2905  Database Management, Introductory (Adv)
4 credit points. Session: 2. Classes: 2 lec, 1 tut/wk; 1 unscheduled lab work. Prerequisite: LSYS 1000. Qualifier: ISYS 1003 or INFO 1000 or [COSC (1001 or 1901) and COSC (1002 or 1902)] or [SOFT (1001 or 1901) or COMP (1001 or 1901) and Distinction in one INFO, ISYS or SOFT unit]. Prohibition: May not be counted with INFO 2000. Assessment: Written and practical assignments + written exam. An advanced alternative to INFO 2005; covers material at an advanced and challenging level.

ISYS 2006  Information Systems in Organisations
4 credit points. Session: 1. Classes: Two 1 hr lectures, one 2 hr tutorial. Assumed knowledge: Use of basic PC tools such as spreadsheet, Internet, email and word processing software. Prerequisite: Credit in one of ISYS 1003 or INFO 1000 or INFO 1000. Assessment: One 2 hr examination, written assignments.

NB: Enrolment Restriction: Entry is restricted to students who have a creditor better in one of the qualifying units.

This course will provide a comprehensive introduction to some of the critical dimensions of information systems in the context of contemporary organisations. It will introduce the organisational foundations of information systems (IS) and
explore the critical roles of IS in shaping the organisation, in
competing more effectively in the market place, and as an enabler
for information and knowledge sharing. The evolving technical foundations of IS will be reviewed.

Some of the important behavioural aspects of implementing new IS applications and the challenges in managing the resulting organisational transformation will be discussed.

The content will be presented in three modules:

i) Introduction to Information Systems and basic concepts of
information, "decisions and decision making, and organisations
ii) Technology of Information Systems
iii) Behavioural, organizational, managerial, and ethical issues in implementing a wide range of Information Systems applications.

ISYS 2007  Distributed Information Systems

Distributed Information Systems are systems where processing and
or data storage are distributed across two or more
autonomous networked computers. The course approaches DIS
from a top down or architectural perspective. It assumes a DIS
belongs within an organisation, has multiple users, and is
inherently complex being made up from many hundreds of
components all subject to frequent change. The course covers the
design of DIS, the impact of DIS on organisations, network
fundamentals and architectures, the client server models, the
integration of application components within the system, the
integration of disparate systems within and between organisations, international issues resulting from
systems crossing country boundaries, and the impact of
reliability, performance and data protection.

NETS 2808  Computer System Organisation
4 credit points. Session: 1. Classes: Two 1 hr lectures, one 2 hr practical. Qualifier: SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)] or [SOFT (1001 or 1901) and Distinction in one NETS or SOFT unit of study]. Prohibition: May not be counted with NETS 2908 or COMP (2001 or 2001). Assessment: Written assignments and exam.

For most people, a computer based system provides powerful services. This unit aims to show how the underlying hardware and
software components can make this possible. It covers
an overview of the main hardware components, such as CPU, memory, storage, peripherals, it also explains the functionality
(not the internal details) of the main software to turn a box into a working system, including the operating system, file
system, window manager, command processing shell.

The unit provides hands on experience of some aspects in the administration of a system, including writing scripts to automate repetitive tasks such as installing upgrades, monitoring logs, altering configuration information, and estimating the performance implications of possible changes.

NETS 2908  Computer System Organisation (Adv)
4 credit points. Session: 1. Classes: Two 1 hr lectures, one 2 hr practical. Qualifier: SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)] and Distinction in one NETS or SOFT unit of study. Prohibition: May not be counted with NETS 2008 or COMP (2001 or 2001). Assessment: Written assignments and exam.

An advanced alternative to NETS 2008; covers material at an
advanced and challenging level. See the description of NETS 2008 for more information.

NETS 2009  Network Organisation
4 credit points. Session: 2. Classes: Two 1 hr lectures, one 2 hr practical. Qualifier: SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)] and Distinction in one NETS or SOFT unit of study. Prohibition: May not be counted with NETS 2009. Assessment: Written assignments and exam.

Computer users often take for granted the ability to access
information and services from remote computers. This unit aims
to show how the underlying hardware and software components
can make this possible. It covers the overall structure of a
network, including the hardware (LANs, WANs, bridges,
switches) and the software (an overview of the OSI layered
reference model; description of the functionality of protocols
such as TCP/IP, PPP, SLIP, DNS, SNMP, SMTP, HTTP; and
the functionality of networked file systems). It introduces the
main issues for security in a network, including firewalls and viruses.
The unit provides hands on experience of some aspects in the
administration of a network, including writing scripts to detect
problems and adjust configurations. There is practice in
trouble-shooting from the wire level up to the application level.

NETS 2909  Network Organisation (Adv)
4 credit points. Session: 2. Classes: Two 1 hr lectures, one 2 hr practical. Qualifier: SOFT (1001 or 1901) or COMP (1001 or 1901) or [COSC (1001 or 1901) and COSC (1002 or 1902)] and Distinction in one NETS or SOFT unit of study. Prohibition: May not be counted with NETS 2009. Assessment: Written assignments and exam.

An advanced alternative to NETS 2009; covers material at an
advanced and challenging level. See the description of NETS 2009 for more information.

SOFT 2001  Concurrent Programming
4 credit points. Session: 2. Classes: Two 1 hr lectures, one 2 hr practical. Qualifier: SOFT (1002 or 1902) or COMP (1002 or 1902). Prohibition: May not be counted with SOFT 2001. Assessment: Written assignments, exam.

There are many sorts of computing infrastructure such as an
operating system kernel or network protocol stack or a Web server,
where one activity may start before other activities have finished.
This requires the software to interleave the processing from
different activities. This software is called 'concurrent' or
'multi-threaded', and it requires specific programming techniques which are taught in this unit. In particular, there is a need to
synchronise the activities when they deal with shared data, using
primitives such as semaphores or mutual exclusion locks.
Emphasis is also given to a similar 'event handling' style for
writing graphical user interfaces.

SOFT 2901  Concurrent Programming (Adv)
4 credit points. Session: 2. Classes: Two 1 hr lectures, one 2 hr practical. Qualifier: SOFT (1002 or 1902) or COMP (1002 or 1902) and Distinction in one of, or in any SOFT unit at 2000 level or above. Prohibition: May not be counted with SOFT 2001. Assessment: Written assignments, exam.

An advanced alternative to SOFT 2001; covers material at an
advanced and challenging level. See the description of SOFT 2001 for more information.
Analysis, and parallel and distributed algorithms. Problems include randomisation, online algorithms and competitive for which traditional analyses are not appropriate. These will be studied in this unit. We will cover elementary methods for developing robust, efficient, and re usable software. Specific topics include memory management and the pragmatic aspects of implementing data structures such as lists and hash tables. Debugging tools and techniques are discussed and common programming errors are considered along with defensive programming techniques to avoid such errors. Testing regimes, such as regression testing, are introduced. The subject is taught from a practical engineering viewpoint and it includes a considerable amount of programming practice, using existing tools as building blocks to complete a large scale task.

In this unit of study we learn elementary methods for developing robust, efficient, and re usable software. An advanced alternative to SOFT 2004, covers material at an advanced and challenging level. See the description of SOFT 2004 for more information.

Computer Science and Information Systems Senior units of study

Students are advised that doing less than 24 Senior credit points is not regarded as adequate preparation for a professional career in computing or for further study. Students are advised to balance their workload between semesters.

Check the school Web site www.it.usyd.edu.au for further advice.

COMP 3002 Artificial Intelligence

4 credit points. Session: 1. Classes: Two 1 hr lectures, one 1 hr tutorial. Prerequisite: [SOFT (2004 or 2004) or COMP (2004 or 2004)] and COMP (2003 or 2003) and 8 credit points 2000 level MATH or STAT and/or ECMT. Assessment: Prerequisite: May not be counted with COMP 3902. Assessment: Written assignments, exam.

The syllabus covers applications in business and management, managing information technology, planning and implementation of information systems, and user computing, system approach, strategic planning, operation management, control and audit and quality management, strategic information systems.

ISYS 3005 Organisational Database Systems

4 credit points. Session: 1. Classes: Two 1 hr lectures, one 1 hr tutorial. Prerequisite: INFO (2000 or 2000) and INFO (2005 or 2005) and Distinction in an INFO, ISYS or SOFT unit at 2000 level or above. Assessment: May not be counted with COMP (3005 or 3905) or INFO (3005 or 3905). Assessment: Written and programming assignments; written exam.

An advanced alternative to INFO 3005; covers material at an advanced and challenging level.

ISYS 3012 Project Management and Practice

4 credit points. Session: 1. Classes: One 2 hr lecture, one 1 hr practical, 1 hr independent study. Prerequisite: INFO (2000 or 2000). Assessment: One 2 hr examination, written assignments.

This unit of study covers the factors necessary for successful management of system development or enhancement projects. Both technical and behavioural aspects of project management are discussed. The syllabus covers applications in business and management, managing information technology, planning and implementation of information systems, and user computing, system approach, strategic planning, operation management, control and audit and quality management, strategic information systems.

ISYS 3015 Analytical Methods for IS Professionals

4 credit points. Session: 1. Classes: Two 1 hr lectures, one 1 hr tutorial. Prerequisite: [ARIN (1000 or ENGL (1005 or 1005)) or LNSGS (1001 or 1002 or 1005)] or ECOC (1001 or 1002) and 16 credit points of an intermediate or senior units of study, including and ISYS 2907 or INFO 2907 and INFO (2000 or 2000). Assessment: Written assignments and exam.

A collection of different methods for collecting and analysing information will be studied in the context of a systems thinking approach to investigative research. These approaches include participative methods, surveys, focus groups, controlled experiments and case studies.

ISYS 3113 Arts Informatics Systems

4 credit points. Session: 1. Classes: Two 1 hr lectures, one 1 hr tutorial. Prerequisite: [INFO (2000 or 2900) or INFO (2005 or 2005)] and [ARIN (1000 or ENGL (1005 or 1005)) or LNSGS (1001 or 1002 or 1005)] or ECOC (1001 or 1002)]. Assessment: Examination and written assignments.

A variety of topics relevant to the text and image processing needs of the Arts and Social Sciences such as scripting languages, text retrieval, natural language processing, applied artificial intelligence, and multi media techniques in the context of data distributed in databases across networks.
MULT 3004 Computer Graphics
4 credit points. Session: 2. Classes: Two 1 hr lecture, one 1 2 hr tutorial/practical. Prerequisite: COMP (2111 or 2811 or 2002 or 2902) and SOFT (2004 or 2904) or COMP (2004 or 2904) and MATH (1002 or 1902). Prohibition: May not be counted with MULT 3004 or COMP (3004 or 3904). Assessment: Written and practical assignments plus 2 hr written exam.

A picture has a million pixels (in round terms). Like any other interface, it must be well engineered for accuracy, high speed performance and compatibility with user needs. This unit of study examines established algorithms for picture generation, covering such topics as hidden line elimination, shading and texturing and ray tracing. The effects on performance of algorithmic design choices are considered. This unit assumes an understanding of vector and matrix operations.

MULT 3904 Computer Graphics (Advanced)
4 credit points. Session: 2. Classes: Two 1 hr lecture, one 1 2 hr tutorial/practical. Prerequisite: COMP (2111 or 2811 or 2002 or 2902) and SOFT (2004 or 2904) or COMP (2004 or 2904) and MATH (1002 or 1902) and Distinction in a MULT or SOFT unit at 2000 level or above. Prohibition: May not be counted with MULT 3004 or COMP (3004 or 3904). Assessment: Written and practical assignments plus 2 hr written exam.

An advanced alternative to MULT 3004; covers material at an advanced and challenging level.

MULT 3018 Multimedia Interaction
4 credit points. Session: 1. Classes: Two 1 hr lecture, one 1 2 hr tutorial/practical. Prerequisite: SOFT (2004 or 2904) or COMP (2004 or 2904) or Distinction in a MULT or SOFT unit at 2000 level or above. Prohibition: May not be counted with MULT 3918. Assessment: Assignments and written exam.

More than 70% of the information people receive comes from visual perception. Multimedia allows a more comprehensive interaction between humans and computers by exploiting the natural ability that humans have of making sense of visual information. This unit provides an overview of visual communication and multimedia interaction with computer interfaces. It introduces the visual perception fundamentals, discusses multimedia I/O devices and multimedia interaction, illustrates visualisation of relational information, describes interactive visual communication and presents some visualisation applications, such as medical imaging and flight simulation.

MULT 3918 Multimedia Interaction (Advanced)
4 credit points. Session: 1. Classes: Two 1 hr lecture, one 1 2 hr tutorial/practical. Prerequisite: SOFT (2004 or 2904) or COMP (2004 or 2904) and Distinction in a MULT or SOFT unit at 2000 level or above. Prohibition: May not be counted with MULT 3918. Assessment: Written assignments and exam.

An advanced alternative to MULT 3018; covers material at an advanced and challenging level.

MULT 3019 Digital Media
4 credit points. Session: 1. Classes: Two 1 hr lecture, one 1 2 hr tutorial/practical. Prerequisite: COMP (2111 or 2811 or 2002 or 2902) and MAH (1001 or 1901) and MAH (1002 or 1902) and MAH (1003 or 1903). Prohibition: May not be counted with MULT 3919. Assessment: Written and practical assignments plus written exam.

Multimedia has become more and more important in modern computing. This unit provides an overview of processing digital media, which includes text, audio, pictorial data and video. It introduces encoding techniques such as text parsing and summarisation, audio masking and manipulation, video segmentation and tracking; standards in each of these areas, such as UML, MP3, JPEG and MPEG; and presents applications such as multimedia Web design, multimedia presentation, video cataloguing and retrievals.

NETS 3007 Network Protocols
4 credit points. Session: 1. Classes: Two 1 hr lecture, one 1 2 hr tutorial/practical. Prerequisite: [NETS (2008 or 2908) and NETS (2009 or 2909)] or ELEC 2601 and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and Distinction in a NETS or SOFT unit at 2000 level or above. Prohibition: May not be counted with NETS 3007 or COMP (3007 or 3907). Assessment: Written assignments and exam.

This unit covers the internal details of network protocols. Building on NETS 2009 which introduces the concepts from a user viewpoint, discussing the functionality of each protocol, NETS 3007 shows how software can provide that functionality.

Topics include the general issues in communications protocols (naming, error detection, buffering, end to end argument), and the main design choices taken in TCP/IP. By the end of the unit, student should be able to design implement and debug simple network protocols.

NETS 3009 Operating Systems
4 credit points. Session: 2. Classes: Two 1 hr lecture, one 1 2 hr tutorial/practical. Prerequisite: [NETS (2008 or 2908) and ELEC 2601] and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and Distinction in a NETS or SOFT unit at 2000 level or above. Prohibition: May not be counted with NETS 3009 or COMP (3009 or 3909). Assessment: Written assignments and exam.

This unit covers the internal details of operating systems. Building on NETS 2009 which introduces the concepts from a user viewpoint, discussing the functionality of each aspect of an OS, NETS 3009 shows how software can provide that functionality. The topics include the internal structure of OS: several ways each major aspect (process scheduling, interprocess communication, memory management, device management, file systems) can be implemented; the performance impact of design choices.

NETS 3009 Operating Systems (Advanced)
4 credit points. Session: 2. Classes: Two 1 hr lecture, one 1 2 hr tutorial/practical. Prerequisite: [NETS (2008 or 2908) or ELEC 2601] and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and Distinction in a NETS or SOFT unit at 2000 level or above. Prohibition: May not be counted with NETS 3009 or COMP (3009 or 3909). Assessment: Written assignments and exam.

An advanced alternative to NETS 3009; covers material at an advanced and challenging level.

NETS 3016 Computer and Network Security
4 credit points. Session: 1. Classes: Two 1 hr lecture, one 1 2 hr tutorial/practical. Prerequisite: [NETS (2008 or 2908) or ELEC 2601] and [SOFT (2004 or 2904) or COMP (2004 or 2904)] and Distinction in a NETS or SOFT unit at 2000 level or above. Prohibition: May not be counted with NETS 3016 or ELEC 5610. Assessment: Written assignments and exam.

This unit examines the main issues of security for enterprise systems and networks. It covers confidentiality, integrity, data origin authentication, nonrepudiation, user authentication, access control.

At the end of this unit students will know and understand properties of and evaluate a variety of common techniques to address security threats (public key crypto, private key crypto, firewalls, role based access control, etc).

We pay special attention to the variety of attacks to which systems are subjected, and the address ways of managing the risks associated with different attacks. In this unit, cryptography is treated as a tool with given properties; to learn more about cryptography see MATH 3024.
NETS 3916  Computer and Network Security  (Advanced)
4 credit points.  Session: 1.  Classes: Two 1 hr lectures, one 1 2 hr 
Prerequisite: [NETS (2008 or 2009) or NETS (2908 or 2909)] and 
[CSC (2004 or 2005) or COMP (2004 or 2005)] and 
Distinction in a NETS or UNIT unit at 2000 level or above.  Prohibition:
May not be counted with NETS 3016 or ELEC 3610.  Assessment:
Written assignments and exam.
An advanced alternative to NETS 3016; covers material at an 
advanced and challenging level.

NETS 3017  Network Programming and Distributed 
Apps
4 credit points.  Session: 2.  Classes: Two 1 hr lectures, one 1 2 hr 
tutorial/practical.  Prerequisite: [NETS (2008 or 2009) and 
ELEC 2601] and [SOFT (2004 or 2009) or COMP (2004 or 2009)] and 
SOFT (2001 or 2009).  Prohibition: May not be counted with 
NETS 3917 or ELEC 3604.  Assessment: Written assignments and 
exam.
This is a practically oriented subject in which students learn to 
write code that uses communication primitives such as sockets, 
RPC and Java RMI.  In contrast, SOFT 3105 assumes the 
existence of middleware that hides most of the details of creating 
sockets, sending and receiving data etc.

NETS 3917  Network Prog & Distributed Apps (Adv)
4 credit points.  Session: 2.  Classes: Two 1 hr lectures, one 1 2 hr 
tutorial/practical.  Prerequisite: [NETS (2008 or 2009) and 
ELEC 2601] and [SOFT (2004 or 2009) or COMP (2004 or 2009)] and 
SOFT (2001 or 2009).  Prohibition: May not be counted with 
NETS 3107 or ELEC 3604.  Assessment: Written assignments and 
exam.
An advanced alternative to NETS 3017; covers material at an 
advanced and challenging level.

SOFT 3101  Object Oriented Software Design
4 credit points.  Session: 1.  Classes: Two 1 hr lectures, one 1 2 hr 
tutorial/practical.  Prerequisite: SOFT (2001 or 2009) and INFO (2000 or 
2009) and INFO (2005 or 2009) and [SOFT (2004 or 2009) or COMP 
(2004 or 2009)].  Prohibition: May not be counted with SOFT 3801 or 
COMP (3008 or 3908).  Assessment: Written assignments and exam.
An important benefit of the object oriented approach to software 
development is that the modelling style (classes with attributes 
and methods, related by inheritance) is useful throughout the 
lifecycle. One can represent the problem space as classes, and 
then adapt these to give a design which is suitable for coding. In 
this unit, we study a methodical approach to developing a design 
for a substantial software project. In particular, many 'patterns' 
will be introduced. These describe common ways to solve 
 recurring issues, especially ways that use inheritance to reduce 
the coupling between parts of the system. We will also cover the 
precise principles behind design by contract, especially the 
relationship between assertions and inheritance. We will use 
UML as a notation for expressing designs, and study some ways 
to structure large designs for improved understanding.

SOFT 3801  Object Oriented Software Design (Adv)
4 credit points.  Session: 1.  Classes: Two 1 hr lectures, one 1 2 hr 
tutorial/practical.  Prerequisite: SOFT (2001 or 2009) and INFO (2000 or 
2009) and INFO (2005 or 2009) and [SOFT (2004 or 2009) or COMP 
(2004 or 2009)] and Distinction in a SOFT or INFO unit at 2000 level or 
above.  Prohibition: May not be counted with SOFT 3101 or COMP 
(3008 or 3908).  Assessment: Written assignments and exam.
An advanced alternative to SOFT 3101; covers material at an 
advanced and challenging level.

SOFT 3102  User Interface Design and Programming
4 credit points.  Session: 1.  Classes: Two 1 hr lectures, one 1 2 hr 
Prerequisite: [SOFT (2004 or 2009) or COMP (2004 or 2009)] and 
Distinction in a SOFT or INFO unit at 2000 level or above.  Prohibition:
May not be counted with SOFT 3102 or COMP (3102 or 3109).
Assessment: Written assignments and exam.
An advanced alternative to SOFT 3102; covers material at an 
advanced and challenging level.

NETS 3103  Software Validation and Verification
4 credit points.  Session: 2.  Classes: Two 1 hr lectures, one 1 2 hr 
tutorial/practical.  Prerequisite: [SOFT (2004 or 2009 or COMP (2004 or 
2009)] and [SOFT (2001 or 2009) and MATH (1005 or 1005)].  Prohibition:
May not be counted with NETS 3803.  Assessment: Written assignments 
and exam.
This unit will introduce a thorough approach to ensure the quality 
of software. It will focus on how to design and carry out effective 
testing. Testing needs to address both functionality and also non-
functional issues such as performance, usability, conformance to 
policy. We will learn to evaluate test strategies in terms of 
coverage and contribution to system reliability. Attention is also 
paid to the automation and management of the testing process.

NETS 3104  Software Development Methods 2
4 credit points.  Session: 2.  Classes: Two 1 hr lectures, one 1 2 hr 
tutorial/practical.  Prerequisite: [SOFT (2004 or 2009 or COMP (2004 or 
2009)] and Distinction in a SOFT or INFO unit at 2000 level or above.  Prohibition:
May not be counted with SOFT 3104 or COMP (3100 or 3800).  Assessment: Written assignments and exam.
At the end of this course you should have an easy familiarity with 
C++ and know when (and when not) to use it to solve a problem. In 
particular, we deal with those issues which differ from Java 
and C, including multiple inheritance, name spaces, destructors, 
the difference between virtual and non virtual overriding, and 
templates. You should be comfortable reading the STL source. 
In addition, you will have had experience with refactoring, use of 
software configuration management systems (such as CVS, 
RCS, SCCS, Perforce), and use of metrics in Personal Software 
Process.

NETS 3803  Software Validation & Verification (Adv)
4 credit points.  Session: 2.  Classes: Two 1 hr lectures, one 1 2 hr 
tutorial/practical.  Prerequisite: [SOFT (2004 or 2009) and COMP (2004 or 
2009)] and [SOFT (2001 or 2009) and MATH (1005 or 1005)] and 
Distinction in a SOFT or INFO unit at 2000 level or above.  Prohibition:
May not be counted with SOFT 3803.  Assessment: Written assignments 
and exam.
An advanced alternative to SOFT 3103; covers material at an 
advanced and challenging level.

NETS 3200  Software Development Project
8 credit points.  Session: 1.  Two 1 hr lectures, one 1 2 hr 
tutorial/practical.  Prerequisite: [SOFT (2004 or 2009) or COMP (2004 or 
2009)] and Distinction in a UNIT or INFO unit at 2000 level or above.
Prohibition: May not be counted with SOFT 3200 or COMP (3100 or 3800).  Assessment: Written assignments and exam.
An advanced version of SOFT 3104; covers material at an 
advanced and challenging level.

NETS 3804  Software Development Methods 2 (Adv)
4 credit points.  Session: 1.  Two 1 hr lectures, one 1 2 hr 
tutorial/practical.  Prerequisite: [SOFT (2004 or 2009) or COMP (2004 or 
2009)] and Distinction in a UNIT or INFO unit at 2000 level or above.
Prohibition: May not be counted with SOFT 3804 or COMP (3100 or 3800).  Assessment: Written assignments and exam.

NETS 3805  Software Development Project (Advance)
8 credit points.  Session: 1.  Two 1 hr lectures, one 1 2 hr 
tutorial/practical.  Assumed knowledge: No assumed knowledge.
Prerequisite: [SOFT (2004 or 2009) or COMP (2004 or 2009)] and 
Distinction in a SOFT or INFO unit at 2000 level or above.  Prohibition:
May not be counted with NETS 3805 or COMP (3102 or 3105).
Assessment: Written assignments and exam.
This unit is an Advanced alternative to NETS 3800.  Students 
develop software to assist an organisation or research group 
which is involved in innovation. Involvement in the activities 
of the client community is an important aspect of the unit.
Computer Science Honours
To be awarded Honours in Computer Science, a student must complete units of study to a total of 48 credit points, as approved by the School and the Faculty, as follows: 8 credit points of research preparation, covering a literature review and research plan, 16 credit points of research project, and 24 credit points of coursework units of study, which, except with permission of the School and Faculty, must all be from 4000 level units of study which are in the subject area of Computer Science (that is, units of study which have codes starting with COMP or INFO).

Note that the Faculty requires that Honours be completed in two consecutive semesters of full time study, or four consecutive semesters of part time study; individual results for separate units of study will not appear on the transcript, instead a single final grade and mark is given for the Honours course, as determined by the Faculty based on performance in Honours and in prior undergraduate study.

Information Systems Honours
Information Systems Honours consists of coursework and a project. The project involves a substantial development or investigation task generally in support of the department's research effort. It provides training in investigating the history of the body of knowledge that encompasses a conceptual problem space, defining a complex task to tackle the problem, and then taking the task to completion. Students receive an education in moving through a problem from its inception to its completion so that they gain the confidence and experience to tackle independently significant research and industrial projects. Research areas in the School include natural language processing, data mining, systems methodologies and Workflow methods. Students are required to participate in School seminars as part of their coursework and in all other activities of the School. They are provided with office accommodation and laboratory facilities and may be employed for a few hours per week in undergraduate teaching.

For further details consult the School Handbook and the Honours Guide Book.

Law units of study
The following units of study are only available to students in the Bachelor of Science/Bachelor of Laws degree. Please consult degree information in chapter 2, the Tables earlier in this chapter, and the relevant Department/Schools entries in this chapter for descriptions of other units of study required for this degree.

LAWS 1006 Legal Institutions
6 credit points. Mrs Jerri Milburn (Convenor). Session: 1. Classes: One 1 hr lecture &Two 2 hr seminars per week.
NB: Unit is part of the Combined Law program.

This unit of study provides a foundation core for the study of law. We aim to provide a practical overview of the Australian legal system, an introduction to the skills of legal reasoning and analysis which are necessary to complete your law degree, and an opportunity for critical engagement in debate about the role of law in our lives.

The course will introduce students to issues such as:
- the development of judge made and statute law
- the relationship between courts and parliament
- the role and function of courts, tribunals and other forms of dispute resolution
- understanding and interrogating principles of judicial reasoning and statutory interpretation
- the relationship between law, government and politics
- what are rights within Australian law, where do they come from and where are they going

We will have a particular focus on indigenous Australia in exploring many of these issues, for example through the landmark Mabo decision.

LAWS 1010 Torts
6 credit points. Associate Professor Barbara McDonald (Convenor). Session: 2. Summer. Classes: Two 2 hr seminars per week. Prerequisite: Legal Institutions. Prohibition: LAWS 3001 Torts.
NB: Unit is part of the Combined Law program for students commencing in 2003.

This is a general introductory unit of study concerned with liability for civil wrongs. The unit seeks to examine and evaluate, through a critical and analytical study of primary and secondary materials, the function and scope of modern tort law and the rationale and utility of its governing principles.

Particular topics on which the unit will focus include:
(a) The relationship between torts and other branches of the common law including contract and criminal law;
(b) The role of fault as the principal basis of liability in the modern law;
(c) Historical development of trespass and the action on the case and the contemporary relevance of this development;
(d) Trespass to the person (battery, assault, and false imprisonment);
(e) Interference with goods (trespass, detinue and conversion);
(f) Trespass to land;
(g) The action on the case for intentional injury;
(h) Defences to trespass, including consent, intellectual disability, childhood, necessity and contributory negligence;
(i) Development and scope of the modern tort of negligence, including detailed consideration of duty of care, breach of duty, causation and remoteness of damage and assessment of damages;
(j) Injuries to relational interests, including compensation to relatives of victims of fatal accidents;
(k) Concurrent and vicarious liability;
(l) Defences to negligence;
(m) Breach of statutory duty;
(n) Nuisance;
(o)Liability for animals.

LAWS 1002 Contracts
8 credit points. Dr Luke Nottage (Convenor). Session: 1, 2, Summer.
Classes: Two 2 hr seminars per week. Prerequisite: Legal Institutions. February Semester classes are for students in Combined Law and July Semester classes are for students in Graduate Law.

Contract law provides the legal background for transactions involving the supply of goods and services and is, arguably, the most significant means by which the ownership of property is transferred from one person to another. It vitally affects all members of the community and a thorough knowledge of contract law is essential to all practising lawyers. In the context of the law curriculum as a whole, Contracts provides background which is assumed knowledge in many other units.

The aims of the unit are composite in nature. The central aim is to provide an understanding of the basic principles of the common law, equity and statutes applicable to contracts. A second aim is to provide students an opportunity to critically evaluate and make normative judgments about the operation of the law. As Contracts is basically a case law unit, the final aim of the unit of study is to provide experience in problem solving through application of the principles derived from decided cases. Successful completion of this unit of study is a prerequisite to the option Advanced Contracts.

LAWS 1003 Criminal Law
8 credit points. Professor Mark Findlay (Convenor). Session: 1, 2.
Classes: Two 2 hr seminars per week.
February Semester classes are for students in Graduate Law and July Semester classes are for students in Combined Law.

The Graduate Law class will commence in Week 2, to accommodate the Legal Institutions intensive. This unit of study is designed to introduce the general principles of criminal law and process as they operate in NSW, and to critically analyse these in their contemporary social context. In order to achieve these goals, the unit will consider a wide range of socio legal literature, and will focus on particular substantive topics. Although the topic structure is necessarily selective, it is intended that students will gain a broad understanding of crime and justice issues, as well as of the applications and ways in which they encounter problem based learning and will be encouraged to challenge a range of conventional wisdom concerning the operation of criminal justice. This unit of study is designed to assist students in developing the following understandings:
(1) A critical appreciation of certain key concepts which recur throughout the substantive criminal law.
(2) A knowledge of the legal rules in certain specified areas of criminal law.
(3) A preliminary understanding of the working criminal justice system as a process and the interaction of that process with the substantive criminal law.
(4) A preliminary knowledge of how the criminal law operates in its broader societal context.

The understandings referred to in the foregoing paragraphs will have a critical focus and will draw on procedural, substantive, theoretical and empirical sources. Race, gender, class and the interaction of these factors will be key themes.
UNDERGRADUATE TABLES AND UNITS OF STUDY

LAWS 1008  Legal Research
No credit points. Mr Graeme Coss (Convener). Session: 1. Classes: 1 hr per week over eleven weeks for Combined Law; 2hrs per week over seven weeks for Graduate Law.
This unit is a compulsory component of the Bachelor of Laws degree.
• Combined Law students undertake tuition at the Law School in their first year, with classes offered in either first or second semester depending on timetabling. The semester 1 'host' law unit will be Legal Institutions, and in semester 2 the 'host' law unit will be Torts.
• Graduate Law students undertake tuition in first semester of the first year. The 'host' substantive law subject will be Criminal Law.
The subject Legal Research aims:
• to provide the proficient use by all students of a law library;
• to introduce students to major Australian legal research aids, both in hard copy and electronic format, and to discourage dependency;
• to provide students with practice in finding and analysing relevant primary and secondary materials;
• to promote the proficient use by all students of a law library;
• to provide the proficient use by all students of a law library;
• to promote efficient and effective research methods.
Legal Research is graded on a Pass/Fail basis. Attendance at all classes is mandatory. Classes will be of one hour duration, one per week, for eleven weeks for Combined Law students; of two hours duration, one per week, for seven weeks for Graduate Law students. Numbers will be limited to a maximum of 16 in each class. There will be continuous assessment throughout the semester. These will be one compulsory assignment and one compulsory exam.

LAWS 3000  Federal Constitutional Law
10 credit points. Dr Helen Irving (Convener). Session: 1. Classes: Two 2 hr seminars per week. Prerequisite: Legal Institutions.
NB: Unit is part of the Combined Law program.
This unit of study aims to achieve an understanding of the principles of Australian constitutional law. The unit commences with a development of an understanding of Australia's constitutional independence, parliamentary sovereignty, indigenous rights and the concepts of representative and responsible government. Further topics covered include federalism (including the external affairs power and the relationship between Commonwealth and state laws), economic and financial power and relations (including the corporations power, the trade and commerce power, freedom of interstate trade, and excise); the doctrine of separation of powers and judicial protection of the rights of the community; express and implied constitutional rights; and principles of constitutional interpretation. The unit aims to develop a capacity to evaluate the principles critically, with regard to political theory and the social context within which these cases have been decided.

LAWS 3002  Law, Lawyers and Justice
10 credit points. Mr Bernard Dunne (Convener). Session: 2. Classes: Two 2 hr seminars per week.
NB: Unit is part of the Combined Law program for re enrolling students in 2003
As for graduate law, LAWS 1001

Liberal Studies units of study
The following units of study form part of the requirements of the Bachelor of Liberal Studies degree. Please consult degree information in chapter 2, the Tables earlier in this chapter, and the relevant Departments/Schools' entries in this chapter for descriptions of other units of study required for this degree.

ENGL 1005  Language and Image
6 credit points. Dr Williams. Session: 1.2. Classes: One 1hr lecture and one 2hr seminar. Prohibition: ENGL 1050. Assessment: One 1000wd assignment, one 1500wd essay, and one 1.5hr examination.
In this unit you will study the construction of texts in different media, of language and image, using Michael Ondaatje's novel 'The English patient', and the film of the novel, as a particular focus. A range of other fiction, academic and media texts will be included to extend the discussion of textual constructions and interpretation. You will learn to analyse some methods of constructing meaning in language and images, taught in workshops. This detailed textual work, which will involve learning a range of grammatical and other detailed analytic techniques, will assist you to improve your academic writing and to interpret expectations for different kinds of textual work in academic disciplines. You will also be introduced in lectures to more descriptive topics, such as historical shifts in relations between language and image, narrative organisation, categories of text, and social agency and power in the production of text.

Textbooks
A Resource Book will be available from the University Copy Centre.

LNGS 1005  Structure of English
6 credit points. Dr J Simpson. Session: 1. Classes: (three 1 hr lectures & one 1 hr tutorial/wk. Prohibition: may not be taken as well as LNGS 1001 or LNGS 1004. Assessment: One 1 hr exam, various written assignments and 1 essay.
This unit looks at the structure of English from the point of view of modern linguistics and focusses on written and spoken academic English. It will be especially valuable to non native speakers of English in giving them an overview of how and why English works the way it does. Topics covered include: English vocabulary, phonetics; intonation; word types; count and mass nouns; verb types and sentence structures; auxiliary verbs and tense and mood; voice, topicality and information structure. Knowledge about the structure of English will be used to improve students' writing skills in collaboration with the Learning Centre

■ Marine Science

The University of Sydney Institute of Marine Science (USIMS) provides for undergraduate students units of study of a transdisciplinary nature in the marine sciences at the Intermediate, Senior and Honours levels. Staff from the School of Biological Sciences and the School of Geosciences teach these units. For further information on all units of study, please refer to the Marine Science Web site (www.usyd.edu.au/marine).

MARS 2001  Introductory Marine Science A
4 credit points. Dr Hughes. Session: 1. Classes: 3 lec & 1 tut/wk. Prerequisite: 24 credit points of Junior units of study from Science Discipline Areas. This is a qualifying unit of study for Senior Marine Science units. Some Senior electives may have additional prerequisites. Assessment: One 2hr exam, classwork.
This unit of study is split into two sections: physical and geological oceanography. Major physical oceanography topics include the physical and chemical properties of ocean water, ocean circulation, waves and tides. Major geological oceanography topics include the origins and geological history of ocean basins, ocean volcanism, sediments and continental margins. Both the regional oceanography and continental shelf of Australia are emphasised. Although this is principally a lecture based unit, you will receive regular feedback on your understanding of the unit content through informal quizzes and assignments. The learning outcome you should expect at the end of the unit is a broad knowledge of the fundamental concepts in physical and geological oceanography, and their particular relevance to the Australasian region. This provides the necessary background for senior level Marine Science units of study in which you will learn more advanced concepts, and also become involved in the practical and field based aspects of marine science.

MARS 2002  Introductory Marine Science B
4 credit points. Dr Cowell, Assoc Prof Hinde. Session: 2. Classes: 3 lec & 1 tut/wk, 1 day excursion, 1/2 day excursion. Prerequisite: 24 credit points of Junior units of study from Science Discipline Areas. This is a qualifying unit for Senior Marine Science units. Some Senior electives may have additional prerequisites. Prohibition: May not be counted with GEOG 2002. Assessment: One 2hrexam, classwork.
This unit of study is split into two sections: marine biology and coastal geomorphology. The marine biology section describes some of the ways that the properties of the oceans affect marine organisms. It also introduces coral reefs and other marine ecosystems, together with their productivity, biological oceanography, the reproductive biology of marine organisms, and marine biological resources. The coastal geomorphology section provides an introduction to coastal geomorphology by examining the geographic variability of coasts as the sum effect of variations in terrestrial, climatic and oceanographic factors. These factors are introduced in terms of the main physical processes (geology, sea level, waves, tides, winds) governing coastal geomorphology on a range of space time scales. Geographic variation in the physical processes is illustrated by reference to the local coast: ie, Sydney. The illustration is amplified by drawing comparisons with other parts of SE
Marine Science

Australia, and with overseas examples (especially from coastal environments very different to that of Sydney).

MARS 2003 Marine Science Field School

NB: This unit of study is available to students in the Bachelor of Science (Marine Science) and the Bachelor of Resource Economics only.

Marine Scientists are generally involved in a wide variety of field work throughout their careers. A detailed knowledge of field methods and techniques is therefore a necessary component in the education of marine scientists. This unit of study introduces students to a range of field issues within the coastal and marine environment during a week long field school held prior to commencement of lectures in Semester 1. Many of the field methods focussed on are generic across the marine disciplines. In addition, techniques specific to the disciplines of Biological Sciences and Geosciences are taught. Students will be expected to participate in a hands on way, undertaking small project based data collection exercises during the field school. These data will provide resources for the practical/seminar part of the course undertaken during the semester. The practical classes are intended to familiarise the student with data processing techniques and the seminars are intended to draw the connection between field work and the theoretical issues discussed in the Introductory Marine Science unit.

Practical: The practical classes are intended to familiarise the student with data processing techniques and the seminars are intended to draw the connection between fieldwork and theoretical issues discussed in the Introductory Marine Science units.

MARS 2004 MarineTechniques

NB: This unit of study is available to students in the Bachelor of Science (Marine Science) and the Bachelor of Resource Economics only.

Marine scientists are involved in the study of the largest and most diverse and dynamic environment on the planet. A multidisciplinary approach is required to investigate the complex physical, biological and chemical interactions that comprise this environment. This unit will build on MARS 2003 and systematically introduce students to a range of field and laboratory techniques used in the acquisition and analysis of marine biological and marine geoscience data. During the course students will collect data in the field, undertake laboratory analysis and input the results into spreadsheet/databases, and finally prepare and present a final report on their findings. Field techniques will include vibrocoring, surveying, dredging and biomass sampling, while laboratory techniques will include core, sediment and water quality analysis, as well as computer drafting, spreadsheet, database and report preparation, with an oral presentation of the results.

Marine Science Senior units of study

Students in the Bachelor of Science intending to major in Marine Science should enrol in Senior MARS units of study to a total worth of 24 credit points. Students in the Bachelor of Science (Marine Science) must enrol in a minimum of 36 credit points of Senior Marine Science units of study.

There are 7 electives available in Semester 1 and 6 electives in Semester 2. The majority of the electives are of half semester duration only and are grouped into each half (see list below). Alternatively, students enrolled in the Bachelor of Science (Marine Science) may apply to replace one or more of these electives with Tropical Marine Science (NTMP) units. Students are encouraged to select those electives in which they have a particular interest, subject to certain conditions. All prerequisites must be met and selection of electives must be managed to avoid too much study in any one half semester. That is, no student may do more than 12 credit points in any one half semester. All enrolments are to be registered with and approved by the Undergraduate Advisor of USMS on the first day of Semester 1. You may be required to change your selection on the basis of these rules.

Semester 1 (weeks 1-7 inclusive)
MARS 3003, MARS 3005, BIOL 3011*
Semester 1 (weeks 7-13 inclusive)
MARS 3004, MARS 3006, MARS 3008, BIOL 3013*
Semester 2 (weeks 1-7 inclusive)
MARS 3103, MARS 3105
Semester 2 (weeks 7-13 inclusive)
MARS 3104, MARS 3106
Semester 2 (full semester)
MARS 3102*

(*) Because of limited facilities available for some units of study, particularly in marine biology, it may be necessary to restrict number of students taking these electives. If this need arises selection will be based on academic merit and/or other courses completed. All students intending to enrol in any of the marine biology options must consult the booklet information for Students Considering Senior Biology units of study available from the School of Biological Sciences Office during the last few weeks of the academic year prior to this enrolment. Each student should also complete a preliminary enrolment form in the School of Biological Sciences before first semester commences.

Registration
In addition to complying with enrolment procedures required by the University, all students in Senior Marine Sciences must register with the Marine Science Administration Office (Room 469 Madsen) during the first week of lectures. Enquiries should also be directed there.

Descriptions of options
Students should also consult electives (BIOL 3011/3011, BIOL 3013/3013) as listed in this chapter under Biological Sciences in this handbook.

MARS 3003 Coastal Depositional Environments
6 credit points. A/Prof Andy Short. Session: 1. Classes: (weeks 1-7) 3 hrs lecs & 3 hrs prac/wk, one half day excursion, one weekend excursion.
Prerequisite: MARS 2001 and 2002 or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study. Prohibition: May not be counted with GEOG 3001.
Assessment: Excursion report, 2 x 1500 word essays, 1 hr exam.
Coastal depositional environments dominate the coast of Australia and most shorelines. They are dynamic systems responding to input sediments and processes as well as boundary conditions. This course focuses on high energy wave and wind dominated depositional systems manifest as beaches, dunes and barrier systems. It examines the background to the study of these systems and their global variation, before systematically looking at the beach surf zone, backshore, dunes and barriers, including their Holocene evolution. The impact of lower waves and tides, embayments, structures and other environmental parameters are also considered. The surface morphology and stratigraphy of representative systems is examined on the excursions and in the practicals. The practicals also introduce students to field and laboratory techniques used in core logging and analysis of sediments. One assignment is based on the excursion and practical work, the second is based on library research of a section of the Australian coast.

Textbooks

Course Notes and other material also available at University Copy Centre

MARS 3004 Coastal Morphodynamics
6 credit points. Dr Peter Cowell. Session: 1. Classes: (weeks 7-13) 3 hrs lecs & 6 hrs prac/wk, one weekend excursion. Prerequisite: MARS 2001 and 2002 or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study. Prohibition: May not be counted with GEOG 3001.
Assessment: Assignments, 1 hr exam.
Coastal Morphodynamics is an option in the modelling of complex and emergent coastal systems. Specifically, this option concerns the interactions between fluid dynamics and changes in coastal geomorphology over a wide range of scale in space and time. The coast is used for exploring development and application of computer models for simulating the behaviour of complex environmental processes. Such processes involve non-linear dynamical problems that go beyond the realm of classical mathematics and physics. Computer simulation of these problems provides practical insights into the application of chaos theory to the evolutionary behaviour of coasts. The option aims to provide: (1) skills in managing complex problems in general, (2) an analytical understanding of coastal processes in particular, and (3) experience in application of computer simulation
programs and vocationally relevant, commercial software packages. Practical work involves extensive use of computers.

MARS 3005 Marine Geophysical Data Analysis
6 credit points. Dr Dietmar Muller, Dr Michael Hughes. Session: 1. Classes: (weeks 7-13) 12 hrs les & prac/wk, one weekend excursion. Prerequisite: MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409. Prohibition: May not be counted with GEP 3201. Assesment: Assignments, 2 hr exam. Exploring the sediments/rocks that make up the deep ocean floor and the continental shelves requires the use of remote sensing techniques, and the analysis of geophysical data. This unit teaches analytical and interpretive skills in both these areas, with a focus on the properties, convolution and correlation, numerical transforms, time series (harmmonic and spectral) analysis, filtering, and image analysis. It covers a variety of these types involving wave and current data, multibeam seafloor data, gravity, magnetic and heatflow data, seismic reflection data, video imagery, and satellite altimetry. All practical exercises are carried out in an integrated LINUX/Solaris computer environment. The unit is relevant to students interested in marine geophysics and geology, offshore engineering, as well as geological or physical oceanography.

Textbooks
Muller, R. D., Marine geophysical data analysis, (available at University Copy Center).

MARS 3006 Dynamics of Ocean Basins and Margins
6 credit points. Dr Dietmar Muller. Session: 1. Classes: (weeks 7-13) 12 hrs les & prac/wk, one weekend excursion. Prerequisite: MARS 3005 is highly recommended. Prerequisite: MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409. Prohibition: May not be counted with GEOP 3201. Assessment: Assignments, 2 hr exam. This unit explores the processes that have shaped the abyssal plains, deep sea trenches, continental shelves and slopes of the ocean basins. Plate tectonic properties, convolution and correlation, numerical transforms, time series (harmonic and spectral) analysis, filtering, and image analysis. It covers a variety of these types involving wave and current data, multibeam seafloor data, gravity, magnetic and heatflow data, seismic reflection data, video imagery, and satellite altimetry. All practical exercises are carried out in an integrated LINUX/Solaris computer environment. The class is relevant to all students interested in using computational methods to learn about the Earth's structure.

Textbooks
Muller, R. D., Dynamics of ocean basins and margins, (available at University Copy Center).

MARS 3008 Energy: Science, Engineering & Economics
6 credit points. Prof Peter Davies, Dr Gavin Birch. Session: 1. Classes: (weeks 7-13) 12 hrs les & prac/wk, one weekend excursion. Prerequisite: MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409. Prohibition: May not be counted with GEOG 3102. Assessment: Assignments, 2 hr exam. This unit is aimed at geoscientists, biologists, environmental and marine scientists who are interested in the energy resources, particularly in the context of the evolution of coral reefs and how they have been affected by changing short and long term environmental conditions. This interdisciplinary unit provides an introduction to offshore energy and coral reefs and explores this complex system in relation to geology, biology and ecology as well as to physical oceanographic settings. The unit acquaints students with tools currently being used in the industry and is underpinned by modern concepts of basin architecture and sequence stratigraphy. Exploration techniques include the principals and practice of electrical logging, source rock evaluation and reservoir quality assessment. The controlling influence of basin architecture is examined in terms of critical factors such as hydrocarbon source, migration and entrapment, whereas the modern stratigraphers of sequence stratigraphy are used to demonstrate climatic and tectonic control. Students will also become familiar with the factors and processes that control the structure, morphology, sediments and distribution of coral reefs and how they function as part of larger ecosystems. The unit is based on problem solving by groups and is underpinned by closely integrating geological, geophysics, marine science and economics. The theoretical base developed in course work will be used to solve a real world exploration case study, using petroleum industry techniques and by simulating an economic competitive environment. The unit will include a 5 day field trip to the Great Barrier Reef. Students will be required to meet associated travel and accommodation costs.

MARS 3102 Marine Ecology
12 credit points. Dr Dickman, Dr Holloway, Dr Hochuli, Dr Wardle, Dr Chapman, Prof. Underwood and others. Session: 2. Classes: 4 lec & 8 hr prac/wk, one 8 day field trip in vacation before Sem 2. Prerequisite: MARS (2001 and 2002) and 16 credit points of Intermediate Biology including BIOL (2001 or 2002 or 2002 or 2004 or 2004). Prohibition: May not be counted with BIOL 3023,3023,3024 or 3024. Assessment: field report, laboratory, exam. Marine Ecology comprises two parts, Ecological Methods and Marine Ecology. Ecological Methods is conducted during weeks 1 and 2 and will consider ecology as a theoretical, quantitative, experimental science concerned with the analysis of patterns of distribution, abundance, dynamics, demography and life histories of natural populations with an appraisal of the nature of scientific investigations, from a philosophical viewpoint and the practicalities of testing hypotheses in the real world, and the application of ecological theory and methods to practical problems will be integrated throughout the unit of study. Lectures will be on sound philosophical and experimental principles and useful for the more informed management, conservation and utilization of natural populations and habitats. Practical classes will deal with practical methods of determining patterns of distribution and abundance, problems of sampling, estimation of ecological variables and methods of statistical analysis of field data. Computer simulations and analyses will be used where appropriate.

Marine Ecology will explore the designs of experimental analysis of marine populations, drawing upon extensive examples from intertidal assemblages of animals and plants and from the biology of sub tidal organisms in coastal habitats. No particular mathematical or statistical skills are required for this module. Much emphasis will be placed on evaluation of recent studies in the literature. Laboratory classes will deal with techniques of analysis and experimental manipulation of natural assemblages. The relationships between experimental marine ecology and general ecological theory will be emphasised. The role of ecological science in management, conservation and exploitation of populations will be emphasised. Notes
1. Marine Ecology has a compulsory pre semester field trip in July (held July 8-15 in 2003). Students wishing to do Marine Ecology must pre enrol with the School of Biological Sciences and the Marine Science Administration Office early in Semester 1. (2) Students should be aware that the Marine Ecology and NTMP field units may clash. Contact the Marine Science Administration Office for further information. (3) Marine Ecology is a prerequisite for Marine Science Honours in Marine Ecology.

MARS 3103 GIS Simulation Modelling
6 credit points. Dr Peter Cowell. Session: 2. Classes: (weeks 7-13) 3 hrs les & 4 6 hrs prac/wk. Prerequisite: MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study. Prohibition: May not be counted with GEG 3102. Assessment: Assignments, 1 hr exam. Specific aims of the unit are to provide: i) an introduction to technical issues in Geographic Information Systems (GIS); ii) experience in using GIS techniques, and iii) insights in application of GIS to coastal studies. The lectures illustrate how Geographic Information Systems can be applied by people working in marine sciences, and provide an introduction to the nuts and bolts of GIS. The technical lectures are based on a leading GIS text book. The practical work focuses on application of GIS techniques to coastal management problems. Practical work involves extensive use of computers.
MARS 3104 Coastal Zone Management 
6 credit points. Dr David Chapman, Dr Eleanor Bruce. Session: 2. Classes: (weeks 7 13) 3 hrs les & 4 6 hrs prac/wk. Prerequisite: MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study. Prohibition: May not be counted with GEOG 3102. Assessment: Assignments, exam.

Aims of the unit: To assist you to identify significant problems in resource management in the coastal zone, to enhance your understanding of the origins of these problems at the interface between the natural and human environments, and the nature of human responses to them. To equip you with some conceptual models for the management of problems in resource management in the coastal zone, and to teach you some of the fundamental skills in analysis of environmental problems, including the use of remotely sensed information in resource management.

MARS 3105 Coastal Oceanography & Sediment Dynamics 
6 credit points. Dr Michael Hughes. Session: 2. Classes: (weeks 7 13) 12 hrs les & prac/wk, one weekend excursion. Prerequisite: MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study or CIVL 2409. Prohibition: May not be counted with GEOI 3104. Assessment: Assignments, 2hr exam.

The scope of this unit of study is intended to have wide appeal: encompassing students with interests ranging from Earth systems modelling through to managing marine environments. You will learn about the fundamental principles that govern fluid and sediment movement in coastal waters, develop computational analysis and modelling skills that enable you to solve practical problems, and explore the wider application of this knowledge and skills base to environmental issues in the Australian region.

The lecture program addresses a range of physical processes relating to waves, tides, nearshore currents, and their combined influence on coastal sediment transport. The practical program provides hands on experience with coastal oceanographic data collection, and the use of a range of computational analysis and modelling techniques. The practical exercises use real data sets collected during recent research programs, and address issues specific to Australia’s coastal seas.

MARS 3106 Physical Marine Habitat 
6 credit points. A/Prof Jock Keene. Session: 2. Classes: (weeks 7 13) 12 hrs les & prac/wk, one weekend excursion. Prerequisite: MARS (2001 and 2002) or 16 credit points of Intermediate Science including at least 8 credit points from Geology or Geography units of study. Assessment: Assignments, presentations, 2 hr exam.

The aim of this unit of study is to provide the student with skills to analyse sea floor environments and their respective physical, chemical, and biological features. Marine survey data sets and computer simulation, including 3D VisLab facilities, will be used to interpret the sea floor. Students will develop skills to analyse remote sensing images (sonar, swath mapping) of the sea floor and seismic reflection profiles of the subsea floor. The practical content of the course will develop student’s skills in field experimentation and sampling, and the interpretation of physical processes from the study of sedimentary textures and structures. Samples from the shelf, slope, and deep sea will enable the students and animals in modifying sediment texture and composition. Ocean Drilling Program data will be used to show how and why sedimentary environments have changed through time, particularly the past 100 million years. In seminars students will develop critical analysis skills and presentation skills. The assessment will be based on participation in field work, an assignment to be completed during the field school, and an examination on the first day of the course. The Coral Reef Ecosystems will be offered each year, together with two to three of the other units. The prerequisites for all units will be the successful completion of the first year of the B.Sc. (Marine Science) course or equivalent, and the qualifying course MARS 2003.

Students may enrol in these units in academic year 2 and year 3 as part of the BSc(Marine Science). In order to major in Tropical Marine Science, students must successfully complete at least 3 and no more than 5 of the NTMP units of study.

Students enrolling in these units of study will be selected from the three participating Universities, as well as some overseas Study Abroad students. Preference will however be given to students enrolled in the program at the three participating universities. Owing to the size of facilities and accommodation at the island research stations all units will have a quota with entry based on merit. For further information on the availability and timing of these units please refer to the Web site: www.usyd.edu.au/marine.

NTMP 3001 Coral Reef Ecosystems 
6 credit points. Session: 2. Classes: Fieldwork, 80 hours block mode. Assumed knowledge: General concepts in Biology. Prerequisite: MARS (2003 and 2001) plus 16 credit points from Intermediate Science units of study. Assessment: Report. NB: Department permission required for enrolment. Coral Reef Ecosystems is an intensive unit that will be held at either the Heron Island or One Tree Island Tropical Research Stations on the Great Barrier Reef. The unit focuses on the dominant taxa in reef environments ad linkages between them. Emphasis is given to corals, other reef associated invertebrates (eg, Echinoderms and plankton) and fishes. Ecological and physiological aspects of key organisms are explored. Aspects covered include: distribution of corals; coral bleaching; coral symbionts and the health of the corals based on photosynthetic activity; predation on plankton; the input of plankton to reefs; and, the role of fishes in reef environments.
NTMP 3002  Marine Biotechnology
6 credit points. Session: 1. Classes: Fieldwork, 80 hours block mode.
NB: Department permission required for enrolment.
Marine Biotechnology is an intensive unit that will be held at the Heron Island Tropical Research Station on the Great Barrier Reef. The unit focuses on novel attributes of coral reef environments that are the basis of an expanding industry of biotechnology. Marine Biotechnology is the application of knowledge of reef based life to improve our quality of life. Emphasis is given to the abilities of corals and other reef associated organisms (eg, Sponges) to protect themselves against the sun, repel and/or destroy non self cells, and to immunise themselves against some diseases. Aspects covered include: collection of organisms; field experiments; and, molecular and genetic techniques to separate and identify 'useful proteins'.

NTMP 3003  Fisheries Biology and Management
6 credit points. Session: 2. Classes: Fieldwork, 80 hours block mode.
NB: Department permission required for enrolment.
Fisheries Biology and Management is an intensive unit that will be held at the tropical research station on Orpheus Island in the Great Barrier Reef. The unit focuses on approaches to quantitative fisheries biology in tropical marine environments. Emphasis is given to sampling design and hypothesis testing, underwater visual census surveys, fishery surveys, assessments of habitat types, and tagging and trapping of organisms. Most field aspects will be covered while diving and data storage will be dealt with at the end of each day. The assessment will focus on the manipulation of data and reporting.

NTMP 3004  Aquaculture
6 credit points. Session: 2. Classes: Fieldwork, 80 hours block mode.
NB: Department permission required for enrolment.
Aquaculture is an intensive unit that will be held at the tropical research station on Orpheus Island in the Great Barrier Reef. The unit focuses on approaches to aquaculture in tropical marine environments. Emphasis is given to aquaculture of tropical invertebrates (especially bivalves and clams) and fishes. Some aspects of the unit may also be done using the aquarium system on campus at James Cook University. Aspects covered include: the design of aquaculture facilities; water quality; rearing of algae; rearing of planktonic food; stocking densities; and, growth and genetics of the target species.

NTMP 3005  Coastal Management
6 credit points. Session: 2. Classes: Fieldwork, 80 hours block mode.
NB: Department permission required for enrolment.
This unit examines the impacts of human activities on coastal and marine environments. It explores the complex relationships among the ecological and social values of these environments and outlines strategies and tools for their management. This is an intensive unit that will be held at the Moreton Bay Research Station.

NTMP 3006  Coastal Oceanography
6 credit points. Session: 1. Classes: Fieldwork, 80 hours block mode.
NB: Department permission required for enrolment.
Coastal Oceanography is an intensive unit that will be held at the tropical research station on North Stradbroke Island in the Great Barrier Reef. The unit focuses on approaches to studying the physical and biological attributes of coastal and pelagic environments. Emphasis is given to measuring horizontal and vertical attributes of the water column (eg, Salinity and temperature) as well as the composition of planktonic assemblages from low salinity waters to the shelf break. Aspects covered include: the use of physical oceanographic equipment (static sampling and logger); analyses of nutrients; and, the use of plankton nets.
MATH 1011 Life Sciences Calculus

MATH 1011 is designed to provide calculus for students of the life sciences who do not intend to undertake higher year mathematics and statistics.

This unit of study looks at the fitting of data to various functions, introduces finite difference methods, and demonstrates the use of calculus in optimisation problems. It extends differential calculus to functions of two variables and develops integral calculus, including the definite integral and multiple integrals.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks
As set out in the Junior Mathematics Handbook

MATH 1012 Life Sciences Algebra

MATH 1012 is designed to provide algebra for students of the life sciences who do not intend to undertake higher year mathematics and statistics.

This unit of study introduces matrices, systems of linear equations and linear programming and counting techniques.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks
As set out in the Junior Mathematics Handbook

MATH 1013 Differential and Difference Equations

MATH 1013 is designed to provide the theory of difference and differential equations for students of the life sciences who do not intend to undertake higher year mathematics and statistics.

This unit of study introduces matrices, systems of linear equations and linear programming and counting techniques.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks
As set out in the Junior Mathematics Handbook

MATH 1015 Life Science Statistics
3 credit points. Session: 1. Summer. Classes: 2 lec & 1 tut/wk. Assumed knowledge: HSC Mathematics. Prohibition: May not be counted with MATH (1005 or 1905) or STAT (1021 or 1022) or ECMT Junior units of study. Assessment: One 1.5 hour examination, assignments and quizzes.

MATH 1015 is designed to provide a thorough preparation in statistics for students of the Life Sciences. It offers a comprehensive first introduction to data analysis, probability and sampling, inference including t tests, confidence intervals and chi squared goodness of fit tests.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks
As set out in the Junior Mathematics Handbook

Mathematics & Statistics Normal units of study
Normal units of study are designed for students who have both the necessary background and the interest in mathematics and who need to study mathematics beyond Junior units of study in order to satisfy their own aspirations or degree requirements.

There are comprehensive details of these units of study in the Junior Mathematics Handbook, available from the School at the time of enrolment.

Assumed knowledge
For the units MATH 1001, MATH 1002 and MATH 1004, knowledge equivalent to the HSC Mathematics Extension 1 course is assumed. The assumed knowledge for MATH 1005 is HSC 2 unit Mathematics. For MATH 1003 the assumed knowledge is MATH 1001 or HSC Mathematics Extension 2.

Students who have a very good result in the equivalent of the HSC 2 unit course are encouraged to enrol in the Normal units of study but should discuss their plans with a Mathematics adviser.

Relation to other units of study and recommendations
Students should take at least two units of study in each semester in order to meet the minimum requirement of 12 credit points of Mathematics in the BSc award course. The usual enrolment for Normal level students is in the three units MATH 1001, MATH 1002, MATH 1003 and (at least) one of MATH 1004 and MATH 1005. Passes in Junior units of study at this level qualify students to proceed to Intermediate units of study in mathematics and statistics. Students should note however that some Intermediate units of study in both mathematics and statistics require specific Junior units of study to be passed as prerequisites. Students obtaining a Credit or better in Normal units of study are encouraged to enrol in other Advanced units of study.
Mathematics and Statistics at the Advanced level.

Mathematics and Statistics require specific Junior units of study Mathematics and Statistics at the Normal level. It should qualify students to proceed to Intermediate units of study in Engineering.

This unit provides an introduction to fundamental aspects of discrete mathematics, which deals with "things that come in chunks that can be counted." It focuses on the enumeration of sets of objects, viz. Catalan numbers. Topics include sets and functions, counting principles, Boolean expressions, mathematical induction, generating functions and linear recurrence relations, graphs and trees.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks

As set out in the Junior Mathematics Handbook

MATH 1004 Discrete Mathematics


MATH 1004 is designed to provide a thorough preparation for further study in Mathematics. It is a core unit of study providing three of the twelve credit points required by the Faculty of Science as well as a Junior level requirements in the Faculty of Engineering.

This unit offers a comprehensive introduction to data analysis, probability, sampling, and inference including tests, confidence intervals and chi squared goodness of fit tests.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks

As set out in the Junior Mathematics Handbook

MATH 1005 Statistics

Assumed knowledge: HSC Mathematics. Prohibition: May not be counted with MATH (1905 or 1015) or ECMT Junior units of study or STAT (1021 or 1022). Assessment: One 1.5 hour examination, assignments and quizzes.

MATH 1005 is designed to provide a thorough preparation for further study in mathematics and statistics. It is a core unit of study providing three of the twelve credit points required by the Faculty of Science as well as a Junior level requirement in the Faculty of Engineering.

This unit provides an introduction to fundamental aspects of discrete mathematics, which deals with "things that come in chunks that can be counted." It focuses on the enumeration of sets of objects, viz. Catalan numbers. Topics include sets and functions, counting principles, Boolean expressions, mathematical induction, generating functions and linear recurrence relations, graphs and trees.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks

As set out in the Junior Mathematics Handbook

MATH 1006 Discrete Mathematics (Advanced)


MATH 1006 is designed to provide a thorough preparation for further study in mathematics and statistics. It is a core unit of study providing three of the twelve credit points required by the Faculty of Science as well as a Junior level requirement in the Faculty of Engineering.

This unit provides an introduction to fundamental aspects of discrete mathematics, which deals with "things that come in chunks that can be counted." It focuses on the enumeration of sets of objects, viz. Catalan numbers. Topics include sets and functions, counting principles, Boolean expressions, mathematical induction, generating functions and linear recurrence relations, graphs and trees.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks

As set out in the Junior Mathematics Handbook

MATH 1901 Differential Calculus (Advanced)


MATH 1901 is designed to provide a thorough preparation for further study in mathematics and statistics. It is a core unit of study providing three of the twelve credit points required by the Faculty of Science as well as a Junior level requirement in the Faculty of Engineering.

This unit of study parallels the normal unit MATH 1001 but goes more deeply into the subject matter and requires more mathematical sophistication.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks

As set out in the Junior Mathematics Handbook

MATH 1902 Linear Algebra (Advanced)


MATH 1902 is designed to provide a thorough preparation for further study in mathematics and statistics. It is a core unit of study providing three of the twelve credit points required by the Faculty of Science as well as a Junior level requirement in the Faculty of Engineering.

This unit of study parallels the normal unit MATH 1002 but goes more deeply into the subject matter and requires more mathematical sophistication.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks

As set out in the Junior Mathematics Handbook

MATH 1903 Integral Calculus and Modelling (Advanced)

3 credit points. Session: 2. Classes: 2 lec & 1 tut/wk. Assumed knowledge: HSC Mathematics Extension 2 or result in Band E4 of HSC Mathematics Extension 1. Prohibition: May not be counted with MATH (1003 or 1013 or 1907). Assessment: One 1.5 hour examination, assignments and quizzes.

MATH 1903 is designed to provide a thorough preparation for further study in mathematics and statistics. It is a core unit of study providing three of the twelve credit points required by the Faculty of Science as well as a Junior level requirement in the Faculty of Engineering.

This unit of study parallels the normal unit MATH 1003 but goes more deeply into the subject matter and requires more mathematical sophistication.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks

As set out in the Junior Mathematics Handbook

MATH 1904 Discrete Mathematics (Advanced)


MATH 1904 is designed to provide a thorough preparation for further study in mathematics and statistics. It is a core unit of study providing three of the twelve credit points required by the Faculty of Science as well as a Junior level requirement in the Faculty of Engineering.

This unit of study parallels the normal unit MATH 1004 but goes more deeply into the subject matter and requires more mathematical sophistication.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks

As set out in the Junior Mathematics Handbook

MATH 1905 Statistics (Advanced)

3 credit points. Session: 2. Classes: 2 lec & 1 tut/wk. Assumed knowledge: HSC Mathematics Extension 2 or result in Band E3 or better of HSC Mathematics Extension 1. Prohibition: May not be counted with
MATH 1905 is designed to provide a thorough preparation for further study in mathematics and statistics. It is a core unit of study providing three of the twelve credit points required by the Faculty of Science as well as a Junior level requirement in the Faculty of Engineering.

This Advanced level unit of study parallels the normal unit MATH 1005 but goes more deeply into the subject matter and requires more mathematical sophistication.

There are comprehensive details of this unit of study in the Junior Mathematics Handbook distributed at the time of enrolment.

Textbooks
As set out in the Junior Mathematics Handbook

MATH 1906 Mathematics (Special Studies Program) A
3 credit points. Session: 1. Classes: 2 lec, 1 sem, 1 tut wk.
Prerequisite: UAI of at least 98.5 and an excellent school record in Mathematics. Students will cover the material in MATH 1901 Differential Calculus (Advanced). In addition there will be a selection of special topics, which are not available elsewhere in the Mathematics and Statistics program.

There are comprehensive details of this unit of study in the Junior mathematics Handbook distributed at the time of enrolment.

MATH 1907 Mathematics (Special Studies Program) B
3 credit points. Session: 2. Classes: 2 lec, 1 sem & 1 tut wk.
Prerequisite: Distinction in MATH 1906; by invitation. Prohibition: May not be counted with MATH (1001 or 1011 or 1901). Assessment: One 1 hr exam, assignments, classwork.
NB: Department permission required for enrolment.

This is an Advanced unit of study. Entry to Mathematics (Special Studies Program) A is restricted to students with an UAI of 98.5 and an excellent school record in Mathematics. Students will cover the material in MATH 1901 Differential Calculus (Advanced). In addition there will be a selection of special topics, which are not available elsewhere in the Mathematics and Statistics program.

There are comprehensive details of this unit of study in the Junior mathematics Handbook distributed at the time of enrolment.

Mathematics Intermediate units of study
The School of Mathematics provides a range of Intermediate units of study, each worth 4 credit points covering a variety of topics in Pure and Applied Mathematics. A normal Intermediate load in a discipline is 16 credit points and this is the minimum that should be undertaken by anyone intending to specialise in Senior mathematics.

The units of study are taught at either the Normal or the Advanced level. Entry to an Advanced unit of study usually requires a Credit or better in a Normal level prerequisite or a Pass in an Advanced level prerequisite.

For ease of overview the units of study are arranged under Pure, for students wishing to specialise in Pure Mathematics, and Applied, for those wishing to specialise in Applied Mathematics. Several units of study are suitable for either. Details of each unit of study appear below whilst full details of unit of study structure, content and examination procedures are provided in the Second Year Mathematics Handbook available from the School at the time of enrolment.

Pure units of study (each 4 credit points)

- Analysis MATH 2007
- Analysis (Advanced) MATH 2907
- Fourier Series and Differential Equations MATH 2005
- Graph Theory MATH 2009
- Introduction to Modern Algebra MATH 2918
- Introduction to Modern Algebra (Advanced) MATH 2918
- Introduction to Nonlinear Systems and Chaos MATH 2906
- Linear Algebra (Advanced) MATH 2902
- Matrix Applications MATH 2002
- Vector Calculus and Complex Variables MATH 2001

- Vector Calculus and Complex Variables (Advanced) MATH 2901

Applied units of study (each 4 credit points)
- Financial Mathematics MATH 2033
- Financial Mathematics (Advanced) MATH 2933
- Fourier Series and Differential Equations MATH 2005
- Introduction to Mathematical Computing MATH 2004
- Introduction to Mathematical Computing (Advanced) MATH 2903
- Introduction to Nonlinear Systems and Chaos MATH 2006
- Introduction to Nonlinear Systems and Chaos (Advanced) MATH 2906
- Lagrangian Dynamics MATH 2004
- Lagrangian Dynamics (Advanced) MATH 2904
- Mathematical Methods (Advanced) MATH 2905
- Matrix Applications MATH 2002
- Optimisation MATH 2010
- Vector Calculus and Complex Variables MATH 2001
- Vector Calculus and Complex Variables (Advanced) MATH 2901

Relation to other units of study and recommendations
In general, 2 units of study (8 credit points) of Intermediate mathematics are needed to progress to a Normal Senior mathematics unit of study, and 3 units of study (12 credit points) of Intermediate mathematics to progress to an Advanced Senior unit of study.

If your major interest is in mathematics, then you are strongly encouraged to enrol in 8 units of study (32 credit points) in Intermediate mathematics. If you are considering doing Honours in mathematics, they should include some Advanced units of study.

Students intending to specialise in Applied Mathematics should choose at least 4 units of study including MATH 2001 or 2901, and MATH 2002 or 2902. Other recommended choices would be 2007 or 2907 and 2008 or 2918. The standard combination of units of study for students wishing to take a full load of Intermediate Applied Mathematics is as follows:

At Advanced level: 2901 + (2903 or 2906) + 2905 + 2904.

Students intending to specialise in Pure Mathematics should choose at least 4 units of study from the Pure list above and should include MATH 2002 or 2902 and 2008 or 2918. Other recommended choices would be 2007 or 2907. The standard combination of units of study for students wishing to take a full load of Intermediate Pure Mathematics is as follows:

At Advanced level: 2901 + 2902 + 2907 + 2918.

Computer Science students may like to include MATH 2009 among their choices.

Physics students would be well advised to choose MATH 2001 or 2901, and 2005 or 2905.

Prospective teachers of mathematics should consider MATH 2001,2009, and 2007 or 2907.

MATH 2001 Vector Calculus and Complex Variables
4 credit points. Session: 1, Summer. Classes: 3 lec & 1 tut wk.
Prerequisite: MATH (1001 or 1901 or 1906) and (1002 or 1902) and (1003 or 1903 or 1907). Prohibition: May not be counted with MATH 2901. Assessment: One 2hr exam, assignments, tutorial quizzes.

This unit of study has two major components: firstly, a study of functions of several real variables from a vector point of view, and secondly an introduction to functions of a complex variable. Vector calculus topics include line integrals and multiple integrals, surface integrals, change of variables, theorems of Green, Gauss and Stokes with their physical significance. Complex variables topics include definitions and properties of complex functions, differentiability, Cauchy-Riemann conditions and analyticity, contour integration and residues.

MATH 2002 Matrix Applications
4 credit points. Session: 1, Summer. Classes: 2 lec, 1 tut & 1 computer lab wk.
Prerequisite: MATH (1002 or 1902) or Distinction in MATH 1012.
Prohibition: May not be counted with MATH 2002. Assessment: One 2hr exam, assignments, tutorial quizzes.

This unit is a continuation of the first year unit MATH 1002. It starts with an examination of the computational efficiency of various methods of solving linear systems, then discusses LU factorisation of a matrix and partial pivoting. The first year work on vectors and matrices is put in a more general setting by developing vector space theory (axioms of a vector space, subspace, linear independence and basis, rank and nullity, linear
transformations, eigenvalues and eigenvectors, diagonalisation, orthogonal diagonalisation). These theoretical topics are illustrated by applications, which include fitting polynomials to data sets, applying rotations, reflections, shears and scalings to the plane, solving linear recurrence relations and systems of linked differential equations by diagonalisation, optimising constrained quadratic forms using orthogonal diagonalisation and developing numerical methods of finding eigenvalues and eigenvectors.

MATH 2003 Introduction to Mathematical Computing
Prerequisite: MATH (1001 or 1901) and (1002 or 1902) and (1003 or 1903 or 1907). Prohibition: May not be counted with MATH 2903. Assessment: One 2 hr exam, assignments, quizzes, computer lab participation.

This unit of study consists of two segments, one devoted to computer simulation and modelling and the other to applied computer algebra. In the first, mathematical models will be set up for a range of problems, such as the minimisation of factory pollutants, determination of drug regimes for a diabetic, the modelling of stars, biological patterns and chaos. Students will use computer simulations to explore solutions. The emphasis will be on modelling, rather than programming. The second segment gives hands on experience with a computer algebra program.

Students work through a set of interactive lessons showing them the practical applications of such programs. Students are required to write programs to solve applied mathematical problems that would be intractable if attempted solely by pen and paper.

MATH 2004 Lagrangian Dynamics
4 credit points. Session: 2. Classes: 2 lec, 1 prac & 1 tut/wk.
Prerequisite: MATH 2001 or 2901. Prohibition: May not be counted with MATH 2904. Assessment: 2 hr exam, assignments.

This unit of study provides a first course in dynamics from a higher standpoint. It demonstrates that Newton's laws of motion can be derived from a variational principle. The advantage offered by the Lagrangian formulation in solving for the motion is emphasised. The applications, which include planetary dynamics, illustrate the basic concepts of Newtonian dynamics such as conservation laws. Small oscillations about equilibrium states are treated as part of linear stability theory.

MATH 2005 Fourier Series & Differential Equations
4 credit points. Session: 2. Summer. Classes: 3 lec & 1 tut/wk.
Prerequisite: MATH (1001 or 1901) and MATH (1002 or 1902) and MATH (1003 or 1903 or 1907). Prohibition: May not be counted with MATH 2005. Assessment: One 2 hr exam, assignments, quizzes.

In the Fourier Series segment, periodic phenomena such as wave motion are given a systematic treatment. The basic problem is to represent a periodic function of one variable as the sum of an infinite series of sines and cosines. The theory has extensive applications in engineering, acoustics, internal and surface waves in fluids, etc., as well as in pure mathematics. Then a review of first order equations is followed by a systematic treatment of second order equations using the methods of variation of parameters, undetermined coefficients and the theory of Laplace Transforms. Linear systems of differential equations are treated using matrices and vectors. The final part of the unit of study deals with partial differential equations with the emphasis on the application of the method of separation of variables to first and second order linear equations and on Laplace transforms for initial value problems.

MATH 2006 Nonlinear Systems and Chaos
4 credit points. Session: 2. Classes: 2 lec, 1 tut & 1 computer tut/wk.
Prerequisite: MATH (1001 or 1901) and (1002 or 1902) and (1003 or 1903 or 1907) or (Credit in MATH 1011 and 1012 and 1013). Prohibition: May not be counted with MATH 2906. Assessment: 2 hr exam, assignments, computer lab participation.

This unit of study aims to provide an introduction to the simplest cases of nonlinear dynamics and chaos. Students will use computer algebra. In the first, mathematical models will be set up for a range of problems, such as the minimisation of factory pollutants, determination of drug regimes for a diabetic, the modelling of stars, biological patterns and chaos. Students will use computer simulations to explore solutions. The emphasis will be on modelling, rather than programming. The second segment gives hands on experience with a computer algebra program.

Students work through a set of interactive lessons showing them the practical applications of such programs. Students are required to write programs to solve applied mathematical problems that would be intractable if attempted solely by pen and paper.

Mathematics and Statistics
Mathematics and Statistics

UNDERGRADUATE TABLES AND UNITS OF STUDY

differential equations, advanced integration and summation techniques, linear and dynamic programming, method of Lagrange multipliers, calculation of distributions and expectations of random variables, linear algebra methods, analysis of simple random walks.

MATH 2901 Vector Calculus and Complex Var (Adv)
4 credit points. Session: 1. Classes: 3 lec & 1 tut/wk. Prerequisite: MATH 1901 or 1906 or Credit in 1001 and (1902 or Credit in 1002) and (1903 or 1907 or Credit in 1003). 

The aim of the unit of study is to provide a solid grounding to the introduction to functions of one complex variable. These subjects are fundamental to many areas of Pure and Applied Mathematics, and are essential for students in Science and Engineering courses. Topics in functions of several variables include the following: local maxima and minima, Lagrange multipliers, inverse function theorem, Jacobians, double integrals, change of variables, triple integrals, line integrals, Green’s theorem, surface integrals, Stokes’ theorem, triple integrals, Gauss’ Theorem, multiple integrals. Elementary complex variable theory includes complex line integrals, Cauchy’s Theorem and Integral Formula, residues and real improper integrals.

MATH 2902 Linear Algebra (Advanced)
4 credit points. Session: 1. Classes: 3 lec & 1 tut/wk. Prerequisite: 12 credit points of Junior Mathematics, including MATH 1902 or Credit in 1002. 

This unit of study is primarily concerned with linear transformations. Abstract vector spaces are introduced as the correct context in which to discuss linear transformations, and the basic structure theorems for finite dimensional vector spaces are proved. The connections between matrices and linear transformations are investigated. Determinants, introduced in first year, are revisited and investigated further. Eigenvalues and eigenvectors are discussed and their usefulness for diagonalizing linear transformations is shown. Diagonalisation techniques are applied to solve simple examples of simultaneous differential equations. A partial treatment of the Jordan normal form may be included if time allows.

MATH 2903 Intro to Mathematical Computing (Adv)
4 credit points. Session: 1. Classes: 2 lec & 2 computer lab/wk. Prerequisite: MATH 2901 or Credit in MATH 1901. 

The content of this unit of study parallels that of MATH 2002.

MATH 2904 Lagrangian Dynamics (Advanced)
4 credit points. Session: 1. Classes: 3 lec & 1 tut/wk. Prerequisite: MATH 2901 or Credit in MATH 1901. 

This unit of study is essentially an advanced version of MATH 2002.

MATH 2905 Mathematical Methods (Advanced)
4 credit points. Session: 1. Classes: 3 lec & 1 tut/wk. Prerequisite: MATH 2901 or Credit in MATH 1901. 

The content of this unit of study parallels that of MATH 2004.

MATH 2906 Nonlinear Systems and Chaos (Advanced)
4 credit points. Session: 2. Classes: 2 lec, 1 tut & 1 computer lab/wk. Prerequisite: MATH (1901 or 1906 or Credit in 1001) and (1902 or Credit in 1002) and (1903 or 1907 or Credit in 1003). 

The aim of the unit of study is to provide a solid grounding to the general theory of infinite processes. We study in a concrete way the limiting behaviour of sequences, series and functions via interesting and enduring examples from classical analysis. This background is essential to understanding the more abstract theories which are studied in third year and beyond, and their myriad of applications in Science, Engineering, Statistics and Economics. Topics will include convergence of sequences and series, power series of real and complex variables, uniform convergence of sequences and series of functions, and Fourier series with applications.

MATH 2918 Introduction to Modern Algebra (Adv)
4 credit points. Session: 2. Classes: 3 lec & 1 tut/wk. Prerequisite: MATH 2902. 

Assessment: One 2hr exam, assignments.

MATH 2933 Financial Mathematics 1 (Advanced)
4 credit points. Session: 1. Classes: 2 lec & 1 tut & 1 comp lab/wk. Prerequisite: MATH (1901 or 1906 or Credit in 1001) and (1902 or Credit in 1002) and MATH (1903 or 1907 or Credit in 1003) and MATH (1905 or Credit in 1005). 

Assessment: 2hr exam, quizzes, assignment, computer project.

The content of this unit of study parallels that of MATH 2303, but students will be required to undertake all problem solving and assessment tasks at a more advanced level. Some additional topics may also be included.

Statistics Intermediate units of study

The School of Mathematics and Statistics provides Intermediate units of study, each worth 4 credit points, in Statistics. A normal Intermediate load in a discipline is 16 credit points and students intending to specialise in Senior Statistics should take the 4 units of study (16 credit points) of Intermediate Statistics.

Some topics are offered at Normal and Advanced levels and may not be counted together.

The units of study (each 4 credit points) are listed below:

- February Semester
  - Statistical Distributions (Advanced) STAT 2901
  - Introduction to Probability (Advanced) STAT 2901
  - Data Analysis STAT 2002
- July Semester
  - Estimation Theory STAT 2003
  - Hypothesis Testing STAT 2004

Further information follows, whilst details of units of study structure, content and assessment procedures are provided in the Intermediate Year unit of study Handbook available from the School at the time of enrolment.

Relation to other units of study and recommendations

Students should note that all Senior Statistics units of study have statistics prerequisites and some require MATH 1003 or MATH 2001 or MATH 2901. Mathematics 2002 or 2902 is also desirable, in addition.

If your major interest is statistics, then you are encouraged to enrol in 4 units of study (16 credit points) in Intermediate Statistics. If you are considering doing Honours in Statistics, these units of study should include some Advanced units of study, and choices from Intermediate Mathematics should include at least Mathematics 2001 or 2901 and Mathematics 2002 or 2902.

If you do not intend to major in Statistics but want a solid introduction to Applied Statistics, you should take STAT 2002 in your first semester and STAT 2901 in your second semester. This allows you the option of continuing with STAT 3002 and STAT 3004 at Senior level.

STAT 2001 Statistical Distributions
4 credit points. Session: 1. Classes: 2 lec & 1 tut/wk. Prerequisite: STAT 1001 and STAT 1002.

Assessment: 2hr exam, assignments, tutorial participation.
Distribution theory for discrete and continuous random variables, providing the probabilistic basis for the treatment of samples.

**STAT 2002 Data Analysis**
4 credit points. *Session: 1. Classes: 2 lec & 1 tut & 1 computer lab/wk.*
*Prerequisite: MATH 1005 or 1905 or 2015 (or STAT 1021 for Arts students).* *Assessment: 2hr exam, quizzes, tutorial participation, one 1 hr computer practical exam.*
Exploratory data analysis, simulation, bootstrapping and an introduction to the use of a statistical computing package.

**STAT 2003 Estimation Theory**
4 credit points. *Session: 2. Classes: 2 lec & 1tut/wk.* *Prerequisite: STAT 2001 or 2901.* *Prohibition: May not be counted with STAT 2903.* *Assessment: 2hr exam, assignments.*
Bivariate distribution theory, estimation, dependence, maximum likelihood estimation and sampling theory.

**STAT 2004 Hypothesis Testing**
4 credit points. *Session: 2. Classes: 2 lec & 1 tut & 1 computer lab/wk.*
*Prerequisite: STAT 2002. Assessment: 2hr exam, quizzes, computer lab participation, one 1 hr computer practical exam.*
Tests of hypotheses about Normal models, including Analysis of Variance, non parametric tests, and regression theory.

**STAT 2901 Introduction to Probability (Advanced)**
*Prerequisite: MATH (1903 or 1907 or Credit in 1003) and MATH (1905 or Credit in 1005). Prohibition: May not be counted with STAT 2001.* *Assessment: 2hr exam, assignments.*
Topics in STAT 2001 are treated at an Advanced level, with extensions. Introduction to the use of generating functions.

**STAT 2903 Estimation Theory (Advanced)**
*Prerequisite: STAT 2901 or Credit in STAT 2901.* *Prohibition: May not be counted with STAT 2903.* *Assessment: 2hr exam, assignments.*
Topics in STAT 2003 are treated at an Advanced level, with extensions.

**Mathematics Senior units of study**
The School of Mathematics and Statistics provides a range of Senior units of study, each worth 4 credit points, covering a wide variety of topics in Pure and Applied Mathematics. Students may take up to 12 units of study (48 credit points) or more at Senior level. Those intending to proceed to Honours or simply to major in mathematics must take a minimum of 6 units of study (24 credit points) from the Science Discipline Area of Mathematics.

The units of study are taught at either the Normal or the Advanced level. Entry into the advanced units of study is restricted to students who have met various prerequisite conditions. Students should consult the list below for requirements of individual Advanced units of study, and seek advice from the Senior year coordinator.

The School encourages students undertaking an Advanced program to choose 3 or 4 units of study at the Advanced level. Students wishing to keep open the possibility of undertaking an Honours year are strongly advised to consult a Senior year adviser about their choice of units of study.

For ease of overview, the units of study are arranged under Pure, for students wishing to specialise in Pure Mathematics, and Applied, for those wishing to specialise in Applied Mathematics. Several units of study are suitable to either. Details for each unit of study appear below, whilst full details of the unit of study structure, content and assessment procedures are provided in the Senior units of study Handbook, available from the School at the time of enrolment.

It should be noted that not all units of study are offered each year and any unit may be withdrawn due to resources constraints.

**Pure units of study (each 4 credit points)**

**Semester 1**
- Algebra I (Advanced) MATH 3902
- Categories and Computer Science (Advanced) MATH 3905
- Complex Variable (Advanced) MATH 3904
- Differential Geometry (Advanced) MATH 3903
- Elementary Cryptography & Protocols MATH 3024
- History of Mathematical Ideas MATH 3004
- Logic MATH 3005
- Metric Spaces (Advanced) MATH 3901
- Ordinary Differential Equations MATH 3003
- Rings and Fields MATH 3002
- Topology MATH 3001

**Semester 2**
- Algebra II (Advanced) MATH 3907 (even years only)
- Coding Theory MATH 3007
- Combinatorics (Adv) MATH 3912
- Financial Mathematics 2 MATH 3015
- Financial Mathematics 2 (Advanced) MATH 3933
- Geometry MATH 3006
- Group Representation Theory (Advanced) MATH 3906 (odd years only)
- Information Theory MATH 3010
- Lebesgue Integration & Fourier Analysis (Adv.) MATH 3909
- Nonlinear Analysis (Advanced) MATH 3908
- Number Theory MATH 3009
- Public Key Cryptography (Advanced) MATH 3925
- Real Variables MATH 3008

**Applied units of study (each 4 credit points)**

**Semester 1**
- Differential Geometry (Advanced) MATH 3903
- Fluid Dynamics (Advanced) MATH 3914
- History of Mathematical Ideas MATH 3004
- Mathematical Computing I (Advanced) MATH 3016
- Mathematical Computing II (Advanced) MATH 3017
- Partial Differential Equations and Waves MATH 3018
- Partial Differential Equations and Waves (Advanced) MATH 3921
- Signal Processing MATH 3019
- Signal Processing (Advanced) MATH 3919

**Semester 2**
- Coding Theory MATH 3007
- Financial Mathematics 2 MATH 3015
- Financial Mathematics 2 (Advanced) MATH 3933
- Hamiltonian Dynamics (Advanced) MATH 3917
- Information Theory MATH 3010
- Mathematical Methods (Advanced) MATH 3915
- Nonlinear Analysis (Advanced) MATH 3908
- Nonlinear Systems and Biomathematics MATH 3020
- Nonlinear Systems and Biomathematics (Advanced) MATH 3920

**Relation to other units of study and recommendations**
In general, 6 units of study (24 credit points) are required in order to major in Mathematics and a credit average is required to progress to an Honours year. Potential Honours students are strongly encouraged to include one or more Advanced level unit(s) of study and seek advice from a Senior year coordinator.

Students intending to major in Pure Mathematics should choose at least 6 units of study from the Pure list above; 3 units of study each semester is the normal choice. Intending Honours students are strongly encouraged to include Mathematics 3901 and 3902.

Students intending to major in Applied Mathematics should choose at least 6 units of study from the Applied list above. A double major would require a choice of 12 units of study from the lists above.

Particular combinations would be suitable for students with special interests.

**Computer Science students:** Mathematics 3001,3002 or 3902,3005,3903,3006,3007,3009,3010,3912,3015 or 3933, 3016 or 3916,3019 or 3919,3024,3925

**Engineering (BSc/BE) students:** Mathematics 3001 or 3901, 3003,3005,3019 or 3919,3903,3904,3007,3008,3010,3908, 3009,3015 or 3933,3016 or 3916,3018,3020 or 3920,3914, 3915,3917,3024,3025.

**Physics or Chemistry students:** Mathematics 3001 or 3901, 3002,3003,3914,3917,3903,3904,3006,3008,3009,3010, 3908,3009,3015 or 3933,3016 or 3916,3018,3019 or 3919,3020 or 3920,3906,3915.

Prospective teachers of Mathematics: Mathematics 3001 or 3901,3002,3003,300,3004,3005,3006,3007,3008,3009, 3010,3016 or 3916,3018,3019 or 3919,3020 or 3920. MATH 3001 Topology

*Prerequisite: 8 credit points of Intermediate Mathematics.*
*Assessment: May not be counted with MATH 3901. Assessment: One 2hr exam, assignments.*

Topology can be considered as a branch of geometry, and it has been called 'rubber sheet geometry', because it originated in the study of figures which are invariant under elastic deformations. It now forms a basic framework for fields such as functional analysis and nonlinear differential equations.

This unit of study covers a number of the more elementary aspects of both general and combinatorial topology. Topics
discussed include continuous mappings and homeomorphisms, compactness, and the combinatorial classification of surfaces.

**MATH 3002 Rings and Fields**
4 credit points. Session: 2 lec & 1 tut/wk. Prerequisite: 8 credit points of Intermediate Mathematics (strongly advise MATH 2002 or 2092, with 2008 or 2098). 

This unit of study is concerned primarily with the algebraic systems such as rings and fields, which are generalizations of familiar examples such as polynomials and real numbers. It generalizes familiar notions of divisibility, greatest common divisors and primality from the integers to other rings, and considers homomorphisms and quotient structures.

**MATH 3003 Ordinary Differential Equations**
4 credit points. Session: 2 lec & 1 tut/wk. Prerequisite: 8 credit points of Intermediate Mathematics (strongly advise MATH 2002 or 2092, with 2001 or 2091). 

This unit of study is an introduction to the theory of systems of ordinary differential equations. Such systems model many types of phenomena in Engineering, Biology and the physical sciences. The emphasis will be on finding explicit solutions, but instead on the qualitative features of these systems, such as stability, instability and oscillatory behaviour. The aim is to develop a good geometrical intuition into the behaviour of solutions to such systems. Some background in linear algebra, and familiarity with concepts such as limits and continuity, will be assumed.

**MATH 3005 Logic**
4 credit points. Session: 2 lec & 1 tut/wk. Prerequisite: (for all but BCST students) 8 credit points of Intermediate Mathematics; (for BCST students) 8 credit points of Intermediate Mathematics or 12 credit points of Junior Mathematics at Advanced level. 

This unit of study is mainly concerned with a general notion of computability, studied by means of Turing machines (simple abstract computers). In particular, it looks at some problems which cannot be solved by any computer. (Note: no experience of computers). In particular, it looks at some problems which cannot be solved by any computer. (Note: no experience of computers).

**MATH 3006 Geometry**
4 credit points. Session: 2 lec & 1 tut/wk. Prerequisite: 8 credit points of Intermediate Mathematics (strongly advise MATH 1902 or 1002). 

This unit of study is mainly concerned with a general notion of computability, studied by means of Turing machines (simple abstract computers). In particular, it looks at some problems which cannot be solved by any computer. (Note: no experience of computers).

**MATH 3008 Number Theory**
4 credit points. Session: 2 lec & 1 tut/wk. Prerequisite: 8 credit points of Intermediate Mathematics (strongly advise MATH 2001 or 2091 and MATH 3919). 

This unit of study is an introduction to elementary number theory, with an emphasis on the solution of Diophantine equations (that is, finding integer solutions to such equations as $x^2 + y^2 = z^2$). 

**MATH 3009 Information Theory**
4 credit points. Session: 2 lec & 1 tut/wk. Prerequisite: 8 credit points of Intermediate Mathematics (strongly advise MATH 2001 or 2091 and some probability theory). 

This unit of study is a general introduction to the ideas and applications of signal theory. The basic concept here is that of entropy, an idea which goes back more than a century to the work of Boltzmann. Interest in the concept was enormously increased by the work of Shannon in the late 1940s. He showed that entropy was a basic property of any (discrete) probability space, and established a fundamental relation between the entropy of a randomly varying signal and the maximum rate at which the signal could be transmitted through a communication line. Another interpretation of entropy is in terms of the financial value of information to a gambler. The unit of study covers applications in both areas; topics studied include data compression, gambling strategies and investment portfolios.

**MATH 3010 Partial Differential Equations**
4 credit points. Session: 2 lec & 1 tut/wk. Prerequisite: 8 credit points of Intermediate Mathematics and one of MATH 1001 or 1003 or 1901 or 1903 or 1906 or 1907. Prohibition: May not be counted with MATH 3919. 

This unit of study is mainly concerned with the general notion of computability, studied by means of Turing machines (simple abstract computers). In particular, it looks at some problems which cannot be solved by any computer. (Note: no experience of computers).
This unit of study is an introduction to the mathematical theory of Digital Signal Processing. It consists of both theory and application. A significant component of the unit of study involves computer exercises using MATLAB. Topics treated include analogue and digital signals, transforms, the spectral theory of digital signals, Fourier series and transforms. Applications include sampling and aliasing, filter design and the basics of image processing.

**Mathematics 3020 Nonlinear Systems and Biomathematics**

- **Credit Points:** 4
- **Session:** 2
- **Classes:** 2 lec & 1 tut/wk.
- **Prerequisite:** 8 credit points of Intermediate Mathematics (strongly advise MATH 2006 or 2906 or 2908 or 3003) and one of MATH (1001 or 1003 or 1901 or 1903).
- **Prohibition:** May not be counted with MATH 3020.
- **Assessment:** One 2hr exam, assignments.

This unit of study is concerned with nonlinear ordinary and partial differential equations applied to biological systems. The applications come from predator-prey models of the transmission of diseases, chemical reactions, beating of the heart, neurons (nerve cells), and pattern formation. The emphasis is on qualitative analysis including phase plane methods, bifurcation theory and the study of limit cycles. The unit of study will include some computer simulations as illustrations.

**Mathematics 3024 Elementary Cryptography and Protocols**

- **Credit Points:** 4
- **Session:** 1
- **Classes:** 2 lec & 1 prac/wk.
- **Prerequisite:** 12 credit points of Intermediate Mathematics. Strongly advise MATH 2008 or 2908 or 2918.
- **Assessment:** One 2hr exam plus assignments.

Cryptography is the branch of mathematics that provides the techniques which enable confidential information to be transmitted over public networks. This unit introduces the student to cryptography, with an emphasis on the cryptographic primitives that are in most common use today. Following a review of classical cryptosystems, modern symmetric cryptosystems (chiefly DES) and non symmetric cryptosystems (chiefly RSA) will be studied. In the second part of the unit, these cryptographic primitives will be used to construct protocols for realising digital signatures, data integrity, identification, authentication and key distribution. An important feature of the course will be weekly exercises in practical cryptography using the Computer Algebra system Magma.

**Mathematics 3901 Metric Spaces (Advanced)**

- **Credit Points:** 4
- **Session:** 1
- **Classes:** 2 lec & 1 tut/wk.
- **Prerequisite:** 12 credit points of Intermediate Mathematics (strongly advise MATH 2907).
- **Prohibition:** May not be counted with MATH 3001.
- **Assessment:** One 2hr exam, assignments.

Topology, developed at the end of the 19th Century to investigate the subtle interaction of analysis and geometry, is now one of the basic disciplines of mathematics. A working knowledge of the language and concepts of topology is essential in fields as diverse as algebraic number theory and non linear analysis. This unit develops the basic ideas of topology using the example of metric spaces to illustrate and motivate the general theory. Topics covered include: Metric spaces, convergence, completeness and the contraction mapping theorem; Metric topology, open and closed subsets; Topological spaces, subspaces, product spaces; Continuous mappings and homeomorphisms; Compact spaces; Connected spaces; Hausdorff spaces and normal spaces.

**Mathematics 3902 Algebra I (Advanced)**

- **Credit Points:** 4
- **Session:** 1
- **Classes:** 2 lec & 1 tut/wk.
- **Prerequisite:** 12 credit points of Intermediate Mathematics (strongly advise MATH 2902).
- **Prohibition:** May not be counted with MATH 3002.
- **Assessment:** One 2hr exam, assignments.

In this unit the tools of modern algebra are developed as an introduction to Galois Theory, which deals with the solution of polynomial equations in one variable. The same tools provide an analysis of the classical problem of determining whether certain geometrical constructions, such as the trisection of a given angle, can be performed using only ruler and compasses. The unit begins with the definitions and basic properties of rings, homomorphisms and ideals, continues with an investigation of factorization in principal ideal domains such as the Gaussian integers and the ring of polynomials over a field, and concludes with a study of algebraic field extensions and their automorphisms.

**Mathematics 3903 Differential Geometry (Advanced)**

- **Credit Points:** 4
- **Session:** 1
- **Classes:** 2 lec & 1 tut/wk.
- **Prerequisite:** 12 credit points of Intermediate Mathematics (strongly advise MATH 2001 or 2901, with MATH 3001 or 3901).
- **Assessment:** One 2hr exam, assignments.

Differential Geometry is an important branch of mathematics in which one uses Calculus to study geometric objects, such as curves, surfaces and higher dimensional objects. It also has close connections with classical and modern physics. This unit of study covers elementary properties of curves and surfaces in R^3, following Do Carmo’s book, leading to the celebrated Gauss Bonnet Theorem. If time allows, either the language of differential forms will be introduced or some global theory of differential geometry will be developed.

**Mathematics 3904 Complex Variable (Advanced)**

- **Credit Points:** 4
- **Session:** 1
- **Classes:** 2 lec & 1 tut/wk.
- **Prerequisite:** 12 credit points of Intermediate Mathematics (strongly advise MATH 2001 or 2901, with MATH 3001 or 3901).
- **Assessment:** One 2hr exam, assignments.

This unit of study continues the study of functions of complex variables introduced in the Intermediate units of study (Mathematics 2001 or 2901) assuming some knowledge of algebra (for example, that covered in Mathematics 2008). It will be advantageous for students to also take either Mathematics 3901 Metric Spaces (Advanced), or Mathematics 3001 Topology if they intend to do this unit of study. The unit of study begins with a review of elementary properties of analytic functions, Cauchy’s integral formula, isolated singularities and the calculus of residues. This will be followed by selected topics from the theory of uniform convergence, entire functions, gamma function, zeta function, elliptic functions, harmonic functions, conformal mappings, Riemann surfaces.

**Mathematics 3906 Group Representation Theory (Advanced)**

- **Credit Points:** 4
- **Session:** 2
- **Classes:** 2 lec & 1 tut/wk.
- **Prerequisite:** 12 credit points of Intermediate Mathematics (strongly advise MATH 3902).
- **Assessment:** One 2hr exam, assignments.

NB: This unit is only offered in odd years only.

This topic is a natural extension of linear algebra combined with group theory. Groups occur naturally wherever there is symmetry of any kind; linear algebra is the fundamental tool of solving equations. Representation theory provides techniques for analysing symmetrical systems of equations. The central problem of the subject is the decomposition of a complicated representation into simple constituents. The remarkable theory of group characters, which provide the algebraic machinery for this decomposition, is the main topic of the unit of study.

**Mathematics 3908 Nonlinear Analysis (Advanced)**

- **Credit Points:** 4
- **Session:** 2
- **Classes:** 2 lec & 1 tut/wk.
- **Prerequisite:** 12 credit points of Intermediate Mathematics (strongly advise MATH 3901).
- **Assessment:** One 2hr exam, assignments.

The purpose of this unit is to give an introduction to some modern ideas in the study of nonlinear dynamical systems. We concentrate largely on one dimensional discrete systems. The dynamics of the apparently simple systems we study turn out to be remarkably complicated. We show how seemingly elementary nonlinear maps, such as quadratic maps, give rise to fractal sets. This leads into a discussion of concepts like topological conjugacy, symbolic dynamics, chaos theory, the Sarkovskii Theorem and, in particular, bifurcations of maps. We also study how period doubling bifurcations can lead to chaos, homeomorphisms of the circle and the rotation number. We give a more general discussion of the important topic of bifurcation theory.

**Mathematics 3909 Lebesgue Int and Fourier Analysis (Adv)**

- **Credit Points:** 4
- **Session:** 2
- **Classes:** 2 lec & 1 tut/wk.
- **Prerequisite:** 12 credit points of Intermediate Mathematics (strongly advise MATH 2907 and MATH 3901).
- **Assessment:** One 2hr exam, assignments.

Integration is a very useful tool in many areas of mathematics. Lebesgue’s theory of integration is the one used in most modern analysis, providing very general conditions under which integrals are defined. The theory is based on measure theory, which is a generalisation of the ideas of area and volume. Measure theory is also the foundation of probability theory, and is important for understanding many different subjects from quantum physics to financial mathematics. In this unit, measure theory is applied to the study of Fourier series and integrals. The first part deals with measure, outer measure, construction of measure and Lebesgue measure. The second part covers measurable functions, integration theory, Fatou’s lemma, dominated convergence theorem. The third part deals with product measure, convolution, Fourier transform and Fourier inversion. The additional topics expectation, Radon Nikodym derivative, and conditional probability may be covered, if time permits.
This course is an introduction to enumerative combinatorics. It begins with a study of some of the important numbers that arise in counting: binomial and multinomial coefficients, Stirling numbers, Fibonacci numbers, etc., in particular in the context of counting functions between finite sets, where functions and sets have special properties. The main tools useful in enumeration problems, including the principle of inclusion exclusion, generating functions, calculus of differences, are discussed. A feature of the course is a detailed account of Polyà's Theory of counting classes of objects possessing some symmetry, for example isomers in chemistry, or non isomorphic finite simple graphs.

MATH 3914 Fluid Dynamics (Advanced)
4 credit points. Session: 2. Classes: 2 lec & 1 tut/wk. Prerequisite: MATH 2905 or Credit in MATH 2005. Assessment: One 2hr exam, assignments.

This unit of study provides an introduction to fluid dynamics, starting with a description of the governing equations and the simplifications gained by using stream functions or potentials. It develops elementary theorems and tools, including Bernoulli's equation, the role of vorticity, Kelvin's circulation theorem and Helmholtz's theorem. Topics covered include viscous flows, boundary layers, potential theory and 2 D airfoils, and complex variable methods. The unit of study concludes with an introduction to hydrodynamic stability and the transition to turbulent flow.

MATH 3915 Mathematical Methods (Advanced)
4 credit points. Session: 2. Classes: 2 lec & 1 tut/wk. Prerequisite: MATH 2901 or 2905 or 2907 or 3921 or Credit in MATH 2005 or 3018. Assessment: One 2hr exam, assignments.

This unit of study begins with a review of analytic functions, complex integration and power series. These techniques are applied to the evaluation of real variable integrals and summation of series. The second part is a study of some of the special functions of mathematical physics in the real and complex domains. Examples include various hypergeometric functions and their connection with certain ordinary and partial differential equations, and also elliptic functions and their connection with the simple pendulum and the spinning top. The third part introduces transforms methods, generalised functions and Green's functions with applications to boundary value problems.

MATH 3916 Mathematical Computing I (Advanced)
4 credit points. Session: 1. Classes: 2 lec & 1 tut/wk. Prerequisite: 8 credit points of Intermediate Mathematics and one of MATH 2005 or 2033 or Credit in MATH 2003. Assessment: One 2hr exam, assignments.

See entry for MATH 3016 Mathematical Computing I.

MATH 3917 Hamiltonian Dynamics (Advanced)
4 credit points. Session: 2. Classes: 2 lec & 1 hr tut/wk. Prerequisite: MATH 2904 or Credit in MATH 2004. Assessment: One 2hr exam, assignments.

This unit of study provides a brief recapitulation of the essential features of Lagrange's equations and of the calculus of variations before introducing the Hamiltonian and deriving Hamilton's equations from a variational principle. Canonical transformations, that is, transformations which take a Hamiltonian system into a new Hamiltonian system, then lead in a natural way to the Hamilton Jacobi equation of mechanics, by means of which any integrable Hamiltonian system is most readily solved. The role of action angle variables in perturbation theory is described, and a brief introduction to the onset of chaos in Hamiltonian systems is given. In the last part the use of Pontrjagin's principle in optimisation and control theory is discussed.

MATH 3919 Signal Processing (Advanced)
4 credit points. Session: 1. Classes: 2 lec, 1 tut & 1 lab/wk. Prerequisite: MATH 2905 or Credit in MATH 2005. Assessment: One 2hr exam, assignments, computer project.

As for MATH 3019 but with more advanced problem solving and assessment tasks. Some additional topics may also be included.
UNDERGRADUATE TABLES AND UNITS OF STUDY

Media and Communications units of study

The following units of study are only available to students in the Bachelor of Science Media and Communications degree. Please consult degree information in chapter 2, the Tables earlier in this chapter, and the relevant Departments/Schools entries in this chapter for descriptions of other units of study required for this degree.

ENGL 1005 Language and Image
6 credit points. Dr Williams. Session: 1,2. Classes: One 1 hr lecture and one 2hr seminar. Prerequisite: ENGL 1. Assessment: One 1000wd essay, one 1hr examination. In this unit you will study the construction of texts in different media, of language and image, using Michael Ondaatje's novel "The English patient", and the film of the novel, as a particular focus. A range of other fiction, academic and media texts will be included to extend the discussion of textual constructions and interpretation. You will learn to analyse some methods of constructing meaning in language and images, taught in workshops. This detailed textual work, which will involve learning a range of grammatical and other detailed analytic techniques, will assist you to improve your academic writing and to interpret expectations for different kinds of textual work in academic disciplines. You will also be introduced in lectures to more descriptive topics, such as historical shifts in relations between language and image, narrative organisation, categories of text, and social agency and power in the production of text.

Textbooks
A Resource Book will be available from the University Copy Centre.

MECO 1001 Introduction to Media Studies 1
6 credit points. A Professor Lusby. Session: 1. Classes: one 2hr lecture, one 1hr tutorial. Assessment: Two 1500wd essays and one 1000wd tutorial paper.

NB: Available to BATOMedia and Commun) and BSc (Media & Commun) students only.

This unit offers an introduction to the history and theory of media and communications studies. Students will gain a foundation in key concepts, methodologies and theorists in the field. They will also explore the interdisciplinary roots of media and communications studies and acquire basic research skills. By the end of the unit students should be familiar with major shifts in the history and theory of media and communications studies and with basic concepts and methodologies in the field.
MECO 1003 Principles of Media Writing
6 credit points. A/Professor Lumby. Session: 2. Classes: Three hours per week. Prohibition: MECO 2002. Assessment: One print media news article of 500wds (20%), one radio or television script for a two minute news item (20%), one print media feature article of 1200wds (30%), one takehome exam (30%).

NB: Available to BA(Media and Commun) and BSc (Media & Commun) students only.

This unit will give students a grounding in writing for the print and broadcast media. Students will learn the elements of journalistic style, how to structure news and feature articles, how to script basic broadcast news items, and be introduced to the principles of interviewing and journalistic research. They will also acquire a basic knowledge of the evolution of print media and its formats.

GOVT 2303 Media Politics
8 credit points. Session: N/A in 2003. Prerequisite: Two GOVT 1000 level units of study or MECO 2003. Assessment: Essay; Exam; Participation.

This unit is primarily about news: its production, contents and impact, as well as the special demands of different news organisations and of reporting different news areas; the news media as an arena in political conflicts and the consequent interests and strategies of various groups in affecting news content; and the impacts of news on political processes and relationships. Our primary focus is on Australia, but there is some comparison with other affluent liberal democracies. The substantive areas the course will focus on include election reporting, scandals and the reporting of war and terrorism.

MECO 2001 Radio Broadcasting
8 credit points. Dr Evans. Session: 1. Classes: Three hours per week. Prerequisite: 12 junior credit points of Media & Communications units; ENGL 1050 or 1005 or LNGS 1105. Assessment: One 2000wd essay, one production diary, radio script and final work.

NB: Available to BA(Media and Commun) and BSc (Media & Commun) students only.

This unit of study provides an introduction to the theory and practice of radio and online audio broadcast news by combining theoretical analysis with practical experience in the creation of news bulletins. The course looks at the history and contemporary status of radio and considers such concepts as news values and the role of the Internet in audio broadcasts. The course has a strong practical component in which students will research, script, record and edit a new bulletin. They will also analyse radio and online broadcast texts.

MECO 2002 Writing for Print Media
8 credit points. Associate Professor Lumby. Session: 2. Classes: One 2hr lecture, one 1hr tutorial. Prerequisite: 12 junior credit points of Media & Communications units; ENGL 1050 or 1005 or LNGS 1005. Prohibition: MECO 1003. Assessment: Two 500wd news stories, two 1500wd feature articles.

NB: Available to BA(Media and Commun) and BSc (Media & Commun) students only.

This unit of study will equip students with practical writing skills required in the mainstream print and online media. It covers the basics of news writing, feature writing, and writing for online publications. Students will be required to research and write articles and to critically analyse material drawn from the contemporary print and online media. They will also study the history of print media forms and learn to critically evaluate articles drawn from the contemporary print and online media in weekly seminars.

MECO 2003 Media Relations and Advertising
8 credit points. Anne Dunn. Session: 2. Classes: One 2hr lecture, one 1 hr tutorial. Prerequisite: 12 junior credit points of Media & Communications units; ENGL 1050 or 1005 or LNGS 1005. Assessment: 2500 wds of practical assignments, one 1500wd essay.

NB: Available to BA(Media and Commun) and BSc (Media & Commun) students only.

This unit of study will examine the media, public relations and advertising industries. It will combine critical analysis of the historical and contemporary industry practices with an introduction to practical skills required in these industries. Students will analyse material drawn from the media relations and advertising industries and learn to write basic copy, prepare press releases, information kits and establish media monitoring and liaison systems.

MECO 3001 Video Production
8 credit points. Anne Dunn. Session: 1. Classes: One 1hr lecture, one 2hr tutorial. Prerequisite: MECO 2001. Assessment: One 500wd Web site proposal, one 2000wd take home exam and one Web site which includes a 1500wd production log and 1000 wd report.

NB: Available to BA(Media and Commun) and BSc (Media & Commun) students only.

This unit builds on knowledge and skills acquired in media studies, writing and radio units. It introduces students to the history, theory and practice of video production, both field and studio based. The unit will equip students with practical skills in planning, researching and budgeting a video production, as well as with skills in digital camera operation, video recording and digital video editing using desktop software. The unit emphasises information programming (news, current affairs, corporate video, documentary and ‘infotainment’). Students will be expected to produce short video items.

MECO 3002 Online Media Production
8 credit points. Kate Crawford. Session: 2. Classes: One 1hr lecture, one 2hr tutorial. Prerequisite: MECO 3001. Assessment: One 500wd Web site proposal, one 2000wd take home exam and one Web site which includes a 1500wd production log and 1000 wd report.

NB: Available to BA(Media and Commun) and BSc (Media & Commun) students only.

This unit will examine the emergent role of the Internet and the way the Web is changing the media landscape. It explores the development and growth of the Internet, and provides a critical framework in which to understand the current industry. Students will also gain practical skills in writing and producing for the Web and will design and develop their own Web sites.

MECO 3003 Media, Law and Ethics
8 credit points. Anne Dunn. Session: 2. Classes: One 2hr lecture, one 1hr tutorial. Prerequisite: MECO 3001. Assessment: A 1500wd word article and an analysis of a court case, requiring students to engage in an intensive research exercise prior to writing which will involve observation of a court case.

NB: Available to BA(Media and Commun) and BSc (Media & Commun) students only.

MECO 3003 will introduce students to key legal and ethical issues relevant to journalism. Students will be given an introductory survey of the main ethical theories in Western thought to establish a framework within which to examine specific ethical issues that relate to media. They will also be introduced to the structure of Australia's legal system and to those aspects of the law that impinge on the work of media professionals.

MECO 3005 Media Globalisation
8 credit points. Anne Dunn. Session: 1. Classes: One 1hr lecture, one 1hr tutorial. Prerequisite: 12 junior credit points of MECO units; ENGL 1005 or ENGL 1050 or LNGS 1005. Assessment: A 1500wd word article and an analysis of a court case, requiring students to engage in an intensive research exercise prior to writing which will involve observation of a court case.

NB: Available to BA(Media and Commun) and BSc (Media & Commun) students only.

This unit develops students' understanding of key issues and debates in Australia relation to the concept of globalisation. It covers the history to the present day of the regulation of the media in Australia, including such issues as foreign and cross media ownership laws, spectrum allocation, and the regulatory environment. Students will explore the nature of globalisation, as it affects the media, considered both as public cultural forms and as political industrial organisations.

MECO 3701 Media and Communications Internship
8 credit points. Session: 1, 2. Prerequisite: MECO 3002 and MECO 3003. Assessment: Students must satisfy the requirements of an internship contract with their workplace, including attendance and performance, as evaluated through workplace supervisor reports both mid placement and a the end of the internship. The internship is assessed on a satisfactory/unsatisfactory basis.

NB: Available to BA(Media and Commun) and BSc (Media & Commun) students only.

The internship provides an opportunity for students to gain practical experience in a professional setting, as part of their academic training. Students undertake a minimum of 20 working days in a media organization, assisted and supervised by both the workplace and the department. Placements may include print, broadcast and online media, public relations and advertising organizations.
MECO 3702 - Internship Project
8 credit points. Session: 1, 2. Prerequisite: MECO 3002 & MECO 3003. Corequisite: MECO 3701. Assessment: Students will be required to submit a professional journal regarding their internship, including a critical reflection on their experience (4000 words), 4000 word research essay or equivalent production piece.

NB: Available to BA (Media and Commun) and BSc (Media & Commun) students only.

The Internship Project offers students the opportunity to reflect on their internship. Students will be required to present a journal recounting their experiences during the internship and, in consultation with a supervisor, will formulate a topic for their 3000 word research paper. Students may complete a production piece in lieu of the research paper, with the approval of the Media & Communications Supervisor. This piece must be in addition to any production pieces completed as part of the internship.

Medical Science units of study

The following units of study are only available to students in the Bachelor of Medical Science degree. Please consult degree information in chapter 2, the Tables earlier in this chapter, and the relevant Departments/Schools entries in this chapter for descriptions of other units of study required for this degree.

Bachelors of Medical Science Junior units of study

All qualifying, pre and corequisite units of study, details of staff, examinations, units of study delivery and descriptions are as described under the appropriate Department or School entry in this chapter.

Bachelors of Medical Science Intermediate Core units of study

BMED2501 - Cells and Cell Communication
6 credit points. AProf Robin Allan (Pharmacology). Session: 1. Classes: Average 6 hours/week of lectures, tutorials and practicals. Prerequisite: 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. Assessment: One 3hr theory exam, practical tests, reports, assignments.

A strong understanding of cellular structures and communication systems is essential for an appreciation of whole body function. This unit of study extends students’ preexisting understanding of basic cell structure by focussing on organelle function, cell specialisation and tissue organisation in humans. By way of contrast, there is also discussion of the unique morphology of procaryotic organisms (bacteria and viruses). Students are then introduced to the ways in which biochemical building blocks are arranged to form macromolecular subcellular structures (eg, phospholipids into cell membranes, and amino acids into proteins). The role of enzymes in the catalysis of cellular reactions and the pharmacological strategies employed to exploit our knowledge of these mechanisms is then discussed. The various modes of communication between cells are then covered, with extended treatment of receptor effector signal transduction, intracellular signalling cascades, cell to cell signalling and pharmacological intervention in these processes.

Practical classes not only complement the lecture material but also introduce students to a wide range of technical skills including basic laboratory skills, tissue processing, bacterial cultivation, manipulation of 3D protein graphics (including drug receptor interactions), protein purification, and enzyme assay. In addition, the sessions are also designed to give students generic skills such as record keeping, data collection and presentation, protocol planning, spreadsheet design and written communication.

BMED 2502 - Genes and Genetic Engineering
6 credit points. Dr Joel Mackay (Biochemistry). Session: 1. Classes: Average 6 hours/week of lectures, tutorials and practicals. Prerequisite: 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. Assessment: One 3hr theory exam, practical tests, reports, assignments.

This unit of study is designed to teach students how genetic information is stored, transmitted and expressed. Students are also introduced to DNA technologies such as cloning and gene therapy as well as receiving an overview of cellular development and embryology. Specifically, the unit of study covers the structure of DNA at both the molecular and chromosomal level, with extrapolation to the packaging, replication and transfer of genetic material. The way in which the message encoded in DNA is transcribed and translated into proteins is then outlined, with particular emphasis on eucaryotic systems and on the control of the expression process. The principles of cloning, gene synthesis, protein engineering and other aspects of modern DNA technology are then described, including an appreciation of the application of transgenic species, gene therapy and the use of DNA technology in drug design. Students then study the linkage and mapping of genes including reference to DNA fingerprinting and the human genome project.

The unit of study then gives an introduction into how gene expression is regulated during development, and how the cell cycle is controlled to coordinate programed events such as differentiation and cell death. This allows discussion of the development of the human embryo and the consequences and treatment of abnormal tissue growth (cancer).

The technical skills taught in the practical classes include the use of restriction enzymes, the separation of DNA molecules using electrophoresis, the inspection of chromosomes, linkage mapping, gene transfer and the measurement of gene expression. Discussion of the respiratory system likewise embraces the execution of experiments, the practical sessions will formally teach students report writing skills and will give students practice at articulating feedback to their peers.

BMED 2503 - Regulation of the Internal Environment
8 credit points. Mrs Françoise Janod Groves (Physiology). Session: 1. Classes: Average 8 hours/week of lectures, tutorials and practicals. Prerequisite: 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. Assessment: One 3hr theory exam, practical tests, reports, assignments.

The maintenance of constant conditions in the human body is dependent on thousands of intricate control mechanisms. This unit of study examines many of these homeostatic processes with specific reference to major apparatus such as the respiratory, cardiovascular, renal, endocrine and nervous systems. Special reference is made throughout the unit of study to the effect of drugs on homeostatic components. For example, as part of the discussion on the structure and function of the heart and blood vessels, students are also taught about the effect of drugs on the cardiac output, blood flow and blood pressure. Examples of how homeostatic mechanisms are perturbed in disease are also emphasised (eg, with reference to cardiovascular pathology). Discussion of the respiratory system likewise embraces the structure of the respiratory organs, description of the mechanism of the transport of gases to and from cells and the pharmacotherapy of respiratory disorders (eg, asthma). Similar treatment of the renal system involves anatomical and physiological investigation of kidney structure and a physiological description of kidney function with reverence to the regulation of pH, P02 and temperature of the extracellular fluid. After this, the action of drugs (including drugs on the kidney) is discussed. Examples of more long term regulation is provided by consideration of the hormonal control of pregnancy, and the fofal new born transition.

Practical classes are designed to nurture the same generic attributes taught in BMED2501 and BMED2502 but, in addition, students are introduced to a wide range of anatomical and physiological technical skills. Specifically, students will investigate the structure and function of endocrine organs, the heart and blood vessels, the components of the respiratory system and the kidney all at the cellular and organ level. Students will also conduct experiments (often on human volunteers) which show how nerve impulses are transmitted, how heart rate and blood pressure are controlled, how breathing is regulated and how urine output is modulated in response to both physiological and pharmacological stimuli. Similarly, study of the pathology of the homeostatic organs will be complemented with tissue samples and slides.

BMED 2504 - Digestion, Absorption and Metabolism
6 credit points. Dr Margaret Day (Physiology). Session: 2. Classes: Average 6 hours/week of lectures, tutorials and practicals. Prerequisite: 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or 12 credit points of Junior Computer Science or 12 credit points of Junior Psychology. Assessment: One 3hr theory exam, practical tests, reports, assignments.

This unit of study gives an introduction to the structures used to digest and absorb fuels, at both the anatomical and histological
level. This is then followed by discussion of the utilisation and fate of absorbed nutrients. After an overview of the alimentary tract and associated organs, the detailed anatomy of the oral cavity, and the digestive process is considered. This is complemented by description of the specialised cell types in the digestive system, discussion of the transport mechanisms employed to absorb nutrients, and consideration of the control systems used to regulate activity of the digestive process. The fate of the foodstuff (carbon, fuel) is then considered by reference to their uptake, disposal and reassembly into storage fuels and cellular structures. The biochemical pathways involved in the extraction of energy from the macronutrient fuels is then covered, with particular emphasis on the whole body integration and regulation of these metabolic processes. This enables students to appreciate the extent of organ coordination in response to circumstances such as starvation, obesity, exercise and diabetes. It also provides a solid background for understanding the metabolic intervention in these conditions. The pharmacokinetic angle is explored further with discussion of the metabolism and absorption of drugs including the detoxification and excretion of xenobiotic compounds. Intestinal microflora, both beneficial and pathogenic are also discussed in this unit of study.

Practical classes give students extensive experience with inspection of the digestive system at both the cellular and gross anatomical level. In addition, students a taught radioisotope handling and biochemical assay design skills in concert with sessions designed to nurture oral presentation skills, hypothesis testing, data analysis, troubleshooting, instruction writing and feedback skills.

BMED 2505 Interaction with External Environment
Classes: Average 6 hrs/wk of lectures, tutorials and practicals. Prerequisite: 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or Junior Computer Science or 12 credit points of Junior Psychology. Assessment: One 3hr theory exam, practical tests, reports, assignments.

This unit of study examines how neural and motor systems are adapted to sense and respond to changes in the external environment. After consideration of the basic anatomical organisation of the nervous and sensory systems, the way in which nerve signals are integrated and coordinated in response to external stimuli are covered in more detail. This is complemented by discussion of the effects of drugs on the nervous system, particularly addictive and psychoactive compounds, with special reference to pain and analgesics. The structure and function of skeletal muscle is covered at both a histological and anatomical level and has been designed to integrate with information regarding the skeleton and movement. After discussion of the molecular mechanism of muscle contraction, students extrapolate to consider the regulation of fuel selection during exercise and the cause of fatigue. This leads onto discussion of performance enhancing drugs, and to an appreciation of how toxins and infections can perturb the normal neuromuscular coordination. Thus pharmacological and pathological considerations, such as the use of poisoned arrows and muscle paralysis, prion and tetanus infection, are studied in concert with relevant physiological and biochemical concepts.

In practical classes, students perform experiments (often on themselves) to illustrate the functioning of the senses and motor control and coordination. In addition, students extend their anatomical expertise by examining the structure and function of the nervous system and the skeleton (especially the vertebral column, the thorax and the limbs). Practical sessions also include computer simulations in synaptic transmission, the detection of opioids and the isolation and identification of tetanus bacteria.

BMED 2506 Microbes and Body Defence Systems
6 credit points. Mrs Helen Agus (Microbiology). Session: 2. Classes: Average 6 hrs/wk of lectures, tutorials and practicals. Prerequisite: 12 credit points of Junior Mathematics, 12 credit points of Junior Chemistry, 12 credit points of Junior Physics, and 12 credit points of Junior Biology or Junior Computer Science or 12 credit points of Junior Psychology. Assessment: One 3hr theory exam, practical tests, reports, assignments.

For a full understanding of human defence systems, it is necessary to have an appreciation of the range of pathogens and injuries with which the body must cope. Therefore this unit of study starts with a description of the structure and function of pathogenic microorganisms (including bacteria, fungi, protists, and viruses, etc.). The impact of bacteria and viruses on individuals and society is taught with reference to specific infectious diseases (eg, influenza, polio, herpes, etc) and this leads into an introduction to epidemiology. Included in discussion of the way in which these organisms cause and transmit disease is a consideration of how antibiotics and antiviral drugs work and how microbes can become drug resistant. The response of the body to pathogen invasion is studied by discussion of both molecular and cellular immune responses. In particular this gives students an appreciation of the basis of derangements of the immune system and the mechanism of action of immuno modulatory drugs. Sections on wound healing, clotting and inflammation cover the response to physical damage and this is complemented by discussion of the pharmacological basis of anti inflammatory agents and anti coagulants.

Practical classes allow students to obtain experience in a range of classical and molecular virological, bacteriological and immunological techniques. In an integrated session, students examine the infection, immunity and pathology of tuberculosis. Also included are tutorial sessions in which hospital microbiologists guide students through clinical case studies. In addition, the practical sessions draw widely on, and nurture, the generic skills taught in preceding units of study.

Textbooks

Bachelor of Medical Science Intermediate and Senior Elective units of study
All students in the Bachelor of Medical Science must take at least 8 credit points of elective units in order to complete the requirements of the degree. This is an opportunity for students to study subjects outside the confines of the Medical Science degree. These elective units are normally taken in the Intermediate year. If they choose students can count a further 12 credit points of elective units (taken in the Senior year) towards their degree.

There are almost no restrictions on what units may be taken as electives. Students may take further units in subjects which do not form part of the Intermediate and Senior core of the BMedSc degree, for example, Mathematics, Chemistry or Physics. They may choose subjects from other science discipline areas which they have not previously studied, for example, Computer Science or Geology. Alternatively they may choose to study a subject from another faculty, for example, a language.

Exactly what elective units of study are taken, and when, is constrained principally by timetable considerations.

Typical patterns of elective enrollment are:
Example 1:
• Year 2: Semester 1 4 credit points Intermediate Elective
• Year 2: Semester 2 4 credit points Intermediate Elective
• Year 3: Four 12 credit point Senior Medical Science units
Example 2:
• Year 2: Semester 1 6 credit points Junior Elective
• Year 2: Semester 2 6 credit points Junior Elective
• Year 3: Three 12 credit point Senior Medical Science units + 8 CP Intermediate Elective

Students may not take additional units in medical science discipline area units in order to meet the elective requirements. In particular students may not enroll in any of the following subjects:
• Anatomy and Histology
• ANAT 2001 Principles of Histology
• ANAT 2002 Comparative Primate Anatomy
• ANAT 2003 Concepts in Neuroanatomy
• ANAT 2004 Principles of Development
• Biochemistry
• BCHM 2111 Biochemistry
• BCHM 2102 Molecules, Metabolism and Cells Theory
• BCHM 2102 Molecules, Metabolism and Cells Theory
• BCHM 2902 Molecules, Metabolism and Cells (Advanced)
• Biological Sciences
• BIOL 2006 Cell Biology
• BIOL 2006 Cell Biology (Advanced)
• BIOL 2106 Cell Biology Theory
• Immunology
• IMMU 2001 Introductory Immunology

UNDERGRADUATE TABLES AND UNITS OF STUDY

149
Microbiology
- MICR 2001 Introductory Microbiology
- MICR 2002 Applied Microbiology
- MICR 2003 Theoretical Microbiology A
- MICR 2004 Theoretical Microbiology B
- MICR 2901 Introductory Microbiology (Advanced)
- MICR 2902 Applied Microbiology (Advanced)

Molecular Biology and Genetics
- MBLG 2001 Molecular Biology & Genetics A
- MBLG 2101 Molecular Biology & Genetics A (Theory)
- MBLG 2901 Molecular Biology & Genetics A (Advanced)
- MBLG 2002 Molecular Biology & Genetics B
- MBLG 2102 Molecular Biology & Genetics B (Theory)
- MBLG 2902 Molecular Biology & Genetics B (Advanced)

Pharmacology
- PCOL 2001 Pharmacology Fundamentals
- PCOL 2002 Intro Pharmacology: Drugs and People
- PCOL 2003 Pharmacology: Drugs and Society

Physiology
- PHSI2001 Introductory Physiology A
- PHSI2002 Introductory Physiology B
- PHSI 2101 Physiology A
- PHSI 2102 Physiology B

This unit of study aims to give the student sufficient knowledge of microbiology while specialising in related fields eg, molecular biology. It is also suitable for students requiring a working knowledge of microbiology while specialising in related fields eg, molecular biology.

Assessment:
- BMED 3004 Infectious Diseases: 12 credit points. A/Prof C Harbour. Session: 2. Classes: 3 lec, 1 tut & 8 prac/wk. Prerequisite: 3 credit points of Intermediate BMED units including BMED 2506. Prohibition: May not be counted with MICR 2902. Qualifier: 6 credit points of Junior Chemistry. 

Medicinal Chemistry
Medicinal Chemistry is an interdisciplinary major offered within the BSc. It is concerned with the chemistry underpinning the design, discovery and development of new pharmaceuticals, and is jointly administered by the School of Chemistry and the Department of Pharmacology. Medicinal Chemistry examines why some types of chemical compounds are toxic, why some have therapeutic value, and the mode of drug action at the molecular level. A major in Medicinal Chemistry includes the study of natural and synthetic compounds of biological and medicinal importance, how molecules interact with each other and how specific molecules can influence metabolic pathways in living organisms.

This unit of study aims to give the student sufficient knowledge and technical skills to provide a foundation for future study of microbiology. It is also suitable for students requiring a working knowledge of microbiology while specialising in related fields eg, molecular biology.

Topics covered include history and scope of microbiology, methodology, comparative study of the major groups of microorganisms (bacteria, algae, protozoa, fungi and the viruses), a detailed study of bacteria including structure, classification and identification, growth, death and control. An introduction to microbial ecology (soil, aquatic and agricultural microbiology, as well as examples of microbial interactions) illustrates the significance of microorganisms in the global, natural cycles of synthesis and degradation.

The practical component focuses on basic, safe microbiological techniques and the use of these to study examples of microbial activity which are illustrative of the lecture series.

Textbooks
Prescott L M et al. Microbiology. 5th edn, WCB/McGraw Hill, 2002
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Session</th>
<th>Classes</th>
<th>Qualifier</th>
<th>Assessment</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICR 2001</td>
<td>Microbiology</td>
<td>Prerequisite: MICR (2001 or 2003). Prohibition: May not be counted with MICR (2002 or 2003). Assessment: One 2hr exam, continuous assessment in prac, 2 assignments, prac exam.</td>
<td>2</td>
<td>3 lec/wk</td>
<td>6 credit points of Junior Chemistry and Distinction in 6 credit points of Junior Biology.</td>
<td></td>
<td>NB: This completion of MBLG (2001 or 2101 or 2901) is highly recommended. The unit of study is based on MICR 2002 with alternative components. The content and nature of these components may vary from year to year. Textbooks As for MICR 2001</td>
</tr>
<tr>
<td>MICR 2002</td>
<td>Applied Microbiology</td>
<td>Prerequisite: MICR 2001. Prohibition: May not be counted with MICR 2004 or 2005. Assessment: One 2hr exam, continuous assessment in prac, 2 assignments, prac exam.</td>
<td>2</td>
<td>3 lec/wk</td>
<td>8 credit points.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICR 2901</td>
<td>Introductory Microbiology (Nutrition)</td>
<td>Prerequisite: BIOL 1001 or BIOL 1002 or 1003 or 1903 or 1902 or 1903 or 6 credit points of Junior Chemistry. Assessment: One 2hr theory exam, prac exam, continuous assessment in prac, one assignment.</td>
<td>2</td>
<td>3 lec/wk</td>
<td>8 credit points.</td>
<td></td>
<td>NB: This unit of study is available to students enrolled in the Bachelor of Science (Nutrition) only. This unit of study aims to give the students some basic knowledge and technical skills to provide a foundation for further study of the applied aspects of microbiology. Topics covered include methodology, a comparative study of the major groups of bacteria, a detailed study of bacteria including their structure, classification and identification, growth, death and control. The practical component focuses on basic, safe microbiological techniques, the principles of asepsis, and the use of these to study examples of microbial activity which are illustrative of the lecture course. Textbooks Prescott L M et al. Microbiology. 5th edn, WCB/McGraw Hill, 2002</td>
</tr>
<tr>
<td>MICR 2909</td>
<td>Fundamental and Applied Microbiology Adv</td>
<td>8 credit points. Dr Peter New. Session: 2. Classes: 3 lec, 1 tut &amp; 4 prac/wk &amp; 8 advanced seminars. Prerequisite: 12 credit points of Junior Chemistry and BIOL 1001 and (1904 or 1905). Prohibition: May not be counted with MICR (2001,2002, 2901, 2002, 2003 or 2004). Assessment: Two 2hr exams, continuous assessment, prac exam, one assignment.</td>
<td>2</td>
<td>3 lec/wk</td>
<td>4 credit points.</td>
<td></td>
<td>NB: This unit of study is available to students enrolled in the Bachelor of Science (Molecular Biology and Genetics) only. This unit of study is designed to provide students with the knowledge and technical skills needed to understand and manipulate microorganisms as part of the field of molecular biology and genetics. In the first part of the unit of study, students are introduced to the nature and scope of microbiology, and to practical methods for handling and analysing microorganisms. The latter part of the unit focuses on the role of microorganisms in health and disease, and on industrial processes involving microorganisms, including recombinant DNA products, biocontrol agents and bioremediation. An advanced seminar series accompanies the latter part of the unit, and focuses on recent research topics in molecular microbiology. Textbooks As for MICR 2001</td>
</tr>
<tr>
<td>MICR 3001</td>
<td>General and Medical Microbiology</td>
<td>12 credit points. Dr Peter New. Session: 1. Classes: 3 lec, 6 prac &amp; 8 advanced seminars. Prerequisite: MBLG (2001 or 2101 or 2001) and [12 credit points of Intermediate MICR units or MICR (2011 and 2012) or MICR 2909]. For BMedSc students: 32 credit points of Intermediate BMed units including BMed 2506, Prohibition: May not be counted with MICR 3901. Assessment: One 2hr exam and one 1.5hr exam, essay, prac.</td>
<td>1</td>
<td>3 lec/wk</td>
<td>4 credit points. Dr Peter New. Session: 2. Classes: 3 or 4 lec, 1 tut &amp; 3 or 4 prac/wk. Qualifier: Distinction in MICR (2001 or 2001). Prohibition: May not be counted with MICR (2002 or 2004). Assessment: As for MICR 2002 plus one 2hr exam.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
includes microbial growth and metabolism, microbial ecology, and food microbiology. The lecture series on microbial growth and metabolism covers aspects of biomass formation, growth rate and nutrient uptake, chemostat cultures, growth yield, aerobic and anaerobic growth, and growth under stress. Microbial ecology introduces the principles which underlie the behaviour of microorganisms in all environments whether they be soil, water, food, medical or industrial. Food microbiology includes the causes and prevention of foodborne disease, microbiological analysis of foods, the indicator concept, hazard analysis and critical control points, modified atmosphere packaging, fungal spoilage of foods and mycotoxins. Medical Microbiology covers aspects of epidemiology, host defences, sexual and transmitted diseases, and other important bacterial, viral, fungal, protozoal, helminth and zoonotic infections.

The practical component is designed to enhance students’ practical skills and to complement the lecture series.

**MICR 3002 Molecular/Environmental Microbiology**
12 credit points. **Session:** 2. **Classes:** 3 lec, 6 7 prac & 2 3 other/wk. **Prerequisite:** 12 credit points of Intermediate Microbiology and MBLG (2101 or 2001 or 2901). **Prohibition:** May not be counted with MICR (3902 or 3004 or 3904). **Assessment:** One 2hr exam and one 1.5hr theory exam, practical.

This unit of study extends some of the topics covered in Microbiology 2001 and 2002. Molecular Microbiology covers aspects of bacterial structure and physiology and principles of molecular techniques on the molecular level. Molecular and cell biology and physiology include structural aspects of surface components, membranes, periplasm and peptidoglycan, and a discussion of drug resistance mechanisms. Principles of Molecular Pathogenicity covers clones in pathogenic species, modes of pathogenesis and adhesion, bacterial toxins, antigenic variation, and vaccines. Environmental Microbiology includes plant microbiology, particularly in relation to nitrogen fixation systems, agrobacterium and crown gall, root colonisation, and endophytes. The unit of study also covers aspects of the distribution and activities of microbes in terrestrial and aquatic ecosystems, including their roles in the biodegradation and bioremediation of organic pollutants.

The practical component is designed to enhance students’ practical skills and to complement the lecture series. Project work may form part of the practical component subject to the availability of resources.

**MICR 3901 General and Medical Microbiology (Adv)**
12 credit points. **Session:** 1. **Classes:** 4 lec, 6 7 prac & 1 2 other/wk. **Prerequisite:** MBLG (2101 or 2001 or 2901) and 12 credit points of Intermediate MICR units including one Distinction, or MICR (2011 and 2012) including one Distinction, or Distinction in MICR 2909. For BMED: 22 credit points of Intermediate MBLG units including Distinction in BMED 2506. **Prohibition:** May not be counted with MICR 3001. **Assessment:** Two 2hr exams and one 1.5hr exam, essay, prac.

This unit of study is based on Microbiology 3001. It is available to students who have performed well in Microbiology 2001 or 2901, and 2002, 2004 or 2902. The unit of study consists of a series of additional lectures related to the research interests in the Department. Consequently, the unit of study content may change from year to year. The selection criteria for entry into the unit of study will be available from the Coordinator at the time of enrolment.

**MICR 3902 Molecular/Environmental Microbiology Adv**
12 credit points. **Session:** 2. **Classes:** 4 lec, 6 7 prac & 1 2 other/wk. **Prerequisite:** 12 credit points of Intermediate Microbiology including one Distinction, and MBLG (2101 or 2001 or 2001). **Prohibition:** May not be counted with MICR (3002 or 3004 or 3904). **Assessment:** Two 2hr exams and one 1.5hr exam, essay, prac.

This unit of study is based on MICR 3002. It will be available to students who have performed well in MICR 2001 or 2901, and 2002, 2004 or 2902. The unit of study consists of a series of additional lectures related to the research interests in the Department. Consequently, the unit of study content may change from year to year. The selection criteria for entry into the unit of study will be available from the Coordinator at the time of enrolment.

**MICR 3003 Molecular Biology of Pathogens**
12 credit points. **Dr Carter. Session:** 2. **Classes:** 3 lec, 8 prac & 1 other/wk. **Prerequisite:** 32 credit points of Intermediate MBLG units including BMED. **Prohibition:** May not be counted with MICR 3903. **Assessment:** One 2hr exam, one 1 hr theory exam, practical.

This unit of study is designed to provide an understanding of microbial disease at the molecular level. The following topics will be covered: introductory bacterial genetics; pathogenic processes and the molecular basis of pathogenicity in bacteria; structure and function of microorganisms and action of antibiotics and chemotherapeutic agents; and pathogenic processes in fungi and viruses.

**MICR 3903 Molecular Biology of Pathogens Advanced**
12 credit points. **Dr Carter. Session:** 2. **Classes:** 4 lec & 8 hrs prac/wk. **Prerequisite:** 32 credit points of Intermediate BMED units including Distinction or better in BMED 2506. **Prohibition:** May not be counted with MICR 3003. **Assessment:** On 2hr exam, one 1.5hr exam, one 1 hr theory exam, practical.

NB: It is strongly recommended that students also enrol in MICR 3001.

Same details as MICR 3003, with advanced components.

**MICR 3004 Molecular Biology of Pathogens Molecular**
12 credit points. **Dr Carter. Session:** 2. **Classes:** 3 lec & 9hrs prac/wk and 4 discussion sessions. **Prerequisite:** Distinction in MICR 2909. **Prohibition:** May not be counted with MICR (3002, 3902 or 3904). **Assessment:** Two 2hr exams, practicals, and an essay based on discussion sessions.

This unit of study is the same as that in Microbiology 3003, except for the addition of 4 special molecular biology and genetics discussion sessions, which consist of topical seminars and discussions in this discipline. As essay based on these discussions is included as part of the assessment of the unit of study.

**MICR 3904 Molecular Biology of Pathogens Mol (Adv)**
12 credit points. **Dr Carter. Session:** 2. **Classes:** 4 lec & 9hrs prac/wk and 4 discussion sessions. **Prohibition:** Distinction in MICR 2909. **Prohibition:** May not be counted with MICR (3002,3902 or 3004). **Assessment:** Two 2hr exams, practicals, and an essay based on discussion sessions.

Same details as MICR 3004, with advanced components.

**Microbiology Honours**

During the Honours year, students will be involved in a research program to produce a thesis under the direction of a supervisor. A seminar at the end of the year will also be given to provide a summary of the research project. Students are also expected to broaden their general knowledge of microbiology through attendance at research seminars and through a coursework component in their first semester which will cover diverse aspects of the subject. The coursework involves an essay as well as analysis of recently published papers in microbiology.

An expression of interest in Honours is required from students by the end of the semester before the Honour year, on a form to be lodged with the Honours Coordinator. Entry into the Honours year is usually dependent on an average of Credit level performance in Senior microbiology units of study. Additionally, strong students with related training may be admitted by permission of the Head of School.

**Bachelor of Science (Molecular Biology and Genetics)**

Please consult degree information in chapter 2, the Tables earlier in this chapter, and the relevant Departments/Schools entries in this chapter for descriptions of units of study required for this degree.

**Molecular Biology and Genetics**

Molecular Biology and Genetics units of study in second year will be taught by staff from the School of Molecular and Microbial Biosciences and the School of Biomedical Sciences. The first semester units, MBLG 2001, MBLG 2101 and MBLG 2901 are coordinated by the School of Molecular and Microbial Biosciences while the second semester units, MBLG 2002, MBLG 2102 and MBLG 2902 are coordinated by the School of Biomedical Sciences.

**MBLG 2001 Molecular Biology and Genetics A**
8 credit points. **AProf Whitehall, Dr Hancock. Session:** 1. **Summer Session:** 2. **Classes:** 3 lec & 5 prac/wk & voluntary tutorials. **Prerequisite:** 12 credit points of Junior Chemistry. **Qualifier:** BIOL (1001 or 1901) except for
students co enrolled in BCHM 2011, or with permission of the unit Coordinator. Prohibition: May not be counted with AGCH 2001 or BCHM 2001 or 2101 or 2901 or MOBL 2101 or 2901. Assessment: One 2hr exam, one 2hr theory exam, one essay. The lectures in this unit of study introduce the main principles of molecular biology and genetics ie, the molecular basis of life. In the beginning, the students are introduced to the information on macromolecules, DNA, RNA and protein. This is followed by a review of how DNA is organised into chromosomes and genes and this leads on to discussion of gene expression and replication. The unit then moves on to discuss how the amino acid sequence of proteins determines the diverse array of protein functions. The unit covers modern molecular biology techniques: plasmids, transposons, bacteriophage and restriction enzymes and the techniques used to manipulate genetic information; gene libraries, DNA sequencing and the polymerase chain reaction.

Practical: The practical component complements the theory component of MBLG 2001 by exposing students to experiments which investigate the regulation of gene expression, the manipulation of DNA molecules and the purification of proteins. During the unit of study, students will acquire a wide range of generic skills; including computing skills, communication and articulation skills (written and oral), criticism and data analysis/evaluation skills, experimental design and hypothesis testing skills. Students perform practical sessions in small groups and, therefore, problem solving and teamwork and team work form an integral part of each activity. In addition to the generic skills, students will learn important laboratory/technical abilities with an emphasis on the equipment used in molecular biology and genetics research.

Textbooks

MBLG 2101 Molecular Biology & Genetics A (Theory) 4 credit points. A/Prof Whitleaw, Dr Hancock. Session: 1. Summer. Classes: 3 lec wk. Prerequisite: 12 credit points of Junior Chemistry. Qualifier: BIOL (1001 or 1901) or by permission of the unit Coordinator. Prohibition: May not be counted with AGCH 2001 or BCHM (2001 or 2101 or 2901) or MBLG (2001 or 2901). Assessment: One 3 hr theory exam. This unit of study is comprised of the lecture component of MBLG 2001.

MBLG 2901 Molecular Biology and Genetics A (Adv) 8 credit points. A/Hof Whitleaw, Dr Hancock. Session: 1. Classes: 3 lec & 3 pr & 1 tut wk. Prerequisite: 12 credit points of Junior Chemistry. Qualifier: BIOL (1001 or 1901) except for students co enrolled in BCHM 2011. Prohibition: May not be counted with AGCH 2001 or BCHM (2001 or 2101 or 2901) or MBLG (2001 or 2101). Assessment: One 2hr exam, one 2hr theory exam, one essay. NB: Entry requires a Distinction in one of the Qualifying or Prerequisite units of study, or permission of the unit Coordinator. Extension of concepts taught in MBLG 2001 which will be taught in the context of practical laboratory experiments.

Textbooks

MBLG 2002 Molecular Biology and Genetics B 8 credit points. Dr K Raphael. Session: 2. Classes: 3 lec, 4pr & 1 tut wk. Prerequisite: MBLG 2001. Prohibition: May not be counted with BIOL 2005 or 2105 or 2905 or MBLG 2102 or 2902. Assessment: One 2 hour theory exam, one 2 hour theory of practical exam, laboratory reports, quizzes, project. This unit of study will build on the concepts introduced in MBLG 2001 and show how modern molecular biology is being applied to the study of the genetics of all life forms from bacteria through to complex multicellular organisms including plants, animals and humans. The course begins with a discussion of classical Mendelian genetics and its extensions, including linkage, sex linkage and gene interactions. Lectures in this section also cover statistical analysis of genetic data, crossing over, tetrad analysis, gene mapping. Eukaryotic chromosome structure and variations in chromosome number and structure are examined as well as inheritance of cytoplasmic genes and gene mutation.

Topics in bacterial genetics and evolution include transfer of genetic information between bacteria via fertility factors and plasmids, bacterial genomics, population genetics, recombinant micro organisms and their use in vaccine production and in agriculture. The application of recombinant DNA to the production of important biologics will be examined as well as the utility of transgenesis and gene knockouts. The study of eukaryotic genomes will begin with a comparison of classical and molecular gene mapping, and results and lessons from eukaryotic sequencing projects, including the Human Genome Project, will be examined. The way in which modern molecular techniques have increased our knowledge in the field of developmental biology will be examined by lectures on the developmental genetics of plants, animals and insects, control of gene expression, regulation of the cell cycle.

Topics in population genetics and molecular evolution include changes in gene frequency, Hardy Weinberg equilibrium, inbreeding selection, genetic drift, molecular and gene evolution, conservation and ecological genetics, plant and animal breeding.

Practical: Laboratory exercises will utilize a variety of prokaryotic and eukaryotic organisms to illustrate aspects of the lecture material, while developing familiarity and competence with practical equipment, microscopes, computers, and statistical tests.

MBLG 2102 Molecular Biology & Genetics B (Theory) 4 credit points. Dr K Raphael. Session: 2. Classes: 3 lec & 1 tut wk. Prerequisite: MBLG 2001 or 2101. Prohibition: May not be counted with BIOL (2005,2105 or 2905), or MBLG (2002 or 2902). Assessment: One 2 hour theory exam, one essay. This unit of study has the same lectures and tutorials as MBLG 2002 Molecular Biology and Genetics B, but no practical work. It does not lead on to Senior Biology units of study in genetics. It is suitable for students who wish to gain an understanding of theoretical aspects of genetics in greater depth for application to other areas of their careers.

MBLG 2902 Molecular Biology and Genetics B (Adv) 8 credit points. Dr K Raphael. Session: 2. Classes: 3 lec, 4 pr & 1 tut/ wk. Qualifier: Distinction or better in MBLG (2001 or 2901). This requirement may be varied and with students with lower marks should consult the unit Executive Officer. Prohibition: May not be counted with BIOL (2005 or 2105 or 2905 or MBLG 2002 or 2102). Assessment: One 2 hour theory exam, one 2 hour theory of practical exam, laboratory reports, quizzes, project. Qualified students will participate in alternative components of MBLG 2002 Molecular Biology and Genetics B. The content and nature of these components may vary from year to year. This is a core Intermediate unit of study in the BSc (Molecular Biology and Genetics) award course.

Molecular Biotechnology

The following units of study are only available to students in the Bachelor of Science (Molecular Biotechnology) degree. Please consult degree information in chapter 2, the Tables earlier in this chapter, and the relevant Departments/Schools entries in this chapter for descriptions of other units of study required for this degree.

MOBT 2001 Molecular Biotechnology 2A 4 credit points. Session: 1. Classes: 3 lec & 1 tut wk. Prerequisite: 12 credit points of Junior BIOL and 12 credit points of Junior CHEM. Assessment: One 3 hour theory exam, one essay and associated tasks. NB: This unit is only available to students in the BSc (Molecular Biotechnology).

The major purpose of this unit of study is to introduce students to the concepts of modern molecular biotechnology. It assumes students will be taught Molecular Biology and Genetics through MBLG 2901/2901 and MBLG 2002/2902. It commences with case studies of overseas and local molecular biotechnology companies, then considers the roles of intellectual property and patenting in Australia and overseas in combination with regulatory issues. This is followed by an appreciation of the societal impact and ethics of biotechnology, implications of patent driven research and development, issues facing start ups, interactions with big companies, informative interactions with the public, and needs for feedback and relevance. This information is disseminated through discussion sessions and problem based learning. It leads on to an introduction to industrial macromolecule production, covering areas of sugar based macromolecules in surgical treatment, engineered protein pharmaceuticals, medicinal enzymes and enzymes in food. This proceeds to considering the chemical synthesis of pharmaceuticals with specific example, including structure activity relationships, use and modification of natural products in drug design, drugs from virus structures including anti influenza drugs, new drug targets from genomics and cell targeting, and biotin drugs. Finally students are taken through large molecule drug discovery, screening in drug development, phase display of molecular targets, molecular diversity of peptides.
recognising industry trends. Students are given practical design research and development, and the importance of needs for experience and preparation for invention, product units of modern molecular biotechnology. It emphasises the This Senior unit of study builds on knowledge gained in earlier units of MOBT 2001 and provide further concepts of modern molecular biotechnology. It assumes students will be taught molecular biology and genetics through MBLG 2001/2901 and MBLG 2002/2902. It commences with the synthesis of commercial products by recombinant microorganisms, including small biological molecules, antibiotics, polynucleotides, nucleic acids and proteins, then leads up to large scale production of proteins from recombinant microorganisms. Students will be introduced to scaled up microbial growth and bioreactors, combined with typical large scale fermentation systems and downstream processing. This will be broadened to an appreciation of yeast and mammalian cells in large scale production. Examples of major protein based therapeutics will be examined in detail. This is followed by an appreciation of the uses of multicellular factories, illustrated with case studies. It extends biomaterials and wound repair, covering issue diversities, connective tissue candidates, recruitment of wound repair reactions, biomimetics and composites, and the prospects of bioartificial organs. The impact of proteomics in these and related areas will be explored in terms of its interplay with genomics, organ and organisational variety, disease states, quantitative vs., qualitative, database management, computer tools and proteome databases and its major interplay with bioinformatics. Finally students are taken through biosensors, where they will learn about amperometric and potentiometric sensing, optical and fluorescence detection, immobilisation of enzymes on biosensor surfaces, ion gating or ion channel biosensors, illustrated with examples, including glucose biosensor for diabetics. Teaching will be augmented through discussion sessions and problem based learning.

MOBT 3001 Molecular Biotechnology 3A
NB: This unit of study is only available to students in the BSc (Molecular Biotechnology). This Senior unit of study explores major current issues in the field and extends builds on the concepts of modern molecular biotechnology taught in MOBT 2001 and MOBT 2002. It commences with a detailed exploration of drug discovery by combinatorial chemistry and molecular diversity. This will be followed with the theory and practice of computer assisted drug design. Genomic studies will interface with predictive concepts and then proceed to an appreciation of therapeutic design in the post genomic era. Students are then taken through essential aspects of genome annotation and functional analysis, then in silico directed metabolic models and testing. To gain an appreciation of key stages in developing concepts and inventions, these approaches and earlier topics are combined through examples, leading to viewing classical development paths for molecular biotechnology products.
Main subject areas include drug discovery by combinatorial chemistry and molecular diversity; fundamentals of computer assisted drug discovery and optimisation; therapeutic design in the post genomic era; therapeutic targets, pharmacogenomics and functional analysis; development of molecular diagnostics; and in silico directed metabolic models and testing.

MOBT 3002 Molecular Biotechnology 3B
12 credit points. Session: 2. Classes: 1 lec. 1 tut & 10 placement/wk. Prerequisite: MOBT 3001. Assessment: Industry placements within the Program will be assessed by an academic staff member of the Molecular Biotechnology Program through communication with both the student and industry appointed liaison officer.
NB: This unit of study is only available to students in the BSc (Molecular Biotechnology). This Senior unit of study builds on knowledge gained in earlier units of modern molecular biotechnology. It emphasises the needs for experience and preparation for invention, product design research and development, and the importance of recognising industry trends. Students are given practical experience through an industry placement program. This will typically involve either participation on site at locations of industry partners in association with University staff or in an industry associated university laboratory. Lectures will address emerging areas in molecular biotechnology and business management. To maximise future opportunities, students will learn about funding, research and development models, partly through Australian and overseas case studies. Guest lecturers will contribute and help students develop an appreciation of emerging areas in molecular biotechnology.
As well as relevant practical experience gained through the industry placement, subject areas including Agricultural Biotechnology; Environmental Biotechnology including remediation strategies and green manufacturing technologies; Bioprocess Technologies (scaling up and micro processing); Commercial Biotechnology; management fundamentals for biotechnology based product marketing with relevant case studies; biotechnology and society; ethics of modern biotechnology; funding, research and development models; and emerging areas in molecular biotechnology will be covered.

### School of Molecular and Microbial Biosciences

The School brings together Biochemistry, Microbiology, Molecular Biotechnology and Nutrition, with separate study codes BCHM, MICR, MOBT [see Table IE for details of the BSc (Molecular Biotechnology)] and NUTR [see Table IF for details of the BSc(Nutrition)]. Significant contributions are also made to the intermediate faculty units of study in Molecular Biology and Genetics with study code MBLG.

#### Unit descriptions

Unit descriptions are located under separate headings in this chapter:
- Biochemistry
- Microbiology
- Molecular Biotechnology
- Molecular Biology and Genetics
- Nutrition.

**Location**
The School is located in the Biosciences Building (G08), across City Road in the Darlington area behind the Wentworth Building.

### Nanoscience and Technology

Nanoscience and Technology is an interdisciplinary major offered within the BSc. It is directed at students interested in understanding the emerging science of working and building at and near the molecular level. It incorporates study of the fundamental sciences in order to understand the structure of matter, as well as technological elements of the mechanical properties of materials. Students undertaking this major are strongly encouraged to take suitable units from the Faculty of Engineering in combination with Physics and Chemistry. A student seeking to complete this major should study Physics and Chemistry in their Junior and Intermediate years together with some Engineering and Mathematics. In the Senior year it is possible to focus on two of the three discipline areas, or to continue to study elements of all three. This major may also be seen as a complement to a traditional major in Chemistry or Physics. Refer to Table 1 for an enrolment guide and to entries under the contributing schools and departments for unit descriptions. Engineering units are described in the Engineering Handbook.

### Neuroscience

Coordinator: Assoc. Prof. Ian Provis (Anatomy)

‘Neuroscience’ is an interdisciplinary major within the BSc which cuts across boundaries between traditional subject areas. As reflected in the structure of the program, it ranges from concern with processes within nerve cells at the molecular level to complex phenomena such as perception and emotion; from the regulation of breathing and blood pressure through movement, to our ability to learn, remember and think. Students wishing to major in Neuroscience can take various combinations of units of study, mainly ones offered by the Departments of Anatomy, Pharmacology, Physiology and Psychology.
Nutrition

Refer to Table 1 for an enrolment guide and to entries under the contributing departments for unit of study descriptions. Please note that this major requires certain combinations of units of study in the Junior and Intermediate years, as well as the Senior year.

There is no equivalent Honours program but students who take appropriate additional units of study may be eligible for entry into the Honours programs offered by the Departments of Anatomy, Pharmacology, Physiology and Psychology. These Honours programs require the equivalent of a further year of full-time study.

**Nutrition**

The Human Nutrition unit in the School of Molecular and Microbial Biosciences offers units of study to students in the Bachelor of Science (Nutrition) degree. Please consult degree information in chapter 2, and Table I in this chapter, and the relevant Departments/Schools entries in this chapter for descriptions of other units of study required for this degree.

**NUTr 2901 Introductory Food Science (Advanced)**

8 credit points. Prof. J Brand Miller. Session: 1. Classes: 3 lec & 5 hr prac/wk. Prerequisite: BIOL (1001 or 1001) and (1002 or 1003 or 1902 or 1903) and CHEM (1101 or 1901 or 1903 or 1908) and CHEM (1102 or 1902 or 1904 or 1908). Assessment: One 3 hr exam (50%), practical (50%).

**Foods as commodities**

Food use around the world, including the origin, history, cultural and nutritional importance of each of the following major human foods: Animal foods, seafood, cereals (wheat, rice, maize), sugar, fats and oils, milk products, legumes and nuts, roots and tubers, green leafy vegetables, herbs and spices, alcohol, fruit, novel proteins.

**Food Behaviour**

Physical and chemical composition of various commodities (fruit and vegetables, carbohydrate foods, wheat and baked goods, eggs, dairy products, fats and oils, meat and poultry), behaviour and function of the commodity during culinary processes, spoilage of the commodity.

**Geography of foods**

Understanding of the global food distribution, food abundance and food scarcity, the problems of nutrition in very poor countries and the potential of food aid to minimise food problems.

**Macronutrients**

Energy, protein, fat, carbohydrate, fibre, water, alcohol consumption patterns, requirements for health, absorption, metabolism and health/disease significance.

**Practical:** Organoleptic assessment of food: vision, smell, taste and tactile. Food pigments, the five tastes, genetic differences, food volatiles, food flavour, texture and consistency. Enzymic and non enzymic browning in foods: desirable versus undesirable browning reactions. Vegetables and fruits — various parts of the plant, types of tissue, cell structure, soluble and insoluble constituents (cell wall, vacuoles, chloroplasts, chromoplasts, oil droplets, intercellular layers), pectic substances, cooking of fruit and vegetables, spoilage reactions. Carbohydrate foods: types of sugars, crystal structures, mouthfeel, texturising, flavou modifying, fermentation. Wheat effect of milling, gluten structure, leavening agents, ingredients, shortening, emulsifiers, gluten, starch, salt, sugar. Eggs functional properties of the albumen and yolk, coagulation of proteins, foaming properties, browning, emulsification, clarification, colour and flavour, deterioration and storage. Dairy products physical structure and chemical composition of milk and dairy products such as butter, cheese, cream and dried milk, effect of whipping, acidity, fermentation, spoilage. Fats and oils Physical and chemical structure of different fats and oils, functional properties. Meat and poultry — chemical and physical composition of red vs white meat, types of tissues (muscle, adipose, connective), conversion of live muscle to meat, effect of marination, ageing, pigment changes, cooking (dry vs moist), spoilage. Fish and shellfish types, oily vs non oily, differences in chemical and physical structure from meat, effect of cooking, problems, spoilage.

**Textbooks**


**NUTr 3901 Nutrition in Individuals (Advanced)**

12 credit points. Dr D Volker. Session: 1. Classes: 4 lec & 8 hr prac/wk. Prerequisite: NUTr 2902. Assessment: One 3 hr exam (50%), practical project (50%).

Lectures: Dietary intake assessment: basic concepts in nutritional status; four methods of dietary assessment in individuals, advantages and limitations; validation of dietary methods; nutritional guidelines, targets and recommended dietary intakes; computerised nutrient analysis; Atwater conversion factors; limitations of food composition analysis; critical interpretation of nutrient analysis

Behavioural influences on food intake

Clinical assessment and biochemical evaluation: nutritional assessment of individuals through clinical examination and commonly used laboratory biochemical tests for nutritional status; methods used to diagnose nutritional deficiencies; specificity, reliability of biochemical tests

Anthropometry and body composition: techniques for measuring body composition; soft tissue measurements; percent body fat; reference standards; growth standards and percentiles

Nutritional metabolism: biochemical interrelationships between nutrients and the supply of energy to the body; effects of nutritional state on energy metabolism (exercise, starvation, obesity, diabetes)

Nutritional epidemiology: basic concepts (causality, randomised control trials, cohort studies, case control studies, cross sectional and ecological studies); advantages and limitations of epidemiological methods; biological markers of chronic diseases; use of biostatistical tools in epidemiology; critical interpretation of published data

Research design: qualitative research methods; questionnaire design

Statistics for nutrition: basic concepts (mean, median, standard deviation; association and regression in the relationship between two continuous variables; parametric and non parametric tests for group comparisons); statistical methods used to analyse dietary intake and epidemiological studies; data management and analysis.

**Practical:** Formats will include practical classes, problem based learning with case histories and small group tutorials.

**Textbooks**

Students will be involved in full time research under the supervision of a staff member within the Human Nutrition unit or a cognate department. During the year, students will be required to:

(i) carry out a supervised research project;
(ii) present a written project proposal and present orally a brief literature survey and aims of the project;
(iii) write an essay based on the project; and
(iv) deliver a seminar on the project.

Students will prepare a project proposal, which should outline the aims, significance and background of the project, including an indication of the relationship of the project to the work of others, citing key references (not to be included in the 1000 word limit) where appropriate. A brief outline of methods and techniques to be used.

### Pharmacology

This Department offers a general training in pharmacology to students in the Faculty of Science. It provides two Intermediate 4 credit point units of study, one Intermediate 6 credit point unit of study and four Senior 12 credit point units of study.

**PCOL 2001** Pharmacology Fundamentals

4 credit points. Dr H Lloyd. **Session:** 1. **Classes:** 2 lec/wk & 4 prac computer sessions. **Prerequisite:** 6 credit points of Junior Chemistry and 6 credit points of Junior Biology. **Assessment:** One 1.5hr exam, classwork.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit of study introduces students to the basic concepts of pharmacology - how drugs act and how they reach their sites of action. The molecular sites of action of drugs are described, and the relationships between drug activity and chemical structure explored. The roles of absorption, distribution, metabolism and elimination of drugs in determining the actions of drugs in the body are also considered.

**Textbooks**

- Foster RW. Basic Pharmacology. 4th edn, Butterworth Heinemann, 1996
- OR
- Rang HP, Dale MM & Ritter JM, Pharmacology. 4th edn, Churchill Livingstone, 1999

**Study aids**


**Reference books**

- Patrick CL. An Introduction to Medicinal Chemistry. 2nd edn Oxford Uni Press, 2001

**PCOL 2002** Intro Pharmacology: Drugs and People

4 credit points. Dr H Lloyd. **Session:** 2. **Classes:** 2 lec/wk & 4 prac/tut sessions. **Prerequisite:** 6 credit points of Junior Chemistry and 6 credit points of Junior Biology. **Prohibition:** May not be counted with PCOL 2003. **Assessment:** One 1.5hr exam, classwork.

**NB:** The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Students are strongly advised to complete PCOL 2001 before enrolling in PCOL 2002.

This unit of study explores how drugs produce their effects in the body and what these effects are. The effects of drugs on the autonomic nervous system and the types and actions of drugs used for the treatment of pain and inflammation are discussed. The social use of drugs and the effects of some commonly abused drugs are examined. There is also a brief introduction to the toxicology of natural poisons, in particular snake and spider venoms.

**Textbooks**

- Rang HP, Dale MM & Ritter JM, Pharmacology. 4th edn, Churchill Livingstone, 1999

**Study aids**


**Reference books**


**PCOL 2003** Pharmacology: Drugs and Society

6 credit points. Dr H Lloyd. **Session:** 3. **Classes:** 3 lec, 3 prac & 2 wrkprac/wk. **Prerequisite:** 6 credit points of Junior Biology and 6 credit points of Junior Chemistry. **Prohibition:** May not be counted with PCOL 2001.
2002. Assessment: One 2hr theory exam; three lab reports and reflective statements, six on line quizzes, one presentation, 5 written assignments from case studies.

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Students are strongly advised to complete PCOL 2001 before enrolling in PCOL 2003.

This unit of study will consist of six modules covering the following topics: drug action in the peripheral and central nervous system; a consideration of drugs used to treat inflammation, allergy and disorders of the gut; drug development from an industry perspective and an introduction to the toxicology of natural poisons such as snake and spider venom; an exploration of modern drugs such as oral contraceptives and anabolic steroids; the social and economic impact of drugs in society; and a consideration of drugs used for recreational purposes. Unit delivery will involve lectures, practicals, computer aided learning and workshops. In the practicals emphasis will be placed on the acquisition of technical and teamwork skills and an understanding of the basics of experimental design, data interpretation and how to write scientific reports. Workshops will be largely problem based, using case reports and drug use in the community or will involve a presentation on a selected pharmacological research paper. Online quizzes will accompany each module to aid students in monitoring their progress.

Textbooks

Study aids
Dale MM et al, Companion to Pharmacology. 2nd edn, Churchill Livingstone, 1999

Neal JM, Medical Pharmacology at a Glance. 4th edn, Blackwell Science, 2002

Reference books
Hardman JG et al (eds), Goodman and Gilman's The Pharmacological Basis of Therapeutics. 9th edn, McGraw Hill, 1996

PCOL 3001 Molecular Pharmacology and Toxicology

NB: The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

This unit of study covers two major areas of pharmacology: (1) toxicology, and (2) drug design and development. The toxicology area covers metabolism of toxic substances, toxicity to major organs, epidemiology and carcinogenesis. It aims to provide an overview of toxicology with detailed examination of selected issues. Drug design and development looks at the principles guiding the development of new therapeutic agents, for example new histamine antagonists, and the use of new methods to study drug distribution and action such as positron emission tomography (PET) and single photon emission computerised tomography (SPECT) scanning.

Textbooks
Department of Pharmacology PCOL 3001: Toxicology Readings.

Patrick GL. An Introduction to Medicinal Chemistry. 2nd edn Oxford Uni Press, 2001

Reference books

PCOL 3901 Molecular Pharmacology & Toxicology Adv

NB: Department permission required for enrolment. The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Entry to this unit requires Departmental permission.

This unit will consist of the lecture and practical components of PCOL 3001. Students selected for PCOL 3001 will be set special advanced assignments related to the material covered in core areas. These may also involve advanced practical work or detailed investigation of a theoretical problem.

Textbooks
Department of Pharmacology PCOL 3901: Toxicology Readings.

Patrick GL. An Introduction to Medicinal Chemistry. 2nd edn Oxford Uni Press, 2001

Reference books

PCOL 3902 Neuro & Cardiovascular Pharmacology Adv

NB: Department permission required for enrolment. The completion of MBLG (2001 or 2101 or 2901) is highly recommended. Entry to this unit requires Departmental permission.

Advanced students will complete the same core lecture material as students in PCOL 3002 but carry out advanced level elective projects, practicals and tutorials. They will sit the same written examinations as students in PCOL 3002, while the elective projects, practicals and tutorials will be assessed separately.

Textbooks

Study aids

Reference books
Cooper JR, Bloom FE & Roth RH. The Biochemical Basis of Neuropharmacology. 7th edn, Oxford, 1996

Pharmacology Honours

Associate Professor R Allan Subject to a satisfactory standard being attained in Pharmacology, a student may arrange to read for the Honours degree in this subject area. Much of the work will be arranged to suit the interest of the individual. The student will participate in a research project in progress in the Department. A research plan...
Physics

The School of Physics provides undergraduate units of study in Physics at Junior, Intermediate, Senior and Honours levels. Appropriate unit of study choices are available for candidates who wish to major in Physics, to proceed to Honours in Physics, or to combine Physics with a major in another subject area. Several other Faculties and other Departments within the Faculty of Science require that Junior Physics be taken as part of the students' preparation for later studies in their more specialised fields. Similarly, Intermediate Physics units of study are taken by many Faculty of Engineering students, as well as by many Faculty of Science students who intend to major in other subjects.

The School of Physics provides units of study at the Junior and Intermediate level for students wishing to complement other studies with Physics units of study which have an environmental emphasis, and for students wishing to major in Physics within the BSc (Environmental) award course program.

Location

Physics Junior units of study: lectures in Physics Building, laboratories in Carslaw Building.

Physics Intermediate, Senior and Honours units of study: Physics Building.

Registration

Junior units of study: In assigned laboratory periods during the second week of each semester.

Intermediate units of study: At first lecture, in the Physics Building. See noticeboard for allocation of lecture theatres.

Senior units of study: At first lecture, in the Physics Building. Consult noticeboard early in orientation period.

Advice units of study

A member of the physics staff is normally present among Faculty advisers during enrolment week to advise students. The Physics Student Office, Room 202, Physics Building, will arrange for students to meet advisers at other times.

Further information about the School of Physics and its teaching program are contained in a booklet for intending commencing students available at enrolment or during O Week or from the Physics Student Office (room 202, ground floor, Physics Building).

Advice units of study

Senior units of study: At first lecture, in the Physics Building. Consult noticeboard early in orientation period.

Advice units of study

A member of the physics staff is normally present among Faculty advisers during enrolment week to advise students. The Physics Student Office, Room 202, Physics Building, will arrange for students to meet advisers at other times.

Further information about the School of Physics and its teaching program are contained in a booklet for intending commencing students available at enrolment or during O Week or from the Physics Student Office (room 202, ground floor, Physics Building).

Physics Junior units of study

There are seven different semester length units of study offered at the Junior level: PHYS 1001 (Regular), PHYS 1002 (Fundamentals) and PHYS 1901 (Advanced) are offered in first semester only and PHYS 1004 (Environmental and Life Sciences), PHYS 1902 (Advanced) and PHYS 1500 (Astronomy) are offered in second semester only. PHYS 1003 (Technological) is offered in both first and second semesters. Completion of one unit of study in each semester provides a solid foundation for further studies in Physics in higher years. PHYS 1500 Astronomy cannot be counted towards the 12 credit points of Junior Physics needed as a prerequisite for Intermediate Physics.

The first semester laboratory work provides an introduction to experimental techniques while reinforcing concepts of physics introduced in lectures. In second semester the laboratory work provides an introduction to electrical circuits and offers students the opportunity to design and undertake short experimental projects.

Information booklet

Further information about Junior Physics units of study is contained in a booklet for intending commencing students available at enrolment or during O Week or from the Physics Student Office (room 202, ground floor, Physics Building A28). It is also available on the School of Physics Web site at www.physics.usyd.edu.au

Physics Junior units of study

PHYS 1001 Physics 1 (Fundamentals)

6 credit points. Session: 1. Classes: three 1 hr lectures, one 3hr laboratory, one 1 hr tutorial. Assumed knowledge: HSC Physics MATH (1001/1901,1002/1902,1003/1903). MATH 1005/1905 would also be useful. Prohibition: May not be counted with PHYS (1002 or 1901). Assessment: laboratory (20%), assignments (5%), progressive test (5%), skills test (5%), examination (65%).

This unit of study is for students who gained 65 marks or better in HSC Physics or equivalent. The lecture series contains three modules on the topics of mechanics, thermal physics and waves.

Textbooks


PHYS Laboratory Manual School of Physics Publication.

PHYS 1002 Physics 1 (Fundamentals)

6 credit points. Session: 1. Classes: three 1 hr lectures, one 3hr laboratory, one 1 hr tutorial. Assumed knowledge: No assumed knowledge of Physics MATH (1001/1901,1002/1902,1003/1903). MATH 1005/1905 would also be useful. Prohibition: May not be counted with PHYS (1001 or 1901). Assessment: laboratory (20%), assignments (5%), progressive test (10%), examination (65%).

This unit of study is designed for students who have not studied Physics previously or scored below 65 in 2 unit HSC Physics. The lecture series contains modules on the language of Physics, mechanics and waves.

Textbooks


Physics Laboratory Manual School of Physics Publication.

PHYS 1003 Physics 1 (Technological)

6 credit points. Session: 1, 2. Classes: three 1 hr lectures, one 3hr laboratory, one 1 hr tutorial. Assumed knowledge: HSC Physics or PHYS (1001 or 1002 or 1901 or equivalent). MATH (1001/1901,1002/1902,1003/1903). MATH 1005/1905 would also be useful. Prohibition: May not be counted with PHYS (1001 or 1901). Assessment: laboratory (25%), assignments (5%), examination (70%).

This unit of study is designed for students majoring in physical and engineering sciences and emphasis is placed on applications of physical principles to the technological world. The lecture series contains modules on the topics of fluids, electromagnetism, and quantum physics. It is recommended that PHYS (1001 or 1002 or 1901) be completed before this unit.

Textbooks


Physics Laboratory Manual School of Physics Publication.

PHYS 1004 Physics 1 (Environmental & Life Science)

6 credit points. Session: 1. Classes: three 1 hr lectures, one 3hr laboratory, one 1 hr tutorial. Assumed knowledge: HSC Physics or PHYS (1001 or 1002 or 1901 or equivalent). MATH (1001/1901,1002/1902,1003/1903). MATH 1005/1905 would also be useful. Prohibition: May not be counted with PHYS (1001 or 1901). Assessment: laboratory (25%), assignments (5%), examination (70%).

This unit of study has been designed specifically for students interested in further study in environmental and life sciences. The lecture series contains modules on the topics of properties of matter, electromagnetism, and radiation and its interactions with matter.

Textbooks


Physics Laboratory Manual School of Physics Publication.

PHYS 1500 Astronomy

6 credit points. Session: 2. Classes: three 1 hr lectures, one 2hr laboratory, one 1 hr tutorial. Assumed knowledge: No assumed knowledge of Physics. Assessment: laboratory (25%), essay (15%), tutorials (5%), night viewing project (5%), examination (50%).

This unit of study provides a broad understanding of the structure, scale and diversity of the universe and an appreciation of the scientific methods used to achieve this understanding. Current areas of investigation, new ideas and concepts which often receive wide media attention will be used to demonstrate how science attempts to understand new and remote phenomena and how our ideas of our place in the universe are changing. The range of topics includes the planets, the solar system and its origin, space, raft discoveries, stars, supernovas, black holes, galaxies, quasars, cosmology and the Big Bang. It also includes day and night sky observing sessions.

This unit of study cannot be counted as part of the 12 credit points of Junior Physics necessary for enrolment in Intermediate Physics.

Textbooks


Astronomy Computer Exercises available from the Copy Centre.

PHYS 1901 Physics 1A (Advanced)

6 credit points. Session: 1. Classes: three 1 hr lectures, one 3hr laboratory, one 1 hr tutorial. Assumed knowledge: MATH (1001/1901,1002/1902,1003/1903). MATH 1005/1905 would also be useful. Prerequisite: UAI of at least 95. HSC Physics result in Band 6, or PHYS 1902, or Distinction or better in PHYS 1003/1904 or an equivalent
Assessment: laboratory (20%), assignments (5%), progressive test (5%), skills test (5%), examination (65%).

Physics 1902 (Advanced) is intended for students who have a strong background in Physics and an interest in studying more advanced topics. It proceeds faster than Physics 1001 (Regular), covering further and more difficult material. The laboratory series contains modules on the topics of mechanics, thermodynamics, waves and chaos. The laboratory work also provides an introduction to computational physics using chaos theory as the topic of study.

Textbooks
Young and Freedman, University Physics, 10th edition, Addison Wesley Longman 2000

Physics Intermediate units of study

The School of Physics offers 2 units of study in semester one and 3 in semester two, at the Intermediate level. The semester one units complete a 'first pass' through physics begun in Junior Physics. A full year Intermediate program in Physics should be selected from PHYS 2001 and 2002. PHYS 2001 and 2002 are the advanced physics units of study for students who have achieved a pass or better in PHYS 1901 and 1902, or who have achieved a Credit or better in PHYS 1003 or 1004. Either of these two combinations form the prerequisite units of study for Senior level physics. One other unit of study, PHYS 2105, is a shorter unit for students with an interest in the medical sciences who do not plan to continue with physics at a Senior level.

Full details of Intermediate Physics unit of study structures, contents and assessment policies are provided in the Intermediate Physics information booklet available at the start of semester and also on the School of Physics Web site at www.physics.usyd.edu.au

PHYS 2001 Physics 2A

8 credit points. Session: 1. Classes: Three 1hr lectures, one 3hr laboratory, one 2hr microlab. Assumed knowledge: MATH (1001/1901 and 1002/1902) and 1003/1903). MATH 1005/1905 would also be useful. Prerequisite: 12 credit points of Junior Physics (excluding PHYS 1500 & 1600). Assessment: One 2hr exam, one 1hr microlab, assignments, practical work, report and oral presentation.

In combination with two semesters of Junior Physics, this unit of study completes a first pass through all major branches of classical and modern physics, providing students with a sound basis for later physics units or for studies in other areas of science or technology. Hence this unit suits students continuing with the study of physics at the general Intermediate level. Students wishing to round out their knowledge of physics before continuing in other fields. The major topics in this unit of study are:
- Optics: The wave nature of light, and its interactions with matter. Applications including holography and fibre optics. The module is accompanied by computer simulation studies (Microlab).
- Special relativity: Space and time at high velocities.
- Nuclear and particle physics: the fundamental structure of matter.
- Microlab: In a PC based computing laboratory students use simulation software to conduct virtual experiments in optics which illustrate and extend the relevant lectures. Students also gain experience in the use of computers to solve problems in physics. An introductory session is held at the beginning of semester for students who are not familiar with personal computers.

Practical: Experimental physics is taught as a laboratory module and includes experiments in the areas of optics, analysis of stellar images, nuclear decay and particles, properties of matter, and other topics. Assessment is based on mastery of each attempted experiment. At the end of the semester students prepare a short report on one experiment and make an oral presentation on it.

Textbooks
Young and Freedman, University Physics, 10th edition, Addison Wesley 2000

PHYS 2002 Physics 2B

8 credit points. Session: 2. Classes: Three 1hr lectures, one 3hr practical, one 2hr microlab. Assumed knowledge: MATH (1001/1901 and 1002/1902 and 1003/1903). MATH 1005/1905 would also be useful. Prerequisite: PHYS (1003 or 1904 or 2002) and PHYS (1001 or 1002 or 1901 or 2001 or 2003). Prohibition: May not be counted with PHYS (2102 or 2104 or 2902). Assessment: One 3hr exam, one 1hr microlab test, assignments, practical work, report and oral presentation.

This unit of study is designed for students continuing with the study of physics at the intermediate level, and represents the beginning of a more in depth study of the topics of classical and modern physics. The lecture topics are:
- Quantum physics: The behaviour of matter and radiation at the microscopic level, modelled by the Schrodinger equation. Application to 1 dimensional systems including solid state physics.
- Electromagnetic properties of matter: Electric and magnetic effects in materials; the combination of electric and magnetic fields to produce light and other electromagnetic waves; the effects of matter on electromagnetic waves.
- Optics: The wave nature of light, and its interactions with matter. Applications including holography and fibre optics. The module is accompanied by computer simulation studies (Microlab).

Microlab: The computational physics component is similar to that of PHYS 2001, except that the material illustrates topics in the quantum physics module.

Practical: Experimental Physics is taught as a laboratory module and includes experiments in the areas of quantum physics, electronic instrumentation, and other topics. Assessment is based on mastery of each attempted experiment. At the end of the semester students work in teams on a project, which forms the subject of their written report and oral presentation.

Textbooks
Experimental Physics Notes, School of Physics Publication Other texts to be advised.

PHYS 2105 Physics for Medical Sciences

4 credit points. Session: 2. Classes: Two 1hr lectures, one 1hr tutorial and one 1hr practical. Prerequisite: 12 credit points of Junior Physics, excluding PHYS (1500 & 1600). Assessment: One 2hr exam, assignments, practical work and report.

This unit of study is primarily intended for students in the Bachelor of Medical Science program, but is also available in other degree programs. It covers a number of physics topics relevant to medical science: sound and ultrasound, light and optics, fluid flow, electrical properties of the cells and the nervous system, heat and temperature. The topics are presented in the context of their relevance and applications to medical science. In addition to lectures, on alternate weeks there are two hour workshop tutorials and laboratory sessions involving both practical and simulation.

PHYS 2901 Physics 2A (Advanced)

8 credit points. Session: 1. Classes: Three 1hr lectures, one 3hr practical, one 2hr microlab. Assumed knowledge: MATH (1901/2001 and 1902/2002 and 1903/2003). MATH 1005/1905 would also be useful. Prerequisite: PHYS 1901 (or credit or better in PHYS 1901 or 2001) and PHYS 1902 (or credit or better in PHYS 1903 or 2003). Prohibition: May not be counted with PHYS 2001 or 2003). Assessment: One 3hr exam, one 1hr microlab test, assignments, practical work, report and oral presentation.

This unit of study is designed for students having a strong interest in Physics. The lecture topics are as for PHYS 2001. They are treated in greater depth and with more rigorous attention to derivations than in PHYS 2001. The assessment reflects the more challenging nature of the material presented.

Microlab: As for PHYS 2001, but at a more advanced level.

Practical: As for PHYS 2001, but at a more advanced level.

Textbooks
Young & Freedman, University Physics, 10th edition, Addison Wesley 2000
Tango, Introduction to Stellar Astrophysics, published by the School of Physics.

**Experimental Physics Notes, published by the School of Physics.**

**PHYS 2002 Physics 2B (Advanced)**
8 credit points. Session: 2. Classes: Three 1 hr lectures, one 3hr practical, one 2hr microlab. Assumed knowledge: MATH (1001/1901 and 1002/1902 and 1003/1903). MATH 1005/1905 would also be useful. Prerequisite: PHYS 1902 (or credit or better in PHYS 1003 or 1004) and PHYS (1901 or 2901) or credit or better in PHYS (1001 or 2901 or 2002 or 2001). prohibition: May not be counted with PHYS (2002 or 2102 or 2104). Assessment: One 3hr exam, one 1 hr microlab test, assignments, practical work, report and oral presentation.

Refer to PHYS 2901 for an overall description of the advanced Intermediate Physics program. The lecture topics are as for PHYS 2002.

**PHYS 3004 Condensed Matter Physics and Photonics**
4 credit points. Session: 1. Classes: Three 1 hr lectures. Assumed knowledge: 8 credit points of Intermediate Mathematics. Prerequisite: 16 credit points of Intermediate Physics. Prohibition: May not be counted with PHYS 3904. Assessment: One 3hr exam, assignments. This unit of study covers two of the most important, and closely related, areas of research in contemporary physics and application to technology and engineering. The physics of condensed matter, in particular the solid state, is studied, as well as topics in photonic technology such as optical fibres.

**PHYS 3006 Topics in Modern Physics B**
4 credit points. Session: 2. Classes: Three 1 hr lectures. Assumed knowledge: 8 credit points of Intermediate Mathematics. Prerequisite: 16 credit points of Intermediate Physics. Prohibition: May not be counted with PHYS (3005 or 3105 or 3106 or 3107 or 3108 or 3109). Assessment: One 3hr exam, assignments. This unit of study covers thermal physics and energy physics, plus a choice of one subject covering an important research area of contemporary physics. Thermal physics covers the laws of thermodynamics, and energy physics explores the technological, environmental and practical uses and consequences of thermodynamics. The option subjects are in the areas covered by the research departments of the School of Physics: Astrophysics, Plasma Physics, Modern Optics, Medical Physics, and Nuclear and Particle Physics. Not all of these option subjects may be offered in the one year.

**PHYS 3008 Experimental Physics A**
4 credit points. Session: 1.2. Classes: One 4hr practical. Assumed knowledge: 8 credit points of Intermediate Mathematics. Prerequisite: 16 credit points of Intermediate Physics. Prohibition: May not be counted with PHYS (3008 or 3009 or 3009). Assessment: Prac assessment. Six experiments drawn from a range of experiments in the areas of waves and optics, nuclear physics and the properties of matter.

**PHYS 3009 Experimental Physics B**
8 credit points. Session: 1.2. Classes: Two 4hr practicals. Assumed knowledge: 8 credit points of Intermediate Mathematics. Prerequisite: 16 credit points of Intermediate Physics. Prohibition: May not be counted with PHYS (3008 or 3009 or 3009). Assessment: Prac assessment. Twelve experiments drawn from a range of experiments in the areas of waves and optics, nuclear physics and the properties of matter.

**PHYS 3007 Topics in Modern Physics A**
4 credit points. Session: 1. Classes: Three 1 hr lectures. Assumed knowledge: 8 credit points of Intermediate Mathematics. Prerequisite: 16 credit points of Intermediate Physics. Prohibition: May not be counted with PHYS (3006 or 3007 or 3008 or 3009). Assessment: One 3hr exam, assignments. This unit of study covers a choice of two subjects covering important research areas of contemporary physics: Astrophysics, Plasma Physics, Modern Optics, Medical Physics, and Nuclear and Particle Physics. Not all of these option subjects may be offered in the one year. The option subjects cover the same topics as for PHYS 3005.

**PHYS 3101 Experimental Physics C**
4 credit points. Session: 1.2. Classes: One 4hr practical. Assumed knowledge: 8 credit points of Intermediate Mathematics. Prerequisite: PHYS (3008 or 3009 or 3009). Prohibition: May not be counted with PHYS (3102 or 3801 or 3802). Assessment: Prac assessment. Six experiments drawn from a range of experiments in the fields of waves and optics, nuclear physics and the properties of matter.

**PHYS 3102 Experimental Physics D**
8 credit points. Session: 1.2. Classes: Two 4hr practicals. Prerequisite: PHYS (3008 or 3009 or 3009). Prohibition: May not be counted with PHYS (3101 or 3801 or 3802). Assessment: Prac assessment. Twelve experiments drawn from a range of experiments in the area of waves and optics, nuclear physics and the properties of matter.
PHYS 3301 Scientific Computing
4 credit points. Session: 1. Classes: One 2hr lecture & one 2hr computer lab. Prerequisite: 16 credit points of Intermediate units of study in Science Subject Areas. Prohibition: May not be counted with PHYS 3301. Scientific computing now stands beside theory and experiment/observation as a third way to pursue scientific investigations and technological developments. This unit presents students with a wide variety of tools and techniques used in scientific computing. Abundant tutorials provide hands on experience with a selection of the powerful computer facilities of Vlslab. The unit of study deals with general principles and is suitable for students in any scientific or engineering discipline.

PHYS 3303 Scientific Visualisation
4 credit points. Session: 2. Classes: One 2hr lecture & one 2hr computer lab. Prerequisite: 16 credit points of Intermediate units of study in Science Subject Areas. Prohibition: May not be counted with PHYS 3303. This unit of study includes an introduction to visualisation, 2D image processing, visualisation of 2D data in 2 and 3 dimensions, dealing with different image formats, 3D scientific data volumes, visualisation techniques (volume, iso surface, mesh), use/abuse of colour, volume visualisation, 3D geometric datasets, using a generic visualisation package (AVS), incorporating computational models within a visualisation, real time visualisation, producing output, conceptual visualisation, experience with computer animation programs. As this unit of study deals with general principles it is suitable for students in any scientific discipline.

PHYS 3903 Quantum Mechanics and Relativity (Adv)
4 credit points. Session: 1. Classes: Three 1 hr lectures. Assumed knowledge: 16 credit points of Intermediate Mathematics. Prerequisite: PHYS (2901 and 2902) or Credit or better in PHYS (2001 or 2011) and Credit or better in PHYS (2002 or 2012). Prohibition: May not be counted with PHYS (3005 or 3200). Assessment: 3hr exam, assignments. This unit of study covers the same topics as PHYS 3003, with some more challenging material.

PHYS 3905 Topics in Modern Physics A (Advanced)
4 credit points. Session: 2. Classes: Three 1hr lectures. Assumed knowledge: 16 credit points of Intermediate Mathematics. Prerequisite: PHYS (2901 and 2902) or Credit or better in PHYS (2001 or 2011) and Credit or better in PHYS (2002 or 2012). Prohibition: May not be counted with PHYS (3005 or 3105 or 3106 or 3107 or 3108 or 3109). Assessment: 3hr exam, assignments. This unit of study covers the same topics as PHYS 3004, with some more challenging material.

PHYS 3906 Topics in Modern Physics B (Advanced)
4 credit points. Session: 2. Classes: Three 1hr lectures. Assumed knowledge: 16 credit points of Intermediate Mathematics. Prerequisite: PHYS (2901 and 2902) or Credit or better in PHYS (2001 or 2011) and Credit or better in PHYS (2002 or 2012). Prohibition: May not be counted with PHYS (3006 or 3105 or 3106 or 3107 or 3108 or 3109). Assessment: 3hr exam, assignments. This unit of study is as for the unit of study PHYS 3006, with some more challenging material.

PHYS 3908 Experimental Physics A (Advanced)
4 credit points. Session: 1. Classes: One 4hr practical. Assumed knowledge: 16 credit points of Intermediate Mathematics. Prerequisite: PHYS (2901 and 2902) or Credit or better in PHYS (2001 or 2011) and Credit or better in PHYS (2002 or 2012). Prohibition: May not be counted with PHYS (3008 or 3009 or 3909). Assessment: Pract assessment. As for PHYS 3008 with some more challenging material.

PHYS 3909 Experimental Physics B (Advanced)
4 credit points. Session: 2. Classes: Two 4hr practicals. Assumed knowledge: 16 credit points of Intermediate Mathematics. Prerequisite: PHYS (2001 and 2002) or Credit or better in PHYS (2001 or 2011) and Credit or better in PHYS (2002 or 2012). Prohibition: May not be counted with PHYS (3008 or 3009 or 3908). Assessment: Pract assessment. As for PHYS 3009 with some more challenging material.

PHYS 3910 Experimental Physics C (Advanced)
4 credit points. Session: 1. Classes: One 4hr practical. Prerequisite: PHYS (3908 or 3909). Prohibition: May not be counted with PHYS (3101 or 3102 or 3802). Assessment: Pract assessment. As for PHYS 3101 with some more challenging material.

PHYS 3920 Experimental Physics D (Advanced)
4 credit points. Session: 2. Classes: Two 4hr practicals. Prerequisite: PHYS (3908 or 3909). Prohibition: May not be counted with PHYS (3101 or 3102 or 3801). Assessment: Pract assessment. As for PHYS 3102 with some more challenging material.

PHYS 3930 Special Project A (Advanced)
4 credit points. Session: 1. Assumed knowledge: 16 credit points of Intermediate Mathematics. Prerequisite: PHYS (2901 and 2902) or Credit or better in PHYS (2001 or 2011) and Credit or better in PHYS (2002 or 2012). Prohibition: May not be counted with PHYS (3103 or 3104 or 3804). Assessment: Written report and oral presentation. NB: Enrolling students should consult the Senior Physics Coordinator to arrange a suitable project and supervisor. The equivalent of 4 hours per week is spent in a research group within the School of Physics, working on a research experiment or theoretical project supervised by a researcher. Approval for this unit must be obtained from the Senior Physics Coordinator.

PHYS 3984 Special Project B (Advanced)
4 credit points. Session: 2. Assumed knowledge: 16 credit points of Intermediate Mathematics. Prerequisite: PHYS (2901 and 2902) or Credit or better in PHYS (2001 or 2011) and Credit or better in PHYS (2002 or 2012). Prohibition: May not be counted with PHYS (3103 or 3104 or 3803). Assessment: Written report and oral presentation. NB: Enrolling students should consult the Senior Physics Coordinator to arrange a suitable project and supervisor. As for PHYS 3803.

PHYS 3931 Scientific Computing (Advanced)
4 credit points. Session: 1. Classes: One 2hr lecture & one 2hr practical. Prerequisite: 16 credit points at a level of Credit or better of Intermediate units of study in Science Subject Areas. Prohibition: May not be counted with PHYS 3301. Assessment: 1 hr exam, competency tests, and project.

As for PHYS 3301 with some more challenging material.

PHYS 3933 Scientific Visualisation (Advanced)
4 credit points. Session: 2. Classes: Two 2hr lecture & one 2hr practical. Prerequisite: 16 credit points at a level of Credit or better of Intermediate units of study in Science Subject Areas. Prohibition: May not be counted with PHYS 3303. Assessment: Exam (40%), assignments (20%), project (40%). As for PHYS 3303 with some more challenging material.

PHYS 3200 Quantum Physics
4 credit points. Session: 1. Classes: Two 1 hr lectures & one 2hr practical. Assumed knowledge: 8 credit points of Intermediate Mathematics. Prerequisite: 16 credit points of Intermediate Mathematics. Prohibition: May not be counted with PHYS (3003 or 3903). Assessment: 2hr exam, assignments, prac assessment. This unit of study is intended for students not majoring in physics. The lecture component is the same as for the quantum physics component of PHYS 3003. Several experiments illustrating the principles of quantum physics are also undertaken in the physics laboratory.

PHYS 3105 Astrophysics
4 credit points. Session: 2. Classes: Two 1 hr lecture & one 2hr practical. Assumed knowledge: 8 credit points of Intermediate Mathematics. Prerequisite: 16 credit points of Intermediate Physics. Prohibition: May not be counted with PHYS (3005 or 3006 or 3905 or 3906). Assessment: 2hr exam, assignments, prac assessment. This unit of study is intended for students not majoring in physics. The lecture component is the same as for the
astrophysics component of PHYS 3005. Several experiments illustrating the principles of astrophysics are also undertaken in the physics laboratory.

PHYS 3106  Plasma Physics
4 credit points. Session: 2. Classes: Two 1 hr lectures & one 2hr practical. Assumed knowledge: 8 credit points of Intermediate Mathematics. Prerequisite: 16 credit points of Intermediate Physics. Prohibition: May not be counted with PHYS (3005 or 3006 or 3905 or 3906). Assessment: 2hr exam, assignments, prac assessment. This unit of study is intended for students not majoring in physics. The lecture component is the same as for the plasma physics component of PHYS 3005. Several experiments illustrating the principles of plasma physics are also undertaken in the physics laboratory.

PHYS 3107  Modern Optics
4 credit points. Session: 2. Classes: Two 1 hr lectures & one 2hr practical. Assumed knowledge: 8 credit points of Intermediate Mathematics. Prerequisite: 16 credit points of Intermediate Physics. Prohibition: May not be counted with PHYS (3005 or 3006 or 3905 or 3906). Assessment: 2hr exam, assignments, prac assessment. This unit of study is intended for students not majoring in physics. The lecture component is the same as for the modern optics component of PHYS 3005. Several experiments illustrating the principles of modern optics are also undertaken in the physics laboratory.

PHYS 3108  Nuclear and Particle Physics
4 credit points. Session: 2. Classes: Two 1 hr lectures & one 2hr practical. Assumed knowledge: 8 credit points of Intermediate Mathematics. Prerequisite: 16 credit points of Intermediate Physics. Prohibition: May not be counted with PHYS (3005 or 3006 or 3905 or 3906). Assessment: 2hr exam, assignments, prac assessment. NB: Department permission required for enrolment. This unit of study is intended for students not majoring in physics. The lecture component is the same as for the nuclear and particle physics component of PHYS 3005. Several experiments illustrating the principles of nuclear and particle physics are also undertaken in the physics laboratory.

(May not be available every year check with the Senior Physics coordinator)

PHYS 3600  Energy and the Environment
4 credit points. Dr Christopher Dey. Session: 1. Classes: One 1hr lecture, one 1hr seminar & 2hrs made up of field trips. Prerequisite: ENV1 2002 or 12 credit points of Junior Physics. Assessment: General attendance/participation (15%), 3000w essay (45%), three assignments (15%), specific seminar presentation (25%). NB: This unit of study is available to students in the Bachelor of Science (Environmental) only.

This unit of study covers the following aspects of energy and the environmental: energy use, power generation including alternative methods, environmental impact of energy use and power generation including the greenhouse effect and other atmospheric effects, transportation and pollution, energy management in buildings, solar thermal energy, photovoltaics, nuclear energy, socio economic and political issues related to energy use and power generation.

The unit of study will consist of one lecture and one seminar per week, with a further two hours on average per week made up of 4 field trips.

Physics Honours
Dr Anne Green Qualifying: 24 credit points of Senior Physics or equivalent. Classes: 6 lecture courses (20 lectures each) & research project. Assessment: six 2hr or 3hr exams, one 9000w report. Students of sufficient merit may be admitted to Honours in fourth year. They must devote their whole time to work in connection with Physics. Physics Honours comprises coursework (weight 50%) and a research project (weight 50%). The series of lectures and prescribed reading cover quantum mechanics, kinetic theory, noise & fluctuations, electromagnetic theory, condensed matter physics, plasma physics, modern optics, sub atomic physics, astrophysics and relativistic quantum theory. Additional options, which may not be offered every year, include general relativity, materials physics, laser physics, cosmology, practice of physics, biomedical imaging, signal and image processing, solar energy, fundamentals of physics, plasma astrophysics, space physics, and astrophysical shock theory.

Honours students are associated with one of the research groups in the School of Physics, and their research project is a part of the research activity of that group. Students are required to submit a formal report on their research work.

Honours students are encouraged to participate along with staff and research students in all activities within the School. They are provided with office accommodation, and are expected to attend colloquia and seminars. They may be employed for several hours per week in Junior teaching.

Physiology

The Department of Physiology provides introductory general Intermediate units of study and for those wishing to major in the subject, in depth Senior units of study. For Senior units the September semester offers Neuroscience and Human Cellular Physiology, and the July semester offers Heart and Circulation as well as further study in Neuroscience.

PHSI2001  Basic Physiology A
4 credit points. Dr M Frommer. Session: 1. Classes: 2 lec & 2 tut or prac/ wk. Prerequisite: 6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, Mathematics, Physics, Psychology units of study. Prohibition: May not be counted with PHSI (2101 or 2901). Assessment: One 2hr theory exam, data tests, one essay, oral presentations. NB: Students taking combined degrees or with passes in units not listed should consult the department if they do meet the prerequisites. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.

This unit of study gives a basic introduction to the functions of the nervous system, including excitable cell (nerve and muscle) physiology, sensory and motor systems, and central processing. It also incorporates gastrointestinal physiology and haematology. The practical component involves simple experiments on humans or using computer simulations, with an emphasis on data analysis. Both oral and written communication skills are emphasized.

Textbooks
Sherwood L. Human Physiology: From Cells to Systems, 4th edn, 2001

PHSI 2101  Integrated Physiology A
8 credit points. Dr M Frommer. Session: 1. Prerequisite: 6 credit points of Junior Chemistry plus 30 credit points from Junior Biology. Chemistry, Mathematics, Physics, Psychology units of study. Prohibition: May not be counted with PHSI (2001 or 2901). Assessment: One 3hr theory exam, data tests, one essay, oral presentations. NB: Students taking combined degrees or with passes in units not listed should consult the department if they do meet the prerequisites. The completion of MBLG2001 or 2101 or 2901 is highly recommended.

This unit of study incorporates PHSI 2001 but deals with the physiology topics covered there in more detail. These include nervous system function (nerve and muscle cells, sensory and motor systems, central processing), gastrointestinal physiology and haematology. It entails additional lectures, more complex practicals, and a component of problem based group learning. Skills in hypothesis generation and testing, data analysis, and oral and written communication will be emphasized.

Textbooks
Sherwood L. Human Physiology: From Cells to Systems, 4th edn, 2001

PHSI 2901  Integrated Physiology A (Advanced)
8 credit points. Dr Miriam Frommer. Session: 1. Classes: 3 lec, 1 prac/tut & 1 PBL/wk. Prerequisite: 6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, Mathematics, Physics, Psychology units of study. Prohibition: May not be counted with PHSI (2001 or 2101). Assessment: One 2hr core exam, PBL essay and take home exam, data and pre tests, practical presentations, research assignment. NB: Department permission required for enrolment. Permission is required for enrolment. Available to selected students who have achieved at least 65 in half of their Junior units of study, including students in combined degrees or with passes in units not listed. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.

This unit of study parallels Physiology A PHSI 2101 but replaces some problem based learning content with a research library or laboratory project.

Textbooks
Sherwood L. Human Physiology: From Cells to Systems, 4th edn, 2001

PHSI 2002  Basic Physiology B
4 credit points. Dr M Frommer. Session: 2. Classes: 2 lec & 2 tut or prac/ wk. Prerequisite: 6 credit points of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, Mathematics, Physics, Psychology units
of study. **Prohibition:** May not be counted with PHSI (2102 or 2902).  
**Assessment:** One 2hr theory exam, data tests, one essay, oral presentations.  

**NB:** Students taking combined degrees or with passes in units not listed should consult the department if they do meet the prerequisites. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.

This unit of study gives a basic introduction to the functions of the remaining body systems: cardiovascular, respiratory, endocrine, reproductive and renal. The practical component involves simple experiments on humans or using computer simulations, with an emphasis on data analysis. Both oral and written communication skills are emphasized.

**Textbooks**
Sherwood L. Human Physiology: From Cells to Systems, 4th edn, 2001

---

**PHSI 2102 Integrated Physiology B**  
8 credit points. Dr M Frommer. **Session:** 2. **Prerequisite:** Sale of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, Mathematics, Physics, Psychology units of study. **Prohibition:** May not be counted with PHSI (2002 or 2902). **Assessment:** One 3hr theory exam, data tests, one essay, oral presentations.

**NB:** Students taking combined degrees or with passes in units not listed should consult the department if they do meet the prerequisites. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.

This unit of study incorporates PHSI 2002 but deals with the physiology topics covered there in more detail. These include the cardiovascular, respiratory, endocrine, reproductive and renal systems. It entails additional lectures, more complex practicals, and a component of problem based group learning. Skills in hypothesis generation and testing, data analysis, and oral and written communication will be emphasized.

**Textbooks**
Sherwood L. Human Physiology: From Cells to Systems, 4th edn, 2001

---

**PHSI 2902 Integrated Physiology B (Advanced)**  
8 credit points. Dr Miriam Frommer. **Session:** 2. **Classes:** 3 lec, 1 prat/tut & 1 PBL/wk. **Prerequisite:** Sale of Junior Chemistry plus 30 credit points from Junior Biology, Chemistry, Mathematics, Physics, Psychology units of study. **Prohibition:** May not be counted with PHSI (2002 or 2902). **Assessment:** One 2hr core exam, PBL essay and take home exam, data and pre tests, practical presentations, research assignment.  

**NB:** Department permission required for enrolment. Permission is required for enrolment. Available to selected students who have achieved at least 65 in half of their Junior units of study, including students in combined degrees or with passes in units not listed. The completion of MBLG 2001 or 2101 or 2901 is highly recommended.

This unit of study parallels PHSI 2102 Physiology B but replaces some problem based learning content with a research library or laboratory project.

**Textbooks**
Sherwood L. Human Physiology: From Cells to Systems, 4th edn, 2001

---

**PHSI 3001 Neuroscience**  
12 credit points. Prof M Bennett, Dr J Mitrofanis. **Session:** 1. **Classes:** 4 lec & 8 prac/wk. **Prerequisite:** For BMedSc: at least 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: PHSI (2101 or 2001 or 2901) or ANAT 2003; and MBLG (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901); plus at least 8 credit points of Intermediate Science units of study. **Prohibition:** May not be counted with PHSI 3001. **Assessment:** Two 2hr exams, spot test, essay, prac report, seminar presentation.  

**NB:** A minimum of 8 credit points of Intermediate Physiology and/or Anatomy is recommended. The aim of this unit of study is to give the student a comprehensive view of the structure and function of the human nervous system. Our current knowledge of how the brain works is based on the analysis of the normal structure of the nervous system and its pathways, the functional effects of lesions and neurological diseases in different parts of the nervous system, and the way that nerve cells work at the molecular, cellular and integrative level. The lecture series addresses the different topics, each of which offers special insights into the normal function of the nervous system in health and disease.  

**Practical:** The practical component of this unit of study consists of small group tutorials in neuroanatomy, experimental and computer based sessions on physiological methods, and small group tutorials in which you will discuss current research papers related to the lecture topics. You will have the opportunity to examine human brain specimens during the tutorials, and in the Wilson Museum in the Department of Anatomy and Histology.

---

Computer based facilities which allow you to learn the brain structures by simulated dissection are also available.

**Textbooks**

---

**PHSI 3901 Neuroscience (Advanced)**  
12 credit points. Prof M Bennett, Dr J Mitrofanis. **Session:** 1. **Classes:** 4 lec & 7 prac/wk. **Prerequisite:** For BMEDSc: at least 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: PHSI (2101 or 2001 or 2901) or ANAT 2003; and MBLG (2001 or 2101 or 2901) or BCHM (2001 or 2101 or 2901); plus at least 8 credit points of Intermediate Science units of study. **Prohibition:** May not be counted with PHSI 3001. **Assessment:** Two 2hr exams, spot test, essay, prac report, seminar presentation.  

**NB:** Department permission required for enrolment. A minimum of 8 credit points of Intermediate Physiology and/or Anatomy is recommended. Permission required for enrolment. Available to selected students who have achieved a mark of at least 65 in the prerequisite units of study.  

The lecture component and practical component are the same as for PHSI 3001. Selected students will be set special advanced assignments and attend tutorials on those assignments during the practical sessions.

---

**PHSI 3002 Neuroscience Cellular & Integrative Adv**  
12 credit points. Dr K Keay, Prof M Bennett. **Session:** 2. **Classes:** 3 lec, 2 tut & 6 hr prac/wk. **Prerequisite:** For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: Credit or better in PHSI 3001; and 16 credit points of Intermediate Science units of study from Anatomy and Histology, Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Microbiology, Molecular Biology and Genetics, Pharmacology, Psychology or Statistics. **Prohibition:** May not be counted with PHSI 3902. **Assessment:** One 2hr exam, tutorial participation, research report.  

**NB:** The completion of PHSI (2001 or 2101 or 2901) is highly recommended.

This second semester unit is designed to introduce students to ‘cutting edge’ issues in the neurosciences. In a combination of small lectures, discussion groups and laboratory or library based research projects, new, innovative or controversial issues in neuroscience research are covered. These usually include discussion of findings published in the most recent editions of scientific journals and often research in progress in the departments of Anatomy and Histology and Physiology (Institute of Biomedical Research). The unit follows two general 'strands', the first deals with cellular and molecular approaches, and the second, integrative approaches to understanding nervous system function and dysfunction. Some of the issues covered in recent years have included mechanisms of neurotoxicity and how to prevent neurodeath, how to prevent shock following trauma, the design of novel antischizophrenic and anti Parkinson's drugs, the ways in which development of the brain is organised and what happens when it goes wrong.

---

**PHSI 3902 Neuroscience Cellular & Integrative Adv**  
12 credit points. Dr K Keay, Prof M Bennett. **Session:** 2. **Classes:** 3 lec, 2 tut & 6 prac/wk. **Prerequisite:** For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: Credit or better in PHSI 3001; and 16 credit points of Intermediate Science units of study from Anatomy and Histology, Biochemistry, Biology, Chemistry, Computer Science, Mathematics, Microbiology, Molecular Biology and Genetics, Pharmacology, Psychology or Statistics. **Prohibition:** May not be counted with PHSI 3002. **Assessment:** One 2hr exam, tutorial participation, research report.  

**NB:** Department permission required for enrolment. Permission required for enrolment. Available to selected students who have achieved a mark of at least 65 in the prerequisite units of study. The completion of MBLG (2001 or 2101 or 2901) is highly recommended.

The lecture and practical component are the same as for PHSI 3002. Selected students will be set special advanced assignments and attend tutorials on those assignments during the practical sessions.

---

**PHSI 3003 Heart and Circulation**  
12 credit points. Dr J Hoh, Mrs I Schneider. **Session:** 2. **Classes:** 4 lec, 2 tut & 8 hr prac/wk. **Assumed knowledge:** PHSI (2001 or 2101 or 2901) and BCHM (2002 or 2102 or 2902). **Prerequisite:** For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2503 and 2505). For others: PHSI (2002 or 2102 or 2902) and MBLG (2001 or 2101 or 2901) plus at least 8 credit points of Intermediate Science units of study. **Prohibition:** May not be counted with PHSI 3003. **Assessment:** One 3hr exam, essays, prac reports, seminar presentations.
NB: A minimum of 8 credit points of Intermediate Physiology and BCHM (2002 or 2102 or 2902) are strongly recommended. This unit of study offers an up to date and in depth treatment of intermediate physiology and molecular mechanisms. At the systemic level, the unit of study deals with short term (neural) mechanisms controlling the blood pressure, and how the system behaves during exercise and other stresses. Long term (hormonal) mechanisms regulating blood pressure via the renal control of extracellular fluid volume, and the pathophysiology of atherosclerosis and hypertension are also discussed.

Practical: Lectures are combined with practical laboratory experiments on animals and human subjects.

PHSI 3903 Heart and Circulation (Advanced)
12 credit points. Dr. Doh Jhoh assisted by Ms I Schneider. Session: 2. Classes: 4 lec, 2 tut & 6 prac wks. Assumed knowledge: PHSI (2001 or 2102 or 2901) and BCHM (2002 or 2102 or 2902). Prerequisite: For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2502 and 2505). For others: PHSI (2002 or 2102 or 2902) and MBLG (2001) plus at least 8 credit points of Intermediate Science units of study. Prohibition: May not be counted with PHSI 3003.
Assessment: One 3hr exam, essays, prac reports, seminar presentations.
NB: Department permission required for enrolment. A minimum of 8 credit points of Intermediate Physiology and BCHM (2002 or 2102 or 2902) are strongly recommended. Permission required for enrolment. Available to selected students who have achieved a mark of at least 65 in the prerequisite units of study. The lecture and practical component are the same as for PHSI 3003. Selected students will be set special advanced assignments and attend tutorials on those assignments as negotiated with a member of the academic staff.

PHSI 3004 Human Cellular Physiology
12 credit points. Dr. Bill Phillips. Session: 1. Classes: 1 lec, 6 prac, & 2 small group PBL/wk. Prerequisite: For BMEdSc: 32 credit points of Intermediate BMED units including BMED (2501 and 2502 and 2504). For others: PHSI (2001 or 2101 or 2901) and PHSI (2002 or 2102 or 2902) and either MBLG (2001) or BCHM (2001 or 2101 or 2901). Prohibition: May not be counted with PHSI 3004.
Assessment: Written exams, 1 essay, practical reports, oral presentations.
The aim of this unit of study is to examine key cellular processes involved in the growth, maintenance and reproduction of human life. Aims of the course include the study of cell division, differentiation and development in developing and adult tissues, the regulation of body fluids through ion transport across epithelia, mechanisms of hormonal and nervous system signaling and the regulation of body fluids. Lectures and practical classes will reveal the molecular underpinnings to physiological functions: our current interpretation of how ion channels, hormone receptors and exocytotic complexes mediate tissue function and human life. The significance of these molecular mechanisms will be highlighted by considering how mutations and other disorders affect key proteins and genes and how this might lead to disease states such as cancer, cystic fibrosis and osteoporosis.

Practical: A problem based learning (PBL) stream will introduce students to reading and interpreting scientific papers. It involves reading lists structured to address written biological problems. A Methods series of lectures will provide an overview of techniques widely employed in cellular physiology to aid in students’ interpretation of published experimental evidence. Finally, the practical course will emphasize experimental design and interpretation. Collectively, the PBL, Methods lecture series and practical classes are intended to begin to develop skills and outlook to prepare students for the Honours year of research.

NB: Department permission required for enrolment. Permission is required for enrolment. Available to selected students who have achieved an average of at least 65 in the prerequisite units of study. The lecture and practical component are the same as for PHSI 3903. Selected students will be set special advanced assignments and attend tutorials on those assignments as negotiated with a member of the academic staff.

Physiology Honours
During fourth year, no formal series of lectures is provided but students are given a relevant problem to investigate. This problem usually represents a small facet of one of the major current research projects within the Department, and the students work in collaboration with members of the staff. Students write a thesis embodying the results of their work.

Psychology
Psychology is the study of behaviour and it is approached on a scientific basis, with provision for professional training at the postgraduate level. The research activities of the School cover almost all of the main branches of the subject.

Extensive information about the subject and the School is available on the School web site: www.psych.usyd.edu.au.

A normal three year sequence required for a major in Psychology is: PSYC 1001, 1002, 2111, 2112, 2113, 2114, and eight Senior units of study selected from PSYC 3201*, 3202*, 3203, 3204, 3205, 3206, 3208, 3209, 3210, 3211, 3212, 3214, 3215 and 3216 (*Required for entry to Fourth Year). Mid year entry is possible and involves modification of this sequence.
The units of study available are:
PSYC 1001, 6 credit points
PSYC 1002, 6 credit points
PSYC 2111, 4 credit points
PSYC 2112, 4 credit points
PSYC 2113, 4 credit points
PSYC 2114, 4 credit points
PSYC 3201, 4 credit points
PSYC 3202, 4 credit points
PSYC 3203, 4 credit points
PSYC 3204, 4 credit points
PSYC 3205, 4 credit points
PSYC 3206, 4 credit points
PSYC 3208, 4 credit points
PSYC 3209, 4 credit points
PSYC 3210, 4 credit points
PSYC 3211, 4 credit points
PSYC 3212, 4 credit points
PSYC 3214, 4 credit points
PSYC 3215, 4 credit points
PSYC 3216, 4 credit points

Students who have completed PSYC 3001 and/or 3002 must obtain the permission of the Head of School of Psychology before enrolling in any of PSYC 3201 to 3216.

Registration and noticeboards
Students in all years must register during the orientation period. Psychology 1001 students register by going to the Carslaw Building during orientation and collecting a personalised computer generated timetable, which will indicate the lecture times and the tutorial group to which they have been allocated. Further information will be posted at the Enrolment Centre and on the Junior Psychology noticeboard on the 4th Floor of the Old Teachers College Building.

Information about registration meetings for Intermediate and Senior Psychology students will also be posted at the Enrolment Centre, and on the School noticeboards on the 5th floor of the Griffith Taylor Building, as well as the School web site.

Enquiries
The main enquiry office of the School is Room 416, Griffith Taylor Building (phone (02) 9351 2872). Staff members available to discuss particular courses may be contacted directly or through this office.

Honours
In order to be eligible to enter Psychology 4 Honours, it is necessary (except as provided in the by laws or resolutions) to gain a year average of Pass with at least Credit average in Intermediate and in Senior Psychology units of study. These Psychology units include Psychology 2111, 2112, 2113, 2114, 3201, 3202, and at least six other Senior Psychology unit from
PSYCH 3201

Statistics and Psychometrics

4 credit points. Session: 1. Classes: 2 lec & 1 prac/wk. Qualifier: PSYC 1001 and 1002 (Note: 16 credit points of Intermediate Psychology is required for Honours entry). Assessment: Class test, assignment, examination. Prerequisite: 8 credit points of Intermediate Psychology including PSYC 2112. Qualifier: PSYC 1001 and 1002 (Note: 16 credit points of Intermediate Psychology is required for Honours entry).

PSY 3202

History and Philosophy of Psychology

4 credit points. Session: 1. Classes: 2 lec & 1 1st and 1 2nd prac/wk. Qualifier: PSYC 1001 and 1002 (Note: 16 credit points of Intermediate Psychology is required for Honours entry). Assessment: Class test, assignment, examination. Prerequisite: 12 credit points of Intermediate Psychology. Qualifier: PSYC 1001 and 1002 (Note: 16 credit points of Intermediate Psychology is required for Honours entry).

PSY 3211

Cognitive Processes & Social Psychology

4 credit points. Session: 2. Classes: 2 lec & 1 prac/wk. Qualifier: PSYC 1001 and 1002 (Note: 16 credit points of Intermediate Psychology is required for Honours entry). Assessment: Class test, assignment, examination. Prerequisite: 8 credit points of Intermediate Psychology including PSYC 2112. Qualifier: PSYC 1001 and 1002 (Note: 16 credit points of Intermediate Psychology is required for Honours entry).

PSY 3212

Psychological Statistics

4 credit points. Session: 1. Classes: 2 lec & 1 prac/wk. Qualifier: PSYC 1001 and 1002 (Note: 16 credit points of Intermediate Psychology is required for Honours entry). Assessment: Class tests, Group project, Multiple choice exam. The aim of this unit of study is to introduce students to some of the fundamental concepts in statistics as used in Psychology. These include summary descriptive statistics and an introduction to the principles and practice of experimental design and inferential statistics. Building upon this ground work, the unit of study aims to develop student's expertise in understanding the rationale for, and application of a variety of statistical tests to the sorts of data typically obtained in psychological research.

PSY 3213

Personality and Individual Differences

process, and to analysis of the form and structure of the various arguments presented in favour of certain psychological theories. The Philosophy of Psychology introduces traditional and contemporary themes in the philosophy of science, with focus on the relevance to psychology. Students are expected to become aware of the main methods and perspectives in psychology alongside empirical methods, that the basic concepts and theories of psychology involve philosophical assumptions which can be articulated and examined.

Textbooks
See School Web site

PSYC 3203 Abnormal Psychology
4 credit points. Session: 2. Classes: 2 lec & 1 tut/wk. Prerequisite: PSYC 2111 and PSYC (2113 or 2114). Assessment: 1.5hr exam, report/presentation.
NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major
This unit of study examines core issues in Abnormal Psychology. The unit of study will cover aspects of adult abnormality and child abnormality and will include topics such as:
(a) Adult abnormal psychology: Anxiety disorders (specific phobias, panic disorder, agoraphobia, OCD); Addictive disorders (drug, alcohol, gambling); Eating disorders (anorexia nervosa, bulimia nervosa); Mood disorders (dysthymia, major depressive disorder, cyclothymia, bipolar disorder); Schizophrenia, Personality disorders.
(b) Child abnormal psychology: Learning disabilities, Mental retardation, Intellectual and educational assessment of children; Pervasive developmental disorders; Attention deficit disorder; Conduct disorder; Anxiety disorders in children and adolescents; Depression.

Textbooks
See School Web site

PSYC 3204 Behavioural Neuroscience
4 credit points. Session: 2. Classes: 2 lec & 1 pract/wk. Prerequisite: 8 credit points of Intermediate Psychology including PSYC 2111. Assessment: 1.5hr exam, class quiz, poster presentation, class participation.
NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major
This unit of study carries on from the Neuroscience component of PSYC 2111, providing more specialised coverage in the areas of psychopharmacology, addiction, molecular neuroscience, sensorimotor integration and the neural basis of learning and memory. Topics to be covered include Psychopharmacology (basic actions of drugs on the brain, mechanism of action of antidepressants, antipsychotic and anxiolytic drugs, effects of recreational drugs (cannabis, MDMA, alcohol, opiates) on brain behaviour and cognition); Addiction (the neural basis of addiction, animal models of intravenous drug use and relapse to drug seeking behaviour); Molecular Neuroscience (effects of drugs on gene expression, the use of knockout mice and transgenic techniques in neural analysis has a central place in the neurobiology of learning and memory (the synaptic and neuroanatomical basis of associative learning and memory retrieval); Sensorimotor Integration (functions of the vestibular system, the role of the hippocampus in spatial learning). In the first few weeks of the unit, tutorials consist of demonstrations and practicals covering basic neuroanatomy, histology and neuropharmacology. In the latter part of the course, tutorials involve groups of students giving poster presentations of recent ‘hot’ papers in the behavioural neuroscience field.

Textbooks
See School Web site

PSYC 3205 Cognition, Language and Thought
4 credit points. Session: 1. Classes: 2 lec & 2hr pract/fortnight. Prerequisite: PSYC (2112 and 2113). Assessment: 1.5hr exam, class quiz, report, class participation.
NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major
The aim of this unit of study is to extend the theories and methods of investigating memory and attentional processes discussed in PSYC 2113 to consider a number of domains of higher cognitive processing. One segment of the course will deal with language processing and focus on theoretical issues and research evidence about the processes involved in speech perception and production, visual word recognition reading, language comprehension and language acquisition. The remainder of the course will deal with topics such as the development of expertise, creativity and problem solving, decision making and the relationship between cognition and emotion. The practical program will expose students to a variety of the research methods used to investigate higher cognitive processes, develop students' understanding of how these methods can be used to investigate hypotheses about mental processes, consider applications of cognitive research to real world problems and provide specific opportunities to discuss the theoretical, methodological and practical implications of the cognitive psychological issues considered in lectures and tutorials.

Textbooks
See School Web site

PSYC 3206 Developmental Psychology
4 credit points. Session: 1. Classes: 2 lec & 1 tut/wk. Prerequisite: 8 credit points of Intermediate Psychology. Assessment: 1.5hr exam, report, tutorial assessment.
NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major
This unit of study examines various theoretical approaches to and selected issues within Developmental Psychology. The major issues/controversies in developmental theory are examined in relation to a number of the more influential theoretical approaches. Students are expected to gain an understanding of current developmental theory and research. In addition the unit introduces students to a range of issues in selected areas of contemporary Developmental Psychology. Students are expected to gain knowledge of these areas, and to develop a critical approach to the analysis of current research and theoretical issues. They are also required to apply their knowledge in practical exercises involving observations of children.

Textbooks
See School Web site

PSYC 3208 Intelligence
NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major
The aim is to provide an overview and critical platform to evaluate recent studies of individual differences in human cognitive abilities. The unit introduces major contemporary issues in individual differences in human abilities and intelligence. The emphasis of the latter part is on recent work on the topics related to (a) Psychometric research on intelligence; (b) Experimental cognitive correlates approach to intelligence; (c) Biological aspects of intelligence; and (d) the role of metacognitive abilities in intelligence. Some of the work carried out at this University is also discussed.

Textbooks
See School Web site

PSYC 3209 Learning and Motivation
NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major
PSYC 3209 addresses the fundamental concepts and more important research findings of contemporary learning theory and selected approaches to motivation. It examines the application of such fundamental research to issues such as drag tolerance, food choice, stress and health. It is designed to develop skills in reading primary sources in this area; and to provide the opportunity for hands on experience of planning and carrying out a research project.

Textbooks
See School Web site

PSYC 3210 Perceptual Systems
4 credit points. Session: 2. Classes: 2 hrs lec & 1 hr lab/wk. Prerequisite: PSYC (2111 and 2112). Assessment: 1.5hr exam, tutorial assessment.
NB: NB: 32 credit points of Senior (thirdyear) Psychology is required for a Psychology Major
This unit covers an advanced level selected topics in Perceptual Systems from both the psychophysical and neuropsychological perspectives. Students are expected to gain an understanding of the main theoretical perspectives in current research, to appreciate the significance and relevance of basic perceptual research for understanding normal perceptual functioning, and to be able to evaluate the conceptual and empirical worth of research contributions.

Textbooks
See School Web site
PSYC 3211 Psychological Assessment & Organisational
4 credit points. Session: 2. Classes: 2 lec & 1 tut/wk. Prerequisite: PSYC (2112 and 2114). Prohibition: May not be counted with PSYC 3207 (except with permission from the Head of Department). Assessment: 1 hr exam, tutorial evaluation.
NB: NB: 32 credit points of Senior (third year) Psychology is required for a Psychology Major.
The Psychological Assessment component covers fundamental issues in the construction, evaluation and administration of psychological tests with particular emphasis on tests of personality. Students will be given 'hands on' experience with a variety of psychological instruments including those used for personality, aptitude and clinical assessment. A variety of psychometric 'skills' (eg, calculating reliability, rudiments of scale construction) will also be taught. This component of the unit will conclude with an introduction of state of the art issues in psychological assessment including demonstrations of adaptive and computerised testing and discussion of item response theory (IRT) and confirmatory factor analysis (CFA).
The Organisational Psychology component focuses on performance in the work place and the influence of social factors on such performance. Various aspects of the workplace will be examined, including leadership, workplace conflict, job satisfaction, selection and appraisal.
Textbooks
See School Web site
PSYC 3212 Social Psychology
4 credit points. Session: 1. Classes: 2 lec & 1 tut/wk. Prerequisite: 8 credit points of Intermediate Psychology including PSYC 2113. Assessment: 1 hr exam, classwork quiz.
NB: NB: 32 credit points of Senior (third year) Psychology is required for a Psychology Major.
PSYC 3212 continues the coverage of topics in Social Psychology begun in the unit PSYC 2113. The unit is divided into topic areas where the focus is on evaluating theories and the relevant evidence. In any one year approximately four topics will be covered from the following list: affiliation and attraction, social motivation (especially aggression), social cognition, social competence, the impact of aspects of the physical environment on social behaviour, jury decision making, interpersonal communication, and social development through the lifespan. Tutorials provide first hand experience of research by involving students in a range of research projects on the topics covered in the lectures. The tutorials also provide an opportunity for discussion of issues associated with the topics covered in lectures.
Textbooks
See School Web site
PSYC 3214 Communication and Counselling
4 credit points. Session: 2. Classes: 2 lec & 1 tut/wk. Prerequisite: PSYC (2113 and 2114). Assessment: 1.5 hr examination, tutorial assessments.
NB: NB: 32 credit points of Senior (third year) Psychology is required for a Psychology Major.
The communication component of the unit is concerned with understanding how interpersonal communication occurs in a face to face context. The emphasis will be on the structure of language and non language components that compose the message and the extent to which that message is correctly decoded. The counseling component of the unit aims to provide an introduction to counseling psychology, to critically examine the theoretical foundations of counseling processes and their application, and to consider relevant empirical research and professional issues.
Textbooks
See School Web site
PSYC 3215 Cognitive Neuroscience & Neuropsychology
4 credit points. Dr Lea Williams. Session: 2. Classes: 2 lec & 1 hr lab/wk. Prerequisite: Two of PSYC (2111, 2112, 2113). Assessment: One 1.5 hr exam; laboratory class assessment.
NB: NB: 32 credit points of Senior (third year) Psychology is required for a Psychology Major.
The unit of study will encompass two components. The Cognitive Neuroscience component will focus on approaches to studying the human brain at different scales of function (microscopic, macroscopic), the link between cognitive and biological models of brain function and dysfunction, and the application of these models to understanding cognitive neuropsychiatric disorders such as post traumatic stress, schizophrenia and attention deficit disorder. The Cognitive Neuropsychology component will use evidence about the selective breakdown of specific cognitive domains (eg, memory, language, visual cognition, praxis) in a variety of neurodegenerative disorders to (1) examine the functional neuroanatomy underpinning those cognitive domains and (2) explore the implications of focal cognitive deficits in neurological patients for models of normal cognitive function. 
Textbooks
See School Web site
PSYC 3216 Health and Safety Psychology Principles
4 credit points. Dr R.F. Scenes, Job, Dr Julie Hatfield. Session: 1. Classes: 2 lec, 1 tut. Prerequisite: PSYC (2111 and 2112). Assessment: One 90 min exam, 2000w essay.
NB: NB: 32 credit points of Senior (third year) Psychology is required for a Psychology Major.
The unit of study aims to develop an awareness of the general nature of Health and Safety Psychology, of the extent of preventable health problems and the likely victim groups, and of the role of psychological factors in the aetiology, prevention, and management of health problems. The unit of study will aims also to develop students' ability to understand and evaluate research methodology in health psychology, and to identify the implications which can be drawn from cross sectional observational, longitudinal observational, and experimental research designs. Topics covered include: several models of health related behaviour, optimism bias (the phenomenon and its measurement, causal models and possible consequences), psychological factors in road safety, psychological issues related to health promotion messages (and factors which influence their efficacy), psychological factors in occupational health and safety, interactions with the health care system, stress and its health consequences (including the role of coping and personality), the role of organisational psychology in occupational stress, and stress management, the influence of lifestyle on health (with particular consideration of diet, exercise and sleep), and the effects of noise exposure (methodological issues, behavioural, cognitive, and physical effects and their interrelationships, as well as the moderating role of psychological factors such as noise sensitivity and attitudes toward the noise source). The tutorial program aims to develop an ability to read and understand Health and Safety Psychology research articles, and an appreciation of ethical issues in Health and Safety Psychology research. It will also provide experience in conducting Health and Safety Psychology research.
Textbooks
See School Web site
Psychology Honours
Prerequisite: Average of Credit or better in 16 credit points of Intermediate Psychology, and also in at least 32 credit points of Senior Psychology which must include PSYC 3201 and 3202. BPsych students should consult resolutions in chapter 5. School permission required.
Due to restricted resources for research supervision, the intake to Psychology 4 Honours will be limited to approximately 55 students and will be determined by academic merit in Intermediate and Senior Psychology. Assessment: Formal exams in Ethics and Issues in Psychology and in Methods; report of empirical research project; theoretical thesis or take home examination in three Special Fields modules.
Students are required to:
(a) devise, conduct and report upon an empirical research project (research area dependent on interests & specialities of staff members);
(b) write a theoretical thesis or attend three Special Fields seminars and write three essays; and
(c) attend one lecture series in Ethics and Issues in Psychology and two Method lecture series.
Overview
The Talented Student Program is a special program of study intended for students 'of exceptional merit' who are enrolled in degrees administered by the Faculty of Science (BSc, BMedsC, BIT, BCST, BPysych and their specialist streams or combined degrees). It is also available for the science component of the BLibStud. If other Faculties grant permission, TSP options may be taken for science components that are part of other degree programs.

The aim of the program is to offer students of exceptional merit additional challenging material to enable them to maximise their intellectual growth and potential.

A major benefit of participation in the Talented Student Program is that students receive special supervision by academic staff and often engage in studies with small numbers of fellow students, all of whom have particular interest in the subject. In general, the TSP caters for students whose talent is broad based across science. There are two main aspects of a student’s involvement in the TSP: Students can choose great flexibility in their course of study (beyond that normally allowed by degree rules), and they have a mentor, a member of the academic staff who assists them in choosing from the great range of possibilities.

Studies undertaken in the Talented Student Program are included separately on the student's academic transcript so that all potential employers are aware that the student has completed challenging courses of study.

Further information on the operation of the Talented Student Program may be obtained from the Departmental coordinators listed below or from the Undergraduate Adviser, Faculty of Science.

Selection
Entry to the Talented Student Program is by invitation from the Dean. Invitations to participate in the TSP are made each year for that year. The following guidelines apply generally, although Departments may have additional (and more stringent) requirements for entry to the activities they offer in the program:

- to be considered for the program in their first year, students should normally have a UAI (or equivalent) of 98.8 or higher and a mark of approximately 92 in at least one HSC science subject area and/or a result in band E4 of HSC Mathematics Extension 2; or demonstrate exceptional performance in scientific study (eg, at the level of participation in an International Olympiad)
- to be considered for the program in their second and third years, students should normally have WAMs 85 or over and a high distinction grade in an appropriate Science subject area.

Intermediate level entry to TSP is available only to students who have been enrolled full time in units of study totaling at least 48 credit points.

Students who feel that they satisfy these criteria, but who have not received an invitation to participate in the TSP that year, should contact the Dean.

Range of TSP structures
The relevant Faculty Resolutions (eg, Section 1(6) of the BSc degree, Section 1(6) of the BLibStud degree) authorise the Dean to give approval for students of exceptional merit to enrol in units of study or in combinations of units of study not normally available within the degree.

In very exceptional cases, particularly for students who have excelled in Olympiad programs, application of these Resolutions may permit accelerated progress toward the completion of the BSc degree.

Faculty policy in relation to the Talented Student Program is described in this chapter.

Students will arrange a suitable pattern of study for the year, in consultation with their mentor (who will also consider the entire degree program). For some students, the TSP activities will be in a single discipline, for others there will be separate TSP activities in several disciplines. Still others will choose interdisciplinary activities that relate several fields to one another. Some students choose TSP activities that involve additional work beyond the normal amount for a student in the degree; for others, the TSP activities replace prescribed work, giving a normal total credit point load. Many disciplines have an organised activity for a whole group of TSP students studying that field, such as a weekly seminar or group project. In other disciplines, TSP activity involves participation by each TSP student in a research group of staff and postgraduates. Every student is treated individually; however, there are some common patterns that we describe below.

For many TSP students who are interested in several fields, (especially if they aren't really sure about their eventual direction), a suitable arrangement might be for them to join in separate TSP activities of each discipline.

Students might elect to study a broader range of fields than usual, by studying more than the normal load of 24 credit points per semester.

Another pattern is to accelerate a student who (say through Olympiad participation) has already learnt most of the topics in the usual first year units in a discipline. Such a student can go directly to second year study in that field and in related fields, when they begin their degree. By studying more than the usual workload each semester, they may be able to complete their Honours degree in less than 4 years full time.

Some students have particular interests that can best be served by specially planned activities combining different disciplines.

Constraints on TSP structure
When a TSP activity replaces normal activity within a unit of study, the student will enrol in that unit, but the transcript will be annotated to reflect the TSP activity. When a TSP activity differs from the normal workload, the student will be enrolled in specially designated TSP units. The maximum number of credit points from TSP activities that can be credited towards the degree is normally 40 credit points designated as TSP units of study that are not listed in the Faculty handbook. This 40 credit point total covers all three years of study, and perhaps several different disciplines, so it is important to plan carefully to leave enough TSP possibilities in later years.

It is also important that the student meets all the usual degree requirements, involving numbers of credit points at various levels and in a range of disciplines. Each TSP activity is assigned a number of credit points, a level (Junior, Intermediate or Senior) and a Discipline area, so it can contribute to meeting the degree requirements.

The TSP process
At the start of each year, the Dean chooses students to be invited to participate in the TSP. A welcome is held in Orientation week, and at that time, each student who is new to the TSP will meet briefly with the Faculty TSP coordinator, who assigns a mentor for the student. The mentor is usually a departmental TSP coordinator, from a department closest to the student’s interest(s). The mentor and the student then plan special activities for the year, covering all fields (this may involve discussions with coordinators from other departments). A proposal is put to the Dean, who can approve enrolment in special TSP units of study. During the year the student will meet several times with the mentor, to make sure that everything is going well. Whatever TSP activities have been arranged will be carried out by the student with others (staff and possibly students too). Assessment will be through the mentor and the staff involved in the activities.

At the end of the semester the mentor will report results and the Dean will also arrange for special notes to be placed on the student's transcript, recording the TSP activity.

TSP coordinators
Faculty of Science
Coordinator: A/Prof Anthony Masters
Medical Science
Coordinator: A/Prof Ian Spence

Senior Agricultural Chemistry
Coordinator: Professor Les Copeland
Students may undertake, in addition to normal coursework, a special research project directly supervised by a member of the academic staff.

Anatomy and Histology
Coordinator: Dr John Mitrofanis

Biochemistry
See Molecular and Microbial Biosciences

Biology
Coordinator: Dr Glenda Wardle
Students may undertake additional seminars and/or special project work.

Chemistry
Coordinator: A/Prof Scott Kable
The Chemistry School offers Junior TSP students a challenging program based on the Chemistry 1 (Special Studies Program). The program comprises the Junior Chemistry (Advanced) lecture series, special tutorials, and special project based laboratory exercises. Admission to Chemistry 1 (SSP) is by invitation only, and is limited to 20 students each year.

TSP students in Intermediate Chemistry take the Intermediate Chemistry (Advanced) units of study. The units of study comprise lectures, tutorials and special project based laboratory exercises that complement the other Intermediate Chemistry units of study. Admission to Intermediate Chemistry (Advanced) units of study is by invitation only, and is limited to 30 students each year. TSP students are automatically eligible.

The Senior Chemistry TSP program consists of Chemistry 3 A and 3B and two special modules (one per half semester). In each module, students work as a group to solve a substantial real life problem in contemporary Chemistry. In addition, the normal Senior Chemistry laboratory subjects are modified to include special TSP experiments. The program is offered under the Senior Chemistry (Advanced) program, but admission is by invitation only and is limited to 15 students each year. TSP students are automatically eligible.

Geosciences
Intermediate Geography
Coordinator: A/Prof Phil Hirsch
In lieu of some of the normal coursework students may undertake special project work on an environmental problem. Particular emphasis will be given to the enhancement of student capabilities in the areas of problem identification, problem formulation, data gathering, and analysis and reporting.

Geology and Geophysics
Coordinator: Dr Derek Wyman
Students will be offered extra seminars and/or special project work.

Information Technologies
Coordinator: Dr Irena Koprinska
The Department will make special arrangements for individual students throughout their studies.

Mathematics and Statistics
Coordinators: Dr Daniel Daners
Students admitted to the program have the following options available to them:
- First Year students in the Faculty Talented Student Program are invited to apply for entry to the Mathematics Special Studies Program. In addition to covering standard material, students in the Special Studies Program will participate in their own seminars on specially chosen advanced topics.
- Students in the Faculty Talented Student Program have access to Mathematics units of study in higher years. For example, a First Year student may take selected second or even third year units.
- Second and third year students have access to special projects, which can be disciplinary, according to the interests of the individual student.

Second and third year students are encouraged to tailor their own programs, in consultation with the coordinators.

Medical Science
Coordinator: A/Prof Ian Spence

Molecular and Microbial Bioscience
(for Biochemistry, Molecular Biology & Genetics, Molecular Biotechnology and Microbiology)
Coordinator: Dr Peter New
A special program of study will be developed for individual students enrolled in Intermediate and Senior Biochemistry, Molecular Biology and Genetics, Molecular Biotechnology and Microbiology.

Pathology
Coordinator: Professor Nick Hunt

Pharmacology
Coordinator: A/Prof Ian Spence
The Department will make special arrangements for individual students throughout their studies.

Physics
Coordinators: Dr Richard Hunstead and Professor David McKenzie
Junior students may take extra seminars and special project work in addition to, or in lieu of, parts of Physics (Advanced) units of study. Intermediate students may take extra seminars and special project work in addition to, or in lieu of, parts of Intermediate Physics units of study. Senior students may take extra seminars and special research project work in addition to, or in lieu of, parts of Senior Physics units of study.

An excursion to visit research facilities outside Sydney is offered in the mid semester break in the July semester.

Physiology
Coordinator: Dr Margot Day
Students may undertake, in addition to normal coursework, a special research project.

Psychology
Coordinator: Dr Colin Clifford
The program is available in Intermediate and Senior Psychology. Students admitted to the program have the following options available to them:
- additional options in Psychology either in lieu of, or in addition to, other units of study in Science
- a combination of additional Psychology options combined with special studies in another science discipline (e.g., Biochemistry, Computer Science, Mathematics and Statistics)
- a special research project in lieu of, or in addition to, normal practical or classwork components
- various combinations of the above options.

Senior Soil Science
Coordinator: Dr Balwant Singh
Students may undertake, in addition to normal coursework, a special research project.
This chapter contains the regulations governing undergraduate degrees throughout the University and the regulations governing undergraduate degrees offered by the Faculty of Science. These are arranged in the following order:

1. University of Sydney (Coursework) Rule
2. Bachelor of Science BSc
   The Bachelor of Science includes the specially designated streams:
   • Bachelor of Science (Advanced) BSc(Advanced)
   • Bachelor of Science (Advanced Mathematics) BSc(Advanced Mathematics)
   • Bachelor of Science (Bioinformatics) BSc(Bioinformatics)
   • Bachelor of Science (Environmental) BSc(Environmental)
   • Bachelor of Science (Marine Science) BSc(Marine Science)
   • Bachelor of Science (Molecular Biology and Genetics) BSc(Molecular Biology and Genetics)
   • Bachelor of Science (Molecular Biotechnology) BSc(Molecular Biotechnology)
   • Bachelor of Science (Nutrition) BSc(Nutrition)

3. Bachelor of Computer Science and Technology BCST
   The Bachelor of Computer Science and Technology includes the specially designated streams:
   • Bachelor of Arts/Bachelor of Science BA/BSc
   • Bachelor of Education (Secondary: Science)/Bachelor of Science BED(Secondary:Science)/BSc
   • Bachelor of Education (Secondary: Mathematics)/Bachelor of Science BED(Secondary:Mathematics)/BSc
   • Bachelor of Engineering/Bachelor of Science BE/BSc
   • Bachelor of Medical Science BMedSc

4. Bachelor of Information Technology BIT

5. Bachelor of Philosophy BPhil

6. Bachelor of Psychology BPsych

7. Bachelor of Science in Media and Communications BScMediaCommun

8. Bachelor of Liberal Studies BLibStud
   The Bachelor of Liberal Studies includes the specially designated stream:
   • Bachelor of Liberal Studies (International) BLibStud(International)

Note the specific glossaries attached to each degree, and the generic glossary common to all degrees, last in the chapter.

The regulations governing postgraduate award courses can be found in chapter 7.

University of Sydney (Coursework) Rule 2000

Preliminary

1. Commencement and purpose of Rule

   (1) This Rule is made by the Senate pursuant to section 37(1) of the University of Sydney Act 1989 for the purposes of the University of Sydney By law 1999.

   (2) This Rule comes into force on 1 January 2001.

   (3) This Rule governs all coursework award courses in the University. It is to be read in conjunction with the University of Sydney (Amendment Act) Rule 1999 and the Resolutions of the Senate and the faculty resolutions relating to each award course in that faculty.

Rules relating to coursework award courses

1. Definitions

   In this Rule:
   
   award course means a formally approved program of study which can lead to an academic award granted by the University.

   coursework means an award course not designated as a research award course. While the program of study in a coursework award course may include a component of original, supervised research, other forms of instruction and learning normally will be dominant. All undergraduate award courses are coursework award courses;

   credit means advanced standing based on previous attainment in another award course at the University or at another institution. The advanced standing is expressed as credit points granted towards the award course. Credit may be granted as specific credit or non specific credit.

   Specific credit means the recognition of previously completed studies as directly equivalent to units of study.

   Non specific credit means a 'block credit' for a specified number of credit points at a particular level. These credit points may be in a particular subject area but are not linked to a specific unit of study;

   credit points mean a measure of value indicating the contribution each unit of study provides towards meeting award course completion requirements stated as a total credit point value;

   dean means the dean of a faculty or the director or principal of an academic college or the chairperson of a board of studies, at the level of bachelor or master for the purpose of this Rule;

   embedded courses/programs means award courses in the graduate certificate/graduate diploma/master's degree by coursework sequence which allow unit of study credit points to count in more than one of the awards;

   faculty means a faculty, college board, a board of studies or the Australian Graduate School of Management Limited as established in each case by its constitution and in these Rules refers to the faculty or faculties responsible for the award course concerned;

   major means a defined program of study, generally comprising specified units of study from later stages of the award course and requiring a smaller number of credit points than a major;

   minor means a defined program of study, generally comprising units of study from later stages of the award course and

   postgraduate award course means an award course leading to the award of a graduate certificate, graduate diploma, degree of master or a doctorate. Normally, a postgraduate award course requires the prior completion of a relevant undergraduate degree or diploma.

   research award course means an award course in which students undertake and report systematic, creative work in order to increase the stock of knowledge. The research award courses offered by the University are: higher doctorate, Doctor of Philosophy, doctorates by research and advanced coursework, and certain degrees of master designated as research degrees.
The systematic, creative component of a research award course must comprise at least 66% of the overall award course requirements;

stream means a defined program of study within an award course, which requires the completion of a program of study specified by the award course rules for the particular stream, in addition to the core program specified by award course rules for the award course;

student means a person enrolled as a candidate for a course;

testamur means a certificate of award provided to a graduate, usually at a graduation ceremony;

transcript or academic transcript means a printed statement setting out a student's academic record at the University;

unit of study means the smallest stand alone component of a student's award course that is recordable on a student's transcript. Units of study have an integer credit point value, normally in the range 3-24;

undergraduate award course means an award course leading to the award of an associate diploma, diploma, advanced diploma or degree of bachelor.

2. Authorities and responsibilities

(1) Authorities and responsibilities for the functions set out in this Rule are also defined in the document Academic Delegations of Authority. The latter document sets out the mechanisms by which a person who has delegated authority may appoint an agent to perform a particular function.

(2) The procedures for consideration of, and deadlines for submission of, proposals for new and amended award courses will be determined by the Academic Board.

Division 1 Award course requirements, credit points and assessment

3. Award course requirements

(1) To qualify for the award of a degree, diploma or certificate, a student must:

(a) complete the award course requirements specified by the Senate for the award of the degree, diploma or certificate concerned;

(b) complete any other award course requirements specified by the Academic Board on the recommendation of the faculty and published in the faculty resolutions relating to the award course;

(c) complete any other award course requirements specified by the faculty in accordance with its delegated authority and published in the faculty resolutions relating to the award course; and

(d) satisfy the requirements of all other relevant by laws, rules and resolutions of the University.

4. Units of study and credit points

(1) (a) A unit of study comprises the forms of teaching and learning approved by a faculty. Where the unit of study is being provided specifically for an award course which is the responsibility of another faculty, that faculty must also provide approval.

(b) Any faculty considering the inclusion of a unit of study in the tables of units available for an award course for which it is responsible may review the forms of teaching and learning of that unit, may consult with the approving faculty about aspects of that unit and may specify additional conditions with respect to inclusion of that unit of study.

(2) A student completes a unit of study if the student:

(a) participates in the learning experiences provided for the unit of study;

(b) meets all examination, assessment and attendance requirements for the unit of study; and

(c) passes the required assessments for the unit of study.

(3) Each unit of study is assigned a specified number of credit points by the faculty responsible for the unit of study.

(4) The total number of credit points required for completion of an award course will be as specified in the Senate resolutions relating to the award course.

(5) The total number of credit points required for completion of award courses in an approved combined award course will be specified in the Senate or faculty resolutions relating to the award course.

(6) A student may, under special circumstances, and in accordance with faculty resolutions, be permitted by the relevant dean to undertake a unit or units of study other than those specified in the faculty resolutions relating to the award course and have that unit or those units of study counted towards fulfilling the requirements of the award course in which the student is enrolled.

5. Unit of study assessment

(1) A student who completes a unit of study will normally be awarded grades of high distinction, distinction, credit or pass, in accordance with policies established by the Academic Board. The grades high distinction, distinction and credit indicate work of a standard higher than that required for a pass.

(2) A student who completes a unit of study for which only a pass/fail result is available will be recorded as having satisfied requirements.

(3) In determining the results of a student in any unit of study, the whole of the student's work in the unit of study may be taken into account.

(4) Examination and assessment in the University are conducted in accordance with the policies and directions of the Academic Board.

6. Attendance

(1) A faculty has authority to specify the attendance requirements for courses or units of study in that faculty. A faculty must take into account any University policies concerning modes of attendance, equity and disabled access.

(2) A faculty has authority to specify the circumstances under which a student who does not satisfy attendance requirements may be deemed not to have completed a unit of study or an award course.

Division 2 Enrolment

7. Enrolment restrictions

(1) A student who has completed a unit of study towards the requirements of an award course may not re-enrol in that unit of study, except as permitted by faculty resolution or with the written permission of the dean. A student permitted to re-enrol may receive a higher or lower grade, but not additional credit points.

(2) Except as provided in sub section (1), a student may not enrol in any unit of study which overlaps substantially in content with a unit that has already been completed or for which credit or exemption has been granted towards the award course.

(3) A student may not enrol in units of study additional to award course requirements without first obtaining permission from the relevant dean.

(4) Except as prescribed in faculty resolutions or with the permission of the relevant dean:

(a) a student enrolled in an undergraduate course may not enrol in units of study with a total value of more than 3 2 credit points in any one semester, or 16 credit points in the summer session; and

(b) a student enrolled in a postgraduate award course may not enrol in units of study with a total value of more than 24 credit points in any one semester, or 12 credit points in the summer session.

Division 3 Credit, cross institutional study and their upper limits

8. Credit for previous studies

(1) Students may be granted credit on the basis of previous studies.

(2) Notwithstanding any credit granted on the basis of work completed or prior learning in another award course at The University of Sydney or in another institution, in order to qualify for an award a student must:

(a) for undergraduate award courses, complete a minimum of the equivalent of two full time semesters of the award course at the University; and

(b) for postgraduate award courses, complete at least fifty percent of the requirements prescribed for the award course at the University.

These requirements may be varied where the work was completed as part of an embedded program at the University or as part of an award course approved by the University in an approved conjoint venture with another institution.

(3) The credit granted on the basis of work completed at an institution other than a university normally should not exceed one third of the overall award course requirements.
Division 4 Progression

10. Repeating a unit of study
(1) A student who repeats a unit of study shall, unless granted exemption by the relevant dean:
   (a) participate in the learning experiences provided for the unit of study; and
   (b) meet all examination, assessment and attendance requirements for the unit of study.
(2) A student who presents for re-assessment in any unit of study is not eligible for any prize or scholarship awarded in connection with that unit of study without the permission of the relevant dean.

II. Time limits
A student must complete all the requirements for an award course within ten calendar years or any lesser period if specified by Resolution of the Senate or the faculty.

Division 5 Discontinuation of enrolment and suspension of candidature

12. Discontinuation of enrolment
(1) A student who wishes to discontinue enrolment in an award course or a unit of study must apply to the relevant dean and will be presumed to have discontinued enrolment from the date of that application, unless evidence is produced showing:
   (a) the discontinuation occurred at an earlier date; and
   (b) there was good reason why the application could not be made at the earlier time.
(2) A student who discontinues enrolment during the first year of enrolment in an award course may not re-enrol in that award course unless:
   (a) the relevant dean has granted prior permission to re-enrol; or
   (b) the student is reselected for admission to candidature for that course.
(3) No student may discontinue enrolment in an award course or unit of study after the end of classes in that award course or unit of study, unless he or she produces evidence that:
   (a) the discontinuation occurred at an earlier date; and
   (b) there was good reason why the application could not be made at the earlier time.
(4) A discontinuation of enrolment may be recorded as Withdrawn (W) or Discontinued not to count as failure (DNF) where that discontinuation occurs within the time-frames specified by the University and published by the faculty, or where the student meets other conditions as specified by the relevant faculty.

13. Suspension of candidature
(1) A student must be enrolled in each semester in which he or she is actively completing the requirements for the award course. A student who wishes to suspend candidature must first obtain approval from the relevant dean.
(2) The candidature of a student who has not re-enrolled and who has not obtained approval from the dean for suspension will be deemed to have lapsed.
(3) A student whose candidature has lapsed must apply for re-admission in accordance with procedures determined by the relevant faculty.
(4) A student who enrolls after suspending candidature shall complete the requirements for the award course under such conditions as determined by the dean.

Division 6 Unsatisfactory progress and exclusion

14. Unsatisfactory progress
A faculty has authority to determine what constitutes satisfactory progress for all students enrolled in award courses in that faculty, in accordance with the policies and directions of the Academic Board.

15. Requirement to show good cause
(1) For the purposes of this Rule, good cause means circumstances beyond the reasonable control of a student, which may include serious ill health or misadventure, but does not include demands of employers, pressure of employment or time devoted to non University activities, unless these are relevant to serious ill health or misadventure. In all cases the onus is on the student to provide the University with satisfactory evidence to establish good cause. The University may take into account relevant aspects of a student's record in other courses or units of study within the University and relevant aspects of academic studies at other institutions provided that the student presents this information to the University.
(2) The relevant dean may require a student who has not made satisfactory progress to show good cause why he or she should be allowed to re-enrol.
(3) The dean will permit a student who has shown good cause to re-enrol.

16. Exclusion for failure to show good cause
The dean may, where good cause has not been established:
(1) exclude the student from the relevant course; or
(2) permit the student to re-enrol in the relevant award course subject to restrictions on units of study, which may include, but are not restricted to:
   (a) completion of a unit or units of study within a specified time;
   (b) exclusion from a unit or units of study, provided that the dean must first consult the head of the department responsible for the unit or units of study; and
   (c) specification of the earliest date upon which a student may re-enrol in a unit or units of study.

17. Applying for re-admission after exclusion
(1) A student who has been excluded from an award course or from a unit or units of study may apply to the relevant dean for re-admission to the award course or re-enrolment in the unit or units of study concerned after at least 4 semesters, and that dean may readmit the student to the award course or permit the student to re-enrol in the unit or units of study concerned.
(2) With the written approval of the relevant dean, a student who has been excluded may be given credit for any work completed elsewhere in the University or in another university during a period of exclusion.

18. Appeals against exclusion
(1) In this Rule a reference to the Appeals Committee is a reference to the Senate Student Appeals Committee (Exclusions and Readmissions).
(2) (a) (i) A student who has been excluded in accordance with this Rule may appeal to the Appeals Committee.
   (ii) A student who has applied for readmission to an award course or re-enrolment in a unit of study after a period of exclusion, and who is refused readmission or re-enrolment may also apply to the Appeals Committee.
(b) The Appeals Committee shall comprise:
   (i) 3 ex officio members (the Chancellor, the Deputy Chancellor and the Vice Chancellor and Principal);
   (ii) the Chair and Deputy Chairs of the Academic Board;
   (iii) 2 student Fellows; and
   (iv) up to 4 other Fellows.
(c) The Appeals Committee may meet as one or more sub-committees providing that each sub committee shall include at least 1 member of each of the categories of:
   (i) ex officio member;
   (ii) Chair or Deputy Chair of the Academic Board;
   (iii) student Fellow; and
   (iv) other Fellows.
(d) Three members shall constitute a quorum for a meeting of the Appeals Committee or a sub committee.
(e) The Appeals Committee and its sub committees have authority to hear and determine all such appeals and must report its decision to the Senate annually.
Bachelor of Science

Division 7 Exceptional circumstances

19. Variation of award course requirements in exceptional circumstances

The relevant dean may vary any requirement for a particular student enrolled in an award course in that faculty where, in the opinion of the dean, exceptional circumstances exist.

Division 8 Award of degrees, diplomas and certificates

20. Classes of award

(i) Undergraduate diplomas may be awarded in five grades:
   (a) pass;
   (b) pass with merit;
   (c) pass with distinction;
   (d) pass with high distinction;
   (e) the award of honours is reserved to indicate special proficiency or particular pathways to completion.

(ii) The basis on which a student may qualify for the award of honours may be determined by the Senate in force at the time they enrolled, except that the Senate in force at the time they enrolled, except that the Senate in force at the time they enrolled, except that the Senate in force at the time they enrolled, except that the Senate in force at the time they enrolled.

Division 9 Transitional provisions

25. Application of this Rule during transition

This Rule applies to all candidates for degrees, diplomas and certificates who commence candidature after 1 January 2001. Candidates who commenced candidature prior to this date may choose to proceed in accordance with the resolutions of the Senate in force at the time they enrolled, except that the Senate in force at the time they enrolled, except that the Senate in force at the time they enrolled, except that the Senate in force at the time they enrolled, except that the Senate in force at the time they enrolled.

Resolutions of the Senate

Bachelor of Science

1. These Resolutions of the Senate relate to the degree of Bachelor of Science including its streams:

(a) Bachelor of Science;
(b) Bachelor of Science (Advanced);  
(c) Bachelor of Science (Advanced Mathematics);
(d) Bachelor of Science (Bioinformatics);
(e) Bachelor of Science (Environmental);  
(f) Bachelor of Science (Marine Science);
(g) Bachelor of Science (Molecular Biology and Genetics);
(h) Bachelor of Science (Molecular Biotechnology);
(i) Bachelor of Science (Nutrition);  
(j) Bachelor of Science (Nutrition and Immunology);  
(k) Bachelor of Science (Nutrition and Immunology) / Bachelor of Laws;
(l) Bachelor of Science (or BSc(Advanced) or BSc(Advanced Mathematics))/Bachelor of Arts;
(m) Bachelor of Arts/Bachelor of Science [or BSc(Advanced) or BSc(Advanced Mathematics)];
(n) Bachelor of Science [or BSc(Advanced) or BSc(Advanced Mathematics)]/Bachelor of Commerce;
(o) Bachelor of Science (Advanced Mathematics)/Bachelor of Engineering;
(p) Bachelor of Education (Secondary: Science) / Bachelor of Science [or BSc(Advanced) or BSc(Advanced Mathematics)];
(q) Bachelor of Education (Secondary: Mathematics) / Bachelor of Science [or BSc(Advanced) or BSc(Advanced Mathematics)];
(r) Bachelor of Education (Secondary: Science) / Bachelor of Science (Psychology); and  
(s) Bachelor of Nursing/Bachelor of Science [or BSc(Advanced) or BSc(Advanced Mathematics)].

2. To qualify for the award of the pass degree students must:

(a) complete successfully units of study giving credit for a total of 144 credit points; and
(b) satisfy the requirements of all other relevant By Laws, Rules and Resolutions of the University.

3. To qualify for the award of the honours degree students must complete the honours requirements published in the faculty resolutions relating to the course.

4. To qualify for the award of the two degrees in a combined degree course students must complete the requirements published in these and the relevant faculty resolutions relating to the course.
Honours courses

19. A maximum of 48 credit points may be counted towards the course requirements of units of study relating to the intended honours course.

3. The testamur for the Bachelor of Science shall specify the major(s) completed in order to qualify for the award.

5. The Dean may permit a student of exceptional merit who is admitted to the Talented Student Program to undertake a unit or units of study within the Faculty other than those specified in Table 1.

6. A student who enrols, in accordance with these resolutions, in a unit or units of study prescribed for a degree other than the Bachelor of Science, shall satisfy the prerequisites, corequisites and other requirements prescribed for such units of study.

Requirements for the Pass Degree

1. To qualify for the award of the degree a student shall complete units of study having a total value of at least 144 credit points, including:

(1) at least 96 credit points from Science subject areas;
(2) at least one major from those included in Table 1;
(3) at least 12 credit points from the Science subject areas of Mathematics and Statistics;
(4) at least 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics and Statistics;
(5) no more than 60 credit points from Junior units of study; and
(6) no more than 18 credit points from units of study in which a grade of Pass (Concessional) has been awarded. Pass (Concessional) is the grade returned for a unit of study when a grade of Concession has been awarded and (Concessional) is the grade returned for a unit of study when a grade of Pass has been awarded.

8. A major in the BSc normally requires the completion of 24 credit points of Senior units of study in one Science area, including any units of study specified in the Table of undergraduate units of study as compulsory for that major. A student may not count a unit of study towards more than one major.

9. A maximum of 48 credit points may be counted towards the degree requirements from units of study offered by faculties other than the Faculty of Science.

10. Units of study completed at the University of Sydney Summer School which correspond to units of study specified in Section 7 and Section 9 may be credited towards the course requirements.

11. The testamur for the degree of Bachelor of Science shall specify the major(s) completed in order to qualify for the award.

Honours courses

12. There shall be honours courses in all Science subject areas listed in Table VI (Honours Units of Study).

13. To qualify to enrol in an honours course, students shall:

(1) have qualified for the award of a pass degree;
(2) have completed a minimum of 24 credit points of Senior units of study relating to the intended honours course;
(3) have achieved either:
(a) a credit average in the relevant Senior Science units of study;
(b) a SCIWAM of at least 58 (or equivalent at another institution);
(4) satisfy any additional criteria set by the Head of Department concerned.

14. Students shall complete the requirements for the honours course full time over two consecutive semesters.

15. If the Faculty is satisfied that a student is unable to attempt the honours course on a full time basis and if the Head of Department concerned so recommends, permission may be granted to undertake honours half time over four consecutive semesters.

16. To qualify for the award of an honours degree, students shall complete 48 credit points of honours units of study in the Table of undergraduate units of study, as prescribed by the Head of Department concerned.

17. The grade of honours and the honours mark are determined by performance in the honours course.

18. A student with an honours mark of 90 or greater in an honours subject area and a minimum SCIWAM of 80 shall, if deemed to be of sufficient merit by the Dean, receive a bronze medal.

19. A student may not re attempt an honours course in a single subject area.

20. A student who is qualified to enrol in two honours courses may either:
(1) complete the honours courses in the two subject areas separately and in succession; or
(2) complete a joint honours course, equivalent to an honours course in a single subject area, in the two subject areas. A joint honours course shall comprise such parts of the two honours courses as may be decided by the Dean.
BSc (Advanced Mathematics)

24. To qualify for the award of the pass degree in the BSc (Advanced Mathematics) stream, a student shall complete the requirements for the BSc degree in Section 7 except 7(5) and in addition, except with the permission of the Dean:

1. include no more than 48 credit points from Junior units of study;
2. include at least 16 credit points of Intermediate units of study at either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics;
3. include at least 48 credit points of Senior units of study of which at least 24 are completed at the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics; and
4. maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment.

25. Students who have completed at least 48 credit points may be permitted to transfer to the BSc (Advanced Mathematics) stream from other degree programs if:

1. their mark averaged over all attempted units of study is 75 or greater; and
2. they are able to enrol in the required number of Advanced level units or TSP units.

Other streams

26. In order to qualify for the award of the pass degree in the following streams, a student shall, except with the permission of the Dean, complete the requirements for the BSc degree in Section 7 with the exception of 7(2) and complete the units of study set out in the respective Tables of Undergraduate units of study:

(a) Bioinformatics Table IA;
(b) Environmental Table IB;
(c) Marine Science Table IC;
(d) Molecular Biology & Genetics Table ID;
(e) Molecular Biotechnology IE; or
(f) Nutrition Table IF.

Combined degrees

Science/Law: Faculty Resolutions

27. A student may proceed concurrently to the degrees of Bachelor of Laws and Bachelor of Science, Bachelor of Science (Advanced) or Bachelor of Science (Advanced Mathematics).

28. To qualify for the award of the pass degree in the BSc degree a student shall complete 96 credit points from Science units of study set out in Table II, including:

1. at least 12 credit points from the Science subject areas of Mathematics and Statistics;
2. 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics or Statistics;
3. 60 credit points of Intermediate/Senior units of study in Science subject areas; and
4. a major in a Science area.

29. To qualify for the award of the pass degree in an Advanced stream of the BSc degree, a student shall complete the requirements for the BSc degree in Section 28 and in addition, except with the permission of the Dean:

1. include at least 16 credit points of Intermediate units of study at either the Advanced level or as TSP units;
2. include at least 24 credit points of Senior units of study at the Advanced level or as TSP units in a single Science subject area; and
3. maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment.

30. To qualify for the award of the pass degree in the BSc (Advanced Mathematics) stream, a student shall complete the requirements for the BSc degree in Section 7 except 7(5) and in addition, except with the permission of the Dean:

1. include no more than 48 credit points from Junior units of study;
2. include at least 16 credit points of Intermediate units of study at either the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics;
3. include at least 48 credit points of Senior units of study of which at least 24 are completed at the Advanced level or as TSP units in the Science subject areas of Mathematics and Statistics; and
4. maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment.

31. Students who qualify to undertake honours in the BSc degree may elect to do so either:

1. by suspending candidacy from the Bachelor of Laws degree (including the combined Science/Law courses) for one year, with the permission of the Faculty of Law; or
2. after completion of the combined course.

32. Students may abandon the combined degree course and elect to complete either a BSc or LLB in accordance with the resolutions governing those degrees.

33. Students will be under the general supervision of the Faculty of Science until the end of the semester in which they complete the requirements for the BSc. After that they will be under the general supervision of the Faculty of Law.

34. The Deans of the Faculties of Law and Science shall jointly exercise authority in any matter concerning the combined degree program not otherwise dealt with in these resolutions.

Science/Commerce: Joint Resolutions

35. A student may proceed concurrently to the degrees of Bachelor of Commerce and Bachelor of Science, Bachelor of Science (Advanced) or Bachelor of Science (Advanced Mathematics).

36. To qualify for the award of the pass degrees a student shall complete units of study having a total value of at least 240 credit points including:

1. in the first six semesters of enrolment at a grade of pass or better:
   (a) 12 credit points of units of study from the Science subject area of Mathematics and Statistics listed in Table I (BSc) not including MATH1005, MATH1015 or MATH1905;
   (b) 12 credit points consisting of ECOM 1010 Business and Economic Statistics A and INFS 1000 Foundations of Business Systems;
   (c) 12 credit points in Junior units of study from each of Accounting and Economics;
   (d) at least 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics or Statistics; and
   (e) at least 96 credit points from Science subject areas;
2. no more than 100 credit points from Junior units of study;
3. at least 64 credit points of Senior units of study in Economics and Business subject areas; and
4. a major in a Science area and a major in Economics and Business from the list of approved majors for the Bachelor of Commerce.

37. To qualify for the award of the pass degree in an Advanced stream of the BSc degree, a student shall complete the requirements for the BSc degree in Section 36 and in addition, except with the permission of the Dean:

1. include at least 16 credit points of Intermediate units of study at either the Advanced level or as TSP units;
2. include at least 24 credit points of Senior units of study at the Advanced level or as TSP units in a single Science subject area; and
3. maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment.

4. Candidates who fail to maintain the required credit average will be transferred to candidature for the Bachelor of Science degree in their next year of enrolment with full credit for the units of study completed in the Advanced stream.

5. Candidates who fail to achieve a credit average across all units of study attempted in the year in which they have otherwise completed the requirements for the degree will be awarded the Bachelor of Science.

6. Except with the permission of the Dean of Law, a student may not enrol in any of the Intermediate or Senior units of study in Table II until the units of study LAWS 1006 Legal Institutions LAWS 1010 Torts are completed.

7. Students who qualify to undertake honours in the BSc degree may elect to do so either:

1. by suspending candidacy from the Bachelor of Laws degree (including the combined Science/Law courses) for one year, with the permission of the Faculty of Law; or
2. after completion of the combined course.

8. Students may abandon the combined degree course and elect to complete either a BSc or a BCom in accordance with the resolutions governing those degrees.

9. Students who are qualified to do so may undertake honours courses in either or both degrees or a joint honours course on completion of the combined degree program.
40. Students will be under the general supervision of the Faculty of Science.

41. The Deans of the Faculties of Economics and Business and Science shall jointly exercise authority in any matter concerning the combined degree program not otherwise dealt with in these resolutions.

Joint Resolutions for BA/BSc and BSc/BA degrees

42. A student may proceed concurrently to the degrees of Bachelor of Arts and Bachelor of Science, Bachelor of Science (Advanced) or Bachelor of Science (Advanced Mathematics) within either a BA/BSc or BSc/BA course.

43. To qualify for the award of the pass degree in an Advanced stream of the BSc degree, a student shall complete the requirements for the BSc degree in Section 49 and 49 in addition, except with the permission of the Dean:

(1) include at least 16 credit points of Intermediate units of study at either the Advanced level or as TSP units;

(2) include at least 24 credit points of Senior units of study at the Advanced level or as TSP units in a single Science subject area; and

(3) maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment.

(4) Candidates who fail to maintain the required credit average will be transferred to candidate for the Bachelor of Science degree in their next year of enrolment with full credit for the units of study completed in the Advanced stream.

The Deans of the Faculties of Engineering and Science shall jointly exercise authority in any matter concerning the combined degrees not otherwise dealt with in these resolutions.

Bachelor of Science
(3) maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment.
(4) Candidates who fail to maintain the required credit average will be transferred to candidacy for the Bachelor of Science degree in their next year of enrolment with full credit for the units of study completed in the Advanced stream. Candidates who fail to achieve a credit average across all units of study attempted in the year in which they have otherwise completed the requirements for the degree will be awarded the Bachelor of Science.

66. Students who are qualified to do so may undertake honours courses in either or both degrees or a joint honours course at the completion of the combined degrees.

67. Students may abandon the combined degree course and elect to complete either a BSc or a BEd in accordance with the resolutions governing those degrees.

68. Supervision of all students in the combined degrees will be the responsibility of the Faculty of Education.

69. The Deans of the Faculties of Education and Science shall jointly exercise authority in any matter concerning the combined degrees not otherwise dealt with in these resolutions.

**BEd(Secondary)/Science/BSc combined degrees**

70. To qualify for the award of the pass degrees a student shall complete, over ten semesters, units of study having a total value of at least 240 credit points including:

1. at least 96 credit points from Science subject areas and 132 credit points from prescribed Education units of study;
2. at least 12 credit points from the Science subject areas of Mathematics and Statistics;
3. at least 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics or Statistics;
4. a major in a Science area;
5. a major in Education;
6. at least 32 credit points of units of study in Methods and Practice of Teaching;
7. 32 credit points in Teaching and Learning including successful completion of the practicum; and
8. no more than 100 credit points from Junior units of study.

**BEd(Secondary)/Mathematics)/BSc combined degrees**

71. To qualify for the award of the pass degrees a student shall complete, over ten semesters, units of study having a total value of at least 240 credit points including:

1. at least 96 credit points from Science subject areas and 132 credit points from prescribed Education units of study;
2. at least 12 credit points from the Science subject areas of Mathematics and Statistics;
3. at least 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics or Statistics;
4. a major in the Science area of Mathematics or Statistics;
5. a major in Education;
6. at least 32 credit points of units of study in Methods and Practice of Teaching;
7. 32 credit points in Teaching and Learning including successful completion of the practicum; and
8. no more than 100 credit points from Junior units of study.

**BEd(Secondary)/BSc(Psychology) combined degrees**

72. To qualify for the award of the pass degrees a student shall complete, over ten semesters, units of study having a total value of at least 244 credit points including:

**Years I to III:**

1. at least 36 credit points from Junior units of study from Science subject areas of which 12 must be in Mathematics and Statistics, 12 in Psychology and 12 in either Chemistry or Physics;
2. at least 32 credit points from Intermediate units of study from Science subject areas of which 16 must be in Psychology and 16 in Mathematics and Statistics, Physics or Chemistry;
3. at least 32 credit points from Senior units of study in Psychology; and
4. at least 48 credit points from prescribed Education units of study.

**Years IV and V:**

1. honours in Psychology (or equivalent);
2. 16 credit points in School Counselling;
3. at least 16 credit points from prescribed Education units of study; and
4. at least 16 credit points from the Science subject areas of Mathematics and Statistics, Physics or Chemistry.

**Science/Nursing: Joint Resolutions**

73. A student may proceed concurrently to the degrees of Bachelor Nursing and Bachelor of Science, Bachelor of Science (Advanced) or Bachelor of Science (Advanced Mathematics).

74. To qualify for the award of the pass degrees a student shall complete, over ten semesters, units of study having a total value of at least 240 credit points including:

1. at least 96 credit points from Science subject areas of which there is:
   a. at least 12 credit points from the Science subject areas of Mathematics and Statistics;
   b. at least 24 credit points of Junior units of study from at least two Science subject areas other than Mathematics or Statistics;
   c. a major in a Science area; and
   d. no more than 60 credit points from Junior Science units of study;
2. at least 132 credit points of units of study listed in Table 3, for the Bachelor of Nursing; and
3. at least 12 credit points of electives taken from either the Faculty of Nursing or the Faculty of Science.

75. To qualify for the award of the pass degree in an Advanced stream of the BSc degree, a student shall complete the requirements for the BN/BSc in Section 74 above and in addition, except with the permission of the Dean:

1. include at least 16 credit points of Science Intermediate units of study at either the Advanced level or as TSP units;
2. include at least 24 credit points of Senior units of study at the Advanced level or as TSP units in a single Science subject area; and
3. maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment.
4. Candidates who fail to maintain the required credit average will be transferred to candidacy for the Bachelor of Science degree in their next year of enrolment with full credit for the units of study completed in the Advanced stream.
Candidates who fail to achieve a credit average across all units of study attempted in the year in which they have otherwise completed the requirements for the degree will be awarded the Bachelor of Science.

76. To qualify for the award of the pass degree in an Advanced Mathematics stream of the BSc degree, a student shall complete the requirements for the BN/BSc in Section 74 above and in addition, except with the permission of the Dean:

1. include at least 16 credit points of Intermediate units of study in the subject areas of Mathematics and Statistics at either the Advanced level or as TSP units;
2. include at least 24 credit points of Senior units of study in the subject areas of Mathematics and Statistics at the Advanced level or as TSP units; and
3. maintain in Intermediate and Senior units of study in Science subject areas an average mark of 65 or greater in each year of enrolment.
4. Candidates who fail to maintain the required credit average will be transferred to candidacy for the Bachelor of Science degree in their next year of enrolment with full credit for the units of study completed in the Advanced stream.
Candidates who fail to achieve a credit average across all units of study attempted in the year in which they have otherwise completed the requirements for the degree will be awarded the Bachelor of Science.

77. Students who are qualified to do so may undertake honours courses in either or both degrees or a joint honours course on completion of the combined degree.

78. Students may abandon the combined degree course and elect to complete either a BSc or a BN in accordance with the resolutions governing those degrees.

79. Students will be under the general supervision of the Faculty of Nursing.

80. The Deans of the Faculties of Nursing and Science shall jointly exercise authority in any matter concerning the combined degree program not otherwise dealt with in these resolutions.
Section 2

Enrolment in more/less than minimum load
81. A student may not enrol without first obtaining permission from the Dean in additional units of study once the degree requirements of 144 credit points have been satisfied.

Repeating a unit of study
82. Where a student enrols in a unit of study which is the same as, or has a substantial amount in common with, a unit of study previously attempted but not completed at the grade of Pass or better, the Head of Department concerned may exempt the student from certain requirements of the unit of study if satisfied that the relevant competence has been demonstrated.

83. A student may not enrol in a unit of study which they have completed previously with a grade of Pass or better.

84. A student who has been awarded a Pass (Concessional) in a unit of study may repeat that unit but, if subsequently awarded a grade of Pass or better, no further credit points will be gained unless the unit of study previously had not been credited under Section 7(6).

Cross institutional enrolment
85. Provided that permission has been obtained in advance, the Dean may permit a student to complete a unit of study at another institution and have that unit credited to his/her course requirements provided that either (1) the unit of study content is material not taught in any corresponding unit of study in the University; or (2) the student is unable for good reason to attend a corresponding unit of study at the University.

Restrictions on enrolment
86. Units of study which overlap substantially in content are noted in the Tables of Undergraduate Units of Study. Such units of study are mutually exclusive and no more than one of the overlapping units of study may be counted towards meeting the course requirements.

Satisfactory progress
87. If a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re enrol in that unit of study.

Assessment policy
88. Students may be tested by written and oral examinations, exercises, essays or practical work or any combination of these as the Faculty may determine.

89. Where a unit of study is offered at different levels of difficulty, the performance of students will be matched so that a grade obtained at one level indicates a quality of work comparable with that required for the same grade at the other level(s).

90. Heads of Department may arrange for further testing in cases of special consideration, in accordance with Academic Board policy governing illness and misadventure.

91. The award of a Pass (Concessional) in a unit of study entitles the student to be credited with the full number of credit points for that unit of study, provided that the limit on the total credit value specified in Section 7(6) is not exceeded.

Credit Transfer Policy
92. Credit will not be granted for units of study completed more than nine years prior to application, except with the permission of the Dean.

93. Credit may be granted as specific credit if the unit of study is considered to be directly equivalent to a unit of study in Table I or as non specific credit.

94. The total amount of credit granted may not be greater than 96 credit points and may not include more than 48 credit points of units of study from other degrees for which credit is maintained or a degree has been conferred.

95. All students, notwithstanding any credit transfer, must complete at least 24 credit points of Senior units of study towards a major taken at the University of Sydney.

Specific glossary for the BSc
Completion of a unit of study means that the assessment requirements have been satisfied and a grade of Pass (Concessional) or better in Junior units of study or Pass or better in other units of study has been achieved.

Junior unit of study is a 1000 or first year stage unit. Its prerequisites or assumed knowledge are non tertiary qualifications and corequisites are other Junior units of study

Intermediate unit of study is a 2000 or second year stage unit. Its prerequisites or assumed knowledge are Junior or Intermediate units of study and corequisites are other Intermediate units of study. (Specific to the Faculty of Science).

Senior unit of study is a 3000 or third year stage unit. Its prerequisites or assumed knowledge are Junior, Intermediate or Senior units of study and corequisites are other Senior units of study. (Specific to the Faculty of Science.)

Honours unit of study is a 4000 or fourth year stage unit offered within an honours course.

Advanced unit of study is a unit which generally parallels a normal unit of study but which provides added breadth of material and/or sophistication of approach.

Major in the BSc normally requires the completion of 24 credit points of Senior units of study in one Science area, including any units of study specified in the Table of undergraduate units of study as compulsory for that major. A student may not count a unit of study toward more than one major. (A major in Psychology requires 16 credit points of Intermediate and 32 credit points from Senior units of study in Psychology).

Major in the Faculty of Arts is normally 32 credit points from Senior units of study in an Arts subject area.

Major in the Faculty of Economics and Business is usually a three year sequence of study (in some cases a two year sequence) in a particular Economics and Business subject area.

Major in the Faculty of Education is 32 credit points from Senior units of study in the subject area of Education.

Dean means the Dean of Science.

Faculty means the Faculty of Science.

Science subject area means a defined field of study in science.

Degree means the Bachelor of Science.

Requirements means coursework requirements for the award of the degree of Bachelor of Science.

Student means a person enrolled as a candidate for the degree of Bachelor of Science.

TSP means the Talented Student Program in the Faculty of Science.

SCIWAM means the weighted average mark calculated by the Faculty from the results for all Intermediate and Senior units of study with a weighting of 2 for Intermediate units and 3 for Senior units.

Bachelor of Computer Science and Technology

Resolutions of the Senate

Bachelor of Computer Science and Technology

1. These Resolutions of the Senate relate to the degree of Bachelor of Computer Science and Technology including its streams;

(a) Bachelor of Computer Science and Technology;

(b) Bachelor of Computer Science and Technology (Advanced).

These Resolutions must be read in conjunction with the University of Sydney (Coursework) Rule, which sets out the requirements for all undergraduate courses, and the relevant Faculty Resolutions.

Requirements for the Pass degree

2. To qualify for the award of the pass degree students must:

(a) complete successfully units of study giving credit for a total of 144 credit points; and

(b) satisfy the requirements of all other relevant By Laws, Rules and Resolutions of the University.

Requirements for the Honours degree

3. To qualify for the award of the honours degree students must complete the honours requirements published in the faculty resolutions relating to the course.

Resolutions of the Faculty

These resolutions must be read in conjunction with the University of Sydney (Coursework) Rule, and the Glossary appended to these Faculty Resolutions.
Section 1

Bachelor of Computer Science and Technology

Section 1

Streams

1. The Bachelor of Computer Science and Technology degree comprises the following streams:
   (a) Bachelor of Computer Science and Technology; and
   (b) Bachelor of Computer Science and Technology (Advanced).

2. A student for the BCST degree in any stream may apply to the Dean for permission to transfer candidature to any other stream.

3. The testamur for the Bachelor of Computer Science and Technology shall specify the stream for which it is awarded.

Units of study

4. The units of study, which may be taken for the degree, are those that may be taken for the degree of Bachelor of Information Technology, the tables for which indicate:
   (1) designation as Junior, Intermediate, Senior or Honours and, where appropriate, as Advanced units of study;
   (2) credit point values;
   (3) assumed knowledge, corequisites/prerequisites;
   (4) the semesters in which they are offered; and
   (5) the units of study with which they are mutually exclusive.

5. The Dean may permit a student of exceptional merit who is admitted to the Talented Student Program to undertake a unit or units of study within the Faculty other than those specified in Table HI.

6. A student who enrolls, in accordance with these resolutions, in a unit or units of study prescribed for a degree other than the Bachelor of Information Technology, shall satisfy the corequisites, prerequisites and other requirements prescribed for such units of study.

Requirements for the Pass degree

7. To qualify for the award of the degree a student shall complete units of study having a total value of at least 144 credit points, of which:
   (1) at least 92 credit points are from Table III associated with the degree of Bachelor of Information Technology, including:
      (a) at least 20 credit points from III (i);
      (b) at least 8 credit points from III (ii);
      (c) at least 36 credit points from III (v) and/or III (v);
      (d) at least 8 credit points from Table III (v);
      (e) at least 16 credit points are from the Science subject areas of Mathematics and/or Statistics;
      (f) at least 40 credit points are from units which have codes starting other than INFO, COMP, ISYS, MULT, NETS, SOFT;
   (2) no more than 18 credit points are from units of study in which a grade of Pass (Concessional) has been awarded. Pass (Concessional) is the grade returned for a unit of study when the final mark is in the range 46–49. It may be awarded for Junior units of study only; and
   (3) at most 72 credit points are from Junior units

8. A major in an Information Technology subject area requires completion of units of study as specified in Table ULA associated with the degree of Bachelor of Information Technology. The testamur for the degree of Bachelor of Computer Science and Technology shall specify any majors completed.

9. Units of study completed at The University of Sydney Summer School which correspond to units of study specified in Section 7 may be credited towards the course requirements.

Honours courses

10. There shall be honours courses in Computer Science and Technology. With permission of the Dean, candidates may be allowed to complete an Honours course available in the Faculties of Science, Arts or Economics, provided that the candidate's plan of study is appropriate for the degree.

11. To qualify to enrol in an honours course, students shall:
   (1) have qualified for the award of a pass degree; or
   (2) be a pass graduate of the Faculty of Science; or
   (3) be a pass graduate holding a Bachelor of Science degree or equivalent qualification from another institution;
   (4) have a minimum of 24 credit points of units of study from Table UI (iv) and/or UI (v) associated with the degree of Bachelor of Information Technology (or equivalent at another institution);
   (5) have achieved either a credit average in the relevant units of study used to satisfy Section 11 (2) above, or a SCIWAM of at least 58; and

(4) satisfy any additional criteria set by the Head of Department concerned.

12. Students shall complete the requirements for the honours course full time over two consecutive semesters.

13. If the Faculty is satisfied that a student is unable to attempt the honours course on a full time basis and if the Head of Department concerned so recommends, permission may be granted to undertake honours half time over four consecutive semesters.

14. To qualify for the award of an honours degree, students shall complete while enrolled in an honours course, 48 credit points of honours units of study in the Table of undergraduate units of study, as prescribed by the Head of Department concerned.

15. The grade of honours and the honours mark are determined by performance in the honours course.

16. A student with an honours mark of 90 or greater in an honours subject area and a minimum SCIWAM of 80 shall, if deemed to be of sufficient merit by the Dean, receive a bronze medal.

17. A student may not re-attempt an honours course in a single subject area.

18. A student who is qualified to enrol in two honours courses may either:
   (1) complete the honours courses in the two subject areas separately and in succession; or
   (2) complete a joint honours course, equivalent to an honours course in a single subject area, in the two subject areas. A joint honours course shall comprise such parts of the two honours courses as may be decided by the Dean.

Designated streams BCST (Advanced)

19. To qualify for the award of the pass degree in the BCST (Advanced) stream, a student shall complete the requirements for the BCST degree in Section 7 so that except with the permission of the Dean:
   (1) they have completed at least 16 credit points of Intermediate units of study from Table III (i) and/or III (ii) which are at either the Advanced level or as TSP units;
   (2) they have completed at least 24 credit points from Table III (iv) and/or III (v) at either the Advanced level or the Honours level or as TSP units;
   (3) they have completed at least 48 credit points from Senior or Honours units of study; and
   (4) they have completed Intermediate and Senior units of study an average mark of 65 or greater in each year of enrolment.

(5) Candidates who fail to maintain the required credit average will be transferred to candidature for the Bachelor of Computer Science and Technology degree in their next year of enrolment with full credit for the units of study completed as Bachelor of Computer Science and Technology (Advanced) candidates. Candidates who fail to achieve a credit average across all units of study attempted in the year in which they have otherwise completed the requirements for the degree will be awarded the Bachelor of Computer Science and Technology.

20. Students who have completed at least 48 credit points may be permitted to transfer to the BCST (Advanced) stream from the BCST if:
   (1) their mark averaged over all attempted units of study is 75 or greater; and
   (2) they are able to enrol in the required number of Advanced level units or TSP units.

Section 2

Enrolment in more/less than minimum load

21. A student may not enrol without first obtaining permission from the Dean in additional units of study once the degree requirements of 144 credit points have been satisfied.

Repeating a unit of study

22. Where a student enrols in a unit of study which is the same as, or has a substantial amount in common with, a unit of study previously attempted but not completed at the grade of Pass or better, the Head of Department concerned may exempt the student from certain requirements of the unit of study if satisfied that the relevant competence has been demonstrated.

23. A student may not enrol in a unit of study which they have completed previously with a grade of Pass or better.
24. A student who has been awarded a Pass (Concessional) in a unit of study may repeat that unit but, if subsequently awarded a grade of Pass or better, no further credit points will be gained unless the unit of study previously had not been credited under Section 7(4).

Cross institutional enrolment

25. Provided that permission has been obtained in advance, the Dean may permit a student to complete a unit of study at another institution and have that unit credited to his/her course requirements provided that either:
   (1) the unit of study content is material not taught in any corresponding unit of study in the University; or
   (2) the student is unable for good reason to attend a corresponding unit of study at the University.

Restrictions on enrolment

26. Units of study which overlap substantially in content are noted in the Table of Undergraduate units of study. Such units of study are mutually exclusive and no more than one of the overlapping units of study may be counted towards meeting the course requirements.

Satisfactory progress

27. If a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re enrol in that unit of study.

Assessment policy

28. Students may be tested by written and oral examinations, exercises, essays or practical work or any combination of these as the Faculty may determine.

29. Where a unit of study is offered at different levels of difficulty, the performance of students will be matched so that a grade obtained at one level indicates a quality of work comparable with that required for the same grade at the other level(s).

30. Heads of Department may arrange for further testing in cases of special consideration, in accordance with Academic Board policy governing illness and misadventure.

31. The award of a Pass (Concessional) in a unit of study entitles the student to be credited with the full number of credit points for that unit of study, provided that the limit on the total credit value specified in Section 7(4) is not exceeded.

Credit transfer policy

32. Credit will not be granted for units of study completed more than nine years prior to application, except with the permission of the Dean.

33. Credit may be granted as specific credit if the unit of study is considered to be directly equivalent to a unit of study in the Table of undergraduate units of study or as non specific credit.

34. The total amount of credit granted may not be greater than 96 credit points and may not include more than 48 credit points of units from other degrees for which credit is maintained or a degree has been conferred.

35. All students, not withstanding any credit transfer, must complete at least 24 credit points from Table in (iv) and/or IH (v) at The University of Sydney.

Candidates enrolled before 2001

36. These Resolutions apply to all candidates for the degree enrolling in the BCST after 1 January 2001.

37. A person who has enrolled as a candidate for the degree of BCST before 1 January 2001 shall complete the requirements for the degree in accordance with the Resolutions in force at the time the candidate commenced, provided that the candidate completes the requirements for the degree by 31 December 2003 or such later date as the Faculty may approve in special cases; and that if a unit of study specified in those Resolutions is no longer offered the Faculty may permit the candidate to substitute a unit of study or units of study deemed by the Faculty to be equivalent.

Specific glossary for the BCST

Completion of a unit of study means that the assessment requirements have been satisfied and a grade of Pass (Concessional) or better in Junior units of study or Pass or better in other units of study has been achieved.

Junior unit of study is a 1000 or first year stage unit. Its prerequisites or assumed knowledge are non tertiary qualifications and corequisites are other Junior units of study

Intermediate unit of study is a 2000 or second year stage unit. Its prerequisites or assumed knowledge are Junior or Intermediate units of study and corequisites are other Intermediate units of study. (Specific to the Faculty of Science).

Senior unit of study is a 3000 or third year stage unit. Its prerequisites or assumed knowledge are Junior, Intermediate or Senior units of study and corequisites are other Senior units of study. (Specific to the Faculty of Science.)

Honours unit of study is a 4000 or fourth year stage unit offered within an honours course.

Advanced unit of study is a unit which generally parallels a normal unit of study but which provides added breadth of material and/or sophistication of approach.

Major in the Faculty of Science normally requires the completion of 24 credit points of Senior units of study in one Science area, including any units of study specified in the Table of undergraduate units of study as compulsory for that major. A student may not count a unit of study toward more than one major. (A major in Psychology requires 16 credit points of Intermediate and 32 credit points from Senior units of study in Psychology).

Major in the Faculty of Arts is normally 32 credit points from Senior units of Study in an Arts subject area.

Major in the Faculty of Economics and Business is usually a three year sequence of study (in some cases a two year sequence) in a particular Economics and Business subject area.

Major in the Faculty of Education is 32 credit points from Senior units of study in the subject area of Education.

Dean means the Dean of Science

Faculty means the Faculty of Science.

Science subject area means a defined field of study in science.

Degree means the Bachelor of Computer Science and Technology.

Requirements means coursework requirements for the award of the degree of Bachelor of Computer Science and Technology.

Student means a person enrolled as a candidate for the degree of Bachelor of Computer Science and Technology.

TSP means the Talented Student Program in the Faculty of Science.

SCIWAM means the weighted average mark calculated by the Faculty from the results for all Intermediate and Senior units of study with a weighting of 2 for Intermediate units and 3 for Senior units.

Bachelor of Information Technology

Resolutions of the Senate

Bachelor of Information Technology

1. These Resolutions of the Senate relate to the degree of Bachelor of Information Technology.

These Resolutions must be read in conjunction with The University of Sydney (Coursework) Rule, which sets out the requirements for all undergraduate courses, and the relevant Faculty Resolutions.

Requirements for the Pass degree

2. To qualify for the award of the pass degree students must:

   (1) complete successfully units of study giving credit for a total of 192 credit points; and

   (2) satisfy the requirements of all other relevant By Laws, Rules and Resolutions of the University.

Requirements for the Honours degree

3. To qualify for the award of the honours degree students must complete the honours requirements published in the faculty resolutions relating to the course.

Resolutions of the Faculty

These resolutions must be read in conjunction with The University of Sydney (Coursework) Rule and the Glossary appended to these Faculty Resolutions.

Section 1

1. The units of study, which may be taken for the degree, are set out in Table m and the Tables of units of study associated with the degrees of BSc, BA, BEc, and BE, all of which tables indicate Units of study:

   (1) designation as Junior, Intermediate, Senior or Honours and, where appropriate, as Advanced units of study;
Requirements for the Bachelor of Information Technology degree

4. To qualify for the award of the degree a student shall complete units of study having a total value of at least 192 credit points, of which:
   (1) at least 144 credit points are from Table HI, including:
   (a) at least 20 credit points from HI (i) with results of Credit or better;
   (b) at least 16 credit points from HI (ii) with results of Credit or better;
   (c) at least 72 credit points from m (iv) and/or III (v); and
   (d) either INFO 3600 or INFO 4900;
   (2) at least 16 credit points are from the Science subject areas of Mathematics and/or Statistics;
   (3) at least 40 credit points are from units which have codes starting other than INFO, COMP, ISYS, MULT, NETS, SOFT;
   (4) none are from units of study with grade of PCON;
   (5) at most 72 credit points are from Junior units; and
   (6) at least 84 credit points are from Senior and/or Honours units.

5. A major in the Bachelor of Information Technology normally requires the completion of 24 to 28 credit points of Senior and/or Honours units of study, together with other Junior and Intermediate units, as specified in Table IUA, except that any unit of study listed may be replaced by another unit which is mutually exclusive with it, for example, an Advanced equivalent:
   (1) a major in Principles of Computer Science all units listed in Table UIA(i) as core, and at least 12 credit points from units listed as electives;
   (2) a major in Information Systems all units listed in Table IIJA(ii) as core, and at least 8 credit points from units listed as electives;
   (3) a major in Multimedia Technology all units listed in Table IIIA(iii) as core, and at least 16 credit points from units listed as electives;
   (4) a major in Networks and Systems all units listed in Table IIIJA(iv) as core, and at least 8 credit points from units listed as electives;
   (5) a major in Software Development all units listed in Table IIIHA(v) as core, and at least 8 credit points from units listed as electives;
   (6) a major in Digital Design all units listed in Table IIHA(v) as core, and at least 8 credit points from units listed as electives; and
   (7) a major in Computational Science all units listed in Table IIIHA(vii) as core and at least 12 credit points from units listed as electives.

6. It is not necessary to complete the requirements of any major in order to qualify for the award of the degree.

7. Units of study completed at The University of Sydney Summer School which correspond to units of study specified in Section 4 may be credited towards the course requirements.

8. The testamur for the degree of Bachelor of Information Technology shall specify the major(s) completed in the degree.

Requirements for the Bachelor of Information Technology (Honours) degree

9. There shall be an honours degree associated with the Bachelor of Information Technology. Entry into the honours degree is only by transfer from the BIT.

10. To qualify to transfer into the Bachelor of Information Technology (Honours) degree, students shall:
   (1) have completed at least 144 credit points from the Bachelor of Information Technology degree;
   (2) have completed a minimum of 24 credit points from Table III (iv) and/or m (v), or the equivalent at another institution;
   (3) have achieved either a distinction average (75) in the relevant units of study in Table III (iv) and/or HI (v), or a SCIWAM of at least 70; and
   (4) satisfy any additional criteria set by the Head of Department concerned.

11. Once enrolled in the BIT (Honours) course, students shall complete the requirements for the honours course full time, over two consecutive semesters.

12. If the Faculty is satisfied that a student is unable to attempt the honours course on a full time basis and if the Head of Department concerned so recommends, permission may be granted to undertake honours half time over four consecutive semesters.

13. To qualify for the award of the Bachelor of Information Technology (Honours) degree, students shall complete 192 credit points as outlined in Section 4, including at least 40 credit points from Honours level units, of which both INFO 4000 and INFO 4900 must be completed with a result of at least 65.

14. The degree of Bachelor of Information Technology (Honours) shall recognise the same majors as the BIT. The testamur shall specify the major(s) completed in qualifying for the award. These majors will be noted independently from the grade of honours awarded.

15. The grade of honours and the honours mark are determined by performance in all Honours level units attempted.

16. A student with an honours mark of 90 or greater and a minimum SCIWAM of 80 shall, if deemed to be of sufficient merit by the Dean, receive a bronze medal.

17. A student may not attempt the Bachelor of Information Technology (Honours) course. However, students who fail to meet the requirements for the award of honours and who have not already satisfied the requirements of the BIT may elect to transfer back to the BIT.

18. A student who is qualified to enrol in two honours courses may either:
   (1) complete the honours courses in the two subject areas separately and in succession; or
   (2) complete a joint honours course, equivalent to an honours course in a single subject area, in the two subject areas. A joint honours course shall comprise such parts of the two honours courses as may be decided by the Dean.

Transfer between the BIT and other degrees

19. Students who have completed at least 48 credit points may be permitted to transfer to the Bachelor of Information Technology degree from other degree programs, if their mark averaged over all attempted units of study is 70 or greater. A quota may apply to the number of students allowed to transfer into the BIT in a given calendar year.

20. Students enrolled in the Bachelor of Information Technology who have satisfied the requirements of the BSc, BSc (Adv), BCST or BCST (Adv) degree, or with permission of the Dean, may elect to discontinue their enrolment in the Bachelor of Information Technology degree and graduate with the BSc, BSc (Adv), BCST or BCST (Adv) degree, as appropriate.

Section 2
Enrolment in more/less than minimum load

21. A student may not enrol without first obtaining permission from the Dean in additional units of study once the degree requirements of 192 credit points have been satisfied.

Repeating a unit of study

22. Where a student enrols in a unit of study which is the same as, or has a substantial amount in common with, a unit of study previously attempted but not completed at the grade of Pass or better, the Head of Department concerned may exempt the student from certain requirements of the unit of study if satisfied that the relevant competence has been demonstrated.

23. A student may not enrol in a unit of study which they have completed previously with a grade of Pass or better.

Cross institutional enrolment

24. Provided that permission has been obtained in advance, the Dean may permit a student to enrol and complete a unit of study at another institution and have that unit credited to his/her course requirements provided that either:
   (1) the unit of study content is material not taught in any corresponding unit of study at the University; or
(2) the student is unable for good reason to attend a corresponding unit of study at the University.

Restrictions on enrolment

25. Units of study which overlap substantially in content are noted in the Tables of Undergraduate units of study. Such units of study are mutually exclusive and no more than one of the overlapping units of study may be counted towards meeting the course requirements.

Satisfactory progress

26.1 If a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re-enrol in that unit of study.

Assessment policy

27. Students may be tested by written and oral examinations, exercises, essays or practical work or any combination of these as the Faculty may determine.

28. Where a unit of study is offered at different levels of difficulty, the performance of students will be matched so that a grade obtained at one level indicates a quality of work comparable with that required for the same grade at the other level(s).

29. Heads of Department may arrange for further testing in cases of special consideration, in accordance with Academic Board policy governing illness and misadventure.

Credit transfer policy

30. Credit will not be granted for units of study completed more than nine years prior to application, except with the permission of the Dean.

31. Credit may be granted as specific credit if the unit of study is considered to be directly equivalent to a unit of study in Table HI, or as non specific credit.

32. The total amount of credit granted may not be greater than 96 credit points and may not include more than 48 credit points of units from other degrees for which credit is maintained or a degree has been conferred.

33. All students, notwithstanding any credit transfer, must complete at least 48 credit points of units from Table n(iv) and/or HI (v) at The University of Sydney.

Specific glossary for the BIT

Completion of a unit of study means that the assessment requirements have been satisfied and a grade of Pass or better has been achieved.

Junior unit of study is a 1000 or first year stage unit.

Intermediate unit of study is a 2000 or second year stage unit.

Senior unit of study is a 3000 or third year stage unit.

Honours unit of study is a 4000 or fourth year stage unit offered within an honours course.

Advanced unit of study is a unit which generally parallels a normal unit of study but which provides added breadth of material and/or sophistication of approach.

Dean means the Dean of Science.

Faculty means the Faculty of Science.

Science subject area means a defined field of study in science.

Degree means the Bachelor of Information Technology.

Requirements means coursework requirements for the award of the degree of Bachelor of Information Technology.

Student means a person enrolled as a candidate for the degree of Bachelor of Information Technology.

TSP means the Talented Student Program in the Faculty of Science.

SCIWAM means the weighted average mark calculated by the Faculty from the results for all Intermediate and Senior units of study with a weighting of 2 for Intermediate units and 3 for Senior units.

Bachelors of Medical Science

Resolutions of the Senate

Bachelor of Medical Science

1. These Resolutions of the Senate relate to the Bachelor of Medical Science and the Combined degree course:

(a) Bachelor of Engineering/Bachelor of Medical Science

These Resolutions must be read in conjunction with The University of Sydney (Coursework) Rule, which sets out the requirements for all undergraduate courses, and the relevant Faculty Resolutions.

Requirements for the Pass degree

2. To qualify for the award of the pass degree students must:

(1) complete successfully units of study giving credit for a total of 144 credit points; and

(2) satisfy the requirements of all other relevant By Laws, Rules and Resolutions of the University.

Requirements for the Honours degree

3. To qualify for the award of the Honours degree students must complete the honours requirements published in the faculty resolutions relating to the course.

Requirements for the Combined degrees

4. To qualify for the award of the two degrees in the combined degree course students must complete the requirements published in these and the other relevant faculty resolutions relating to the course.

Resolutions of the Faculty

These resolutions must be read in conjunction with The University of Sydney (Coursework) Rule and the Glossary appended to these Faculty Resolutions.

Section 1

Units of study

1. The units of study, which may be taken for the degree, are set out in Table IV together with:

(1) designation as Junior, Intermediate, Senior and Honours and, where appropriate, as an Advanced unit of study;

(2) credit point value;

(3) assumed knowledge, qualifying units, corequisites and prerequisites;

(4) the semester in which they are offered; and

(5) the units of study with which they are mutually exclusive.

2. A student may enrol, in accordance with Section 4(5), in a unit of study prescribed for a degree other than the Bachelor of Medical Science and shall satisfy the prerequisites, corequisites, qualifying and other requirements prescribed for such units of study for that other degree.

3. The Dean may permit a student of exceptional merit who is admitted to the Talented Student Program to undertake a unit or units of study within the Faculty other than those specified in the Tables of Undergraduate units of study.

Requirements for the Pass degree

4. In order to qualify for the award of the degree a student shall complete units of study having a total value of at least 144 credit points, including:

(1) at least 48 credit points from Junior units of study, comprising 12 credit points each from Biology, Chemistry, Mathematics and Physics; with the permission of the Dean 12 credit points of Biology may be replaced with Junior units of study in Computer Science or Psychology;

(2) no more than 60 credit points from Junior units of study (340 credit points of Intermediate core units of study listed in Table IV);

(4) at least 36 credit points of Senior units of study taken from the subject areas of Anatomy/Histology, Biology (Genetics), Biochemistry, Cell Pathology, Immunology, Infectious Diseases, Microbiology, Pharmacology and Physiology listed in Table IV;

(5) no more than 20 credit points from units of study other than those specified in Table IV;

5. Units of study taken at The University of Sydney Summer School which correspond to units of study specified in Section 4 may be credited towards the course requirements.

Honours courses

6. There shall be honours courses in Science subject areas listed in Table IV D (Bachelor of Medical Science Honours Units of Study).

7. In order to qualify to enrol in an honours course, students shall:

(1) either:

(a) have qualified for the award of the pass degree; or

(b) be a pass graduate in Medical Science of the Faculty of Science; or

(c) be a pass graduate holding a Bachelor of Medical Science degree or an equivalent qualification from another institution;

(2) have completed a minimum of 24 credit points of Senior units of study relating to the intended honours course (or equivalent at another institution);

(3) have achieved either:
9. If the Faculty is satisfied that a student is unable to attempt the Medical Science Bachelor of Medical Science Cross institutional enrolment

21. Where a student enrols in a unit of study which is the same as, or has a substantial amount in common with, a unit of study previously attempted but not completed satisfactorily, the Head of Department concerned may exempt the student from certain requirements of the unit of study requirements if satisfied that the relevant competence has been demonstrated.

22. A student may not enrol in a unit of study which they have completed previously with a grade of Pass or better.

Cross institutional enrolment

23. Provided that permission has been obtained in advance, the Dean may permit a student to complete a unit of study or units of study at another institution and have that unit or units of study credited to his/her course requirements provided that:

(a) the unit of study content is material not taught in any corresponding unit of study in the University; or

(b) the student is unable for good reason to attend a corresponding unit of study at the University.

Section 2

Repeating a unit of study

21. Where a student enrolls in a unit of study which is the same as, or has a substantial amount in common with, a unit of study prescribed as prerequisites for the Senior unit of study, as set out in Table IV.

26. Enrolment in some Senior units of study may be subject to a quota.

27. In satisfying the requirements of Section 4.3 a student may not enrol in units of study which overlap substantially in content with units of study listed in Table IV.

28. A student may not enrol without first obtaining permission from the Dean in:

(a) additional units of study once the degree requirements of 144 credit points have been satisfied; or

(b) units of study which may not be counted towards the course requirements.

Satisfactory progress

29. If a student fails or discontinues enrolment in one unit of study twice, the student may be asked to show good cause why he or she should be allowed to re enrol in that unit of study.

Assessment policy

30. Students may be tested by written and oral examinations, exercises, essays or practical work or any other form that the Faculty may determine.

31. Where a unit of study is offered at different levels of difficulty, the performance of students will be matched so that a grade obtained at one level indicates a quality of work comparable with that required for the same grade at the other levels.

Credit transfer policy

32. Credit will not be granted for units of study completed more than ten years prior to application, except with the permission of the Dean.

33. Credit will not be granted to units of study completed more than ten years prior to application, except with the permission of the Dean.

34. Advanced standing may be granted as specific credit if the unit of study is considered by the Faculty to be directly equivalent to a unit of study in Table IV, or as nonspecific credit.

35. The total credit point value of the advanced standing may not be greater than 96 credit points and may not include more than 48 credit points of units from other degrees which have been conferred, or for which credit is maintained in another degree program.

36. All students, notwithstanding any credit transfer, must enrol in at least 36 credit points of Senior units of study from Table IV.

Candidates enrolled before 2000

37. These Resolutions apply to all candidates for the degree enrolling in units of study after 1 January 2000.

38. A person who has enrolled as a candidate for the degree of Bachelor of Medical Science before 1 January 2000 may complete the requirements for the degree in accordance with the Resolutions in force at the time the candidature commenced, provided that the candidate completes the requirements for the degree by 31 December 2002 or such later date as the Faculty may approve in special cases; and that if a unit of study specified in those Resolutions is no longer offered the Faculty may permit the candidate to substitute a unit of study or units of study deemed by the Faculty to be equivalent.

39. Where a candidate proceeding pursuant to Section 38 fails to complete the requirements for the degree by 31 December 2002 the candidate shall complete the requirements for the degree under such conditions as may be determined from time to time by the Dean.
Specific glossary for the BMedSc

Completion of a unit of study means that the assessment requirements have been satisfied and a grade of Pass or better has been achieved.

Intermediate unit of study is of second year (2000) level. Its prerequisites or assumed knowledge are Junior or Intermediate units of study and corequisites are other Intermediate units of study.

Senior unit of study is of third year (3000) level. Its prerequisites or assumed knowledge are Junior, Intermediate or Senior units of study and corequisites are other Senior units of study.

Honours unit of study is a 4000 level unit offered within an honours course.

Advanced unit of study is a unit which generally parallels a normal unit of study but which provides added breadth of material and/or sophistication of approach.

Dean means the Dean of Science.

Faculty means the Faculty of Science.

Pass (Concessional) is not an available grade in the Bachelor of Medical Science.

Degree means the Bachelor of Medical Science.

Requirements means coursework requirements for the award of the degree of Bachelor of Medical Science.

Student means a person enrolled as a candidate for the degree of Bachelor of Medical Science.

TSP means the Talented Student Program in the Faculty of Science.

SCIWAM means the weighted average mark calculated by the Faculty from the results for all Intermediate and Senior units of study with a weighting of 2 for Intermediate units and 3 for Senior units.

Bachelor of Psychology

Resolutions of the Senate

Bachelor of Psychology

1. These Resolutions of the Senate relate to the Bachelor of Psychology.

2. To qualify for the award of the degree students must:
   (1) complete successfully units of study giving credit for a total of 144 credit points;
   (2) complete successfully an additional 48 credit points from the fourth year (Honours) units of study in the Science subject area of Psychology; and
   (3) satisfy the requirements of all other relevant By Laws, Rules and Resolutions of the University.

Resolutions of the Faculty

These resolutions must be read in conjunction with the University of Sydney (Coursework) Rule and the Glossary appended to these Faculty Resolutions.

Section 1

Units of study

1. The units of study, which may be taken for the degree, are set out under Subject areas in Table I together with:
   (1) designation as Junior, Intermediate, Senior or Honours and, where appropriate, as Advanced units of study;
   (2) credit point values;
   (3) assumed knowledge, corequisites/prerequisites;
   (4) the semesters in which they are offered; and
   (5) the units of study with which they are mutually exclusive.

2. The Dean may permit a student of exceptional merit who is admitted to the Talented Student Program to undertake a unit or units of study within the Faculty other than those specified in Table I.

3. A student who enrolls, in accordance with these resolutions, in a unit or units of study prescribed for a degree other than the Bachelor of Psychology, shall satisfy the prerequisites, corequisites and other requirements prescribed for such units of study.

Requirements for the degree

4. To qualify for the award of the degree a student shall:

   (1) complete units of study having a total value of at least 144 credit points where:
       (a) at least 12 credit points are from Junior units of study in the Science subject area of Psychology, with an average grade of credit or better;
       (b) at least 16 credit points are from Intermediate units of study in the Science subject area of Psychology, with an average grade of distinction or better;
       (c) at least 36 credit points are from Senior units of study in the Science subject area of Psychology (including PSYC 3201 and PSYC 3202) and, except with the permission of the Faculty, with an average grade of Distinction or better;
       (d) Candidates who fail to maintain the required average in Psychology units will be transferred to candidature for the Bachelor of Science degree in their next year of enrolment with full credit for the units of study completed as Bachelor of Psychology candidates. Candidates who fail to achieve the required average in Psychology units in the year in which they have otherwise completed the requirements for the degree will be awarded the Bachelor of Science;
       (e) at least 96 credit points are from Science subject areas;
       (f) at least 12 credit points are from the Science subject areas of Mathematics and Statistics;
       (g) at least 12 credit points are Junior units of study from Science subject areas other than Psychology and Mathematics and Statistics;
       (h) no more than 60 credit points are from Junior units of study; and
       (i) no more than 18 credit points are from units in which a grade of Pass (Concessional) has been awarded. Pass (Concessional) is the grade returned for a unit of study when the final mark is in the range 46-49. It may be awarded for Junior units of study only;
   (2) complete 48 credit points from fourth year (Honours) units of study in the Science subject area of Psychology with a grade of honours.

5. A maximum of 48 credit points may be counted towards the degree requirements from units of study offered by faculties other than the Faculty of Science.

6. Units of study completed at The University of Sydney Summer School which correspond to units of study specified in Section 4 and Section 5 may be credited towards the course requirements.

7. Students shall complete the requirements for the honours course full time over two consecutive semesters.

8. If the Faculty is satisfied that a student is unable to attempt the honours course on a full time basis and if the Head of Department concerned so recommends, permission may be granted to undertake honours half time over four consecutive semesters.

9. The grade of honours and the honours mark are determined by performance in the honours course.

10. A student with an honours mark of 90 or greater and a minimum SCIWAM of 80 shall, if deemed to be of sufficient merit by the Dean, receive a bronze medal.

11. A student may not re attempt the Psychology honours course.

Section 2

Enrolment in more/less than minimum load

12. A student may not enrol without first obtaining permission from the Dean in
   (1) additional units of study once the degree requirements of 144 credit points have been satisfied, or
   (2) units of study which may not be counted towards the course requirements.

Repeating a unit of study

13. Where a student enrolls in a unit of study which is the same as, or has a substantial amount in common with, a unit of study previously attempted but not completed at the grade of Pass or better, the Head of Department concerned may exempt the student from certain requirements of the unit of study if satisfied that the relevant competence has been demonstrated.

14. A student may not enrol in a unit of study which they have completed previously with a grade of Pass or better.

15. A student who has been awarded a Pass (Concessional) in a unit of study may repeat that unit but, if subsequently awarded a grade of Pass or better, no further credit points will be gained unless the unit of study previously had not been credited under Section 4(1)(i).
Cross institutional enrolment

16. Provided that permission has been obtained in advance, the Dean may permit a student to complete a unit of study at another institution and have that unit credited to his/her course requirements provided that either:
(1) the unit of study content is material not taught in any corresponding unit of study in the University; or
(2) the student is unable for good reason to attend a corresponding unit of study at the University.

Restrictions on enrolment

17. Units of study which overlap substantially in content are noted in the Tables of Undergraduate units of study. Such units of study are mutually exclusive and no more than one of the overlapping units of study may be counted towards meeting the course requirements.

Satisfactory progress

18. If a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re-enrol in that unit of study.

Assessment policy

19. Students may be tested by written and oral examinations, exercises, essays or practical work or any combination of these as the Faculty may determine.

20. Where a unit of study is offered at different levels of difficulty, the performance of students will be matched so that a grade Obtained at one level indicates a quality of work comparable with that required for the same grade at the other level(s).

21. Heads of department may arrange for further testing in cases of special consideration, in accordance with Academic Board policy governing illness and misadventure.

22. The award of a Pass (Concessional) in a unit of study entitles the student to be credited with the full number of credit points for that unit of study, provided that the limit on the total credit value specified in Section 4(1)(i) is not exceeded.

Credit transfer policy

23. Credit will not be granted for units of study completed more than nine years prior to application, except with the permission of the Dean.

24. Credit may be granted as specific credit if the unit of study is considered to be directly equivalent to a unit of study in Table I or as non specific credit.

25. The total amount of credit granted may not be greater than 96 credit points and may not include more than 48 credit points of units from other degrees for which credit is maintained or a degree has been conferred.

26. All students, notwithstanding any credit transfer, must complete at least 36 credit points of Senior Psychology units (as outlined in 4(1)(c)) at The University of Sydney.

Specific glossary for the BPsys

Completion of a unit of study means that the assessment requirements have been satisfied and a grade of Pass (Concessional) or better in Junior units of study or Pass or better in other units of study has been achieved.

Junior unit of study is a 1000 or first year stage unit. Its prerequisites or assumed knowledge are non tertiary qualifications and corequisites are other Junior units of study.

Intermediate unit of study is a 2000 or second year stage unit. Its prerequisites or assumed knowledge are Junior or Intermediate units of study and corequisites are other Intermediate units of study. (Specific to the Faculty of Science).

Senior unit of study is a 3000 or third year stage unit. Its prerequisites or assumed knowledge are Junior, Intermediate or Senior units of study and corequisites are other Senior units of study. (Specific to the Faculty of Science.)

Honours unit of study is a 4000 or fourth year stage unit offered within an honours course.

Advanced unit of study is a unit which generally parallels a normal unit of study but which provides added breadth of material and/or sophistication of approach.

Major in the Faculty of Science normally requires the completion of 24 credit points of Senior units of study in one Science area, including any units of study specified in the Table of undergraduate units of study as compulsory for that major. A student may not count a unit of study toward more than one major. (A major in Psychology requires 16 credit points of Intermediate and 32 credit points from Senior units of study in Psychology).

Dean means the Dean of Science.

Faculty means the Faculty of Science.

Science subject area means a defined field of study in science.

Degree means the Bachelor of Psychology.

Requirements means coursework requirements for the award of the degree of Bachelor of Psychology.

Student means a person enrolled as a candidate for the degree of Bachelor of Psychology.

TSP means the Talented Student Program in the Faculty of Science.

SCIWAM means the weighted average mark calculated by the Faculty from the results for all Intermediate and Senior units of study with a weighting of 2 for Intermediate units and 3 for Senior units.

Bachelor of Liberal Studies

Resolutions of the Senate

Bachelor of Liberal Studies

1. These Resolutions of the Senate relate to the Bachelor of Liberal Studies including its streams:
(a) Bachelor of Liberal Studies; and
(b) Bachelor of Liberal Studies (International).

These Resolutions must be read in conjunction with The University of Sydney (Coursework) Rule, which sets out the requirements for all undergraduate courses, and the relevant Faculty Resolutions.

Requirements for the Pass degree

2. To qualify for the award of the degree students must:
(1) complete successfully units of study giving credit for a total of 192 credit points; and
(2) satisfy the requirements of all other relevant By Laws, Rules and Resolutions of the University.

Requirements for the Honours degree

3. To qualify for the award of the honours degree students must complete the honours requirements published in the faculty resolutions relating to the course.

Resolutions of the Faculties of Arts and Science

These resolutions must be read in conjunction with the University of Sydney (Coursework) Rule and the glossary appended to these Faculty resolutions.

Section 1

Authority of the Deans

1. The Deans of Arts and Science shall jointly exercise authority in any matter concerning the Bachelor of Liberal Studies degree not otherwise dealt with in the Resolutions of the Senate or these resolutions.

Streams

2. The Bachelor of Liberal Studies degree comprises the following streams:
(a) Bachelor of Liberal Studies; and
(b) Bachelor of Liberal Studies (International).

A student for the BLibStud degree in any stream may apply to the Deans of Arts and Science for permission to transfer candidate to any other stream.

4. The testamur for the Bachelor of Bachelor of Liberal Studies shall specify the stream for which it is awarded.

Units of study

5. The units of study, which may be taken for the degree, are set out under subject areas in Table I for the Bachelor of Science and the Tables of units of study for the degree of Bachelor of Arts, including:
(1) designation as Junior, Intermediate, Senior or Honours and, where appropriate, as Advanced units of study;
(2) credit point values;
(3) assumed knowledge, corequisites/prerequisites;
(4) the semesters in which they are offered; and
(5) the units of study with which they are mutually exclusive.
6. The Deans of Arts and Science may permit a student of exceptional merit who is admitted to the Talented Student Program to undertake a unit or units of study other than those specified in Table I for the Bachelor of Science.

7. A student who enrols, in accordance with these resolutions, in a unit or units of study prescribed for a degree other than the Bachelor of Liberal Studies, shall satisfy the prerequisites, corequisites and other requirements prescribed for such units of study.

Requirements for the Pass degree

8. To qualify for the award of the degree a student shall complete units of study having a total value of at least 192 credit points, including:
   (1) at least 120 Intermediate or Senior credit points; (2) at least one Arts major and one Science major; (3) at least 28 credit points, including 16 Intermediate or Senior credit points, from units of study in one language subject area other than English from Part A of the Table of units of study for the degree of Bachelor of Arts; (4) a 6 credit point unit of study in communication and analytical skills or in other academic skills as may be prescribed from time to time; (5) a minimum of 6 credit points from units of study in Mathematics and Statistics; and (6) no more than 18 credit points from units in which a grade of Pass (Concessional) has been awarded. Pass (Concessional) is the grade returned for a unit of study when the final mark is in the range 46-49. It may be awarded for Junior units of study only.

9. Unless otherwise defined, a major shall consist of units of study taken in a single subject area from Part A of the Table of units of study for the Bachelor of Arts or from Table I for the Bachelor of Science.

10. A major in an Arts subject area requires 32 credit points from Senior units of study in an Arts subject area listed in Part A of the Table of units of study for the Bachelor of Arts, including any units of study specified in the Table of units of study as compulsory for that major, or of at least 16 senior credit points from a Part A subject area combined with no more than 16 senior credit points from units of study approved by the Dean of the Faculty of Arts for cross listing with the major, except in the case of Semiotics, Medieval Studies, and European Studies where the entire major may be cross listed and in such other subject areas as may be approved by the Dean of the Faculty of Arts.

11. A major in a Science area normally requires the completion of 24 credit points of Senior units of study in that area, including any units of study specified in Table I as compulsory for that major. (A major in Psychology requires 16 credit points of Intermediate and 32 credit points of Senior units of study in Psychology). A student may not count a unit of study toward more than one major.

12. Candidates shall nominate their choice of majors no later than the beginning of the fifth semester of candidature, but with the permission of the Deans of Arts and Science as appropriate, may change the majors during the candidature.

13. A maximum of 28 credit points may be counted towards the degree requirements from units of study offered by faculties other than the Faculties of Arts and Science and in addition to those listed in Part B of the Table of units of study for the Bachelor of Arts.

14. Units of study completed at The University of Sydney Summer School which correspond to units of study specified in Section 8 and Section 13 may be credited towards the course requirements.

15. The testamur for the degree of Bachelor of Liberal Studies shall specify the majors completed in order to qualify for the award.

Award of the degree

16. (1) A weighted average mark (WAM) will be calculated for each candidate as an overall measure of the performance in the degree Bachelor of Liberal Studies. The WAM is calculated by summing the products of the marks achieved and the weighted credit point values of the units of study taken in the degree and then dividing by the sum of the weighted credit point values, with all attempts at units of study being included in the calculation, except where units of study are discontinued with permission; the formula used is as follows:

\[ \text{WAM} = \frac{\sum (W \times c)}{\sum c} \]

where \( W \) is the weighted credit point value, \( c \) is the credit point value, and \( \sum (W \times c) \) is the sum of the products of the marks achieved and the credit point values, with all attempts at units of study being included in the calculation, except where units of study are discontinued with permission; the formula used is as follows:

18. To qualify to enrol in an honours course, students shall:
   (1) (a) have completed the requirements for the award of the Bachelor of Liberal Studies with the grade of Distinction or High Distinction; or (b) have a pass grade in the subject area relating to the intended honours course (or equivalent at another institution);
   (2) have completed a major at credit average in the subject area.

Honours courses

17. There shall be honours courses in all Arts and Science subject areas.

18. To qualify for the award of the pass degree in the Bachelor of Arts, a student shall:
   (1) at least 120 Intermediate or Senior credit points; (2) at least one Arts major and one Science major; (3) at least 28 credit points, including 16 Intermediate or Senior credit points, from units of study in one language subject area other than English from Part A of the Table of units of study for the Bachelor of Liberal Studies; and (4) a 6 credit point unit of study in communication and analytical skills or in other academic skills as may be prescribed from time to time.

Bachelor of Liberal Studies (International)

20. If the Faculties are satisfied that a student is unable to attempt the honours course on a full time basis and if the Head or Chair of Department concerned so recommends, permission may be granted to undertake honours half time over three or four consecutive semesters.

21. Units to qualify for the award of an honours degree, students shall complete an honours course in the honours course on a full time basis and if the Head or Chair of Department concerned, receive a bronze medal.

22. The grade of honours and the honours mark are determined by performance in the honours course.

Designated Streams Bachelor of Liberal Studies

23. A student with an honours mark of 90 or greater in an honours subject area shall, if deemed to be of sufficient merit by the Deans of Arts and Science, receive a bronze medal.

24. A student may not re-attempt an honours course in a single subject area.

25. A student who is qualified to enrol in two honours courses may either:
   (1) complete the honours courses in the two subject areas separately and in succession; or
   (2) complete a joint honours course, equivalent to an honours course in a single subject area, in the two subject areas. A joint honours course shall comprise such parts of the two honours courses as may be decided by the Deans of Arts and Science.

26. To qualify for the award of the pass degree in the Bachelor of Liberal Studies (International) stream, a student must complete the requirements for the Bachelor of Liberal Studies degree in Section 8 and in addition, except with the permission of the Deans of Arts and Science, include at least the equivalent of 24 credit points from units of study taken over a minimum of one semester while enrolled as an exchange student at an overseas university which has an agreement with The University of Sydney.

27. To qualify to participate in an exchange program a student must have:
   (1) completed at least the equivalent of two semesters of full time study (normally a minimum of 48 credit points); and (2) maintained an average mark of 65 or greater over all units of study completed.

28. During the period of their exchange program a student must be enrolled as a full time student in the Bachelor of Liberal Studies at The University of Sydney and take classes at the
overseas university that will qualify for a minimum of 24
credit points per semester towards the Bachelor of Liberal
Studies degree.
29. Except as specified in these resolutions, students will comply
with the rules of and be under the administration of The
University of Sydney's Exchange Program.
30. Students who have completed at least 48 credit points may be
permitted to transfer from the Bachelor of Liberal Studies to
the Bachelor of Liberal Studies (International) stream if:
(1) their marks averaged over all attempted units of study is 65
or greater; and
(2) they are able to qualify for participation in the exchange
program.
31. Students enrolled in the Bachelor of Liberal Studies
(International) stream who do not qualify for, or are unable or
unwilling to participate in an exchange program may, with the
permission of the Deans of Arts and Science, transfer to the
Bachelor of Liberal Studies.

Transfer to candidacy for the Bachelor of Arts or the
Bachelor of Science
32. Candidates who at the end of at least four semesters of
candidate have completed at least 96 credit points in total,
and who intend to satisfy the requirements for entry to a
Fourth Year Honours unit of study or joint Honours unit of
study for the Bachelor's degrees in Arts or Science, may apply
to transfer to candidacy for one of these degrees.
33. Candidates who at the end of at least six semesters of
candidate have completed units of study which correspond
to the entry requirements for Fourth Year Honours for the
Bachelor's degrees in Arts or Science may apply to transfer
to candidacy for one of these degrees.
34. Candidates for the degree may, with the permission of the
Dean concerned, transfer to candidacy for the pass
degrees of Bachelor of Arts or Bachelor of Science no later
than the end of the fourth semester of candidacy.
35. If a candidate for the degree has completed the normal
requirements for the pass degree of Bachelor of Arts,
Bachelor of Arts (Asian Studies) or Bachelor of Science, he or
she may apply to take one of these degrees provided that
candidature for the Bachelor of Liberal Studies is abandoned.
36. The maximum enrolment in a single Arts subject area is 18
junior credit points and 64 senior credit points.

Section 2
Enrolment in more/less than minimum load
37. A student may not enrol without first obtaining permission
from the Deans of Arts and Science in additional units of
study once the degree requirements of 192 credit points have
been satisfied.

Repeating a unit of study
38. Where a student enrolls in a unit of study which is the same as,
or has a substantial amount in common with, a unit of study
previously attempted but not completed at the grade of Pass
or better, the Head or Chair of Department concerned may
exempt the student from the examination requirements of the
unit of study if satisfied that the relevant competence has been
demonstrated.
39. A student may not enrol in a unit of study which they have
completed previously with a grade of Pass or better.
40. A student who has been awarded a Pass (Concessional) in a
unit of study may repeat that unit but, if subsequently awarded
a grade of Pass or better, no further credit points will be
gained unless the unit of study previously had not been
credited because of the provisions of Section 8(6).

Cross institutional enrolment
41. Provided that permission has been obtained in advance, the
Deans of Arts and Science may permit a student to complete a
unit of study at another institution and have that unit credited
to his/her course requirements provided that either:
(1) the unit of study content is material not taught in any
corresponding unit of study in the University; or
(2) the student is unable for good reason to attend a
corresponding unit of study at the University.

Restrictions on enrolment
42. Units of study which overlap substantially in content are
noted in the Table of units of study for the Bachelor of Arts
and in the Tables of Undergraduate units of study for the
Bachelor of Science. Such units of study are mutually
exclusive and no more than one of the overlapping units of
study may be counted towards meeting the course
requirements.

Satisfactory progress
43. If a student fails or discontinues enrolment in one unit of
study twice, a warning will be issued that if the unit is failed a
third time, the student may be asked to show good cause why
he or she should be allowed to re enrol in that unit of study.

Assessment policy
44. Students may be tested by written and oral examinations,
exercises, essays or practical work or any combination of
these as the Faculties of Arts or Science may determine.
45. Where a unit of study is offered at different levels of difficulty,
the performance of students will be matched so that a grade
obtained at one level indicates a quality of work comparable
with that required for the same grade at the other level(s).
46. Heads or Chairs of Department may arrange for further
testing in cases of special consideration, in accordance with
Academic Board policy governing illness and misadventure.

Credit transfer policy
47. Credit will not be granted for units of study completed more
than nine years prior to application, except with the
permission of the Deans of Arts and Science.
48. Credit may be granted as specific credit if the unit of study is
considered to be directly equivalent to a unit of study in the
Table of units of study for the Bachelor of Arts or from Table I
for the Bachelor of Science or as non specific credit.
49. The total amount of credit granted may not be greater than
96 credit points and may not include more than 48 credit points
of units from other degrees for which credit is maintained or a
degree has been conferred.
50. A11 students, notwithstanding any credit transfer, must
complete a major from each of the Faculties of Arts and
Science taken at The University of Sydney.

Specific glossary for the BLibStud
Completion of a unit of study means that the assessment
requirements have been satisfied and a grade of Pass
(Concessional) or better in Junior units of study or Pass or
better in other units of study has been achieved.
Junior unit of study is a 1000 or first year stage unit. Its
prerequisites or assumed knowledge are non tertiary
qualifications and corequisites are other Junior units of study
Intermediate unit of study is a 2000 or second year stage unit. Its
prerequisites or assumed knowledge are Junior or
Intermediate units of study and corequisites are other
Intermediate units of study. (Specific to the Faculty of
Science).
Senior unit of study is a 3000 or third year stage unit. Its
prerequisites or assumed knowledge are Junior, Intermediate
or Senior units of study and corequisites are other Senior units
of study. (Specific to the Faculty of Science).
Honours unit of study is a 4000 or fourth year stage unit offered
within an honours course.
Advanced unit of study is a unit which generally parallels a
normal unit of study but which provides added breadth of
material and/or sophistication of approach.
Major in the Faculty of Arts is normally 32 credit points from
Senior units of Study in an Arts subject area, including any
units of study specified in the Table of Units of Study as
compulsory for that major.
Major in the Faculty of Science normally requires the completion
of 24 credit points of Senior units of study in one Science
area, including any units of study specified in the Table of
undergraduate units of study as compulsory for that major.
A student may not count a unit of study toward more than one
major. (A major in Psychology requires 16 credit points of
Intermediate and 32 credit points from Senior units of study in
Psychology).
Deans means the Dean of Arts and the Dean of Science.
Faculties means the Faculty of Arts and the Faculty of Science.
Arts subject area means a defined field of study in Arts.
Science subject area means a defined field of study in Science.
Degree means the Bachelor of Liberal Studies.
Requirements means coursework requirements for the award
of the degree of Bachelor of Liberal Studies.
Student means a person enrolled as a candidate for the degree of
Bachelor of Liberal Studies.
TSP means the Talented Student Program in the Faculty of
Science.
Requirements for the Pass degree

To qualify for the award of the degree a student shall complete units of study having a total value of at least 192 credit points, including:

1. at least 120 Intermediate or Senior credit points;
2. at least one Science major;
3. a major in Media and Communications (normally 12 credit points from Junior units and 32 credit points from Senior units in MECO);
4. an internship in Science Media and Communications Practice consisting of 16 credit points taken in an approved industry in the third or fourth year of candidature;
5. 8 credit points of Senior units from each of the areas of Government and Media, Law and Media, and Media Relations;
6. 6 credit points from a unit of study in communication and analytical skills (currently ENGL 1005);
7. at least 12 credit points from units in the areas of Mathematics and Statistics; and
8. no more than 12 credit points from units in which the grade of Pass (Concessional) has been awarded. Pass (Concessional) is the grade returned for a unit of study when the final mark is in the range 46–49. It may be awarded for Junior units of study only.

9. A weighted average mark (WAM) will be calculated for each candidate as an overall measure of the performance in the degree Bachelor of Science in Media and Communications. The WAM is calculated by summing the products of the marks achieved and the weighted credit point values of the Intermediate and Senior units of study taken in the degree and then dividing by the sum of the weighted credit point values, with all attempts at units of study being included in the calculation, except where units of study are discontinued with permission; the formula used is as follows:

\[ WAM = \frac{\sum_{i=1}^{n} W_i M_i} {\sum_{i=1}^{n} W_i} \]

where \( W_i \) is the weighted credit point value of the unit of study, \( M_i \) is the mark out of 100 for the unit of study, and \( n \) is the number of units of study.

10. There shall be honours courses in the subject of Media and Communications, and in all Science subject areas.

11. To qualify to enrol in an honours course, students shall:

- (a) have completed the requirements for the award of the Bachelor of Science Media and Communications with the grade of Distinction or High Distinction; or
- (b) be a pass graduate holding an equivalent qualification from another institution; and
- (c) satisfy any additional criteria set by the Head or Chair of Department concerned.

12. Students shall complete the requirements for the honours course full time over two consecutive semesters.

13. If the Faculty is satisfied that a student is unable to attempt the honours course on a full time basis and if the Head or Chair of Department concerned so recommends, permission may be granted to undertake honours half time over four consecutive semesters.

14. A student who is qualified to enrol in two honours courses may either:

- (1) complete the honours courses in the two subject areas separately and in succession; or
- (2) complete a joint honours course, equivalent to an honours course in a single subject area, in the two subject areas. A joint honours course shall comprise such parts of the two honours courses as may be decided by the Dean.

15. To qualify for the award of an honours degree, students shall complete 48 credit points of honours units of study in the Table of units of study for the Bachelor of Arts or in Table VI for the Bachelor of Science, as prescribed by the Head or Chair of Department concerned.

16. The grade of honours and the honours mark are determined by the Dean.

17. A student with an honours mark of 90 or greater in an honours subject area and a minimum SCIWAM of 80 shall, if deemed to be of sufficient merit by the Dean, receive a bronze medal.
Transfer of candidature to and from other degrees in the Faculty

18. A student may, with the permission of the Dean, transfer into the BSc Media & Communications from the BSc, BMedSc, BPsysch, BCST, BIT or BLibStud after two semesters of enrolment, subject to having achieved a Distinction average.

19. A student in the BSc Media & Communications may, with the permission of the Dean, transfer to other degrees in the Faculty subject to meeting prerequisite and progression requirements.

20. If a candidate for the degree has completed the normal requirements for the pass degree of Bachelor of Science he or she may apply to take this degree provided that candidature for the Bachelor of Science in Media and Communications is abandoned.

Other conditions of candidature

21. Unless otherwise specified, the regulations applying for matters not included here shall be those applying for the degree of Bachelor of Science.

Section 2

Enrolment in more/less than minimum load

22. A student may not enrol without first obtaining permission from the Dean in additional units of study once the degree requirements of 192 credit points have been satisfied.

Repeating a unit of study

23. Where a student enrols in a unit of study which is the same as, or has a substantial amount in common with, a unit of study previously attempted but not completed at the grade of Pass or better, the Head of Department concerned may exempt the student from certain requirements of the unit of study if satisfied that the relevant competence has been demonstrated.

24. A student may not enrol in a unit of study which they have completed previously with a grade of Pass or better.

25. A student who has been awarded a Pass (Concessional) in a unit of study may repeat that unit but, if subsequently awarded a grade of Pass or better, no further credit points will be gained unless the unit of study previously had not been credited under Section 4(8).

Cross institutional enrolment

26. Provided that permission has been obtained in advance, the Dean may permit a student to complete a unit of study at another institution and have that unit credited to his/her course requirements provided that either:

(1) the unit of study content is material not taught in any corresponding unit of study in the University; or

(2) the student is unable for good reason to attend a corresponding unit of study at the University.

Restrictions on enrolment

27. Units of study which overlap substantially in content are noted in the Tables of Undergraduate units of study. Such units of study are mutually exclusive and no more than one of the overlapping units of study may be counted towards meeting the course requirements.

Satisfactory progress

28. If a student fails or discontinues enrolment in one unit of study twice, a warning will be issued that if the unit is failed a third time, the student may be asked to show good cause why he or she should be allowed to re-enrol in that unit of study.

29. Students may be tested by written and oral examinations, exercises, essays or practical work or any combination of these as the Faculty may determine.

Assessment policy

30. Where a unit of study is offered at different levels of difficulty, the performance of students will be matched so that a grade obtained at one level indicates a quality of work comparable with that required for the same grade at the other level(s).

31. Heads or Chairs of Department may arrange for further testing in cases of special consideration, in accordance with Academic Board policy governing illness and misadventure.

32. The award of a Pass (Concessional) in a unit of study entitles the student to be credited with the full number of credit points for that unit of study, provided that the limit on the total credit value specified in Section 4(8) is not exceeded.

Credit Transfer Policy

33. Credit will not be granted for units of study completed more than nine years prior to application, except with the permission of the Dean.

34. Credit may be granted as specific credit if the unit of study is considered to be directly equivalent to a unit of study in Table 1 or as non specific credit.

35. The total amount of credit granted may not be greater than 96 credit points and may not include more than 48 credit points of units from other degrees for which credit is maintained or a degree has been conferred.

36. All students, notwithstanding any credit transfer, must complete at least 24 credit points of Senior Science units normally comprising a major taken at The University of Sydney.

Specific glossary for the BScMediaComm

Completion of a unit of study means that the assessment requirements have been satisfied and a grade of Pass (Concessional) or better in Junior units of study or Pass or better in other units of study has been achieved.

Junior unit of study is a 1000 or first year stage unit. Its prerequisites or assumed knowledge are non tertiary qualifications and corequisites are other Junior units of study.

Intermediate unit of study is a 2000 or second year stage unit. Its prerequisites or assumed knowledge are Junior or Intermediate units of study and corequisites are other Intermediate units of study. (Specific to the Faculty of Science).

Senior unit of study is a 3000 or third year stage unit. Its prerequisites or assumed knowledge are Junior, Intermediate or Senior units of study and corequisites are other Senior units of study. (Specific to the Faculty of Science.)

Honours unit of study is a 4000 or fourth year stage unit offered within an honours course.

Advanced unit of study is a unit which generally parallels a normal unit of study but which provides added breadth of material and/or sophistication of approach.

Major in the Faculty of Science normally requires the completion of 24 credit points of Senior units of study in one Science area, including any units of study specified in the Table of undergraduate units of study as compulsory for that major. A student may not count a unit of study toward more than one major. (A major in Psychology requires 16 credit points of Intermediate and 32 credit points from Senior units of study in Psychology).

Major in the Faculty of Arts is normally 32 credit points from Senior units of Study in an Arts subject area.

Major in the Faculty of Economics and Business is usually a three year sequence of study (in some cases a two year sequence) in a particular Economics and Business subject area.

Major in Media and Communications is usually 12 credit points from Junior units of study and 32 credit points from Senior MECO units of study.

Dean means the Dean of Science.

Faculty means the Faculty of Science.

Science subject area means a defined field of study in science.

Degree means the Bachelor of Science in Media and Communications.

Requirements means coursework requirements for the award of the degree of Bachelor of Science in Media and Communications.

Student means a person enrolled as a candidate for the degree of Bachelor of Science in Media and Communications.

TSP means the Talented Student Program in the Faculty of Science.

WAM means the weighted average mark calculated by the Faculty from the results for all Intermediate and Senior units of study with a weighting of 2 for Intermediate units and 3 for Senior units.

Generic glossary for BSc, BCST, BIT, BMedSc, BPsysch, BLibStud & BScMediaComm

Unit of study is a standalone component of a course and comprises such lectures, tutorial instruction, essays, exercises and practical work as the Faculty may prescribe.

Qualifying unit of study. For Junior and Intermediate units of study this means a unit which must be completed at the grade of Pass or better before a student may enrol in any unit of
study for which that unit of study has been prescribed as a qualifying unit unless waived with the permission of the Dean. For Senior units of study the term does not apply.

**Prerequisite** unit of study. For Junior and Intermediate units of study this means a unit of study which must be completed at the grade of Pass (Concessional) or better before a student may enrol in any unit of study for which that unit of study has been prescribed as a prerequisite unless waived with the permission of the Dean. For Senior units of study this means a unit which must be completed at the grade of Pass or better before a student may enrol in any unit of study for which that unit of study has been prescribed as a prerequisite unless waived with the permission of the Dean.

**Assumed knowledge** is curricular material which is assumed to be known by each student when enrolling in a unit of study.

**Corequisite** means a unit of study in which, unless previously completed, a student must enrol concurrently with any unit of study for which that unit of study has been prescribed as a corequisite unless waived with the permission of the Head of Department concerned.

**Credit** is granted in the form of credit points towards the requirements of a course on the basis of previous attainment in another course at a recognized tertiary institution.

**Credit may be granted as specific credit in recognition of previously completed studies which are directly equivalent to a unit of study at this University or non specific credit in the form of block credit for a specified number of credit points at a particular level and, where appropriate, in a particular subject area.**

**Exemption** means that a student may be exempted from completing parts of the prescribed work (lectures, seminars, tutorials and practical work) for a unit of study on the basis of previous study. Exemption may be granted for the whole of a unit of study but no advanced standing will be granted.

**Cross listing** is the availability of units of study in one subject area for counting towards requirements in other subject areas.

**University** means the University of Sydney.

**Department** means department, school, or teaching unit.

**Course** means a structured academic program of study leading to the award of a degree.

**Stream** means a form of specialization in which there is a defined program of study, in terms either of subject areas or depth of study.

**Program of study** means a recommended or prescribed sequence that forms a course or part of a course, and may consist of compulsory or optional units of study as well as other forms of study.

**Combined degrees** means concurrent enrolment in two degree courses which compresses the duration of the two degree programs.

**Double degrees** means completing a second degree while enrolment is suspended from the first degree.

**UAC** means Universities Admission Centre.

**Supervision by a faculty** covers all areas of policy and procedure affecting students such as degree rules, enrolment procedures and the Dean to whom reference is to be made at any given time.
6 Postgraduate degree requirements

This chapter sets out the requirements for both research and coursework postgraduate degrees offered in the Faculty of Science. Following is a brief description of the research degrees, notes on the presentation of theses and a description of coursework/research degrees. A comprehensive guide to the requirements and units of study of the coursework degrees is listed.

The information in this chapter is in summary form and is subordinate to the provisions of the relevant degree Resolutions, collected variously in chapter 7, or in The University of Sydney Calendar. The Calendar is available for sale at the Student Centre, for viewing at the Faculty Office or the Library, or on the Web at www.usyd.edu.au/publications/calendar/

## Research degrees

Research degrees offered by the Faculty are listed in this chapter in the following order:

- Doctor of Science
- Doctor of Philosophy
- Master of Science
- Master of Science (Environmental Science).

The resolutions of the Senate, Academic Board and Faculty relating to these degrees may be found in chapter 7 and the Calendar. Additional valuable resources for intending and current research students are the Postgraduate Research Studies Handbook, published by The University of Sydney, The Thesis Guide and the Survival Manual published by SUPRA (Sydney University Postgraduate Representative Association). These publications are available from the Faculty Office. The Postgraduate Research Studies Handbook is also on the Web at http://www.usyd.edu.au/study/gradstud.shtml

### Doctor of Science (DSc)

The degree of Doctor of Science is awarded for published work which has been generally recognised by scholars in the field concerned as a distinguished contribution to knowledge. To be eligible applicants must be graduates of The University of Sydney, have been a full time member of academic staff of The University of Sydney for at least three years, or have had a significant involvement with the teaching or research of the University.

Admission to candidature is subject to a preliminary assessment by the Faculty of the applicant’s case. If this is favourable an applicant is required to submit a list of published work, together with a description of the theme of the published work. At least three examiners, of whom at least two are external are appointed to assess the application and make recommendations.

For Faculty resolutions see chapter 7. For the Resolutions of the Senate see University of Sydney Calendar.

### Doctor of Philosophy (PhD)

The degree of Doctor of Philosophy is a research degree awarded for a thesis considered to be a substantially original contribution to the subject concerned. Some coursework may be required (mainly in the form of seminars) but in no case is it a major component. The Resolutions of the Senate and Academic Board relating to the degree of Doctor of Philosophy are printed in University of Sydney Calendar.

Applicants should normally hold a master’s degree or a bachelor’s degree with first or second class honours from The University of Sydney, or an equivalent qualification from another university or institution.

The degree may be taken on either a full time or part time basis.

In the case of full time candidates, the minimum period of candidature is normally four years.

Part time candidature may be approved for applicants who can demonstrate that they are engaged in an occupation or other activity, which leaves them substantially free to pursue their candidature for the degree. Normally the minimum period of candidature will be determined on the recommendation of the Faculty but in any case will be not less than three years; the maximum period of part time candidature is normally eight years.

Doctor of Philosophy Resolutions: see The University of Sydney Calendar.

### Master of Science (MSc)

Graduates of the University of Sydney with first or second class honours and candidates in the final year of an approved honours course in the BSc degree or who have an equivalent qualification from another institution or an equivalent standard of knowledge, may apply for admission to candidature for the MSc degree. Once admitted, candidates proceed full time or part time, by supervised research and thesis, or in some cases by coursework and essay.

An application should be lodged with the Faculty. It must be supported by the Head of the Department concerned and approved by the Faculty. If qualifications have been obtained in another university or institution then an application must also be approved by the Academic Board. If an applicant has the prerequisite qualifications, admission to candidature may be approved provided the necessary staff and facilities are available, including adequate accommodation and any special equipment.

Some candidates must satisfy a preliminary examination before being admitted to full candidature.

- Full time candidates
  - Minimum period of candidature: 1 year
  - Maximum period of candidature: 2 years
- Part time candidates
  - Minimum period of candidature: 1 year
  - Maximum period of candidature: 4 years

Master of Science Resolutions: see chapter 7.

### Master of Science (Environmental Science)

The MSc (Environmental Science) is a research degree requiring a minimum of three semesters of full time study (or equivalent part time study). This degree is designed to extend the student's knowledge base in environmental matters by providing the student with further training and research experience.

Candidates are required to show proof of a breadth of knowledge in environmental issues, as determined by the Director of Environmental Science. Consequently, as well as the submission of a research thesis, candidates may be required to satisfactorily complete up to a maximum of 24 credit points of coursework study. Prior to the beginning of studies, students must discuss their enrolment details and candidature with the Director of Environmental Science and agree a program guaranteeing breadth of study and ensuring that all units of coursework cover material new to the student. Such details may only be approved or modified by the Director.

Graduates of The University of Sydney with first or second class honours, or who have completed a Graduate Diploma in Applied Science (with or without an emphasis in Environmental Science) with a grade of credit or above, or who have an equivalent qualification from another institution or an equivalent standard of knowledge, may apply for admission to candidature for the Master of Science (Environmental Science) degree.

An application should be lodged with the Faculty of Science and must include a project proposal and the signature(s) of the prospective supervisor(s). It should also be supported by the Director of Environmental Science. If an applicant has the prerequisite qualifications, admission to candidature may be approved if the necessary staff and facilities are available.
including adequate accommodation and any special equipment. Some candidates may need to satisfy a preliminary examination before being admitted to full candidature.

Master of Science (Environmental Science) Resolutions: see chapter 7.

Presentation of theses
The following information is presented for the guidance of candidates. It should be regarded as a summary only. Candidates should also consult the University’s Calendar, the Postgraduate Research Studies Handbook and the Faculty of Science for the most current and detailed advice. The Postgraduate Research Studies Handbook is available on the Web at www.usyd.edu.au/su/ab/committees/commgtrees.html.

Formal requirements
Number of copies to be submitted MSc, 3; PhD, 4. The four copies of theses submitted for examination for the degree of Doctor of Philosophy may be bound in either a temporary or a permanent form.

Theses submitted in temporary binding should be strong enough to withstand ordinary handling and postage. The title of the thesis, the candidate’s initials and surname, the title of the degree, the year of submission and the name of The University of Sydney should appear in lettering on the front cover or on the title page. The lettering on the spine, reading from top to bottom, should conform as far as possible to the above except that the name of The University of Sydney may be omitted and the thesis title abbreviated. Supporting material should be bound in the back of the thesis as an appendix or in a separate sheet of covers.

Similar formal requirements exist for the presentation of MSc theses.

Additional information
At the request of the Academic Board, the Science Faculty has resolved that a thesis should not normally exceed 80,000 words. With the approval of the chair of the Committee, the candidate has submitted a permanently bound copy of the thesis (containing any corrections or amendments that may be required) and printed on acid free or permanent paper.

The title shall be accompanied by a certificate from the supervisor stating whether in the supervisor’s opinion the form of presentation of the thesis is satisfactory.

Theses in permanent form shall normally be on International Standard A4 size paper sewn and bound in boards covered with bookcloth or buckram or other binding fabric. The title of the thesis, the candidate’s initials and surname, the title of the degree, the year of submission and the name of The University of Sydney should appear in lettering on the front cover or on the title page. The lettering on the spine, reading from top to bottom, should conform as far as possible to the above except that the name of The University of Sydney may be omitted and the thesis title abbreviated. Supporting material should be bound in the back of the thesis as an appendix or in a separate sheet of covers.

Similar formal requirements exist for the presentation of MSc theses.

Admission requirements
Applications for both courses are rated according to the following:

• Academic record. Ratings are based on the class of Honours degree or equivalent is required which must include an individually conducted research project and thesis.

• Referees’ reports

• Experience in the practice of psychology. Relevant experience includes paid or voluntary work in the areas of research, clinical or community psychology. The experience is rated according to its relevance to the practice of clinical psychology.

• Academic record. Ratings are based on the class of Honours degree (or equivalent) obtained.

In general, individuals with high ranking applications are invited to interview for the second stage of the selection process with interviews for lower ranking dependent upon competition.
for places. The interviews are standardised so that all candidate's are asked the same set of questions. The questions are designed to assess the candidates understanding of issues relevant to clinical psychology.

Course Structure

Bom programs are based on a scientist practitioner model with a cognitive behavioural emphasis. They aim to provide students with a high level of expertise in practical, academic and research areas which will enable them to work successfully as professional clinical psychologists in a variety of academic, clinical and community settings.

Our graduates will have a highly developed knowledge base and strong clinical skills necessary for both the practice of professional psychology on the one hand and conducting psychological research on the other.

Course Resolutions: see chapter 7.

**Course Resolutions:**

POSTGRADUATE DEGREE REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Points</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 6001</td>
<td>Adult Psychological Disorders</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6002</td>
<td>Psychological Assessment of Adults</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6003</td>
<td>Clinical Internships</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6004</td>
<td>Ethics and Professional Practice 1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6005</td>
<td>Research 1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6006</td>
<td>Child and Family Psychology</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6007</td>
<td>Psychological Assessment of Children</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6008</td>
<td>Clinical Internships</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6009</td>
<td>Ethics and Professional Practice 2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6010</td>
<td>Research 2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6011</td>
<td>Adult and Health Psychology</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6012</td>
<td>Cognitive Neuropsychology</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6013</td>
<td>Clinical Internships</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6014</td>
<td>Ethics and Professional Practice 3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6015</td>
<td>Research 3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6016</td>
<td>Specialist Seminars</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6017</td>
<td>Neuropsychological Disorders</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6018</td>
<td>Clinical Internships</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6019</td>
<td>Ethics and Professional Practice 4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6020</td>
<td>Research 4</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6022</td>
<td>Clinical Internships</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6023</td>
<td>Ethics and Professional Practice 5</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6024</td>
<td>Research 5</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6025</td>
<td>Clinical Internships</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 6026</td>
<td>Ethics and Professional Practice 6</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 6027</td>
<td>Research 6</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

**Course Resolutions:**

POSTGRADUATE DEGREE REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Points</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 6003</td>
<td>Clinical Internship 1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6004</td>
<td>Ethics and Professional Practice 1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6005</td>
<td>Research 1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6006</td>
<td>Child and Family Psychology</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6007</td>
<td>Psychological Assessment of Children</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6008</td>
<td>Clinical Internship 2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6009</td>
<td>Ethics and Professional Practice 2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6010</td>
<td>Research 2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6011</td>
<td>Adult and Health Psychology</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6012</td>
<td>Cognitive Neuropsychology</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6013</td>
<td>Clinical Internships</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6014</td>
<td>Ethics and Professional Practice 3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6015</td>
<td>Research 3</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6016</td>
<td>Specialist Seminars</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6017</td>
<td>Neuropsychological Disorders</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6018</td>
<td>Clinical Internships</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6019</td>
<td>Ethics and Professional Practice 4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6020</td>
<td>Research 4</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6022</td>
<td>Clinical Internships</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 6023</td>
<td>Ethics and Professional Practice 5</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 6024</td>
<td>Research 5</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 6025</td>
<td>Clinical Internships</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 6026</td>
<td>Ethics and Professional Practice 6</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 6027</td>
<td>Research 6</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>

**Course Resolutions:**

POSTGRADUATE DEGREE REQUIREMENTS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Points</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 6001</td>
<td>Adult Psychological Disorders</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6002</td>
<td>Psychological Assessment of Adults</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6003</td>
<td>Clinical Internship 1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6004</td>
<td>Ethics and Professional Practice 1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6005</td>
<td>Research 1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6006</td>
<td>Child and Family Psychology</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6007</td>
<td>Psychological Assessment of Children</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6008</td>
<td>Clinical Internship 2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6009</td>
<td>Ethics and Professional Practice 2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6010</td>
<td>Research 2</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6011</td>
<td>Adult and Health Psychology</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6012</td>
<td>Cognitive Neuropsychology</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6013</td>
<td>Clinical Internships</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6014</td>
<td>Ethics and Professional Practice 3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6015</td>
<td>Research 3</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6016</td>
<td>Specialist Seminars</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6017</td>
<td>Neuropsychological Disorders</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6018</td>
<td>Clinical Internships</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6019</td>
<td>Ethics and Professional Practice 4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6020</td>
<td>Research 4</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>PSYC 6022</td>
<td>Clinical Internships</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6023</td>
<td>Ethics and Professional Practice 5</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6024</td>
<td>Research 5</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>PSYC 6025</td>
<td>Clinical Internships</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 6026</td>
<td>Ethics and Professional Practice 6</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 6027</td>
<td>Research 6</td>
<td>0</td>
<td>3</td>
</tr>
</tbody>
</table>
POSTGRADUATE DEGREE REQUIREMENTS

Coursework/research degrees

PSYC 6009 Ethics and Professional Practice 2
3 credit points. Session: 2. Prerequisite: PSYC 6004.
This unit of study will continue the seminars introduced in PSYC 6004 Ethics & Professional Practice 1.

PSYC 6010 Research 2
3 credit points. Session: 2. Prerequisite: PSYC 6005.
Within this unit of study students will consolidate their research plan, develop research presentation skills and knowledge of statistical approaches to their research. Students will attend the Research Forum and present the rationale, aims, hypotheses, and plan of their proposed research project to the group. This process will provide each student with feedback to help them to finalise their research design. The Research Forum will also feature the presentation of special topics including research design, power considerations, and ethical issues in clinical research. Students will develop a written proposal for their research project. Students will also be guided through the process of submitting an Application for Ethical Approval.

PSYC 6011 Adult Health Psychology
9 credit points. Session: 1. Prerequisite: PSYC 6006.
This unit of study will cover the theory and practice of clinical health psychology. It will aim to understand the relationships between psychological and physical functioning across a wide range of medical disorders. This includes the role of psychological and behavioral factors in influencing physiological and physical health outcomes. Students will explore different applications of clinical psychology to physical health settings. These include preventive medicine (e.g., HIV), medical problems (e.g., asthma, diabetes), psychological problems in subclinical to mild clinical range, issues related to terminal illness (e.g., psychooncology) and issues relating to terminal illness (e.g., dementia). The unit will be concerned with theories and interventions that promote health-related behaviors and improve quality of life for people with psychological problems.

PSYC 6012 Cognitive Neuropsychology
6 credit points. Session: 1. Prerequisite: PSYC 6007.
This unit will introduce students to cognitive and emotional correlates of neuropsychological disorders. Students will be introduced to a theoretical approach to the principal cognitive domains: memory, visual, language, visual, spatial, executive, and emotional and their neuroanatomical substrates. This will provide the conceptual framework for consideration of a number of major neuropsychological conditions including amnesic disorders, visual agnosia, visuospatial disturbances including hemineglect, problems with language, and disorders of attention and executive function.

PSYC 6013 Clinical Internship 3
3 credit points. Session: 1. Prerequisite: PSYC 6008.
This unit of study is designed to introduce students to therapy and psychological assessment skills for working specifically with young people and their families. Students will be allocated to pairs to a supervisor who will oversee their clinical practice closely. This internship will expose students to clients with psychological problems in sub-critical to mild clinical range. The internship builds student's confidence in working with young clients of school age. For therapy, it will allow students to develop skills in the identification of clinical problems, the communication of a formulation and treatment plan and the conduct of that plan. For assessment, it will allow students to develop hypotheses, select appropriate tests, conduct and interpret test results and communicate these to young people, their families and schools, as appropriate. In addition, this unit will allow students to build on their previous work with adults. Specifically, students will continue to work half a day per week with adult clients in the internal clinic. The work will involve therapy and assessment therapy. Interns will be able to work more independently at this stage of their training.

PSYC 6014 Ethics and Professional Practice 3
3 credit points. Session: 1. Prerequisite: PSYC 6009.
This unit of study builds upon previous semesters where second year students will present a clinical case for discussion.

PSYC 6015 Research 3
3 credit points. Session: 1. Prerequisite: PSYC 6010.
Students will attend the PG Seminar 'Research methods in Psychology, which will cover a number of research issues that may arise in undertaking a research degree (writing up research for publication, conferences, grant applications, University policy related to research). During this semester, students will be expected to commence the collection of data. Students will also be encouraged to submit a School Research Grant to request financial support for materials and/or travel expenses. Students will attend the Departmental Colloquium in fulfilment of requirements for this unit of study.

PSYC 6016 Specialist Seminars
3 credit points. Session: 2. Prerequisite: PSYC 6011.
This unit of study will cover all the important medico legal aspects of clinical practice. Students will become familiar with legal terminology, medico legal report writing, responding to subpoena, undergoing cross examination and referring to the legal profession in general. All legal requirements pertaining to the practice of clinical psychology in New South Wales including when to breach confidentiality in child abuse cases, dangerousness to others or when self harm is threatened will be covered.

PSYC 6017 Neuropsychological Disorders
6 credit points. Session: 2. Prerequisite: PSYC 6012.
This unit of study examines the neuropsychological disorders associated with specific neurological conditions. Students will be introduced to the neuropsychological diagnosis of neurodegenerative disorders, epilepsy, stroke, toxic and metabolic conditions as well as the differential diagnosis of depression and other psychiatric phenomena.

PSYC 6018 Clinical Internship 4
3 credit points. Session: 2. Prerequisite: PSYC 6013.
This unit of study is designed to introduce students to a range of therapy and assessment experiences in accordance with their clinical and research interests. At least one of their three internships will involve work with children and at least one will involve work with adults. One of the three internships will be specifically tied to the student's research project to allow them to specifically develop skills relevant to research with that particular clinical population. One of the three internships should be with a client group with general, psychiatric problems. The specific nature of learning outcomes will depend upon the setting for the internship, the client group and the nature of the clinical work. Choices for internships will be made in collaboration with the unit coordinator, who will work with students to develop individually tailored training plans.

PSYC 6019 Ethics and Professional Practice 4
3 credit points. Session: 2. Prerequisite: PSYC 6014.
This unit of study builds upon previous semesters where second year students will present a clinical case for discussion.

PSYC 6020 Research 4
9 credit points. Session: 2. Prerequisite: PSYC 6015.
This unit of study will require students to develop literature search, critical analysis of research methods, and writing skills. Students will continue to collect research data. Students will also attend the Research Forum and the Departmental Colloquium in fulfillment of requirements for this unit of study.

PSYC 6021 Advanced Seminars
No credit points. Session: 2. Prerequisite: PSYC 6016.
Students will be given the opportunity to choose several options which will allow them to specialize in particular areas of psychology/psychiatry. These seminars will be at an advanced level with an emphasis requiring the integration of theory and practice and at a greater depth than is generally found in a Master's coursework degree.

PSYC 6022 Clinical Internship 5
No credit points. Session: 1. Prerequisite: PSYC 6018.
This unit of study, following on from PSYC 6018 Clinical Internship 4, is designed to build on the clinical skills of students in further areas of practice.

PSYC 6023 Ethics and Professional Practice 5
No credit points. Session: 1. Prerequisite: PSYC 6019.
This unit of study builds upon both the knowledge and clinical skills acquired in previous semesters. Third year students will present complex clinical cases for discussion which pose either diagnostic dilemmas or difficulties in treatment.

PSYC 6024 Research 5
No credit points. Session: 1. Prerequisite: PSYC 6020.
Students will continue to undertake original investigation of a topic in clinical psychology. Students will continue to work on a thesis that will include at least the following: an updated literature review (incorporating feedback from markers and recent literature), a detailed method section, one or two journal articles, discussion, and relevant appendices. Students will also attend the Clinical Psychology unit's Research Forum and the Departmental Colloquium.

**PSYC 6025 Clinical Internship 6**
No credit points. Session: 2. Prerequisite: PSYC 6022.
This unit of study, following on from PSYC 6022 Clinical Internships 5, is designed to consolidate the clinical skills of students who will be working with a greater level of independence.

**PSYC 6026 Ethics and Professional Practice 6**
No credit points. Session: 2. Prerequisite: PSYC 6023.
This unit of study builds upon both the knowledge and clinical skills acquired in previous semesters. Third year students will present complex clinical cases for discussion which pose either diagnostic dilemmas or difficulties in treatment.

**PSYC 6027 Research 6**
No credit points. Session: 2. Prerequisite: PSYC 6024.
Students will submit a research thesis that will include at least the following: an updated literature review (incorporating feedback from markers and recent literature), a detailed method section, one or two journal articles (prepared for publication in peer reviewed journals of international reputation), discussion and relevant appendices. Requirements of the Master of Science are outlined in the Resolutions of the Senate. Students will also present their results and conclusions at the Research Forum and complete a viva examination of their research conducted by a panel of members of the Clinical Psychology unit.

### Coursework degrees

Requirements for coursework degrees offered by the Faculty, and their associated units of study, are listed in this chapter in the following subject area order:

#### Degrees in Science

**Graduate Diploma in Science**
**Master of Environmental Science and Law**
**History and Philosophy of Science**
Graduate Certificate in Science (History and Philosophy of Science)
**Information Technology**
Graduate Certificate in Information Technology
Graduate Diploma in Information Technology
Master of Information Technology
Graduate Certificate in Applied Information Technology
Graduate Diploma in Applied Information Technology
Master of Applied Information Technology
**Marine Ecology**
Graduate Certificate in Quantitative Marine Ecology
Graduate Diploma in Quantitative Marine Ecology
Master of Quantitative Marine Ecology
**Mathematics**
Master of Science (Coursework) *This degree is no longer available to new students from 2002.*
**Microscopy and Microanalysis**
Graduate Certificate in Science (Microscopy and Microanalysis) *This degree is no longer available to new students from 2002.*
Graduate Diploma in Science (Microscopy and Microanalysis) *This degree is no longer available to new students from 2002.*
Master of Science (Microscopy and Microanalysis) *This degree is no longer available to new students from 2002.*
**Nutrition and Dietetics**
Master of Nutrition and Dietetics
Master of Nutritional Science
**Psychology**
Graduate Diploma in Psychology
Graduate Diploma in Science (Psychology)
Master of Psychology *This degree is no longer available to new students from 2002.*

#### Degrees in Applied Science

**Overview**
Graduate Certificate in Applied Science
Graduate Diploma in Applied Science
Master of Applied Science

The Graduate Certificate, Graduate Diploma and Master of Applied Science are offered in a range of subject areas, listed below.

**Bioinformatics**
Graduate Certificate in Applied Science (Bioinformatics)
Graduate Diploma in Applied Science (Bioinformatics)
Master of Applied Science (Bioinformatics)

**Coastal Management**
Graduate Certificate in Applied Science (Coastal Management)
Graduate Diploma in Applied Science (Coastal Management)
Master of Applied Science (Coastal Management)

**Environmental Science**
Graduate Certificate in Applied Science (Environmental Science)
Graduate Diploma in Applied Science (Environmental Science)
**Informatics and Communication**
Graduate Certificate in Applied Science (Informatics and Communication)
Graduate Diploma in Applied Science (Informatics and Communication)

**Microscopy and Microanalysis**
Graduate Certificate in Applied Science (Microscopy and Microanalysis)
Graduate Diploma in Applied Science (Microscopy and Microanalysis)
Master of Applied Science (Microscopy and Microanalysis)

**Molecular Biotechnology**
Graduate Certificate in Applied Science (Molecular Biotechnology)
Graduate Diploma in Applied Science (Molecular Biotechnology)
Master of Applied Science (Molecular Biotechnology)
**Neuroscience**
Graduate Certificate in Applied Science (Neuroscience)
Graduate Diploma in Applied Science (Neuroscience)
Master of Applied Science (Neuroscience)

**Photonics**
Graduate Certificate in Applied Science (Photonics)
Graduate Diploma in Applied Science (Photonics)
Master of Applied Science (Photonics)

**Psychology of Coaching**
Graduate Certificate in Applied Science (Psychology of Coaching)
Graduate Diploma in Applied Science (Psychology of Coaching)
**Surface Coatings**
Graduate Certificate in Applied Science (Surface Coatings)
Graduate Diploma in Applied Science (Surface Coatings)

**Wildlife Health and Population Management**
Graduate Certificate in Applied Science (Wildlife Health and Population Management)
Graduate Diploma in Applied Science (Wildlife Health and Population Management)
Master of Applied Science (Wildlife Health and Population Management)

The resolutions of the Senate relating to these degrees may be found in Chapter 7. Additional valuable resources for intending and current research students are the Postgraduate Coursework Studies Handbook, published by the University, and the Survival Manual published by SUPRA (Sydney University Postgraduate Representative Association). Both publications are available from the Faculty Office. The Postgraduate Coursework Studies Handbook is also on the web at [http://www.usyd.edu.au/study/postgrad.shtml](http://www.usyd.edu.au/study/postgrad.shtml)

### Coursework degrees in Science

**Graduate Diploma in Science**
Graduates of the University of Sydney who are holders of a Bachelor of Science, Bachelor of Computer Science and
Technology, Bachelor of Liberal Studies, Bachelor of Medical Science or Bachelor of Psychology, or graduates from other universities with an equivalent degree, may apply for admission to candidature for the degree Graduate Diploma in Science.

The Graduate Diploma in Science serves as an entry qualification for the degrees of Master of Science or Doctor of Philosophy. It consists of equivalent work to that carried out by candidates enrolled in the fourth year honours courses, and is normally available to candidates who may not be eligible to enrol in those courses. The normal duration of the degree is one year full time or two years part time.

Intending students should consult the table of honours units of study at the end of chapter 3 for the range of disciplines offered. After discussion of your interests with a relevant number of academic staff, an application should be lodged with the Faculty of Science. Entry to the Graduate Diploma is subject to approval by the relevant head of department, the Faculty, and confirmation that requirements for the award of a relevant bachelor's degree have been met.

### Environmental Science and Law

#### Master of Environmental Science and Law

Further information can be found on the Environmental Science Web site: www.usyd.edu.au/envsci.

**Course Overview**
The Master of Environmental Science and Law program is a novel concept of undertaking dual courses in the fields of both Science and Law. The program is unique and is not available elsewhere. It provides science graduates with the opportunity of extending their scientific knowledge into the area of the environment, as well as acquiring new skills in the field of environmental law. For law graduates, the opportunity is to extend their knowledge into environmental aspects of law, as well as to gain an understanding of some of the concepts underpinning environmental science.

**Course Outcomes**
Upon completion of the Master of Environmental Science and Law graduates will possess a practical and theoretical background in aspects of Environmental Science and Environmental Law. This knowledge includes research and practical skills in these areas. The program is designed to integrate disciplines which are normally considered separately and which would be difficult to study outside of the Masters in Environmental Science and Law program.

**Admission Requirements**
Applicants for the Masters program should hold a Bachelor's degree appropriate for the field of study, or graduates with subsequent experience which is considered to demonstrate the knowledge and aptitude required to undertake the course.

**Course Requirements**
To qualify for award of the Master of Environmental Science and Law candidates must complete 48 credit points of units of study approved for the relevant field of study, 24 credit points from the Faculty of Science and 24 credit points from the Faculty of Law. The unit of study LAWS 6044 is compulsory for all students. The unit LAWS 6252 is compulsory for students without a legal qualification.

**Course Resolutions:** see chapter 7.

**Units of study**
The table lists the units of study available with this degree. Other units are possible with the permission of the Director of Environmental Science. For LAWS units descriptions, see below. For other descriptions please see the entries in this chapter under Applied Science (Environmental Science).

**Master of Environmental Science and Law**

**Unit of study**
Unless otherwise indicated, all units are worth 6 credit points

**Core units**

<table>
<thead>
<tr>
<th>Unit Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAWS 6252</td>
<td>Legal Reasoning &amp; Common Law System</td>
</tr>
<tr>
<td>LAWS 6044</td>
<td>Environmental Law &amp; Policy</td>
</tr>
<tr>
<td>Science Units (* = recommended)</td>
<td></td>
</tr>
<tr>
<td>ENV15501</td>
<td>Environmental Research Project (12cp)</td>
</tr>
<tr>
<td>ENV15705*</td>
<td>Ecological Principles for Environmental Scientists</td>
</tr>
<tr>
<td>LAWS 5707</td>
<td>Energy Sources, Uses &amp; Alternatives</td>
</tr>
<tr>
<td>LAWS 5708*</td>
<td>Introduction to Environmental Chemistry</td>
</tr>
<tr>
<td>LAWS 5808*</td>
<td>Applied Ecology for Environmental Scientists</td>
</tr>
<tr>
<td>ENVI 5809</td>
<td>Computer Modelling &amp; Resource Management</td>
</tr>
<tr>
<td>ENVI 5901</td>
<td>Weathering Processes &amp; Applications</td>
</tr>
<tr>
<td>GEOG 5001</td>
<td>Geographic Information Systems (Introduction)</td>
</tr>
<tr>
<td>QMEC 5110</td>
<td>Structure &amp; Management of Research Projects</td>
</tr>
<tr>
<td>QMEC 5120</td>
<td>Design &amp; Analysis of Sampling (Introduction)</td>
</tr>
<tr>
<td>WILD 5001</td>
<td>Australian Wildlife: Introduction</td>
</tr>
<tr>
<td>WILD 5002</td>
<td>Australian Wildlife: Field Studies</td>
</tr>
<tr>
<td>WILD 5007*</td>
<td>Sustainable Wildlife Use &amp; Stewardship</td>
</tr>
<tr>
<td>ENGG 5601</td>
<td>Greenhouse Gas Mitigation</td>
</tr>
<tr>
<td>PACS 6903</td>
<td>Peace &amp; the Environment</td>
</tr>
<tr>
<td>LAWS 6041</td>
<td>Environmental Dispute Resolution</td>
</tr>
<tr>
<td>LAWS 6043</td>
<td>Environmental Assessment Law</td>
</tr>
<tr>
<td>LAWS 6045</td>
<td>Environmental Planning Law</td>
</tr>
<tr>
<td>LAWS 6055*</td>
<td>Heritage Law (not available in 2003)</td>
</tr>
<tr>
<td>LAWS 6061</td>
<td>International Environmental Law</td>
</tr>
<tr>
<td>LAWS 6082*</td>
<td>Pollution Law</td>
</tr>
<tr>
<td>LAWS 6154*</td>
<td>Sustainable Development Law in China (12cp)</td>
</tr>
<tr>
<td>LAWS 6165</td>
<td>Biodiversity Law</td>
</tr>
<tr>
<td>LAWS 6173*</td>
<td>Trade &amp; Environment</td>
</tr>
<tr>
<td>LAWS 6186</td>
<td>Native Title Coexistence Perspectives</td>
</tr>
<tr>
<td>LAWS 6191*</td>
<td>Water Law</td>
</tr>
<tr>
<td>LAWS 6257</td>
<td>Public Policy</td>
</tr>
<tr>
<td>LAWS 6252</td>
<td>Legal Reasoning &amp; the Common Law System</td>
</tr>
</tbody>
</table>

6 credit points. Professor Ben Boer. Session: 2 Intensive, 1 Intensive. **Assessment:** Two practical assignments, each worth 30%, one dealing with analysis of a case, the other, analysis of a statute. The remaining 40% will be attached to an assignment, comprised of short answer questions, covering issues raised by the material on constitutional law, administrative law, contracts and torts.

This is a compulsory unit for all postgraduate students without a legal qualification entering the:

- Masters of Administrative Law and Policy
- Masters of Environmental Law
- Masters of Health Law
- Masters of Asian and Pacific Legal Systems
- Masters of Environmental Science and Law
- Masters of International Business and Law
- Masters of Labour Law and Relations

as well as Graduate Diplomas offered in these programs.

The aim of the unit is to introduce students to overarching themes in environmental law and policy as a foundation to their more detailed studies for the degree of Master of Environmental Law or Graduate Diploma in Environmental Law.

This is an overview unit addressing a number of environmental issues at various levels of analysis; such as policy making, implementation of policy and dispute resolution. The unit covers the law and policy relating to environmental planning, environmental impact assessment, pollution and heritage. The concept of ecologically sustainable development and its implications for environmental law and policy is a continuing theme.

The unit is designed to develop multi dimensional thinking about environmental issues and the strategies needed to address them. The unit provides a broad background of the political and economic issues in so far as they are related to the legal issues involved.

**LAWS 6141** | Environmental Dispute Resolution |

6 credit points. Ms Rosemary Lyster (Convenor), Mr Brian Preston SC. **Session:** 2 Intensive. **Assessment:** 7000wd essay (80%), class participation (20%).

Note: Department permission required for enrolment. This unit aims to explore the nature of environmental disputes and the means of resolving them. The means examined include...
judicial review, administrative appeals and public inquiries and non adjudicative or consensual means such as mediation. Critical evaluation of the forms and methods of resolution strategies, including appropriateness of each means in resolving different types of environmental disputes, will be explored. The unit involves the use of innovative teaching techniques: lectures will be alternated with small group workshops, mediation simulations, a public inquiry and a mock court hearing.

In addition to the lecturers, there are guest lecturers including (subject to availability) a Land and Environment Court judge, Commissioner of Inquiry, Senior Counsel and a trained mediator from the Land and Environment Court. Participation in the practical exercises is a compulsory condition of the unit.

**LAW 6043 Environmental Impact Assessment Law**
6 credit points. Mr Bernard Donnet. Session: 2 Intensive. Assessment: one 4000wd essay (50%), one take home exam (50%).

This unit has three fundamental aims. The first is to provide a sound analysis of Environmental Impact Assessment (EIA) procedures in NSW and at the Commonwealth level. The second aim is to develop a critical understanding of EIA as a distinctive regulatory device by examining its historical, ethical and political dimensions as well as relevant aspects of legal theory. The third and ultimate aim is to combine these doctrinal and theoretical forms of knowledge so we can suggest possible improvements to the current practice of EIA in Australia.

**LAW 6061 International Environmental Law**
6 credit points. Mr Simon Soar. Session: 2 Intensive. Assessment: one problem based 2500 wd assignment (30%), one 5500wd essay (70%).

This unit aims to provide students with an overview of the development of international environmental law throughout the twentieth century. Attention will primarily be devoted to the international law and policy responses to global and regional environmental and resource management issues. Basic principles will be discussed prior to taking a sectoral approach in looking at the application of international environmental law in specific issue areas. The unit includes material on implementation of international environmental law in the Asia Pacific region. Relevant Australian laws and initiatives will be referred to from time to time. The focus is on law and policy that has been applied to deal with environmental problems in an international and transboundary context.

**LAW 6082 Pollution Law**
6 credit points. Dr Gerry Bates. Session: 2 Intensive. Assessment: one problem based 4000wd assignment (50%), one 4000wd essay (50%).

This unit examines approaches to pollution prevention and control, with particular emphasis on regulation and enforcement. Compliance, deterrence and incentive strategies are evaluated. The unit also reflects on the attempts to negotiate an agreement on investment liberalisation and the issues that raises for environmental protection initiatives. By the end of the unit participants should be able to critically assess the prospects for future harmonisation of global free trade regimes and ESD principles in the context of the Australian debate on these issues.

**LAW 6191 Water Law**
6 credit points. Ms Rosemary Oyster. Session: 2 Intensive. Assessment: one 7000wd essay (80%), class participation (20%).

This unit examines the ecologically sustainable management of water resources incorporating legal, scientific and economic perspectives. The legal analysis incorporates the following: international principles of water law; Commonwealth and state responsibilities for water management; the Water Management Act 2000 (NSW); the legal and constitutional implications of the reallocation of rights to use water; the implications of allocation and use for Indigenous people; the regulation of water pollution; and the corporatisation and privatisation of water utilities. Case studies from a number of jurisdictions are used to explore these themes. Economic perspectives include the impact of National Competition Policy on water law while the principles of sustainable water management are discussed within a scientific paradigm.

**LAW 6257 Public Policy**
6 credit points. Session: 1 Intensive. Prohibition: Not available to candidates who completed LAWS 6139 'Public Sector Policy V, LAWS 6042 'Environmental Economics' or LAWS 6113 'Taxation and Social Policy'.

Assessment: research essay (80%), problem based assignments and class presentation of a case study (20%).

The aim of this unit is to provide an understanding of the role of government in a market economy and of the need for intervention in a wide range of policy areas, defined within the framework of welfare economics. Particular attention is given to the analysis of taxation, social insurance and regulation. Applications include detailed studies of policy issues central to the following:

- The Australian tax benefit system
- Unemployment, health and retirement income insurance
- Environmental taxes, tradable permits and regulation
- Monopoly regulation and access pricing
- Intergenerational equity and growth

The unit also provides a brief overview of empirical methodologies used in evaluating policy reforms in these areas.

**History and Philosophy of Science**

**Graduate Certificate in Science (History and Philosophy of Science)**

Course overview
The Graduate Certificate in Science (HPS) provides an introduction to the historical, philosophical, and sociological analysis of science. Candidates will be introduced to the main accounts of the nature of science and the methodologies underlying those interpretations.
Course outcomes
Upon completion of the Graduate Certificate candidates will understand the nature of the discipline of History and Philosophy of Science and will have acquired either basic research skills in history of science or basic skills in the sociological study of science or the basic skills of philosophical argument or some combination of the above, depending on their choice of options.

Admission requirements
Candidates must have a Bachelors Degree or equivalent.

Course requirements
Candidates must complete 24 credit points from the following units of study, including HPSC 4108 (if they have not completed a major in HPS or equivalent program of study at another institution). Each unit of study is worth 6 credit points.

Units of study
• HPSC 4101 Philosophy of Science
• HPSC 4102 History of Science
• HPSC 4103 Sociology of Science
• HPSC 4104 Recent Topics in HPS
• HPSC 4105 HPS Research Methods
• HPSC 4108 Core Topics in HPS

Other information
The unit of study, HPSC 4108 Core Topics in HPS, is not available to students who have completed a major in History and Philosophy of Science or equivalent program of study at another institution.

Course resolutions: see chapter 7.

HPSC 4101 Philosophy of Science
Classes: One 2hr sem/wk. Prerequisite: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission. Assessment: Five short written assignments, seminar participation. NB: Department permission required for enrolment.
This unit covers the main contemporary philosophical accounts of the nature of science. Philosophical analyses are compared with examples of actual practice in both physical and biological science.

Textbooks
Course reader

HPSC 4102 History of Science
6 credit points. HPS Staff. Session: 1, 2. Classes: One 2hr sem/wk.
Prerequisite: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission. Assessment: Two essays, seminar participation. NB: Department permission required for enrolment.
This unit explores major episodes in the history of science as well as introducing students to historiographic methods.

Textbooks
Course reader

HPSC 4103 Sociology of Science
6 credit points. HPS staff. Session: 2.
Classes: One 2hr sem/wk.
Prerequisite: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission. Assessment: Essays, fieldwork report, seminar participation mark. NB: Department permission required for enrolment.
This course builds upon earlier courses introducing the sociology of science with an exploration of recent approaches in the social studies of scientific knowledge. Specific topics include the 'strong program' sociologists of knowledge and their critique of traditional philosophy of science, the counter arguments of philosophers, anthropological approaches to science such as ethnomethodology and 'actor network' theory, and sociology of technology. Students evaluate the approaches by conducting their own research on specific cases.

Textbooks
Course reader

HPSC 4104 Recent Topics in HPS
6 credit points. HPS Staff. Session: 1, 2, Classes: One 2hr sem/wk.
Prerequisite: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission. Assessment: Two essays, seminar participation. NB: Department permission required for enrolment.
An examination of one area of the contemporary literature in the history and philosophy of science.

Textbooks
Course reader

HPSC 4105 HPS Research Methods
6 credit points. Dr Rachel Ankeny. Session: 1.
Classes: One 2hr sem/wk. Prerequisite: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science), or by special permission. Assessment: Literature review, archival research project, seminar participation mark, short essays.
NB: Department permission required for enrolment.
An introduction to the research skills of history, philosophy and sociology of science. Students will learn to be conscious of their own introductions of interpretations, arguments and theories into their research and writing through comparative study of different schools in contemporary HPS.

Textbooks
Course reader

HPSC 4108 Core topics: History & Philosophy of Sci
6 credit points. HPS staff. Session: 1, 2.
Classes: One 2hr sem/wk.
Prerequisite: Available only to students admitted to HPS Honours, Graduate Diploma in Science (History and Philosophy of Science) and Graduate Certificate in Science (History and Philosophy of Science).
Prohibition: Not available to students who have completed a major in History and Philosophy of Science or an equivalent program of study at another institution. Assessment: Fortnightly literature reviews, seminar presentations, seminar participation mark.
An intensive reading course, supported by discussion seminars, in the main figures and events of the 'Scientific Revolution' of the 16th to 18th centuries, in the leading historiographic interpretations of the scientific revolution and in the use of episodes in the scientific revolution as evidence for the philosophies of science of Karl Popper, Imre Lakatos, Thomas Kuhn and contemporary authors.

Textbooks
Course reader.

Information Technology

Graduate Certificate in Information Technology

Graduate Diploma in Information Technology

Master of Information Technology

Course Overview
The University of Sydney offers planned, targeted postgraduate programs in IT to meet the huge demand of the applied IT industry. This articulated program includes the Graduate Certificate in Information Technology, the Graduate Diploma in Information Technology and the Master of Information Technology degree and is designed to provide a core of knowledge in information technology, supplemented by a broad range of options within areas of Computer Networks and the Internet, E-business, MultiMedia, Database Management and Administration, Software Engineering, Business Information Systems, etc. The combination of core units and electives provides an excellent retraining opportunity. Students will not only obtain depth in their knowledge of the IT industry but will also be able to choose from a selection of options which will allow them to focus on different specialisations in the broad span of the industry.

The Master of Information Technology requires 1 year (2 semesters) of full time study. The degree is designed to teach you current developments in topics you have already studied as well as extend your knowledge in advanced computing subjects. The program consists of coursework and/or projects in your major area of interest.

During the first semester of attendance you have the opportunity to select from a number of Information Technology units of study. These cover areas such as object oriented systems, computer graphics, artificial intelligence, database systems, multimedia, software engineering, computer networks and the Internet, e-business, and user interfaces.

Also available is a selection of specialist units of study covering advanced topics within various areas. In addition you have the option to choose information technology projects to replace some specialist units in the second semester if the average mark of your units of study is credit or better. The project
Involves a substantial piece of programming using the knowledge gained during the course and may be related to your employment.

**Course Outcomes**

Upon completion of the Graduate Certificate, graduates will possess a practical and theoretical background in some of the basic aspects of Information Technology. This can be supplemented and extended upon completion of the Graduate Diploma, and extended further to include research and practical skills by completion of the Masters program.

Upon completion of the Master of Information Technology graduates will have a sound knowledge base in several contemporary topics within information technology. They will also have experience in applying this knowledge to the implementation of a useful system.

**Admission Requirements**

Applicants for the Graduate Certificate in Information Technology should hold a Bachelor's degree with substantial study of a relevant field of Information Technology or a Bachelor of Engineering, Software Engineering or Telecommunications Engineering, or those with evidence of recognised prior learning which is considered to demonstrate the knowledge and aptitude required to undertake this course.

Applicants for the Graduate Diploma in Information Technology should hold a Bachelor's degree with substantial study of a relevant field of Information Technology or a Bachelor of Engineering with a major sequence of study in Computer Engineering, Software Engineering or Telecommunications Engineering, or have completed the Graduate Certificate in Information Technology at the University of Sydney with credit average results or above.

Applicants for the Master of Information Technology should hold a Bachelor's degree with credit average results in a major sequence in any aspect of Information Technology, or a Bachelor of Engineering with credit average results in a major sequence in Computer Engineering, Software Engineering or Telecommunications Engineering, or have completed the Graduate Diploma in Information Technology at the University of Sydney with credit average results or above.

**Course Requirements**

**Graduate Certificate in Information Technology**

- A total of 24 credit points must be completed;
- Credit points can be selected from Foundational and Specialist units of study, excluding IT project units of study.

**Graduate Diploma in Information Technology**

- A total of 36 credit points must be completed;
- A maximum of 24 credit points can be selected from Foundational units of study;
- At least 12 credit points should come from Specialist units of study, excluding IT project units of study.

**Master of Information Technology**

- A total of 48 credit points must be completed;
- A maximum of 24 credit points can be selected from Foundational units of study;
- At least 24 credit points should come from Specialist units of study or IT project units of study;
- Candidates who do not achieve an average result of a Credit or better in their course work may not select IT project units of study;
- Candidates who have an average result of a Credit or better in their course work may select a maximum of 18 credit points from IT project units of study.

**Credit for previous study**

Credit is not available in the Graduate Certificate in Information Technology, Graduate Diploma in Information Technology and Master of Information Technology for postgraduate study which has not been undertaken in these award courses within the previous three years.

Course Resolutions: see chapter 7.

**Units of study available in 2003**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Sem</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC 6505</td>
<td>Error Control Coding</td>
</tr>
<tr>
<td>ELEC 6507</td>
<td>Wireless Networks</td>
</tr>
<tr>
<td>ELEC 6704</td>
<td>Software Project Management</td>
</tr>
<tr>
<td>INFS6600</td>
<td>Business Information Systems</td>
</tr>
<tr>
<td>COMP 5306</td>
<td>Database Systems (Advanced Topic)</td>
</tr>
<tr>
<td>COMP 5307</td>
<td>Distributed Systems (Advanced Topic)</td>
</tr>
<tr>
<td>COMP 5311</td>
<td>Computational Geometry</td>
</tr>
<tr>
<td>COMP 5312</td>
<td>Natural Language Processing</td>
</tr>
<tr>
<td>COMP 5315</td>
<td>Internet Programming</td>
</tr>
<tr>
<td>COMP 5318</td>
<td>Knowledge Discovery and Data Mining</td>
</tr>
<tr>
<td>COMP 5319</td>
<td>Programming Distributed Object Systems</td>
</tr>
<tr>
<td>COMP 5327</td>
<td>Computer and Communication Security</td>
</tr>
<tr>
<td>COMP 5337</td>
<td>Design of Distributed Object Systems</td>
</tr>
<tr>
<td>COMP 5347</td>
<td>E Commerce Technology</td>
</tr>
<tr>
<td>COMP 5414</td>
<td>Visual Information Processing</td>
</tr>
<tr>
<td>COMP 5415</td>
<td>Multimedia Authoring and Production</td>
</tr>
<tr>
<td>ELEC 6604</td>
<td>Engineering Software Requirements</td>
</tr>
<tr>
<td>ELEC 6605</td>
<td>Computer Design</td>
</tr>
<tr>
<td>ELEC 6701</td>
<td>Real Time Computing</td>
</tr>
<tr>
<td>ELEC7501</td>
<td>Advanced Communication Networks</td>
</tr>
<tr>
<td>ELEC 7502</td>
<td>Satellite Communication Systems</td>
</tr>
<tr>
<td>ELEC 7503</td>
<td>Optical Communication Systems</td>
</tr>
<tr>
<td>ELEC 7504</td>
<td>Cellular Radio Engineering</td>
</tr>
<tr>
<td>ELEC 7506</td>
<td>Optical Networks</td>
</tr>
<tr>
<td>ELEC 7610</td>
<td>Computer &amp; Network Security</td>
</tr>
<tr>
<td>ELEC 8521</td>
<td>Radio Frequency Engineering</td>
</tr>
<tr>
<td>ELEC 8522</td>
<td>Antennas &amp; Propagation</td>
</tr>
<tr>
<td>INFS 6001</td>
<td>Management Information Systems</td>
</tr>
<tr>
<td>INFS 6002</td>
<td>Information Technology Strategy &amp; Mgmt</td>
</tr>
<tr>
<td>INFS 6004</td>
<td>Change Agent Consulting for IT Industry</td>
</tr>
<tr>
<td>INFS 6012</td>
<td>Integrated Enterprise Systems</td>
</tr>
<tr>
<td>INFS 6013</td>
<td>IT Risk Management &amp; Assurance</td>
</tr>
<tr>
<td>INFS 6014</td>
<td>IT Project Management</td>
</tr>
<tr>
<td>INFS 6015</td>
<td>Business Process Analysis &amp; Design</td>
</tr>
<tr>
<td>INFS 6017</td>
<td>INFS Knowledge Management</td>
</tr>
<tr>
<td>INFS 6101</td>
<td>Special Topic in Business Info Systems</td>
</tr>
<tr>
<td>MKT6351</td>
<td>Electronic Marketing</td>
</tr>
<tr>
<td>COMP 5702</td>
<td>Information Technology Project A (12 cp)</td>
</tr>
<tr>
<td>COMP 5703</td>
<td>Information Technology Project B (12 cp)</td>
</tr>
<tr>
<td>COMP 5704</td>
<td>Information Technology Project C</td>
</tr>
<tr>
<td>ELEC 8900</td>
<td>Project full time (12 cp)</td>
</tr>
<tr>
<td>ELEC 8901</td>
<td>Project part time A</td>
</tr>
<tr>
<td>ELEC 8902</td>
<td>Project part time B</td>
</tr>
</tbody>
</table>

**Units of study available in majors in 2003**

Unit of study offerings change annually. Students may but are not required to undertake a major.

**Computer Networks major**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 5018</td>
<td>Object Oriented Programming in C++</td>
</tr>
<tr>
<td>COMP 5019</td>
<td>System and Network Administration</td>
</tr>
<tr>
<td>COMP 5114</td>
<td>Digital Media Fundamentals</td>
</tr>
<tr>
<td>ELEC 6404</td>
<td>Integrated Circuit Design</td>
</tr>
<tr>
<td>ELEC 6504</td>
<td>Digital Communication Systems</td>
</tr>
<tr>
<td>COMP 5307</td>
<td>Distributed Systems (Advanced Topic)</td>
</tr>
<tr>
<td>COMP 5315</td>
<td>Internet Programming</td>
</tr>
<tr>
<td>COMP 5319</td>
<td>Programming Distributed Object Systems</td>
</tr>
<tr>
<td>COMP 5327</td>
<td>Computer and Communication Security</td>
</tr>
<tr>
<td>COMP 5337</td>
<td>Design of Distributed Object Systems</td>
</tr>
<tr>
<td>COMP 5347</td>
<td>E Commerce Technology</td>
</tr>
<tr>
<td>ELEC 7501</td>
<td>Advanced Communication Networks</td>
</tr>
<tr>
<td>ELEC 7502</td>
<td>Satellite Communication Systems</td>
</tr>
<tr>
<td>ELEC 7503</td>
<td>Optical Communication Systems</td>
</tr>
<tr>
<td>ELEC 7504</td>
<td>Cellular Radio Engineering</td>
</tr>
<tr>
<td>ELEC 7506</td>
<td>Optical Networks</td>
</tr>
<tr>
<td>ELEC 7610</td>
<td>Computer &amp; Network Security</td>
</tr>
<tr>
<td>ELEC 8521</td>
<td>Radio Frequency Engineering</td>
</tr>
<tr>
<td>ELEC 8522</td>
<td>Antennas &amp; Propagation</td>
</tr>
<tr>
<td>INFS 6001</td>
<td>Management Information Systems</td>
</tr>
<tr>
<td>INFS 6002</td>
<td>Information Technology Strategy &amp; Mgmt</td>
</tr>
<tr>
<td>INFS 6004</td>
<td>Change Agent Consulting for IT Industry</td>
</tr>
<tr>
<td>INFS 6012</td>
<td>Integrated Enterprise Systems</td>
</tr>
<tr>
<td>INFS 6013</td>
<td>IT Risk Management &amp; Assurance</td>
</tr>
<tr>
<td>INFS 6014</td>
<td>IT Project Management</td>
</tr>
<tr>
<td>INFS 6015</td>
<td>Business Process Analysis &amp; Design</td>
</tr>
<tr>
<td>INFS 6017</td>
<td>INFS Knowledge Management</td>
</tr>
<tr>
<td>INFS 6101</td>
<td>Special Topic in Business Info Systems</td>
</tr>
<tr>
<td>MKT6351</td>
<td>Electronic Marketing</td>
</tr>
<tr>
<td>COMP 5702</td>
<td>Information Technology Project A (12 cp)</td>
</tr>
<tr>
<td>COMP 5703</td>
<td>Information Technology Project B (12 cp)</td>
</tr>
<tr>
<td>COMP 5704</td>
<td>Information Technology Project C</td>
</tr>
<tr>
<td>ELEC 8900</td>
<td>Project full time (12 cp)</td>
</tr>
<tr>
<td>ELEC 8901</td>
<td>Project part time A</td>
</tr>
<tr>
<td>ELEC 8902</td>
<td>Project part time B</td>
</tr>
</tbody>
</table>

Unless otherwise indicated, all units are worth 6 credit points.
## Computer Science major

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unless otherwise indicated, all units are worth 6 credit points</td>
<td></td>
</tr>
<tr>
<td><strong>Foundational units</strong></td>
<td></td>
</tr>
<tr>
<td>COMP 5307</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5311</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5318</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5327</td>
<td>C</td>
</tr>
<tr>
<td>ELEC6604</td>
<td>C</td>
</tr>
<tr>
<td>ELEC6605</td>
<td>C</td>
</tr>
<tr>
<td><strong>Specialist units</strong></td>
<td></td>
</tr>
<tr>
<td>COMP 5307 Distributed Systems (Advanced Topic)</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5331 Computations Geometry</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5318 Knowledge Discovery and Data Mining</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5327 Computer and Communication Security</td>
<td>C</td>
</tr>
<tr>
<td>ELEC6604 Engineering Software Requirements</td>
<td>C</td>
</tr>
<tr>
<td>ELEC6605 Computer Design</td>
<td>C</td>
</tr>
<tr>
<td>ELEC6606 Real Time Computing</td>
<td>C</td>
</tr>
<tr>
<td><strong>IT projects</strong></td>
<td></td>
</tr>
<tr>
<td>COMP 5702 Information Technology Project A</td>
<td></td>
</tr>
<tr>
<td>COMP 5703 Information Technology Project B</td>
<td></td>
</tr>
<tr>
<td>ELEC 8900 Project full time (12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8901 Project part time part A (A+B = 12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8902 Project part time part B (A+B = 12 cp)</td>
<td></td>
</tr>
<tr>
<td><strong>Database Management Systems major</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Unit of study</strong></td>
<td></td>
</tr>
<tr>
<td>Unless otherwise indicated, all units are worth 6 credit points</td>
<td></td>
</tr>
<tr>
<td><strong>Foundational units</strong></td>
<td></td>
</tr>
<tr>
<td>COMP 5306 Database Systems (Advanced Topic)</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5315 Internet Programming</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5318 Knowledge Discovery and Data Mining</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5319 Programming Distributed Object Systems</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5327 Computer and Communication Security</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5337 Design of Distributed Object Systems</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5347 E Commerce Technology</td>
<td>C</td>
</tr>
<tr>
<td>INF56001 Management Information Systems</td>
<td>C</td>
</tr>
<tr>
<td>INF56002 Information Technology and Management</td>
<td>C</td>
</tr>
<tr>
<td>INF56004 Change Agent Consulting for IT Industry</td>
<td>C</td>
</tr>
<tr>
<td>INF56012 Integrated Enterprise Systems</td>
<td>C</td>
</tr>
<tr>
<td>INF56013 IT Risk Management and Assurance</td>
<td>C</td>
</tr>
<tr>
<td>INF5614 IT Project Management</td>
<td>C</td>
</tr>
<tr>
<td>INF5615 Business Process Analysis and Design</td>
<td>C</td>
</tr>
<tr>
<td>INF56101 Special Topic in Business Information Systems</td>
<td>C</td>
</tr>
<tr>
<td><strong>Specialist units</strong></td>
<td></td>
</tr>
<tr>
<td>COMP 5702 Information Technology Project A (12 cp)</td>
<td></td>
</tr>
<tr>
<td>COMP 5703 Information Technology Project B (12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8900 Project full time (12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8901 Project part time part A (A+B = 12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8902 Project part time part B (A+B = 12 cp)</td>
<td></td>
</tr>
</tbody>
</table>

## Business major

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unless otherwise indicated, all units are worth 6 credit points</td>
<td></td>
</tr>
<tr>
<td><strong>Foundational units</strong></td>
<td></td>
</tr>
<tr>
<td>COMP 5308 Object Oriented Programming in C++</td>
<td></td>
</tr>
<tr>
<td>COMP 5019 System and Network Administration</td>
<td></td>
</tr>
<tr>
<td>INF56000 Business Information Systems</td>
<td></td>
</tr>
<tr>
<td><strong>Specialist units</strong></td>
<td></td>
</tr>
<tr>
<td>COMP 5315 Internet Programming</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5318 Programming Distributed Object Systems</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5327 Computer and Communication Security</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5337 Design of Distributed Object Systems</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5347 E Commerce Technology</td>
<td>C</td>
</tr>
<tr>
<td>INF56001 Information Technology Strategy and Management</td>
<td>C</td>
</tr>
<tr>
<td>INF56002 Change Agent Consulting for IT Industry</td>
<td>C</td>
</tr>
<tr>
<td>INF5601 Integrated Enterprise Systems</td>
<td>C</td>
</tr>
<tr>
<td>INF56013 IT Risk Management and Assurance</td>
<td>C</td>
</tr>
<tr>
<td>INF5614 IT Project Management</td>
<td>C</td>
</tr>
<tr>
<td>INF5615 Business Process Analysis and Design</td>
<td>C</td>
</tr>
<tr>
<td>INF56101 Special Topic in Business Information Systems</td>
<td>C</td>
</tr>
<tr>
<td>MKTG 6015 Electronic Marketing</td>
<td>C</td>
</tr>
</tbody>
</table>

## Information Technology

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unless otherwise indicated, all units are worth 6 credit points</td>
<td></td>
</tr>
<tr>
<td><strong>Foundational units</strong></td>
<td></td>
</tr>
<tr>
<td>COMP 5702 Information Technology Project A (12 cp)</td>
<td></td>
</tr>
<tr>
<td>COMP 5703 Information Technology Project B (12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8900 Project full time (12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8901 Project part time part A (A+B = 12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8902 Project part time part B (A+B = 12 cp)</td>
<td></td>
</tr>
<tr>
<td><strong>Multimedia Technology major</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Unit of study</strong></td>
<td></td>
</tr>
<tr>
<td>Unless otherwise indicated, all units are worth 6 credit points</td>
<td></td>
</tr>
<tr>
<td><strong>Foundational units</strong></td>
<td></td>
</tr>
<tr>
<td>COMP 5702 Information Technology Project A (12 cp)</td>
<td></td>
</tr>
<tr>
<td>COMP 5703 Information Technology Project B (12 cp)</td>
<td></td>
</tr>
<tr>
<td>COMP 5704 Information Technology Project C</td>
<td></td>
</tr>
<tr>
<td>ELEC 8900 Project full time (12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8901 Project part time part A (A+B = 12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8902 Project part time part B (A+B = 12 cp)</td>
<td></td>
</tr>
<tr>
<td><strong>Software Engineering major</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Unit of study</strong></td>
<td></td>
</tr>
<tr>
<td>Unless otherwise indicated, all units are worth 6 credit points</td>
<td></td>
</tr>
<tr>
<td><strong>Foundational units</strong></td>
<td></td>
</tr>
<tr>
<td>COMP 5702 Information Technology Project A (12 cp)</td>
<td></td>
</tr>
<tr>
<td>COMP 5703 Information Technology Project B (12 cp)</td>
<td></td>
</tr>
<tr>
<td>COMP 5704 Information Technology Project C</td>
<td></td>
</tr>
<tr>
<td>ELEC 8900 Project full time (12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8901 Project part time part A (A+B = 12 cp)</td>
<td></td>
</tr>
<tr>
<td>ELEC 8902 Project part time part B (A+B = 12 cp)</td>
<td></td>
</tr>
<tr>
<td><strong>Business Information Systems major</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Unit of study</strong></td>
<td></td>
</tr>
<tr>
<td>Unless otherwise indicated, all units are worth 6 credit points</td>
<td></td>
</tr>
<tr>
<td><strong>Foundational units</strong></td>
<td></td>
</tr>
<tr>
<td>INF56000 Business Information Systems</td>
<td></td>
</tr>
<tr>
<td><strong>Specialist units</strong></td>
<td></td>
</tr>
<tr>
<td>COMP 5315 Internet Programming</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5318 Knowledge Discovery and Data Mining</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5319 Programming Distributed Object Systems</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5327 Computer and Communication Security</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5337 Design of Distributed Object Systems</td>
<td>C</td>
</tr>
<tr>
<td>COMP 5347 E Commerce Technology</td>
<td>C</td>
</tr>
<tr>
<td>INF56001 Information Technology Strategy and Management</td>
<td>C</td>
</tr>
<tr>
<td>INF56002 Change Agent Consulting for IT Industry</td>
<td>C</td>
</tr>
<tr>
<td>INF56013 IT Risk Management and Assurance</td>
<td>C</td>
</tr>
<tr>
<td>INF56014 IT Project Management</td>
<td>C</td>
</tr>
<tr>
<td>INF56015 Business Process Analysis and Design</td>
<td>C</td>
</tr>
<tr>
<td>INF56101 Special Topic in Business Information Systems</td>
<td>C</td>
</tr>
<tr>
<td>MKTG 6015 Electronic Marketing</td>
<td>C</td>
</tr>
<tr>
<td><strong>TTprojects</strong></td>
<td></td>
</tr>
</tbody>
</table>
Information Technology units of study

Unit of study Core
COMP 5704 Information Technology Project C
ELEC 8900 Project full time (12 cp)
ELEC 8901 Project part time part A (A+B = 12 cp)
ELEC 8902 Project part time part B (A+B = 12 cp)

Telecommunications Engineering major
Unit of study Core
Unless otherwise indicated, all units are worth 6 credit points
Foundational units
COMP 5018 Object Oriented Programming in C++
COMP 5019 System and Network Administration
ELEC 6504 Digital Communication Networks
ELEC 6505 Error Control Coding
ELEC 6507 Wireless Networks
ELEC 6704 Software Project Management

Specialist units
COMP 5315 Internet Programming
COMP 5319 Programming Distributed Object Systems
COMP 5327 Computer and Communication Security
COMP 5337 Design of Distributed Object Systems
ELEC 7304 Advanced Communication Networks
ELEC 7503 Satellite Communication Systems
ELEC 7504 Optical Communication Systems
ELEC 7506 Cellular Radio Engineering Systems
ELEC 8521 Optical Networks
ELEC 8522 Radio Frequency Engineering
ELEC 8523 Antennas and Propagation

IT projects
COMP 5702 Information Technology Project A (12 cp)
COMP 5703 Information Technology Project B (12 cp)
COMP 5704 Information Technology Project C
ELEC 8900 Project full time (12 cp)
ELEC 8901 Project part time part A (A+B = 12 cp)
ELEC 8902 Project part time part B (A+B = 12 cp)

Computer Engineering major
Unit of study Core
Unless otherwise indicated, all units are worth 6 credit points
Foundational units
COMP 5018 Object Oriented Programming in C++
COMP 5114 Digital Media Fundamentals
COMP 5344 Integrated Circuit Design
COMP 5347 E Commerce Technology
COMP 5414 Visual Information Processing
ELEC 6004 Engineering Software Requirements
ELEC 6005 Computer Design
ELEC 6006 Real Time Computing
ELEC 6710 Computer and Network Security

Specialist units
COMP 5311 Computational Geometry
COMP 5315 Internet Programming
COMP 5319 Programming Distributed Object Systems
COMP 5327 Computer and Communication Security
COMP 5337 Design of Distributed Object Systems
COMP 5347 E Commerce Technology
COMP 5414 Visual Information Processing
ELEC 6004 Engineering Software Requirements
ELEC 6005 Computer Design
ELEC 6006 Real Time Computing
ELEC 6710 Computer and Network Security

IT projects
COMP 5702 Information Technology Project A (12 cp)
COMP 5703 Information Technology Project B (12 cp)
COMP 5704 Information Technology Project C
ELEC 8900 Project full time (12 cp)
ELEC 8901 Project part time part A (A+B = 12 cp)
ELEC 8902 Project part time part B (A+B = 12 cp)

Information Technology units of study

Foundational units of study
COMP 5018 Object Oriented Programming in C++

This unit of study is a foundational subject on object oriented programming and C++. It teaches relevant skills in the C++ programming language and will give a solid grounding in object oriented programming with an emphasis on C++ design and coding skills.

COMP 5019 System and Network Administration
6 credit points. Session: 1, 2. Classes: 2 lec & 1 tut/wk. Assumed knowledge: It is expected that students should have some UNIX experience as an ordinary user. Assessment: Assignments, written exam.

This unit of study is a foundational subject on operation system and network administration. It introduces the principles of operation systems and the structure of networks. It also shows students how to administrate the system and network by using examples under UNIX systems. From the initial installation of the operating system, to the intricacies of virtual Web servers, this unit of study will show how these systems act and how to make them perform at their best.

COMP 5114 Digital Media Fundamentals

This unit provides an overview of processing digital media which include text, audio, pictorial data and video. It introduces various processing techniques and standards, and presents some applications.

Assessment:

Objective:
The unit covers Multimedia Primer; Text Processing which includes text parsing, text summarization, text manipulation, text retrieval, and surrogate coding; Audio Data Processing which includes audio attribute, audio masking, MP3 audio, audio manipulation and audio segmentation; pictorial data processing which includes still image processing, multi modal image processing and artificial image processing; video data processing which includes active image processing, video segmentation, motion analysis, moving object extraction, video representation and codification.

ELEC 6404 Integrated Circuit Design
6 credit points. Session: 1. Classes: Two 1hr lectures and a 2hr lab/tut/wk. Prerequisite: Assumed Knowledge: ELEC 3401 Electronic Devices and Circuits. Assessment: A design project and a 2hr exam at end of semester.

Recommended elective unit of study for Computer, Electrical, Software and Telecommunications Engineering Technology (IC production processes, design rules, layout). Design automation and verification (DRC, circuit extraction, simulation and hardware design languages). Basic digital building blocks (inverters, simple logic gates, transmission gates, propagation delays, power dissipation and noise margins). Digital circuits and systems (PLAs, dynamic circuits, RAM, ROM, microprocessors, systolic arrays). Semicustom design (gate arrays and standard cells). Analog VLSI (switches, active resistors, current sources and mirrors, voltage, current references, amplifiers, DAC, ADC, continuous time filters, switch capacitor circuits, analog signal processing circuits).

ELEC 6504 Digital Communication Systems
6 credit points. Session: 1.

ELEC 6505 Error Control Coding
6 credit points. Session: 1. Classes: Two 1 hr lectures and a 2hr lab/tut/wk. Prerequisite: Assumed Knowledge: ELEC 3502 Random Signals and Communications, and ELEC 3503 Introduction to Digital Communications. Assessment: Assignments and a 2hr exam at end of semester.

Recommended elective unit of study for Computer, Electrical, Software and Telecommunications Engineering.

Error control coding principles, linear algebra, linear block codes, cyclic codes, BCH codes, Reed Solomon codes, burst error correcting codes, design of codes for block codes, applications of block codes in communications and digital recording, convolutional codes, Viterbi algorithm, design of codes for convolutional codes, applications of convolutional codes in communications, soft decision decoding of block and convolutional codes, trellis coded modulation, design of codes for trellis codes, applications of trellis codes in data transmission, multidimensional codes, turbo codes.

ELEC 6704 Software Project Management
6 credit points. Session: 1. Classes: Two 1 hr lectures and a 2hr lab/tut' per week. Prerequisite: Assumed Knowledge: (COMP 3100 Software Engineering and COMP 3205 Product Development Project) or (INFO 2000 Systems Analysis and Design and SOFT 2004 Software Development Methods 1). Assessment: Lab work, project and a 2hr exam at end of semester.

201
Core unit of study for Software Engineering. Recommended elective unit of study for Computer, Electrical and Telecommunications Engineering and Electronic Commerce.

The objective of this unit of study is for students to understand the issues involved in software project management and the factors that affect software quality; to be familiar with a range of standards, techniques and tools developed to support software project management and the production of high quality software; and to be able to develop software project plans, supporting software quality plans and risk management plans. Topics covered include project management issues such as client management; management of technical teams; project planning and scheduling; risk management; configuration management; quality assurance and accreditation; legal issues. Topics on software quality include: factors affecting software quality; planning for quality; software quality assurance plans; software measurement; Australian and international standards.

INF5000 Business Information Systems
6 credit points. Session: 1, 2.
This unit is designed to help you understand i) the information environment of the firm from the perspective of users, evaluators and designers and ii) how business processes impact on the appropriateness of the design of appropriate information systems. This unit employs a conceptual framework to emphasise the professional and legal responsibility of management for the design, operation and control of business information system applications. The unit also examines various approaches and methodologies used in systems analysis and design, including structured design, computer aided software engineering and prototyping.

Specialist units of study
COMP5306 Database Systems (AdvancedTopic)
6 credit points. Session: 1. Table 3
COMP5307 Distributed Systems (AdvancedTopic)
6 credit points. Session: 1, 2. Table 3
COMP5311 Computational Geometry
6 credit points. Session: 1, 2. Classes: 3hrs Lectures/week; 1 hr Practical/week. Prerequisite: COMP5001 Algorithms. Assessment: 2. Table 3
Computational geometry is the study of the design and analysis of algorithms to solve problems of a geometric or spatial nature. Although a theoretical discipline in its own right, computational geometry has numerous applications in such areas as graphics, pattern recognition, robotics and motion planning, computer aided design, integrated circuit design, and optimization.

Textbooks
Lecture notes produced by the lecturer
COMP5312 Natural Language Processing
6 credit points. Session: 1. Classes: 3hrs Lectures/week; 1 hr Practical/week. Assessment: 2. Table 3
This unit of study is a foundational subject on artificial intelligence. It teaches relevant skills in natural language processing. A study of the methods for analysis of natural language, both statistical and heuristic, for identifying lexical, grammatical and semantic components.

Textbooks
Lecture notes produced by the lecturer
COMP5315 Internet Programming
6 credit points. Session: 1, 2. Classes: 2 lec & 1 tut/wk. Assessment: Assignments, written exam. Specialist/Elective
The subject of the Internet Programming unit is the delivery of dynamic information via the Internet. Most Internet applications follow a client/server model, and as a result, dynamic data generation can be found at two places: creation of data from dynamic sources in the server, and dynamic presentation of this data to the user. A recent development which enhances the usability and portability of dynamic data presentation is the emergence of international standards for representation of data between the client and the server. The Internet Programming unit will focus on these three areas.

Objectives
At the end of the unit, students are expected to:

• have a thorough understanding of the technologies involved in the Internet, and in the production,
• representation and delivery of dynamic information.
• be able to write simple, but well structured and well documented programs,
• be able to create programs for the management of dynamic data,
• be able to create programs for the dynamic presentation of information to the user.

COMP5318 Knowledge, Discovery and Data Mining
6 credit points. Session: 2. Classes: 2 lec & 1 tut/wk. Assessment: Assignments, written exam. Specialist/Elective
Knowledge discovery is the process of extracting useful knowledge from data. Data mining is a discipline within knowledge discovery that seeks to facilitate the exploration and analysis of large quantities of data, by automatic or semiautomatic means. This subject provides a practical and technical introduction to knowledge discovery and data mining.

Objectives
Topics to be covered include problems of data analysis in databases, discovering patterns in the data, and knowledge interpretation, extraction and visualisation. Also covered are analysis, comparison and usage of various types of machine learning techniques and statistical techniques: clustering, classification, prediction, estimation, affinity grouping, description and scientific visualisation.

COMP5319 Programming Distributed Object Systems
6 credit points. Session: 2. Classes: 2 lec & 1 tut/wk. Prerequisite: COMP5018 and COMP5337. Assessment: Assignments, written exam. Specialist/Elective
This unit provides a practical, technical introduction to the underlying technologies and architectures used in real life distributed object systems. The topics covered include object request brokers (CORBA), directory services, security services, distributed transaction processing, common application architectures, performance implications and reliability and fault tolerance.

COMP5327 Computer and Communication Security
6 credit points. Session: 1, 2. Classes: 2 lec & 1 tut/wk. Assessment: Assignments, written exam. Specialist/Elective
This unit covers computer security which includes cryptography, authentication, access control and auditing. We shall examine secret key, message digest and public key algorithms. Authentication systems are used to prove identity. These systems make use of various protocols based on cryptographic mechanisms. We shall look at some common systems and common flaws in authentication systems. Once the system is convinced of the identity of a user it must decide which actions that user is entitled to carry out. Finally we will look at some of the other mechanisms required for security, such as auditing.

Objectives
• Cryptography and cryptanalysis,
• Authentication and authorization,
• Cryptographic protocols,
• Digital signatures, watermarking, public key infrastructures,
• Access control, including Discretionary Access Control (DAC), Mandatory Access Control (MAC), Role Based Access Control (RBAC) and Lattice based approaches.
• Trust management, social and legal issues,
• WWW security and security for mobile code,
• Digital cash, payment protocols, digital rights management.

COMP5337 Design of Distributed Object Systems
This unit of study provides a practical introduction to the underlying technologies and architectures used in real life distributed object systems. The topics covered include object request brokers (CORBA), directory services, security services, distributed transaction processing, common application architectures, performance implications and reliability and fault tolerance.
COMP5347 E commerce Technology
Specialist/Elective
This unit is designed to provide in depth technology relevant to electronic commerce on the Internet. It covers communications and networking, the Internet and mobile commerce, architecture of Web systems, data interchange, access and cryptographic security, electronic payments, etc. The unit has heavy programming exercises.

COMP 5414 Visual Information Processing
Specialist/Elective
More than 70% of the information humans perceive comes from vision, and there is every indication that computers should follow this trend. The demand for visual information processing has grown tremendously in areas such as communications, consumer electronics, medicine, management, defence, robotics, and geophysics. This unit of study aims at providing fundamental knowledge of visual representation and visual information processing, basic techniques in manipulating images and video, and applications in medical imaging, multimedia and the Internet.

COMP 5415 Multimedia Authoring and Production
Specialist/Elective
This unit provides fundamentals on multimedia authoring and production. It discusses in great length on multimedia animation and authoring. It also introduces some multimedia authoring packages. The students will get a great exposure to the software authoring package Alice. It will study the applications of multimedia authoring in the areas of tele medicine, progressive animation, multi casting, distance learning.

ELEC 6604 Engineering Software Requirements
6 credit points. Session: 2. Classes: Two 1 hr lectures and a 2hr lab/tut per week. Prerequisite: Assumed Knowledge: (COMP 3100 Software Engineering) (COMP 2111 Algorithm 1) and SOFT 2004 Software Development Methods 1. Assessment: Lab work, project and a 2hr exam at end of semester.
Core unit of study for Software Engineering. Recommended elective unit of study for Computer, Electrical and Telecommunications Engineering and Electronic Commerce.

The objective of this course is for students to become aware of issues, tools and techniques involved in the engineering of software to meet specific performance, safety and security requirements, to understand the factors that affect software reliability and conformity with design techniques that can enhance reliability. Topics covered include: systems design process; system specifications; functional decomposition; safety requirements aspects; security requirements; reliability concepts; models and design techniques.

ELEC 6605 Computer Design
6 credit points. Session: 1. Classes: Two 1 hr lectures and a 2hr lab/tut per week. Prerequisite: Assumed Knowledge: ELEC 3403 Switching Devices and Electronics, and ELEC 3601 Digital Systems Design. Prohibition: MECO 4730 Computers in Real time Instrumentation and Control. Assessment: Assignments, lab reports and a 2hr exam at end of semester.
Core unit of study for Computer Engineering. Recommended elective unit of study for Electrical, Software and Telecommunications Engineering.


ELEC 6606 Real Time Computing
6 credit points. Session: 1. Classes: Two 1 hr lectures and a 2hr lab/tut per week. Prerequisite: Assumed Knowledge: ELEC 3601 Digital Systems Design and COMP 3100 Software Engineering. Assessment: Lab marks, reports and a 2hr exam at the end of semester.

Core unit of study for Computer and Software Engineering. Recommended elective unit of study for Electrical and Telecommunications Engineering.

Hard real time and embedded systems, as applied to engineering, manufacturing and automation. Timing and scheduling: periodic vs aperiodic processes, hard vs soft deadlines, predictability and determinism, granularity, rate monotonic and earliest deadline scheduling. Real time systems and software, implementation of real time control. Real time languages and their features. Real time operating systems. Real time software design.


ELEC 7501 Advanced Communication Networks
6 credit points. Session: 1. Classes: Two 1 hr lectures and a 2hr lab/tut per week. Prerequisite: Assumed Knowledge: NETS 3007 Network Protocols or ELEC 3604 Internet Engineering. Assessment: Project report and presentation and a 2hr exam at end of semester.
Recommended elective unit of study for Computer, Electrical, Software and Telecommunications Engineering.

This unit of study serves as an introduction to networking research. The unit relies on a solid understanding of the TCP/IP protocol suite and properties of networks' physical layers. The unit introduces some of the currently most debated research topics in networking and presents an overview of different technical solutions. The students are expected to critically evaluate these solutions in their context and produce an objective analysis of advantages/disadvantages of the different research proposals. Areas covered will be IP mobility management, quality of service in IP networks, ad hoc networks, naming and presence systems and peer to peer networks.

ELEC 7502 Satellite Communication Systems
6 credit points. Session: 2. Classes: Two 1 hr lectures and a 1 hr tut per week. Prerequisite: Assumed Knowledge: ELEC 3502 Random Signals and Communications, ELEC 3503 Introduction to Digital Communications and ELEC 4502 Digital Communication Systems. Assessment: Assignments and a 2hr exam at end of semester.
Recommended elective unit of study for Computer, Electrical, Software and Telecommunications Engineering.

Introduction to satellite communication, satellite link design, propagation characteristics of fixed and mobile satellite links, channel modelling, access control schemes, system performance analysis, system design, mobile satellite services, global satellite systems, national satellite systems, mobile satellite network design, digital modem design, speech codec design, low earth orbit communication satellite systems.

ELEC 7503 Optical Communication Systems
6 credit points. Session: 1. Classes: Two 1 hr lectures and a 1 hr tut per week. Prerequisite: Assumed Knowledge: ELEC 3402 Communications Electronics, ELEC 3502 Random Signals and Communications, and ELEC 3503 Introduction to Digital Communications. Assessment: Assignments and a 2hr exam at end of semester.
Recommended elective unit of study for Computer, Electrical, Software and Telecommunications Engineering.

Introduction to optical fibre communications, optical fibre transmission characteristics, semiconductor and fibre laser signal sources, optical transmitters, direct and external modulation, optical amplifiers, optical repeaters, fibre devices and multiplexers, fibre nonlinearity, optical detectors, optical receivers and regenerators, sensitivity and error rate performance, photonic switching and processing, lightwave local area networks, multi channel multiplexing techniques, optical fibre communication systems.

ELEC 7504 Cellular Radio Engineering
6 credit points. Session: 1. Classes: Two 1 hr lectures and a 2hr lab/tut per week. Prerequisite: Assumed Knowledge: ELEC 3502 Random Signals and Communications, and ELEC 3503 Introduction to Digital Communications. Assessment: Assignments and a 2hr exam at end of semester.
Recommended elective unit of study for Computer, Electrical, Software and Telecommunications Engineering.

Antenna basics: analysis of simple antennas, uniform linear antenna arrays, planar array, base station antennas, mobile antennas. Mobile radio channel: multipath fading, diversity, log normal fading, mean propagation loss, propagation models. Cellular technologies: cell types, coverage, frequency allocation, link budget, power budget, traffic capacity. TDMA cellular systems: GSM standard: coding and modulation, special characteristics and features, logical and physical channels, frame
structure, general packet radio services (GPRS), GSM evolution towards UMTS. CDMA/cellular systems TS 95 standard: physical and logical channels, asynchronous data, short message service, packet data services for CDMA cellular/PCS systems, cdma2000 layering structure.

**ELEC 7506 Optical Networks**

6 credit points. Session: 2. Classes: Two 1 hr lectures and a 1 hr lab/tut per week. Prerequisite: Assumed Knowledge: ELEC 3502 Random Signals and Communications, and ELEC 3503 Introduction to Digital Communications. Assessment: Assignments and a 2hr exam at end of semester.

Recommended elective unit of study for Computer, Electrical, Software and Telecommunications Engineering.

Introduction, photonic network architectures: point to point, star, ring, mesh, system principles: modulation formats, link budgets, optical signal to noise ratio, dispersion, error rates, optical gain and regeneration; wavelength division multiplexed networks; WDM components: optical filters, gratings, multiplexers, demultiplexers, wavelength routers, optical crossconnects, wavelength converters, WDM transmitters and receivers; Wavelength switched/routed networks, ultra high speed TDM, dispersion managed links, soliton systems; broadcast and distribution networks, multiple access, subcarrier multiplexed lightweight video networks, optical local area and metropolitan area networks; protocols for photonic networks: IP, Gbit Ethernet, SDH/SONET, FDDI, ATM, Fibre Channel.

**ELEC 7610 Computer and Network Security**

6 credit points. Session: 2. Classes: Two 1 hr lectures and a 2hr lab/tut per week. Prerequisite: Assumed Knowledge: ELEC 3504 Internet Engineering and ELEC 4501 Data Communication Networks or ELEC 3504 Data Communications and the Internet. Prohibition: NETS 3016 Complementary and Network Security. Assessment: Assignments, lab marks and an exam at end of semester.

Recommended elective unit of study for Computer, Electrical, Software and Telecommunications Engineering.

This unit examines the basic cryptographic building blocks of security, working through to their applications in authentication, key exchange, secret and public key encryption, digital signatures, protocols and systems. It then considers these applications in the real world, analysing practical cryptosystems, the assumptions with which they were designed, their limitations, failure modes, and ultimately why most end up broken.

**ELEC 8521 Radio Frequency Engineering**

6 credit points. Session: 1. Classes: Two 1 hr lectures and a 1 hr lab/tut per week. Prerequisite: Assumed Knowledge: ELEC 2101 Circuit Analysis, and ELEC 3401 Electronic Devices and Circuits. Assessment: Assignments and a 2hr exam at end of semester.

Recommended elective unit of study for Computer, Electrical, Software and Telecommunications Engineering.

This unit of study is concerned with the design, specification, implementation and control of radio frequency systems such as in mobile communications. It covers the following areas: transmission lines and circuit descriptions; passive radio frequency components, including couplers, filters and power dividers; typical radio frequency circuits; radio frequency system characteristics, including noise, linearity, sensitivity, selectivity and distortion; basic radio frequency measurements; amplifier and oscillator design; frequency translating circuits; non linear and large signal characteristics; introduction to device modelling and circuit simulation.

**ELEC 8522 Antennas and Propagation**

6 credit points. Session: 2. Classes: Two 1 hr lectures and a 1 hr lab/tut per week. Prerequisite: Assumed Knowledge: MATH 2001 Complex Variables, and ELEC 3102 Engineering Electromagnetics. Assessment: Assignments and a 2hr exam at end of semester.

Recommended elective unit of study for Computer, Electrical, Software and Telecommunications Engineering.

This unit of study covers the theory and practice of modern antenna design, relevant to applications in telecommunications, radar and imaging systems from metre to millimetre wavelengths.

The first part of the unit describes the theory of radiation from elementary current sources, wires and arrays and introduces antenna terminology and characteristics such as radiation patterns, directivity, polarization and gain. The properties of receiving and transmitting antennas in a communications link are also described.

The second part of the unit describes three significant areas in antenna practice:

1. Numerical analysis of wire antennas an introduction to the computer aided design of wire antennas and arrays:
2. Aperture antennas an introduction to horn and reflector antennas and their applications.
3. Microstrip antennas an introduction to modern printed circuit antennas and arrays and their applications.

**INF 6001 Management Information Systems**

6 credit points. Session: 2. This unit is concerned with the organisational foundations of, information systems and their emerging strategic role. It provides an extensive introduction to real world systems, focusing on their relationship to organisations, management and business processes. It also provides a solid understanding of the technology underlying information systems and how various information technology work together to create infrastructure for electronic commerce and electronic business. The role of information systems in capturing and distributing organisational knowledge and in enhancing management decision making is also explored. Finally the special management challenges and opportunities created by the pervasiveness and power of information systems are examined.

**INF 6002 Information Technology Strategy and Mgmt**

6 credit points. Session: 1. This course aims to equip students with an ability to operate as a change agent in the IT industry with an appropriate sensitivity to the needs of the client and their own role in the change process. Its learning objectives are to understand: i) the context and roles of change; ii) the applicability of various change techniques and the role of information technology in each; iii) practical issues in the management of client selection, relationships and contract management; and iv) how to apply all these concepts to the activity of consulting in the IT industry.

**INF 6012 Integrated Enterprise Systems**

6 credit points. Session: 1. Assumed knowledge: INF 6000; INF 6010 OR COMP 5015 (RELATIONAL DATABASE SYSTEMS) OR COMP 5215 (FOUNDATIONAL DATABASE SYSTEMS).

This unit provides an overview of integrated enterprise systems with the help of packaged software solutions (via the SAP R/3 enterprise resource planning system). It provides students with practical experience in using the SAP R/3 system and familiarises them with all the modules and their functionality with the aim of exploring the concepts of enterprise resource planning and its ability to integrate functions within business. Students gain a thorough understanding of the information flows in procurement, production planning, production control, inventory control, sales and distribution, financial accounting and cost controlling. Reengineering and configuration of the enterprise systems and the architecture requirements for successful implementation of packaged software solutions is also covered.

**INF 6013 IT Risk Management and Assurance**

6 credit points. Session: 1. Assumed knowledge: INF 6000.

The purpose of this subject is to provide concepts, tools and techniques for effective management control of the acquisition, implementation and operation of information systems. Within a risk management framework, the unit outlines the requirements and potential risks of each stage of the information system lifecycle and details how the application of appropriate quality standards and internal controls can serve to mitigate those risks. Theoretical and conceptual material covered in lectures is reinforced through extensive case study analysis.

Students will be exposed to the specific requirements of information systems for different organisational functions and introduced to auditing approaches and standards to ensure that processes and controls are effective.

**INF 6014 IT Project Management**

6 credit points. Session: 2. Assumed knowledge: INF 6000.
This course covers the factors necessary for successful management of system development or enhancement projects. Both technical and behavioural aspects of project management are discussed with a focus on management of development. Major topics include project plan development, execution and control along with consideration of the organisational context of the project including cost benefit analysis, human resource management, communications management and any application specific issues.

**INFS 6015 Business Process Analysis and Design**
6 credit points. Session: 2. Assumed knowledge: INFS 6000.
This unit provides students with an overview of designing, analysing, modelling and redesigning business processes. It provides detailed understanding of concepts, strategies, tools and technologies for reengineering, integration, and performance measurement of the business processes. The unit also develops practical skills by modelling and redesigning business processes and workflows using commercial software. The notion of developing a fully process managed enterprise is central to the unit.

**INFS 6017 INFS Knowledge Management**
6 credit points. Session: 2. Assumed knowledge: INFS 6001 or INFS 6002.
This unit covers the concepts, tools and techniques necessary for the acquisition, generation, formulation dissemination, sharing, storage, dissemination, application and archival of corporate knowledge. It also addresses knowledge discovery in corporate data warehouses, knowledge validation, knowledge representation and inference techniques. The unit exposes students to both conceptual and software skills required to manage knowledge and to work with knowledge and workflow management systems used in business.

**INFS 6101 Special Topic in Business Info Systems**
6 credit points. Session: 1, 2. Prerequisite: Permission of Head of Department.
NB: Department permission required for enrolment.
This unit provides the opportunity for students to complete intensive study in an area of Business Information Systems. In the absence of formal classes, students are required to research and write a short dissertation under the guidance of a staff member in an area of contemporary business information systems.

**MKTG 6015 Electronic Marketing**
6 credit points. Jeanx Ylpr; Session: 2. Prerequisite: MKTG 5001. Assessment: Presentation of e marketing plan 10%; in class participation 10%; Case analysis 20%; E marketing plan and Web site 30%; Final exam 30%.
This subject introduces students to emerging interactive technologies. The primary focus will be the Internet and its impact on every aspect of marketing strategy. At present, every function within marketing is fundamentally changed by these interactive technologies. Consequently, there is a clear need for marketing students and practitioners to understand how these new technologies can be combined with traditional marketing techniques. An objective of this course is to equip students with a working knowledge of the principles and techniques of electronic marketing. Additionally it explores the similarities and differences between using the traditional and new technologies in the marketing context.

**IT project units**

**COMP 5702 Information Technology project A**
12 credit points. Session: 1, 2. Classes: 8 prac/wk. Assessment: Report. Specialist/Elective/Project

**COMP 5703 Information Technology project B**
12 credit points. Session: 1, 2. Classes: 8 prac/wk. Assessment: Report. Specialist/Elective/Project

**COMP 5704 Information Technology project C**
6 credit points. Session: 1, 2. Classes: 4 prac/wk. Assessment: Report. Specialist/Elective/Project

**ELEC 8900 Project, Full Time**
12 credit points. Session: 1, 2.
The carrying out and writing up of an approved significant project equivalent to about four months full time work in a topic preferably related to their course work enrolment. It can be part of the candidate's normal employment. As a guide, a project topic is likely to be satisfactory if a successful outcome of the work is such that it would lend itself to publication in a learned journal such as the Journal of the Institution of Engineers, Australia. The project may be carried out full time over one semester or part time over two semesters (part A followed by part B).

**ELEC 8901 Project Part Time Part A**
6 credit points. Session: 1, 2.
The carrying out and writing up of an approved significant project equivalent to about four months full time work in a topic preferably related to their course work enrolment. It can be part of the candidate's normal employment. As a guide, a project topic is likely to be satisfactory if a successful outcome of the work is such that it would lend itself to publication in a learned journal such as the Journal of the Institution of Engineers, Australia. The project may be carried out full time over one semester or part time over two semesters (part A followed by part B).

**ELEC 8902 Project Part Time Part B**
6 credit points. Session: 1, 2.
The carrying out and writing up of an approved significant project equivalent to about four months full time work in a topic preferably related to their course work enrolment. It can be part of the candidate's normal employment. As a guide, a project topic is likely to be satisfactory if a successful outcome of the work is such that it would lend itself to publication in a learned journal such as the Journal of the Institution of Engineers, Australia. The project may be carried out full time over one semester or part time over two semesters (part A followed by part B).

**Applied Information Technology**

**Graduate Certificate in Applied Information Technology**

**Graduate Diploma in Applied Information Technology**

**Master of Applied Information Technology**

**Course Overview**
The University of Sydney offers planned, targeted postgraduate programs in IT to meet the huge demand of the applied IT industry. This articulated program includes the Graduate Certificate in Applied Information Technology, the Graduate Diploma in Applied Information Technology and the degree of Master of Applied Information Technology and is designed to provide a core of knowledge in information technology, supplemented by a broad range of options within the areas of Computer Networks and the Internet, Multimedia, Database Management and Administration. The combination of core units and options provides an excellent retraining opportunity. Students will not only obtain depth in their knowledge of the IT industry but will also be able to choose from a selection of options which will allow them to focus on different specialisations in the broad span of the industry.

**Course Outcomes**
The articulated award program in Applied Information Technology is designed for graduates in other fields who wish to enter the IT industry, for graduates with expertise in another field who wish to enhance the effective use of IT within the field of their previous training, or for those already skilled as IT professionals who wish to embrace new technology. On completion, students would be prepared for typical IT positions as analyst/programmer, developer, support staff, sales or training staff, etc, or a high level manager who can identify new frontiers and redirect their company’s expertise and development.

Upon completion of the Graduate Certificate, graduates will possess a practical and theoretical background in some of the basic aspects of Information Technology. This can be supplemented and extended upon completion of the Graduate Diploma, and extended further to include research and practical skills by completion of the Masters program. Students completing the full postgraduate program will have a solid grounding in all basic areas of Information Technology, enabling
them to follow new innovations in IT, contribute to the development of IT and make use of IT in solving various issues.

**Admission Requirements**

Applicants for the Graduate Certificate in Applied Information Technology should hold a Bachelor's degree in Physical Science, Engineering, or a Bachelor's degree with some background in Information Technology or Mathematics, or persons who have worked in Information Technology for more than 8 years can offer evidence of prior learning which is considered to demonstrate the knowledge and aptitude required to undertake this course.

Applicants for the Graduate Diploma in Applied Information Technology should hold a Bachelor's degree in Physical Science or Engineering, or a Bachelor's degree with some background in Information Technology or Mathematics, or have completed the Graduate Certificate in Applied Information Technology at the University of Sydney with credit average results or above.

Applicants for the Master of Applied Information Technology should hold a Bachelor's degree in Physical Science or Engineering, or a Bachelor's degree with some background in Information Technology or Mathematics, or have completed the Graduate Diploma of Applied Information Technology at the University of Sydney with credit average results or above.

**Course Requirements**

Graduate Certificate in Applied Information Technology:

- A total of 36 credit points must be completed;
- A maximum of 24 credit points can be selected from Elementary units of study;
- At least 12 credit points should come from Foundational and Specialist units of study, excluding IT project units of study.

Graduate Diploma in Applied Information Technology:

- A total of 48 credit points must be completed;
- A maximum of 24 credit points can be selected from Elementary units of study;
- At least 24 credit points should come from Foundational and Specialist units of study, excluding IT project units of study.

Master of Applied Information Technology:

- A total of 72 credit points must be completed;
- A maximum of 24 credit points can be selected from Elementary units of study;
- A maximum of 24 credit points can be selected from Foundational units of study;
- At least 24 credit points should come from Specialist units of study or IT project units of study;
- Students who do not achieve an average result of a Credit or better in their course work may not select IT project units of study;
- A maximum of 18 credit points from IT projects may be selected by students who have average result of a Credit or better in their course work.

**Credit for previous study**

Credit is not available in the Graduate Certificate in Applied Information Technology, Graduate Diploma in Applied Information Technology and Master of Applied Information Technology for postgraduate study which has not been undertaken in these award courses within the previous three years.

**Course Resolutions:** see chapter 7.

**Units of study available in majors in 2003**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Sem</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP 5319 Programming Distributed Object Systems</td>
<td>2</td>
</tr>
<tr>
<td>COMP 5327 Computer and Communication Security</td>
<td>1.2</td>
</tr>
<tr>
<td>COMP 5337 Design of Distributed Object Systems</td>
<td>1</td>
</tr>
<tr>
<td>COMP 5347 E Commerce Technology</td>
<td>1.2</td>
</tr>
<tr>
<td>COMP 5414 Visual Information Processing</td>
<td>2</td>
</tr>
<tr>
<td>COMP 5415 Multimedia Authoring and Production</td>
<td>1.2</td>
</tr>
</tbody>
</table>

**Units of study available in majors in 2003**

**Computer Networks major**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unless otherwise indicated, all units are worth 6 credit points.</td>
<td></td>
</tr>
</tbody>
</table>

**Elementary units**

- COMP 5213 Computer and Network Organisation
- COMP 5241 Software development in Java
- INFO 5210 Systems Modelling & Design

**Foundational units**

- COMP 5018 Object Oriented Programming in C++
- COMP 5019 System and Network Administration
- COMP 5114 Digital Media Fundamentals

**Specialist units**

- COMP 5307 Distributed Systems (Advanced Topic)
- COMP 5315 Internet Programming
- COMP 5318 Knowledge Discovery and Data Mining

**IT projects**

- COMP 5702 Information Technology Project A (12 cp)
- COMP 5703 Information Technology Project B (12 cp)
- COMP 5704 Information Technology Project C

**Computer Science major**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unless otherwise indicated, all units are worth 6 credit points.</td>
<td></td>
</tr>
</tbody>
</table>

**Elementary units**

- COMP 5211 Algorithmics and Informatics
- COMP 5213 Computer and Network Organisation
- COMP 5214 Software development in Java
- COMP 5215 Foundational Database Systems

**Foundational units**

- COMP 5018 Object Oriented Programming in C++

**Specialist units**

- COMP 5307 Distributed Systems (Advanced Topic)
- COMP 5311 Computational Geometry
- COMP 5318 Knowledge Discovery and Data Mining
- COMP 5327 Computer and Communication Security

**IT projects**

- COMP 5702 Information Technology Project A (12 cp)
- COMP 5703 Information Technology Project B (12 cp)
- COMP 5704 Information Technology Project C

**Database Management Systems major**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Core</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unless otherwise indicated, all units are worth 6 credit points.</td>
<td></td>
</tr>
</tbody>
</table>

**Elementary units**

- COMP 5213 Computer and Network Organisation
- COMP 5214 Software development in Java
- COMP 5215 Foundational Database Systems

**Foundational units**

- COMP 5018 Object Oriented Programming in C++
- COMP 5019 System and Network Administration
- COMP 5114 Digital Media Fundamentals

**Specialist units**

- COMP 5306 Database Systems (Advanced Topic)
- COMP 5315 Internet Programming
- COMP 5318 Knowledge Discovery and Data Mining
- COMP 5319 Programming Distributed Object Systems

**IT projects**

- COMP 5327 Computer and Communication Security
Applied Information Technology units of study

Unit of study
COMP 5337 Design of Distributed Object Systems
COMP 5347 E Commerce Technology

Core

It projects
COMP 5702 Information Technology Project A (12 cp)
COMP 5703 Information Technology Project B (12 cp)
COMP 5704 Information Technology Project C

Multimedia Technology major

Unit of study
Unless otherwise indicated, all units are worth 6 credit points.

Elementary units
COMP 5213 Computer and Network Organisation
COMP 5214 Software Development in Java
INFO 5210 Systems Modelling & Design

Foundational units
COMP 5018 Object Oriented Programming in C++
COMP 5114 Digital Media Fundamentals

Specialist units
COMP 5311 Computational Geometry
COMP 5315 Internet Programming
COMP 5319 Programming Distributed Object Systems
COMP 5327 Computer and Communication Security
COMP 5337 Design of Distributed Object Systems
COMP 5347 E Commerce Technology
COMP 5414 Visual Information Processing
COMP 5415 Multimedia Authoring and Production

IT projects
COMP 5702 Information Technology Project A (12 cp)
COMP 5703 Information Technology Project B (12 cp)
COMP 5704 Information Technology Project C

Software Engineering major

Unit of study
Unless otherwise indicated, all units are worth 6 credit points.

Elementary units
COMP 5211 Algorithmics and Informatics
COMP 5214 Software Development in Java
INFO 5210 Systems Modelling & Design

Foundational units
COMP 5018 Object Oriented Programming in C++
COMP 5019 System and Network Administration

Specialist units
COMP 5312 Natural Language Processing
COMP 5315 Internet Programming
COMP 5319 Programming Distributed Object Systems
COMP 5327 Computer and Communication Security
COMP 5337 Design of Distributed Object Systems
COMP 5347 E Commerce Technology
COMP 5415 Multimedia Authoring and Production

IT projects
COMP 5702 Information Technology Project A (12 cp)
COMP 5703 Information Technology Project B (12 cp)
COMP 5704 Information Technology Project C

Applied Information Technology units of study

For descriptions of Foundational and Specialist units and IT projects, refer to the Information Technology units of study in the preceding pages.

Elementary units

COMP 5211 Algorithmics and Informatics
6 credit points. Session: 1, 2. Classes: 2 lec & 1 tut/wk. Assessment: Assignments, written exam.
Elementary

Algorithm is a fundamental technique in computing. This unit of study covers data structure, algorithm and an overview of the main ways of thinking used in IT from simple list manipulation and data format conversion, up to shortest paths and cycle detection in graphs.

Objectives
Basic concepts on data structure, algorithm, dynamic programming and program analysis. The students will gain essential knowledge in computer science.

COMP 5213 Computer and Network Organisation
6 credit points. Session: 1, 2. Classes: 2 lec & 1 tut/wk. Assessment: Assignments, written exam.
Elementary

This unit of study is an overview of hardware and system infrastructure software including compilers, operating systems, device drivers, network protocols, etc. It also includes user level Unix skills and network usability.

Objectives
This unit of study provides an overview of hardware and system infrastructure software including compilers, operating systems, device drivers, network protocols, etc. It also includes user level Unix skills and network usability.

COMP 5214 Software Development in Java
6 credit points. Session: 1, 2. Classes: 2 lec & 1 tut/wk. Assessment: Assignments, written exam.
Elementary

This unit of study introduces software development methods with main emphasis on the careful adherence to a process. It includes design methodology, quality assurance, group work, version control, and documentation. It will suit students who do not come from programming background and will not go into programming but want to know computer software.

Objectives
This unit of study covers system analysis, design methodology, quality assurance, group collaboration, version control, software delivery and system documentation.

COMP 5215 Foundational Database Systems
6 credit points. Session: 1, 2. Classes: 2 lec & 1 tut/wk. Assessment: Assignments, written exam.
Elementary

The syllabus covers the fundamentals of databases and SQL language. It includes data representation, relational design, normalization, data modelling, query methods and database development.

Objectives
• Data models: entity relationship, relational, object oriented.
• Relational database management systems: data definition, query languages, development tools.
• Object oriented database systems: object heritage, encapsulation, XML.
• Database application design and implementation.
• Architecture of relational database management systems: storage management, query processing, transaction processing.
• Lab: design and implementation of a database application using PostgreSQL, database Web Server using PHP or Python or Perl.

INFO 5210 Systems Modelling and Design
6 credit points. Session: 1, 2. Classes: 2 lec & 1 tut/wk. Assessment: Assignments, written exam.
Elementary

This unit of study provides fundamental knowledge of computer systems and programming design. It introduces process centric, data centric and object oriented approaches to system modelling, and systems thinking including organisational structures, critical awareness of human issues etc.

Objectives
Basic concepts on computer systems, file systems, database systems, languages and programming, user interface and human computer interaction. The students will gain confidence in designing a simple computer software.

Marine Ecology

Graduate Certificate in Quantitative Marine Ecology

Graduate Diploma in Quantitative Marine Ecology

Master of Quantitative Marine Ecology

Course outcomes
Upon completion of the Graduate Certificate graduates will possess a practical and theoretical background in some aspects of the field of study; this will be extended upon completion of the
Graduate Diploma and further extended to include research and practical skills upon completion of the Masters program.

**Admission requirements**

Applicants for the Graduate Certificate should hold a Bachelor's degree appropriate for the field of study, or an equivalent standard of knowledge; or have completed the Graduate Certificate in Quantitative Marine Ecology in the same field of study.

Applicants for the Master in Quantitative Marine Ecology should hold a Bachelor's degree appropriate for the field of study, or an equivalent standard of knowledge; or have completed the Graduate Diploma in Quantitative Marine Ecology in the same field of study.

**Course requirements**

The Graduate Certificate in Quantitative Marine Ecology is completed full time over one semester. To qualify for the award candidates must complete 24 credit points of units of study, as described in the table below.

The Graduate Diploma in Quantitative Marine Ecology is completed by one semester of full time study and one semester of part time study. To qualify for the award candidates must complete 24 credit points of core units of study in semester one, 12 credit points of elective units in semester two, as described in the table below.

The Master of Quantitative Marine Ecology is completed by one semester of full time study and two semesters of part time study. To qualify for the award candidates must complete 24 credit points of core units of study in semester one and 12 credit points of elective units in semester two and the associated project in the first semester of the following year, as described in the table below.

Prospective international students should contact the Centre for Research on the Ecological Impacts of Coastal Cities (CREICC) regarding alternative timetabling arrangements.

**Credit for previous study**

Credit is not available in the Graduate Certificate in Quantitative Marine Ecology, Graduate Diploma in Quantitative Marine Ecology and Master of Quantitative Marine Ecology for postgraduate study which has not been undertaken in these award courses within the previous three years, except at the discretion of the Dean. A candidate who has qualified for the award of the Graduate Certificate in Quantitative Marine Ecology may transfer, within three years, to the Graduate Diploma in Quantitative Marine Ecology and receive credit for up to 24 credit points from the Graduate Certificate in Quantitative Marine Ecology. A candidate who has qualified for the award of the Graduate Diploma in Quantitative Marine Ecology may transfer, within three years, to the Master of Quantitative Marine Ecology and receive credit for up to 36 credit points from the Graduate Diploma in Quantitative Marine Ecology. A candidate who has completed units of study in the Quantitative Marine Ecology program within the previous three years, but has not qualified for an award, may transfer to another award within the Quantitative Marine Ecology program and receive credit for the units of study completed.

Course Resolutions: see chapter 7.

**Master of Quantitative Marine Ecology**

<table>
<thead>
<tr>
<th>Year, Semester</th>
<th>Course Title</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, All students</td>
<td>QMEC 5110 Structure &amp; Management of Research Projects</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>QMEC 5120 Design &amp; Analysis of Sampling</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>QMEC 5140 Intro to Assessment of Living Marine Resources</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>QMEC 5150 Ecological Science &amp; Environmental Impact Assessment</td>
<td>6</td>
</tr>
</tbody>
</table>

**Year 1, Semester 2**

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>QMEC 5270 Environmental Impacts &amp; Ecological Restoration</td>
<td>12</td>
</tr>
<tr>
<td>QMEC 5280 Conservation &amp; Biodiversity</td>
<td>12</td>
</tr>
<tr>
<td>QMEC 5290 Assessment of Living Marine Resources</td>
<td>12</td>
</tr>
</tbody>
</table>

**Year 2, Semester 1**

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>QMEC 5310 Project: Environmental Impacts &amp; Restoration</td>
<td>12</td>
</tr>
<tr>
<td>QMEC 5320 Project: Conservation &amp; Biodiversity</td>
<td>12</td>
</tr>
<tr>
<td>QMEC 5330 Project: Assessment of Living Marine Resources</td>
<td>12</td>
</tr>
</tbody>
</table>

QMEC 5110 Structure & Management of Research Proj
6 credit points. Session: 1.
Developing an understanding of the management of ecological/ environmental research projects through phases of recognition, definition, explanation, sampling, analysis, interpretation, conclusions and action requires realization of the nature of scientific aspects of problem solving. This unit will integrate the logical basis of the problem being investigated with the management of the quantitative data needed to interpret such problems.

QMEC 5120 Design and Analysis of Sampling (Intro)
6 credit points. Session: 1.
This unit introduces ecological variables in spatial hierarchies and how to estimate means and variances, with simple linear relationships between ecological variables. The unit demonstrates decision making using statistical estimates.

QMEC 5140 Intro Assessment:Living Marine Resources
6 credit points. Session: 1.
An overview of the application of modelling methods for marine resource assessment. Candidates will build deterministic and stochastic simulation models of fisheries and modify these to reflect management options and performance criteria. The written report of this modelling exercise will be assessed.

QMEC 5150 Ecological Sci & Enviro Impact Assess
6 credit points. Session: 1.
This unit includes lectures, tutorials and assessment that will provide the candidate with a critical understanding of the role of ecological science within environmental impact assessment (EIA). Guidelines for EIA shall be studied along with several environmental impact statements (EIS) for proposals within the marine environment. Candidates will learn to identify if the ecological science presented within these EIS meets appropriate scientific standards and is adequate to meet the guidelines for EIA in NSW.

QMEC 5270 Enviro Impacts & Ecological Restoration
12 credit points. Session: 2. Prerequisite: QMEC (5110 and 5120 and 5140 and 5150).
This unit is comprised of several topics that are described below:

**Design and Analysis of Sampling**

This topic builds from the introduction in QMEC 5120 to develop concepts of linear models and combinations of ecological variables. The topic leads to general skills with design of sampling programs to detect specified patterns in temporally variable and spatially patchy habitats.

**Legislative and Policy Frameworks**

In this topic, the regulatory and policy frameworks for environmental assessments are identified. A particular focus is on guidelines for professional consultants in quantitative aspects of sampling and monitoring.

**Analysis of Multivariate Data**

This topic emphasises conceptual understanding and applied usage of advanced analytical methods. Implementation and interpretation of methods in applied research with complex experimental designs and structures are emphasized.

**Environmental Impact Assessment**

Quantitative analyses to test hypotheses about environmental impacts are generally asymmetrical because disturbances are usually in one area, while many reference or locations are available to provide realistic contrasts. Beyond BACI procedures and other modern approaches solve the problems. In this topic, their use is explained and practical examples explored.

**Numerically Intensive Statistical Methods**

Candidates will be given the necessary computing skills and theoretical knowledge to tackle various problems using numerically intensive methods such as bootstrapping and permutation tests.

**Ecological Restoration**

This unit will introduce the participants to the scientific background and quantitative nature of ecological restoration, thereby emphasizing it as a scientific discipline. It will discuss the logical framework for restoration, how this leads to appropriate sampling designs and analyses to measure it and the consequences of ignoring such a quantitative approach. Methods of measuring and analysing restoration will be illustrated with practical examples and field studies.
QMEC 5280 Conservation and Biodiversity
12 credit points. Session: 2. Prerequisite: QMEC 5110, QMEC 5120, QMEC 5140 and QMEC 5150.

This unit is comprised of several topics that are described below:

**Design and Analysis of Sampling**
This topic builds from the introduction in QMEC 5120 to develop concepts of linear models and combinations of ecological variables. The topic leads to general skills with design of sampling programs to detect specified patterns in temporally variable and spatially patchy habitats.

**Legislative and Policy Frameworks**
In this topic, the regulatory and policy frameworks for environmental assessments are identified. A particular focus is guide lines for professional consultants in quantitative aspects of sampling and monitoring.

**Analysis of Multivariate Data**
This topic emphasises conceptual understanding and applied usage of advanced analytical methods. Implementation and interpretation of methods in applied research with complex experimental designs and structures are emphasized.

**Analysis of Marine Biodiversity**
This topic will introduce the participants to the quantitative nature of marine biodiversity. Appropriate measurements of biodiversity are discussed and analysed.

**Numerically Intensive Statistical Methods**
Candidates will be given the necessary computing skills and theoretical knowledge to tackle various problems using numerically intensive methods such as bootstrapping and permutation tests.

**Ecological Restoration**
This unit will introduce the participants to the scientific background and quantitative nature of ecological restoration, thereby emphasizing it as a scientific discipline. It will discuss the logical framework for restoration, how this leads to appropriate sampling designs and analyses to measure it and the consequences of ignoring such a quantitative approach. Methods of measuring and analysing restoration will be illustrated with practical examples and field studies.

QMEC 5290 Assessment of Living Marine Resources
12 credit points. Session: 2. Prerequisite: QMEC 5110, QMEC 5120, QMEC 5140 and QMEC 5150.

This unit is comprised of several topics that are described below:

**Design and Analysis of Sampling**
This topic builds from the introduction in QMEC 5120 to develop concepts of linear models and combinations of ecological variables. The topic leads to general skills with design of sampling programs to detect specified patterns in temporally variable and spatially patchy habitats.

**Marine Population Dynamics and Stock Assessment**
This topic examines the statistical modelling techniques used to assess fish stocks. Approaches such as age structured modelling and yield per recruit analyses are covered in detail. Strategies for modelling the growth of individual fish and relationships between stock size and recruitment are also studied.

**Legislative and Policy Frameworks**
In this topic, the regulatory and policy frameworks for environmental assessments are identified. A particular focus is guide lines for professional consultants in quantitative aspects of sampling and monitoring.

**Numerically Intensive Statistical Methods & Monte Carlo Simulation**
Candidates will be given the necessary computing skills and theoretical knowledge to tackle various problems using numerically intensive methods such as bootstrapping and Monte Carlo Simulation.

QMEC 5310 Project: Environment Impacts/Restoration
12 credit points. Session: 1, 2. Corequisite: QMEC 5270.

The unit will provide candidates with the necessary skills and experience for them to either commence a Ph.D. in marine ecology, environmental management or other related fields. Candidates will initiate a research project of their own design, but will be supervised in all aspects of developing it as a M.Sc. level thesis. This will involve identifying and understanding the logical basis of the questions being asked, the sampling design, methods and analyses to answer them, the collection of data and interpretation of the results with respect to the international

QMEC 5320 Project: Conservation and Biodiversity
12 credit points. Session: 1, 2. Corequisite: QMEC 5280.

The unit will provide candidates with the necessary skills and experience for them to either commence a Ph.D. in marine ecology, environmental management or other related fields. Candidates will initiate a research project of their own design, but will be supervised in all aspects of developing it as a M.Sc. level thesis. This will involve identifying and understanding the logical basis of the questions being asked, the sampling design, methods and analyses to answer them, the collection of data and interpretation of the results with respect to the international literature. The research will be written up as a academic thesis and published in a peer reviewed journal (if of suitable quality).

QMEC 5330 Project: Assess Living Marine Resources
12 credit points. Session: 1, 2. Corequisite: QMEC 5290.

The unit will provide candidates with the necessary skills and experience for them to either commence a Ph.D. in marine resource assessment or commence employed work in this field. Candidates will complete a research project that requires them to complete a fishery resource assessment of interest to a state or federal management agency. Tasks will include liaison with the appropriate agency staff, quality assessment of data, parameter estimation, variance estimation and appropriate forecasts of management decisions. The assessment will be written up as a academic thesis and published in a peer reviewed journal (if of suitable quality).

**Mathematics**

Master of Science (coursework)
Note: This award course is not available to new students from 2002.
Master of Science Resolutions: see Chapter 7.

**Microscopy and Microanalysis**

Graduate Certificate in Science (Microscopy and Microanalysis)
Note: This award course is not available to new students from 2002.

Graduate Diploma in Science (Microscopy and Microanalysis)
Note: This award course is not available to new students from 2002.
Graduate Diploma in Science (Microscopy and Microanalysis) Resolutions: See Chapter 7.

Master of Science (Microscopy and Microanalysis)
Note: This award course is not available to new students from 2002.
Master of Science (Microscopy and Microanalysis) Resolutions: See Chapter 7.

See also: Graduate Certificate in Applied Science (Microscopy and Microanalysis), Graduate Diploma in Applied Science (Microscopy and Microanalysis) and Master of Applied Science (Microscopy and Microanalysis) later in this chapter.

**Nutrition and Dietetics**

Master of Nutrition and Dietetics

Course overview
The MNutDiet is a course designed to survey all aspects of human nutrition, with special emphasis on the needs of dietitians who will be working in Australia. It provides the basic training for hospital and community dietitians and nutritionists and is one of the recognised professional courses for dietitians in Australia.
The course requires two years of full time work and study. The first year consists of coursework, lectures, tutorials and practicals. In the second year, one semester is devoted to clinical training and the other semester is spent on a small research project. The dates for this course do not follow the undergraduate academic year. First year starts at the same time as undergraduate teaching but there is some work during vacations. Second year commences in late January.

Course outcomes
Upon completion of the course, the graduate will have a sound knowledge base in nutrition and dietetics, possess the skills to improve nutritional status of individuals, families and the community at large and to modulate the course of illness with dietetics. The graduate will be skilled in basic research and have a lifelong commitment to the pursuit of excellence in professional conduct.

Admission Requirements
Applicants must have a degree from a recognised institution and have completed two full semesters in Biochemistry and Human Physiology. For example, a student who completed a BSc at Sydney should have studied Biochemistry 2001(or MBLG 2001) and 2502 and Physiology 2001 and 2002. A student who has completed a BMedsSc should have completed the second year of the program. These subjects are required by the Dietitians Association of Australia.

Course requirements
First Year: This is an integrated academic year of teaching, practicals and study. As part of the course, students attend the Ryde College of Technical and Further Education for practicals in commercial cookery, followed by dietetic cookery. This costs an additional $550. All students take the courses listed below.

Second year: In the February semester of second year (Jan to June) approximately half of the class do a clinical and community dietetics training placement while the other half do a research project. Then in the July semester of second year (July to Nov) students cross over to the alternate course.

During the second year all students are required to attend formal lectures at the University on several days. Lectures on management, advanced clinical nutrition and advanced community nutrition are compulsory.

The units of study are supervised by a Program Committee in Nutrition and Dietetics, chaired by the Dean of the Faculty of Science.

Course Resolutions: see chapter 7.

### Master of Nutrition and Dietetics

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Credit points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Year 1, Semester 1</strong></td>
<td></td>
</tr>
<tr>
<td>NTDT 5301 Nutritional Science</td>
<td>8</td>
</tr>
<tr>
<td>NTDT 5302 Food Science</td>
<td>4</td>
</tr>
<tr>
<td>NTDT 5303 Dietary Intake &amp; Nutrition</td>
<td>4</td>
</tr>
<tr>
<td>NTDT 5304 Principles of Dietetic Practice</td>
<td>2</td>
</tr>
<tr>
<td>NTDT 5305 Food Service Management</td>
<td>6</td>
</tr>
<tr>
<td><strong>Year 1, Semester 2</strong></td>
<td></td>
</tr>
<tr>
<td>NTDT 5307 Clinical Nutrition &amp; Dietetics</td>
<td>12</td>
</tr>
<tr>
<td>NTDT 5308 Community &amp; Public Health</td>
<td>10</td>
</tr>
<tr>
<td>NTDT 5309 Communication</td>
<td>2</td>
</tr>
<tr>
<td><strong>Year 2, Semester by arrangement</strong></td>
<td></td>
</tr>
<tr>
<td>NTDT 5310 Nutrition Research Project</td>
<td>24</td>
</tr>
<tr>
<td>NTDT 5311 Nutrition Practice</td>
<td>12</td>
</tr>
<tr>
<td>NTDT 5312 Nutrition &amp; Dietetics Training Placement</td>
<td>12</td>
</tr>
<tr>
<td><strong>NTDT 5301 Nutritional Science</strong></td>
<td></td>
</tr>
<tr>
<td>8 credit points. Dr Samir Samman. Session: 1.</td>
<td></td>
</tr>
<tr>
<td>The study of biochemical interrelationships between nutrients, energy supply and modification of metabolism by disease; the study of the macronutrients i.e., protein, fat, carbohydrate, energy and the micronutrients i.e., vitamins and minerals.</td>
<td></td>
</tr>
<tr>
<td><strong>NTDT 5302 Food Science</strong></td>
<td></td>
</tr>
<tr>
<td>4 credit points. Prof. J Brails Miller. Session: 1</td>
<td></td>
</tr>
<tr>
<td>The study of nutritional content, production and consumption of major foods, and the study of principles of food preservation, processing, safety and microbiology.</td>
<td></td>
</tr>
<tr>
<td><strong>NTDT 5303 Dietary Intake &amp; Nutritional Assessment</strong></td>
<td></td>
</tr>
<tr>
<td>4 credit points. Dr Karen Webb. Session: 1.</td>
<td></td>
</tr>
<tr>
<td>The study of methodology for assessing dietary intake and nutritional status.</td>
<td></td>
</tr>
<tr>
<td><strong>NTDT 5304 Principles of Dietetic Practice</strong></td>
<td>2 credit points. Dr D Volker. Session: 1.</td>
</tr>
<tr>
<td><strong>NTDT 5305 Food Service Management</strong></td>
<td>6 credit points. Ms Maria Kokkinakos. Session: 1.</td>
</tr>
<tr>
<td><strong>NTDT 5307 Clinical Nutrition and Dietetics</strong></td>
<td>12 credit points. Dr D Volker. Session: 2.</td>
</tr>
<tr>
<td><strong>NTDT 5308 Community and Public Health Nutrition</strong></td>
<td>10 credit points. Ms Sue Amanatidis. Session: 2.</td>
</tr>
<tr>
<td><strong>NTDT 5309 Communication</strong></td>
<td>2 credit points. Ms Veronica Taffs. Session: 2.</td>
</tr>
<tr>
<td><strong>NTDT 5310 Nutrition Research Project</strong></td>
<td>24 credit points. Dr Samir Samman. Session: 1, 2.</td>
</tr>
<tr>
<td><strong>NTDT 5311 Nutrition Practice</strong></td>
<td>12 credit points. Ms Nicola Riley. Session: 1, 2.</td>
</tr>
<tr>
<td><strong>NTDT 5312 Nutrition &amp; Dietetics Training Placement</strong></td>
<td>12 credit points. Ms Nicola Riley. Session: 1, 2.</td>
</tr>
<tr>
<td><strong>NTDT 5313 Nutrition Research Project units</strong></td>
<td></td>
</tr>
<tr>
<td>The following units of study are for students who have completed the DipNutrDiet and are upgrading to the MNutrDiet.</td>
<td></td>
</tr>
<tr>
<td><strong>NTDT 5321 Nutrition Research Project (Full Time)</strong></td>
<td>24 credit points. Session: 1, 2.</td>
</tr>
<tr>
<td><strong>NTDT 5322 Nutrition Research Project A</strong></td>
<td>12 credit points. Session: 1, 2.</td>
</tr>
<tr>
<td><strong>NTDT 5323 Nutrition Research Project B</strong></td>
<td>12 credit points. Session: 1, 2.</td>
</tr>
<tr>
<td><strong>Master of Nutritional Science</strong></td>
<td></td>
</tr>
</tbody>
</table>

Course overview
The MNutrSc provides the same survey of all aspects of human nutrition in the first year as the MNutrDiet, but is designed for those persons who wish to pursue a career in nutrition research. The second year is devoted to a research project, with regular seminars. Students have a range of areas to choose from for their
research year, for example sports nutrition, lipid biochemistry, infant nutrition or ecological research.

**Course outcomes**
Upon completion of the course the graduate will have a sound knowledge base in nutritional science and possess the skills to conduct nutrition research projects.

**Course requirements**
First year: The first year coursework and practicals coincide with those for MNutrDiet except that NTDT 5305 is replaced with the units of study NTDT 5306 and NTDT 5315.

Second year: The second year is devoted to a full time research project, supervised by a member of the academic staff of the Human Nutrition unit, which is written up for assessment in a short thesis. Students enrol in NTDT 5313 and NTDT 5314.

**Admission**
Applicants must have a degree from a recognised institution and have completed two full semesters in Biochemistry and Human Physiology. However, the requirement for 2nd year university physiology can be replaced by such alternatives as a third year course in Biochemistry or in Food Science. Application forms are available from the Faculty of Science. Applications close in early November and should be lodged with the Faculty of Science together with your academic record.

**Course Resolutions:** see chapter 7.

**Unit of study descriptions**
See also units listed under first year for Master of Nutrition and Dietics (above).

---

**Master of Nutritional Science**

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Credit points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1, Semester 1</td>
<td></td>
</tr>
<tr>
<td>NTDT 5301 Nutritional Science</td>
<td>8</td>
</tr>
<tr>
<td>NTDT 5302 Food Science</td>
<td>.4</td>
</tr>
<tr>
<td>NTDT 5303 Dietary Intake &amp; Nutrition</td>
<td>4</td>
</tr>
<tr>
<td>NTDT 5304 Principles of Diabetic Practice</td>
<td>2</td>
</tr>
<tr>
<td>NTDT 5306 Introduction to Food Service</td>
<td>3</td>
</tr>
<tr>
<td>NTDT 5315 Scientific Methodology in Nutrition</td>
<td></td>
</tr>
<tr>
<td>Year 2, Semester 2</td>
<td></td>
</tr>
<tr>
<td>NTDT 5307 Clinical Nutrition &amp; Diabetics</td>
<td>12</td>
</tr>
<tr>
<td>NTDT 5308 Community &amp; Public Health</td>
<td>10</td>
</tr>
<tr>
<td>NTDT 5309 Communication</td>
<td>2</td>
</tr>
<tr>
<td>Year 2</td>
<td>24</td>
</tr>
<tr>
<td>NTDT 5313 Nutritional Science Research A</td>
<td>24</td>
</tr>
<tr>
<td>NTDT 5314 Nutritional Science Research B</td>
<td>24</td>
</tr>
<tr>
<td>NTDT 5306 Introduction to Food Service</td>
<td>3 credit points, Ms Maria Kokkinakos, Session: 1.</td>
</tr>
<tr>
<td>An introduction to food service systems in institutions.</td>
<td></td>
</tr>
<tr>
<td>NTDT 5315 Scientific Methodology in Nutrition</td>
<td>3 credit points, Dr Samir Samman, Session: 1.</td>
</tr>
<tr>
<td>A small report on the desired area of research in year 2.</td>
<td></td>
</tr>
<tr>
<td>NTDT 5313 Nutritional Science Research A</td>
<td>24 credit points, Session: 1.</td>
</tr>
<tr>
<td>Students have a range of areas to choose from for their research year — eg, sports nutrition, lipid biochemistry, infant nutrition or ecological research.</td>
<td></td>
</tr>
<tr>
<td>NTDT 5314 Nutritional Science Research B</td>
<td>24 credit points, Session: 2.</td>
</tr>
</tbody>
</table>

---

**Psychology**

**Graduate Diploma in Psychology**

**Course outcomes**
Upon completion of the course, the graduate will have a Psychology major, accredited by the Australian Psychological Society, equivalent to that available in the Bachelor of Arts, Bachelor of Science, Bachelor of Economics (Social Science) or Bachelor of Liberal Studies. They will have studied all basic areas of experimental Psychology, statistical methods in Psychology, and an extensive range of optional topics. They will be eligible to apply to continue to a fourth year in Psychology, either in Psychology 4 (Honours) or the Graduate Diploma in Science (Psychology), and from there to a higher degree in Psychology.

**Eligibility for admission**
1. The Faculty of Science may admit to candidature applicants who hold the award course of Bachelor of Science, Bachelor of Arts, Bachelor of Economics (Social Science), or Bachelor of Liberal Studies from the University of Sydney, or equivalent degree as deemed by the Faculty, who have not previously completed a major in Psychology. When assessing an applicant, both undergraduate record and UAI (or equivalent) may be taken into account.

2. Applicants must have already successfully completed 12 credit points of Junior Psychology (currently PSYC 1001 and 1002) or equivalent.

**Method of progression**

Students are required to study a minimum of 48 credit points of Intermediate and Senior level Psychology. This shall consist of 16 credit points of Intermediate Psychology (currently PSYC 2111, 2112, 2113 and 2114) and a minimum of 32 credit points of Senior Psychology. To be eligible for study in Psychology beyond the Graduate Diploma at the University of Sydney, students must, except with School approval, include PSYC 3201 Statistics and Psychometrics and PSYC 3202 History of Philosophy of Psychology. Students may study additional Senior Psychology if they wish.

Individual unit of study qualifying units will apply, so that normally progression will be over a minimum of four semesters.

**Exemptions and Advanced Standing**

Students may apply for exemptions if they have already completed studies which the Faculty deems equivalent to those in the program. Such units of study must have been completed within the previous ten years.

The amount of exemptions allowed will not exceed Faculty of Science regulations or will not exceed 24 credit points, whichever is the lower.

**Units of study for Graduate Diploma in Psychology**

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC2111 Learning, Neuroscience and Perception</td>
<td>4</td>
</tr>
<tr>
<td>PSYC2112 Psychological Statistics</td>
<td></td>
</tr>
<tr>
<td>PSYC2113 Cognitive Processes and Social Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC2114 Personality and Individual Differences</td>
<td></td>
</tr>
<tr>
<td>PSYC3201 Statistics and Psychometrics</td>
<td></td>
</tr>
<tr>
<td>PSYC3202 History and Philosophy of Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC3203 Abnormal Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC3204 Behavioural Neuroscience</td>
<td></td>
</tr>
<tr>
<td>PSYC3205 Cognition, language and thought</td>
<td></td>
</tr>
<tr>
<td>PSYC3206 Developmental Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC3208 Intelligence</td>
<td></td>
</tr>
<tr>
<td>PSYC3209 Learning and Motivation</td>
<td></td>
</tr>
<tr>
<td>PSYC3210 Perceptual Systems</td>
<td></td>
</tr>
<tr>
<td>PSYC3211 Psychological Assessment and Organisational</td>
<td></td>
</tr>
<tr>
<td>PSYC3212 Social Psychology</td>
<td></td>
</tr>
<tr>
<td>PSYC3214 Communication and Counselling</td>
<td></td>
</tr>
<tr>
<td>PSYC3215 Cognitive neuroscience &amp; neuropsychology</td>
<td></td>
</tr>
<tr>
<td>PSYC3216 Health and Safety Psychology Principles</td>
<td></td>
</tr>
</tbody>
</table>

See chapter 3 for unit of study descriptions.

**Course Resolutions:** see chapter 7.

**Graduate Diploma in Science (Psychology)**

**Award Course overview**

The Graduate Diploma in Science (Psychology) is an Honours equivalent (in the terms used by the Australian Psychological Society) fourth year of study in Psychology. It is designed to meet the needs of students wishing to continue with Psychology but who have not completed a four year Honours program. The diploma requires one year of full time or two years of part time study.

**Course outcomes**

Upon completion of this course the graduate will have a sound background in significant issues in general and applied psychology, an understanding of research methodology in both experimental and field studies contexts, be capable of finding and assessing relevant research literature, be eligible to apply for further programs of study in psychology and be prepared to undertake supervised training in certain professional areas of psychology.

**Eligibility for admission**

The Resolutions of the Senate state, in part, that:

1. (1) The Faculty of Science, on the recommendation of the appropriate Interdepartmental Committee, may admit to candidature the following:
Graduate Diploma in Science (Psychology): an applicant who is a holder of a Bachelors degree with an APS accredited major in Psychology within the past 10 years from a recognised tertiary institution and has achieved a minimum of Credit average in senior (third) year units of study which includes a unit in statistics/research methods which meets the requirements of the School.

**Course requirements**

The program involves attending lectures and seminars in six units and completing a research project. The compulsory (core) units include Psychology Honours program. Contribution: 10% of total mark.

**PSYC 4719 Special Fields Topic (B)**
5 credit points. Session: 2.

Students choose one of the following topics, which must be different from that chosen in PSYC 4715 Special Fields Topic A.

The 9 available research seminar areas are: Abnormal Psychology, Cognitive Processes, Developmental, Individual Differences, Learning, Neuroscience, Perception, Social Psychology and Theory & Systems, which are offered as part of the Psychology Honours program. Contribution: 10% of total mark.

**PSYC 4716 Health and Safety Psychology Issues**
5 credit points. Session: 2.

This addresses theoretical and empirical issues associated with a number of health and medical conditions. Discussion includes issues such as definition and scope of health psychology, health beliefs, compliance with medical regimens, risk perception and risk taking, and the conceptualisation of stress. Contribution: 10% of total mark.

**PSYC 4717 Counselling Psychology**
5 credit points. Session: 2.

Topics will be selected and developed on the basis of the experience and interests of the class members. Selections will be made from these topics: Skills oriented models of individual counseling, focusing on the organizing principles of counseling as proposed by various theoretical viewpoints; Relational counseling, extending theories and principles of individual counseling to relational work and issues; Applying counseling theory and skills in various cultural and community settings industry, education, personal growth, vocational guidance, rehabilitation, health, grief, and specific contemporary issues (eg, domestic violence, suicide, stress); Professional issues supervision, burnout, ethics, professional associations, using research to guide and inform counseling practice.

Contribution: 10% of the final mark.

**PSYC 4718 Psychology of Addiction**
5 credit points. Session: 2.

This deals with addiction from two perspectives. The first is primarily biological, focusing on biological, pharmacological, genetic, sociopolitical and clinical aspects of addiction to psychoactive drugs. The second is primarily social, focusing on conceptual issues in defining addiction and the extent to which the notion of addiction can be extended validly to include excessive behaviours that do not involve drugs. Contribution: 10% of total mark.

**PSYC 4710 Research Project (A)**
9 credit points. Session: 1.

In this year long component students complete an individual research project under supervision of a member of the academic staff. A 9000 word report is assessed by at least two independent examiners. Contribution: 40% of total mark.

**PSYC 4720 Research Project (B)**
9 credit points. Session: 2.

See description under Research Project A (PSYC 4710) above.

**Units of study available in 2003**

**PSYC 5106 Research Thesis A**
6 credit points. Session: 1.

NB: Department permission required for enrolment.

**PSYC 5107 Assessment Placement**
6 credit points. Session: 2.

NB: Department permission required for enrolment.

**PSYC 5109 Family, Couple and Sex Therapy**
4 credit points. Session: 2.

NB: Department permission required for enrolment.
POSTGRADUATE DEGREE REQUIREMENTS

Course requirements

To qualify for award of the Graduate Certificate in Applied Science candidates must complete 24 credit points of units of study approved for the relevant field of study.

To qualify for award of the Graduate Diploma in Applied Science candidates must complete 36 credit points of units of study approved for the field of study.

To qualify for award of the Master of Applied Science candidates must complete 48 credit points of units of study approved for the field of study.

All units of study for a particular subject area may not be available every semester. The Faculty may allow substitution of any unit of study by an approved unit of study, including units of study from other postgraduate coursework programs in the Faculty or elsewhere in the University.

Credit for previous study

Credit is not available in the Graduate Certificate in Applied Science, Graduate Diploma in Applied Science and Master of Applied Science for postgraduate study which has not been undertaken in these award courses within the previous three years, except at the discretion of the Dean.

A candidate who has qualified for the award of the Graduate Diploma in Applied Science and receive credit for up to 24 credit points from the Graduate Certificate in Applied Science!

A candidate who has qualified for the award of the Graduate Diploma in Applied Science may transfer, within three years, to the Master of Applied Science and receive credit for up to 36 credit points from the Graduate Diploma in Applied Science.

A candidate who has completed units of study in the Applied Science program within the previous three years, but has not qualified for an award, may transfer to another award within the same Applied Science program and receive credit for the units of study completed.

Course Resolutions: see chapter 7.

■ Bioinformatics

Graduate Certificate in Applied Science (Bioinformatics)

Graduate Diploma in Applied Science (Bioinformatics)

Master of Applied Science (Bioinformatics)

Course Overview

The Graduate Certificate in Applied Science (Bioinformatics), Graduate Diploma in Applied Science (Bioinformatics) and Master of Applied Science (Bioinformatics) are articulated award courses that provide a professional qualification to biologists and computer scientists working in industry, research and education. The award program brings together the disciplines of computer science, statistics and the life sciences, developing and enhancing skills in bioinformatics. Students with little background in molecular biology who want to extend their understanding of the biosciences, statistics and bioinformatics will follow Stream A. Students who have a strong background in molecular biology and want to study bioinformatics, statistics and computer science should follow Stream B. The Program has core and optional units of study to satisfy both of these requirements and will produce graduates with skills in the disciplines that underpin bioinformatics and in bioinformatics itself. Graduates from the Bioinformatics Program will be proficient in molecular biology, genetics and bioinformatics. (Biology graduates who want to learn about computer programming are directed to the Postgraduate Program in Applied Information Technology.)

Course Outcomes

The aim of this articulated coursework program is to provide students with a coordinated approach to bioinformatics, thus developing expertise to perform and develop the analysis of biological data with underlying competencies in the life sciences, computer science and statistics. Upon completion of the Graduate Certificate, Graduate Diploma or Masters, graduates will have a broad understanding of the topic of bioinformatics.
addition, the Masters will provide the option of experience in carrying out and completing a research project and report.

Admission Requirements
Applicants for the Graduate Certificate in Applied Science (Bioinformatics) should hold a first degree in science (computer science or molecular biology).
Applicants for the Graduate Diploma in Applied Science (Bioinformatics) similarly should hold a first degree in science (computer science or molecular biology), or have completed the Graduate Certificate in Applied Science (Bioinformatics).
Applicants for the Master of Applied Science (Bioinformatics) should hold a first degree in science (computer science or molecular biology), or have completed the Graduate Diploma in Applied Science (Bioinformatics).

Course Requirements
To qualify for award of the Graduate Certificate in Applied Science (Bioinformatics), candidates must complete 24 credit points from the four core units of study (Stream A and B).
To qualify for award of the Graduate Diploma in Applied Science (Bioinformatics), candidates must complete 24 credit points from the four core units and 12 credit points from the optional units of study shown (Stream A), or 30 credit points from the five core units and 6 credit points from the optional units of study (Stream B), as described in the table below.
To qualify for award of the Master of Applied Science (Bioinformatics), candidates must complete 24 credit points from four core units and 24 credit points from the optional units of study (Stream A), or 30 credit points from five core units and 18 credit points from the optional units of study (Stream B), as described in the table below.

Not all units of study will be available every semester. The faculty may allow substitution of any unit of study by an approved unit of study from other postgraduate coursework programs in the Faculty or elsewhere in the University.

Credit for previous study
See Graduate Certificate, Graduate Diploma and Master of Applied Science in this chapter or Course Resolutions in chapter 7.

Master of Applied Science (Bioinformatics)

Unit of study

Core

Stream A
Graduate Certificate
BCHM 5001 Structural & Functional Proteomics C
BIOL 5001 Molecular Genetics & Inheritance C
BIOL 5002 Bioinformatics: Sequences & Genomes C
STAT 5001 Applied Statistics for Bioinformatics C
Graduate Diploma and Masters additional units
BINF 5002 Bioinformatics Research Project A
BINF 5003 Bioinformatics Research Project B
COMP 5213 Computer & Network Organisation
COMP 5214 Software Development in Java
Stream B
Graduate Certificate
BCHM 5001 Structural & Functional Proteomics C
BIOL 5002 Bioinformatics: Sequences & Genomes C
COMP 5213 Computer & Network Organisation C
STAT 5001 Applied Statistics for Bioinformatics C
Graduate Diploma and Masters additional units
COMP 5214 Software Development in Java C
BIOL 5001 Molecular Genetics & Inheritance C
BINF 5002 Bioinformatics Research Project A
BINF 5003 Bioinformatics Research Project B
BCHM 5001 Structural and Functional Proteomics C

Function; gene expression technology; DNA, oligonucleotide and protein microarrays; mutagenic screening in yeast; gene expression; status of genomics and proteomics arenas; two dimensional gel electrophoresis, mass spectrometry, mass maps and tags, protein sequencing, automation and sample handling, robotics, HTML and other Web based languages, tools for sequence identification.

BINF 5002 Bioinformatics Research Project A
6 credit points. Session: 1, 2. Corequisite: BIOL (5001 and 5002) and BCHM 5001 and STAT 5001.

NB: Department permission required for enrolment.
BINF 5002 comprises the commencement of a research project on a topic with significant emphasis on the use of bioinformatics tools to address important questions in the areas of biology, biochemistry, maths and stats, computer science, crop and veterinary sciences, and medical science. Students will be working with an appointed supervisor from the Faculties of Agriculture, Science, Veterinary Science, and Medicine or from industry under the guidelines of the convenor. Students will commence a small research project in an area agreed by the student, the supervisor and the convenor. Research experience is highly valued by prospective employers as it shows a willingness and ability to undertake independent, as well as guided, research in bioinformatics. The project is not conducted in the way of contact hours per week for a semester. Rather, the student is expected to work in a continuous manner throughout the semester.

BINF 5003 Bioinformatics Research Project B
6 credit points. Session: 1, 2. Corequisite: BIOL (5001 and 5002) and BCHM 5001 and STAT 5001.

NB: Department permission required for enrolment.
BINF 5003 comprises the continuation of a research project commenced in BINF 5002 on a topic with significant emphasis on the use of bioinformatics tools to address important questions in the areas of biology, biochemistry, maths and stats, computer science, crop and veterinary sciences, and medical science. Students will be working with an appointed supervisor from the Faculties of Agriculture, Science, Veterinary Science, and Medicine or from industry under the guidelines of the convenor. The research project will be in an area agreed by the student, the supervisor and the convenor. Research experience is highly valued by prospective employers as it shows a willingness and ability to undertake independent, as well as guided, research in bioinformatics. The project is not conducted in the way of contact hours per week for a semester. Rather, the student is expected to work in a continuous manner throughout the semester.

BCHM 5001 Molecular Genetics and Inheritance
6 credit points. Session: 2.
The fundamentals of inheritance and applications of molecular genetics will be covered. At the completion of the unit, students will be able to recognise the most common modes of inheritance, understand the fundamentals of linkage analysis, be familiar with common genome structures, be familiar with modes of transmission and mechanisms of change in genetic material, be familiar with the genetic mechanisms behind complex biological systems, understand basic methods in recombinant DNA technology, be adept at applying genetics to solving problems in biology and understand the fundamentals of quantitative and population genetics.

BCHM 5002 Bioinformatics: Sequences and Genomes
6 credit points. Session: 2. Corequisite: BIOL 5001.
A unit of study of lectures, practical assignments and tutorials on the application of bioinformatics to the storage, retrieval and analysis of biological information, principally in the form of nucleotide and amino acid sequences. Although the main emphasis is on sequence data, other forms of biological information such as protein structures, chemical structures and pharmaceuticals are considered, together with classical taxonomy and biodiversity. The unit begins with the assembly and management of nucleotide sequence data and an introduction to the databases that are normally used for the storage and retrieval of biological data, and continues with signal detection and analysis of deduced products, sequence alignment, and database search methods. Phylogenetic reconstruction based on distance based methods, parsimony methods and maximum likelihood methods is described and students are introduced to the idea of tree space, phylogenetic uncertainty, and taught to evaluate phylogenetic trees and identify factors that will
confound phylogenetic inference. Finally, whole genome analysis and comparative genomics are considered. The unit gives students an appreciation of the significance of bioinformatics in contemporary biological science by equipping them with skills in the use of a core set of programs and databases for 'in silico' biology, and an awareness of the breadth of bioinformatics resources and applications.

COMP 5213  **Computer and Network Organisation** 6 credit points.  **Session:** 1, 2.  **Classes:** 2 lec & 1 tut/wk.  **Assessment:** Assignments, written exam.  **Elementary**  
This unit of study is an overview of hardware and system infrastructure software including compilers, operating systems, device drivers, network protocols, etc. It also includes user level Unix skills and network usability.  **Objectives**  
This unit of study provides an overview of hardware and system infrastructure software including compilers, operating systems, device drivers, network protocols, etc. It also includes user level Unix skills and network usability.

COMP 5214  **Software Development in Java** 6 credit points.  **Session:** 1, 2.  **Classes:** 2 lec & 1 tut/wk.  **Assessment:** Assignments, written exam.  **Elementary**  
This unit of study introduces software development method with main emphasis on the careful adherence to a process. It includes design methodology, quality assurance, group work, version control, and documentation. It will suit students who do not come from programming background and will not go into programming but want to know computer software.  **Objectives**  
This unit of study covers system analysis, design methodology, quality assurance, group collaboration, version control, software delivery and system documentation.

STAT 5001  **Applied Statistics for Bioinformatics** 6 credit points.  **Session:** 1.  **Objectives**  
This is an introduction to statistics and data analysis used in Bioinformatics and many other areas of Biology. It aims to give an understanding of the concepts and the use of a major scientific statistical package, Splus. In addition to an introduction to ideas of analysis of data and statistical testing the unit will introduce ideas of simulation in resampling and the methods of clustering and classification of particular importance in Bioinformatics.

### Coastsal Management

#### Graduate Certificate in Applied Science (Coastal Management)

#### Graduate Diploma in Applied Science (Coastal Management)

#### Master of Applied Science (Coastal Management)

**Course Overview**  
The University of Sydney Institute of Marine Science in collaboration with the Department of Land and Water Conservation, the NSW Coastal Council and Surf Life Saving Australia has developed a new and innovative graduate program in Coastal Management. This program is the only one of its kind in Australia, and has been designed and will be taught by leading researchers and practitioners of coastal management.

It will be taught primarily in coastal locations in the Sydney region. It will draw on local coastal management systems, issues and problems as part of the program material. It will also make use of the new (2003) NSW Coastal Policy and Coastal Management Manual to provide students with an in depth understanding of all aspects of coastal management. The program will include units on coastal processes and systems, coastal zone policy and management, beach management and the application of geographical information systems (GIS) to the coastal zone.

The program is ideal for recent graduates who wish to extend their knowledge of coastal and beach management, and for coastal practitioners in local, state, federal and other agencies and in industry who require additional training and knowledge of coastal management policy and issues. The program will provide formal training and also enable students to undertake a supervised coastal management project. A key aspect of all Masters units will be a broad on site exposure to coastal processes, systems, issues and real management problems in the greater Sydney region, and in some units in regional NSW.

**Course outcomes**  
Upon completion of the Graduate Certificate graduates will possess a practical and theoretical background in a range of issues related to coastal management. This knowledge can be extended by completion of a Graduate Diploma, and further extended through course work and research projects as part of a Masters program.

**Admission Requirements**  
Applicants for the Graduate Certificate should hold a Bachelor's degree appropriate for the field of study, or experience which is considered to demonstrate the knowledge and aptitude required to undertake the units of study.

Applicants for the Graduate Diploma should hold a Bachelor's degree appropriate for the field of study, or have an equivalent standard of knowledge; or have completed the Graduate Certificate in Applied Science (Coastal Management).

Applicants for the Master of Applied Coastal Management should hold a Bachelor's degree appropriate for the field of study, or have an equivalent standard of knowledge; or have completed the Graduate Diploma in Applied Science (Coastal Management).

**Course Requirements**  
To qualify for award of the Graduate Certificate in Applied Science (Coastal Management) students are required to satisfactorily complete 24 credit points of units of study including 12 from the core units and 12 from the remaining core and/or optional units, as described in the table below.

To qualify for award of the Graduate Diploma in Applied Science (Coastal Management) students are required to satisfactorily complete 36 credit points of units of study including 24 from the core units and 12 from the optional units, as described in the table below.

To qualify for award of the Masters of Applied Science (Coastal Management) students are required to satisfactorily complete 48 credit points of units of study including 24 from the core units and 24 from the optional units, as described in the table below.

**Credit for previous study**  
See Graduate Certificate, Graduate Diploma and Master of Applied Science in this chapter of Course Resolutions in chapter 7.

#### Master of Applied Science (Coastal Management)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Core/option</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Graduate Certificate</strong></td>
<td></td>
</tr>
<tr>
<td>MARS 5001 Coastal Processes &amp; Systems</td>
<td>C/O</td>
</tr>
<tr>
<td>MARS 5002 Coastal Zone Management</td>
<td>C/O</td>
</tr>
<tr>
<td>MARS 5003 Beach Management</td>
<td>C/O</td>
</tr>
<tr>
<td>GEOG5001 Geographic Information Systems</td>
<td>C/O</td>
</tr>
<tr>
<td><strong>Graduate Diploma and Masters</strong></td>
<td></td>
</tr>
<tr>
<td>MARS 5001 Coastal Processes &amp; Systems</td>
<td>C</td>
</tr>
<tr>
<td>MARS 5002 Coastal Zone Management</td>
<td>C</td>
</tr>
<tr>
<td>MARS 5003 Beach Management</td>
<td>C</td>
</tr>
<tr>
<td>GEOG 5001 Geographic Information Systems</td>
<td>C</td>
</tr>
<tr>
<td>MARS 5004 Coastal Management Field School</td>
<td>0</td>
</tr>
<tr>
<td><strong>Masters</strong></td>
<td></td>
</tr>
<tr>
<td>MARS 5005 Coastal Management Project (12cp)</td>
<td>O</td>
</tr>
<tr>
<td><strong>Optional units all degrees</strong></td>
<td></td>
</tr>
<tr>
<td>CHEM 5001 Information Retrieval in the Sciences</td>
<td>O</td>
</tr>
<tr>
<td>ENVI 5705 Ecological Principles for Scientists</td>
<td>O</td>
</tr>
<tr>
<td>ENVI 5803 Law &amp; the Environment</td>
<td>O</td>
</tr>
<tr>
<td>ENVI 5808 Applied Ecology for Environmental Scientists</td>
<td>O</td>
</tr>
<tr>
<td>ENVI 5809 Computer Modelling &amp; Resource Management</td>
<td>O</td>
</tr>
<tr>
<td>ICOM 5002 Science Communication</td>
<td>O</td>
</tr>
<tr>
<td>ICOM 5003 Commercialisation of Science</td>
<td>O</td>
</tr>
<tr>
<td>QMCE 5110 Structure &amp; management of Research Projects</td>
<td>O</td>
</tr>
<tr>
<td>QMCE 5150 Ecological Sci. &amp; Environmental Impact Assess.</td>
<td>O</td>
</tr>
</tbody>
</table>

**MARS 5001 Coastal Processes and Systems**  
6 credit points.  **Session:** 2.  **Corequisite:** MARS 5002, MARS 5003 and GEOG 5001.
This unit of study will examine the major coastal processes and systems of relevance to coastal zone management. These will include nearshore, estuarine and aeolian processes. Systems investigated will include rocky coasts and bluffs; beaches, barriers and dunes; and estuaries and inlets. The interaction between these processes and systems that are of most relevance to coastal management will be highlighted. These will include coastal hazards such as beach erosion, dune migration, bluff retreat, coastal flooding, inlet closure, and anthropogenic impacts such as pollution, storm water and acid sulphate soils. The unit will be presented both in lectures and field exercises, the latter enabling each system to be examined first hand.

MARS 5002 Coastal Zone Management
This unit explores various approaches to coastal zone management with an emphasis on the management process adopted in NSW. Students will explore a range of coastal management issues such as beach erosion, water quality, habitat conservation and climate change and discuss various policies and planning approaches to address these issues. The practicals, tutorials and field excursions will introduce students to a range of coastal zone issues and management responses with in the Sydney area.

MARS 5003 Beach Management
This unit of study focuses on the fundamental issues, strategies and infrastructure involved in the management of urban, rural and resort beach environments. At present, the concept and application of beach management is poorly defined. The goal of this unit of study is to provide an integrated and comprehensive template for beach management covering a range of issues such as beach hazard recognition and assessment, public safety and awareness, patterns of public beach usage, and the planning and undertaking of major events. Specific topics covered include hazardous wave and surf conditions, rip currents, lifeguarding, beach capacity, demographics of beach users, beach infrastructure, beach auditing, surf carnivals, sporting events and concerts. The unit will use lectures, real world scenarios, case studies and field exercises to enable students to develop beach management plans appropriate to their backgrounds.

MARS 5004 Coastal Management Field School
6 credit points. Session: 1, 2. Corequisite: MARS 5001, MARS 5002, MARS 5003 and GEOG 5001.
The field school will be based around visits to a series of coastal sites along the NSW coast. The unit will include a series of introductory lectures followed by visits to the sites where both unit staff and local coastal managers and stakeholders will address the students on the nature of the site, its historical development and contemporary coastal management issues and solutions. Sites will be selected to the representative of both the range of coastal systems present along the NSW coast, as well as the range of management issues presented by the sites.

MARS 5005 Coastal Management Project
12 credit points. Session: 1, 2. Prerequisite: MARS 5001, MARS 5002, MARS 5003 and GEOG 5001. Corequisite: MARS 5004.
This unit will enable students who have completed earlier coursework to design and undertake a research project related to a coastal management topic under the supervision of an appropriate member of the teaching staff. The unit will be suitable for students who wish to learn how to undertake and complete an original research project, as well as students from industry and government organisations who wish to undertake a project that relates to their professional environment.

GEOG 5001 Geographic Information Systems (Intro)
6 credit points. Session: 2.
This unit of study gives an overview of basic spatial data models, and enables students to understand the import and export of data to and from a geographic information system. The manipulation of spatial data at a level appropriate to planning or locational applications, and the development of thematic maps from diverse data layers, will be addressed.

Environmental Science

Graduate Certificate in Applied Science (Environmental Science)
Graduate Diploma in Applied Science (Environmental Science)
Master of Applied Science (Environmental Science)

Further information can be found on the Environmental Science Web site: www.usyd.edu.au/envsci.
Course Overview
The Graduate Certificate in Applied Science (Environmental Science), Graduate Diploma in Applied Science (Environmental Science) and Master of Applied Science (Environmental Science) are articulated coursework programs that allow a large degree of flexibility in the depth at which studies are undertaken and the choice of subjects studied. Some of the major themes addressed include environmental sciences, environmental politics and law, project evaluation and assessment, decision making and conflict resolution.

Course Outcomes
The articulated award program in Environmental Science is designed for both recent graduates wishing to obtain employment in the environmental field and for graduates already working in an environmental sphere who are interested in gaining either a formal qualification in environmental science or additional information about related areas of environmental science.
Environmental managers and scientists are increasingly finding that they need to have a broad interdisciplinary knowledge base and the ability to be flexible and innovative in their application of such knowledge. Thus the aim of this award program is to provide students with the ability to solve environmental problems that require the integration of knowledge from diverse disciplines. Emphasis is placed on studies which span several disciplines, adaptive problem solving, and the development of new skills and expertise.
Upon completion of the Graduate Certificate, graduates will possess a practical and theoretical background in some of the basic aspects of environmental science. This can be supplemented and extended upon completion of the Graduate Diploma, and extended further to include research and practical skills upon completion of the Masters program. Students completing the full postgraduate program will have a solid grounding in all basic areas of environmental science, enabling them to understand the environmental problems that can arise and the disparate solutions that can be applied to solve such problems, and to comprehend all aspects of environmental assessment.

Admission Requirements
Applicants for the Graduate Certificate in Applied Science (Environmental Science) should either hold a Bachelor's degree in Science or in a field of study appropriate for expansion into Environmental Science, or possess experience which is considered to demonstrate the knowledge and aptitude required to undertake this award course.
Similarly, applicants for the Graduate Diploma in Applied Science (Environmental Science) should hold a Bachelor's degree in a field of study appropriate for expansion into Environmental Science, or possess an equivalent standard of knowledge, or have completed the Graduate Certificate in Applied Science (Environmental Science). Applicants for the Master in Applied Science should hold a Bachelor's degree in a field of study appropriate for expansion into Environmental Science, or an equivalent standard of knowledge, or have completed the Graduate Diploma in Applied Science (Environmental Science).

Course Requirements
To qualify for award of the Graduate Certificate in Applied Science (Environmental Science) candidates must complete 24 credit points of core units of study and 12 credit points from optional units of study, as described in the table below.
To qualify for award of the Graduate Diploma in Applied Science (Environmental Science) candidates must complete 36 credit points of units of study including 18 credit points from the
core units and 18 credit points from the optional units of study as described in the table below.

To qualify for award of the Master of Applied Science (Environmental Science) candidates must complete 48 credit points of units of study including 18 credit points from the core units and 30 credit points from the optional units of study as described in the table below.

Not all units of study may be available every semester. The Faculty may allow substitution of any unit of study by an approved unit of study, including units of study from other postgraduate coursework programs in the Faculty or elsewhere in the University.

See Graduate Certificate, Graduate Diploma and Master of Applied Science in this chapter or Course Resolutions in chapter 7.

Master of Applied Science (Environmental Science)

Unit of study Core/option

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Points</th>
<th>Core/option</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVI 5705</td>
<td>Ecological Principles for Environmental Scientists</td>
<td>6</td>
<td>C</td>
</tr>
<tr>
<td>ENVI 5708</td>
<td>Introduction to Environmental Chemistry</td>
<td>6</td>
<td>O</td>
</tr>
<tr>
<td>ENVI 5808</td>
<td>Applied Ecology for Environmental Scientists</td>
<td>6</td>
<td>C</td>
</tr>
<tr>
<td>ENVI 5705</td>
<td>Ecological Principles for Environmental Scientists</td>
<td>6</td>
<td>C</td>
</tr>
<tr>
<td>ENVI 5708</td>
<td>Introduction to Environmental Chemistry</td>
<td>6</td>
<td>C</td>
</tr>
<tr>
<td>ENVI 5808</td>
<td>Applied Ecology for Environmental Scientists</td>
<td>6</td>
<td>C</td>
</tr>
</tbody>
</table>

Optional units all degrees

ENVI 5501 Environmental Research Project (12cp) 0
ENVI 5707 Energy Sources, Uses & Alternatives 0
ENVI 5803 Law & the Environment 0
ENVI 5805 The Urban Environment & Planning 0
ENVI 5809 Computer Modelling & Resource Management 0
ENVI 5901 Weathering Processes & Applications 0
ENVI 5902 Fluvial Geomorphology 0
ENVI 5903 Sustainable Development 0
ENGI 5001 Greenhouse Gas Mitigation 0
GEOG 5001 Geographic Information Systems (Intro) 0
CHEM 5001 Information Retrieval in the Sciences 0
MCAN4001 Principles of Microscopy & Microanalysis 0
PACS 6903 Peace & the Environment 0
QMEC5110 Structure & Management of Research Projects 0
QMEC5120 Design & Analysis of Sampling (Intro) 0
QMEC 5150 Ecological Sci. & Environmental Impact Assess 0
WILD 5001 Australian Wildlife: Introduction 0
WILD 5002 Australian Wildlife: Field Studies 0
WILD 5007 Sustainable Uses & Stewardship of Wildlife 0
ENVI 5501 Environmental Research Project 12 credit points. Session: 1,2. 0
ENVI 5705 Ecological Principles for Environ Scientists 6 credit points. Session: 1. 0
ENVI 5707 Energy Sources, Uses & Alternatives 6 credit points. Session: 1. 0
ENVI 5708 Introduction to Environmental Chemistry 6 credit points. Session: 1. 0
ENVI 5803 Law and the Environment 6 credit points. Session: 1. 0
ENVI 5805 The Urban Environment and Planning 6 credit points. Session: 1. 0
ENVI 5809 Computer Modelling & Resource Management 6 credit points. Session: 2. 0
ENVI 5901 Weathering Processes and Applications 6 credit points. Session: 2. 0
ENVI 5902 Fluvial Geomorphology 6 credit points. Session: 1. 0
ENVI 5903 Sustainable Development 6 credit points. Session: 2. 0
GEOG 5001 Geographic Information Systems (Intro) 6 credit points. Session: 2. 0
PACS 6903 Peace and the Environment 6 credit points. Session: 1. 0

Knowledge of the concepts and procedures which are relevant to the application of scientific analysis to the formulation of urban and regional development policy and strategies.

ENVI 5501 Environmental Research Project 12 credit points. Session: 1,2. 0
This unit of study introduces fundamental concepts of modern ecology for environmental scientists so as to provide non biologically trained persons an understanding of the nomenclature of ecology and the physical parameters represented.
ENVI 5705 Ecological Principles for Environmental Scientists 6 credit points. Session: 1. 0
This unit of study introduces fundamental concepts of modern ecology for environmental scientists so as to provide non biologically trained persons an understanding of the nomenclature of ecology and the physical parameters represented.
ENVI 5707 Energy Sources, Uses and Alternatives 6 credit points. Session: 1. 0
Environmental impacts of energy generation and use are addressed in this unit of study. Major topics include discussion of the various energy sources, global energy resources, the economics associated with energy production, the politics and culture that surrounds energy use, and the alternative sources of solar thermal and photovoltaic energy and atmospheric systems.

Environmental Science: other units

For detailed descriptions of optional units see the listings under the appropriate headings of postgraduate Degrees in Science and
the Applied Science articulated coursework programs. Special attention should be paid to any prerequisite studies that may be required. Other options are possible with permission of the Director of Environmental Science.

Informatics and Communication

Graduate Certificate in Applied Science (Informatics and Communication)

Graduate Diploma in Applied Science (Informatics and Communication)

May not be offered in 2003

Course Overview

The program is designed to train people to become effective in information retrieval in the sciences, in science communication, in the development of databases, in Internet activities of importance to scientists, and in the legal and technical issues associated with scientific research.

The Certificate will require attainment of 24 credit points and the Diploma will require attainment of 36 credit points made up of combinations of units of study offered. Units of study generally are of 6 credit points value. Each credit point will approximate to 6 contact hours and the principal contact hours will involve lectures and workshops. Projects will be an important part of the course, and contact hours will be allocated according to the complexity of the project.

All units of study may not be available every semester. The Faculty may allow substitution of any unit of study by an approved unit of study, including units of study from other postgraduate coursework programs in the Faculty or elsewhere in the University.

Course Resolutions: see chapter 7.

CHEM 5001 Information Retrieval in the Sciences 6 credit points. Session: 1. NB: Department permission required for enrolment.

This unit of study alerts scientists to opportunities concerning information retrieval in the sciences and instructs how to effectively retrieve science information. Lectures first describe the worldwide Web, search engines, scientific publishers including their products, roles, and distribution mechanisms, e-journals, e patents, and reference linking. Following an overview of these primary sources, the second part of the lecture course discusses database producers, including their roles, products, and policies. Access points to, and search options, in key databases in the physical and life sciences, and in engineering are discussed, and the students deal with the special role of patent information.

CHEM 5002 Information Retrieval in Chem Sciences 6 credit points. Session: 1, 2. NB: Department permission required for enrolment.

This unit of study deals with chemical bibliographic, chemical substance and chemical reaction databases all of which are important not only to the chemical sciences but also to the life sciences, to environmental sciences, to toxicological and health information, to geological sciences, and to material sciences. Lectures include discussion of databases produced by the Chemical Abstracts Service, by the US Department of Health, by the Beilstein Institute, and by other suppliers for example MDL. Issues relating to the indexing of substances, to searching for substances, and then to finding information on substances are discussed.

ICOM 5001 The Internet as a Resource in Science 6 credit points. Session: 1, 2. NB: Department permission required for enrolment.

This unit of study aims to explore recent developments in the use of the Internet by teachers and students of science. The background educational principles will be investigated, which will apply when teaching is taken out of the classroom and transferred to the Web Features of the Internet which are relevant to education will be examined and how these can be harnessed to the job of teaching and learning science. Real life examples where this kind of teaching is done will be evaluated, with an eye to judging whether those enterprises are successful, and where their future may lie.

ICOM 5002 Science Communication 6 credit points. Session: 2.

INFS 6005 Internet for Commerce 6 credit points. Session: NA in 2003.

This unit of study is for people who want an overview of current developments in commerce on the Internet. It analyses issues concerning networks infrastructure, the Internet: architecture and protocols, the World Wide Web: protocols, browsers, Java, javascript, activeX, security, privacy. Questions of security are developed at length eg, secure transactions, cryptography, digital signatures, authentication, integrity and privacy, Web server security and firewalls. The course studies electronic payment systems, focusing on digital tokens, electronic cash, smart cards and EDI.


The organisation of data and means for access to them form the core of all information systems. Database systems are computer systems that provide storage of, and methods of access to, data. They range from small, single user systems to large, distributed, networked systems with thousands of users. Common to all of these are the underlying concepts of data integrity, database design, and tools providing data access.

Issues studied in detail include; normalisation, database design using the entity relationship model, formal relational database languages, industry standard relational database language, SQL, both in its interactive mode and embedded in application programs, underlying database structures, and the problems of concurrent database access.

GEOG 5001 Geographic Information Systems (Intro) 6 credit points. Session: 2.

This unit of study gives an overview of basic spatial data models, and enables students to understand the import and export of data to and from a geographic information system. The manipulation of spatial data at a level appropriate to planning or locational applications, and the development of thematic maps from diverse data layers, will be addressed.

NB: Department permission required for enrolment.

This unit of study aims to provide students with an understanding of intellectual property as an input and product of research; an understanding of the different types of intellectual property and the mechanisms and procedures designed to provide creators with the capacity to exercise rights over the intellectual property they create; the capacity to apply the knowledge in the preceding points in a manner that maintains value in the intellectual property created and maximises the opportunities for utilisation of that intellectual property, particularly in commercial applications; an understanding of the effect of employer policies, relevant legislation and contractual obligation on the rights of creators of new intellectual property; and, the capacity to assess the intellectual property implications of a research or consultancy opportunity and make judgements about the benefits that the project presents.
Microscopy and Microanalysis

Graduate Certificate in Applied Science (Microscopy and Microanalysis)

Graduate Diploma in Applied Science (Microscopy and Microanalysis)

Master of Applied Science (Microscopy and Microanalysis)

Course Overview
The Graduate Certificate in Applied Science (Microscopy & Microanalysis), Graduate Diploma in Applied Science (Microscopy & Microanalysis) and Master of Applied Science (Microscopy & Microanalysis) are articulated award courses that provide a professional qualification to microscopists for industry, research, medical science and education. The course develops and enhances skills in specimen preparation, operation of microscopes and analytical equipment, maintenance of electron microscopes, interpretation of microscopical images and microanalysis.

Course Outcomes
The aim of this articulated coursework program is to provide students with a coordinated and interdisciplinary approach to microscopy and microanalysis, thus developing expertise to recognise and solve a broad range of problems in life and material sciences. Upon the completion of the Graduate Certificate, graduates will possess practical and theoretical background in a wide variety of microscopy, microanalysis and specimen preparation techniques for the materials or life sciences. The Graduate Diploma will add more specialist knowledge in particular areas of interest or relevance. In addition, the Masters will provide experience in designing, carrying out and completing an independent project and report.

Admission Requirements
Applicants for the Graduate Certificate in Applied Science (Microscopy & Microanalysis) should have a Bachelor of Science, Bachelor of Applied Science, Bachelor of Engineering, or equivalent qualifications or experience. Applications will also be considered from those with a Bachelor of Arts who wish to acquire microscopy and microanalysis skills for such areas as archaeology, history of art and museum studies.

Applicants for the Graduate Diploma in Applied Science (Microscopy & Microanalysis) should have a Bachelor of Science, Bachelor of Applied Science, Bachelor of Engineering or equivalent degree or have completed the Graduate Certificate in Applied Science (Microscopy & Microanalysis). Applications will also be considered from those with a Bachelor of Arts who wish to acquire microscopy and microanalysis skills for such areas as archaeology, history of art and museum studies.

Applicants for the Master of Applied Science (Microscopy and Microanalysis) should have a Bachelor of Science, Bachelor of Applied Science, Bachelor of Engineering or equivalent degree, with Honours, or have completed the Graduate Diploma in Applied Science (Microscopy & Microanalysis) at credit level.

Course Requirements
To qualify for award of the Graduate Certificate in Applied Science (Microscopy and Microanalysis), candidates must complete 12 credit points from core units and 12 credit points from optional units shown below.

To qualify for award of the Graduate Diploma in Applied Science (Microscopy and Microanalysis), candidates must complete 36 credit points, 12 from core units and 24 from optional units shown below.

To qualify for award of the Master of Applied Science (Microscopy and Microanalysis), candidates must complete 48 credit points, 24 from core units, 12 from optional units and 12 from an independent project and report.

Not all units of study may be available every semester. The faculty may allow substitution of any unit of study by an approved unit of study, including units of study from other postgraduate coursework programs in the Faculty or elsewhere in the University.

Credit for previous study
See Graduate Certificate, Graduate Diploma and Master of Applied Science in this chapter or Course Resolutions in chapter 7.

Master of Applied Science (Microscopy and Microanalysis)

Unit of study Core/ option
All units are worth 6 credit points
Graduate Certificate, Graduate Diploma and Masters core units
MCAN 5005 Microscopy & Optical Microscopes C
MCAN 5006 Electron Microscopy C
Masters additional core units
MCAN 5201 Project & Report A C
MCAN 5202 Project & Report B C
Optional units
MCAN 5101 Confocal & Fluorescence Microscopy O
MCAN 5102 Biological Specimen Preparation O
MCAN 5103 Materials Microscopy & Microanalysis O
MCAN 5104 Image Analysis O
MCAN 5105 Diffraction Techniques O
MCAN 5106 Microanalysis O
MCAN 5107 Advanced Techniques in Biological EM O
MCAN 5108 High Resolution Microscopy O
MCAN 5109 RPM & Advanced Optical Methods O

MCAN 5005 Microscopy and Optical Microscopes 6 credit points. Session: 1, 2.
Introduces the general principles of microscopy and microanalysis, and reviews the basic physical principles on which they are based, including optics and image formation.

MCAN 5106 Electron Microscopy 6 credit points. Session: 1, 2.
Trains participants, with no prior knowledge of electron microscopy, to become operators of scanning and transmission electron microscopes. Participants are given theoretical and practical understanding of the operation and construction of the microscope and how to obtain the optimum performance from it in routine operation.

MCAN 5101 Confocal & Fluorescence Microscopy 6 credit points. Session: 1, 2. Prerequisite: MCAN 5005.
Introduces the general principles of confocal microscopy and training in the use of the confocal microscope. It covers the theory behind confocal microscopy, the instrumentation and its applications. Develops knowledge and skills in specimen preparation for biological and medical applications of optical and confocal microscopes, immunocytochemistry, cell loading, GFP.

MCAN 5102 Biological Specimen Preparation 6 credit points. Session: 1, 2.
Develops knowledge and skills in the fundamentals of specimen preparation for light microscopy. Techniques covered will include tissue processing for paraffin microtomy and an introduction to histochemical staining methods. In addition this unit will present the theory and practical skills of routine specimen preparation techniques used for electron microscopy in the biological sciences including fixing, embedding, sectioning, drying, coating and staining techniques.

MCAN 5103 Materials Microscopy & Microanalysis 6 credit points. Session: 1, 2.
Gives practical training in the preparation of specimens from a wide range of materials for electron microscopy, including metals, semiconductors, powders, ceramics and polymers, using a comprehensive range of preparation techniques including electropolishing, ion milling, dimple grinding, ultramicrotomy and cleavage. Approaches to microscopy and microanalysis will be developed and specific techniques introduced. Case studies from optical to electron microscopy including energy and wavelength dispersive X ray spectroscopy, electron energy loss spectroscopy (EELS), cathodoluminescence and Auger spectroscopy will be introduced.

MCAN 5104 Image Analysis 6 credit points. Session: 1, 2.
This unit of study covers the nature and processing of images and the extraction of quantitative data from them. Emphasis will be on the correct treatment of real data to provide a basis for reliable research. Participants will develop a sound working knowledge of image processing which is based on an understanding of both
the strengths and the limitations that are inherent in image data, and the technology applied to it. This will be set in the context of the nature of the analysis which is to follow processing, directed at extracting quantitative parameters characteristic of the content of the image. Emphasis will be on the application of these techniques to typical problems encountered in microscopy based imaging. Participants will develop a sound working knowledge of image analysis which is based on an understanding of both the strengths and the limitations of the techniques of analysis. Topics in this module include: a general review of image acquisition, filters and transforms, segmentation methods, calibration of hardware for analysis, extraction of simple features from images, advanced feature extraction from images, limitations of measurement, and an overview of classification techniques used to discriminate measured objects. Provides a general overview of stereology, including global, specific, manual and computerised measurements, geometric probability, density estimation and sampling.

**MCAN 5105 Diffraction Techniques**
6 credit points. Session: 1,2.
Introduces the basics of diffraction theory and its applications to powder diffraction and elementary single crystal diffraction. Participants are trained to collect, process and interpret powder diffraction data using electrons, neutrons and X rays. Assumes basic mathematical ability including elementary complex numbers and integration. Provides training in advanced structural analysis using X ray, electron and neutron techniques.

**MCAN 5106 Microanalysis**
6 credit points. Session: 1,2.
Provides a theoretical introduction and practical training in a broad range of microanalytical techniques which rely on the interaction of electrons with materials, including EDS and WDS techniques, the electron probe and electron energy loss spectroscopy (EELS). This unit of study provides an introduction and some training in a range of materials characterisation techniques. Other techniques covered include a range of surface science analytical methods, infra red and Raman spectroscopy and ion beam analysis techniques. On completion of this unit of study, the student will be aware of the wide range of materials characterisation techniques available and understand their strengths and weaknesses.

**MCAN 5107 Advanced Techniques in Biological EM**
6 credit points. Session: 1,2. Prerequisite: MCAN 5006 and 5102.
Develops further the knowledge and skills in biological specimen preparation techniques and image interpretation obtained in Biological Specimen Preparation, with specific training in specialisation techniques including cryo techniques and immunolabelling. Provides an introduction to a broad range of microanalytical techniques which rely on the interaction of electrons with materials including EDS and EELS, with particular emphasis on qualitative and quantitative analytical techniques appropriate for biological applications, especially analysis of soluble and mobile ions.

**MCAN 5108 High Resolution Microscopy**
6 credit points. Session: 1,2. Prerequisite: MCAN 5006.
Gives training in advanced imaging and diffraction techniques, especially those skills required to obtain atomic or molecular levels of resolution in transmission, scanning and scanning transmission electron microscopes.

**MCAN 5109 SPM & Advanced Optical Methods**
6 credit points. Session: 1,2. Prerequisite: MCAN 5005 and 5101.
Provides advanced training in confocal and non linear optical microscopy, and an introduction to wide field deconvolution. Acquisition and presentation of three dimensional images is covered in detail. It also covers the nature of surfaces and the imaging techniques that can be used to obtain topographical, spectroscopic and structural information about them. Techniques include various scanning probe microscopies (eg, scanning tunnelling microscopy, atomic force microscopy and near field scanning optical microscopy), optical interference microscopies for surface studies, and surface profilometry.

**MCAN 5201 Project and Report A**
6 credit points. Session: 1,2.
Gives students the opportunity to extend the practical work encountered in other modules, and gain skills in carrying out and writing up a research project. Students will choose topics in consultation with members of academic staff and complete project work under supervision. Students also need to enrol in MCAN 5203.

**MCAN 5202 Project and Report B**
6 credit points. Session: 1, 2. Corequisite: MCAN 5201. See MCAN 5201.
Graduate Diploma or Masters courses offered by the Faculty subject to timetable constraints. These optional units are listed in the surrounding pages of this handbook. The unit MOBT 5103 is an allowable elective for Graduate Diploma and Masters students.

Credit for previous study
See Graduate Certificate, Graduate Diploma and Master of Applied Science in this chapter or Course Resolutions in chapter 7.

Master of Applied Science (Molecular Biotechnology)

Unit of study

Core units all degrees
MOBT 5101 Applied Molecular Biotechnology A C
MOBT 5102 Applied Molecular Biotechnology B C
MOBT 5103 Applied Molecular Biotechnology C C/O

Optional units
MOBT 5104 Life Science Entrepreneurship (6cp) O

MOBT 5101 Applied Molecular Biotechnology A
12 credit points. Session: 1.
This unit of study provides a solid foundation for education and training in applied molecular biotechnology. Classes emphasise molecular biology and genetics combined with essential aspects underscoring modern molecular biotechnology.

MOBT 5102 Applied Molecular Biotechnology B
12 credit points. Session: 2.
Applied molecular biotechnology B broadens knowledge of and training in applications of the field. Key areas of molecular biology and genetics are combined with studies embracing major issues in modern molecular biotechnology, and are illustrated by examples and case studies.

MOBT 5103 Applied Molecular Biotechnology C
12 credit points. Session: 2.
This unit of study combines hands on experience in association with industry partners. This will typically involve part time placement in an approved partner’s facility or an on campus project conducted in association with an industry affiliate, supplemented by lectures and tutorials. Entry is limited by a quota and availability of facilities and projects. Relevant students will be expected to participate in a laboratory skills test, the results of which will help determine the category of industry placement.

MOBT 5104 Life Science Entrepreneurship
6 credit points. Session: N/A in 2003.
The Life Science Entrepreneurship unit is an innovative course that is aimed at providing participants with the ability to operate and present life science developments to the business community. Australia’s growing biotechnology industry relies heavily on the integration of business and science concepts. This unit will provide a critical framework that enables participants to move developments from the laboratory to the marketplace. The unit would dramatically improve participants’ business skills and ability to promote investment opportunities arising from their work.

■ Neuroscience

Graduate Certificate in Applied Science (Neuroscience)

Graduate Diploma in Applied Science (Neuroscience)

Master of Applied Science (Neuroscience)

Course overview
The Graduate Certificate in Applied Science (Neuroscience), Graduate Diploma in Applied Science (Neuroscience) and Master of Applied Science (Neuroscience) are articulated programs that allow flexible combinations of units of study. The programs cover basic concepts in neuroscience together with advanced treatment of most major current research areas in neuroscience, particularly those with medical and other potential applications, and an introduction to related developments in other disciplines.

Course Outcomes
The study of the brains and nervous systems of living creatures represents one of the most exciting and fast moving fields in 21st century science. It is also one that has a considerable impact on attempts to solve major problems in health, including various neural diseases, current social problems such as addiction, and longer term social trends such as aging. The programs are designed both for graduates already working in a field where development of their expertise in at least some aspects of neuroscience is important and for recent graduates who wish to acquire a solid and broad grounding in this area.

Many professionals, particularly in health related areas, find that they need to update or broaden their knowledge and understanding of the structure and function of the nervous system. Traditionally such training has been provided within individual departments, such as anatomy, physiology, pharmacology or psychology, and consequently has tended to be narrow in focus. The present programs have from the outset been designed to be inter disciplinary; most units of study are taught by staff from at least three different departments. This is to meet the aim of providing a broad and comprehensive treatment of neuroscience.

Upon completion of the Graduate Certificate, graduates will have a solid grounding in basic principles of neuroscience and more specialised understanding of four different areas. This is supplemented in the Diploma by inclusion of a fifth area and by acquisition of some project skills by working on either a library or laboratory based project. Extension of these project skills is obtained during completion of the Masters by working on a total of three unrelated projects, of which two would normally be laboratory based.

Admission Requirements
Applicants for Applied Science (Neuroscience) should either hold a Bachelor’s degree in Science or in a field of study appropriate for expansion into Neuroscience, or possess experience which is considered to demonstrate the knowledge and aptitude required to take this award course. Students may elect to begin with a Graduate Certificate or Graduate Diploma and build on these to gain a higher qualification, up to Master, within the articulated series. Students may also elect to enrol directly into the Masters program.

Course Requirements
To qualify for award of the Graduate Certificate in Applied Science (Neuroscience) candidates must complete 24 credit points of approved units of study as described in the table below.

To qualify for award of the Graduate Diploma in Applied Science (Neuroscience) candidates must complete 36 credit points of approved units of study of which 6 credit points are project based units of study, as described in the table below.

To qualify for award of the Master in Applied Science (Neuroscience) candidates must complete 48 credit points of approved units of study, of which 18 credit points are from project based units of study in Neuroscience, as described in the table below.

Normally a unit of study is available for only 1 semester each year. Not all units of study are available every semester. The Faculty may allow substitution of any unit of study by an approved unit of study, including units of study from other postgraduate coursework programs in the Faculty or elsewhere in the University.

Credit for previous study
See Graduate Certificate, Graduate Diploma and Master of Applied Science in this chapter or Course Resolutions in chapter 7.

Master of Applied Science (Neuroscience)

Unit of study
All units are worth 6 credit points

Optional units all degrees
NEURS101 Neurobiology of Addiction
NEURS102 Neuroscience of Aging
NEURS103 Brain Development
NEURS104 Psychology of Learning & Memory
NEURS105 Movement & Motor Control
NEURS110 Pain
NEURS116 Visual Neuroscience
This provides the opportunity to develop knowledge gained from units of study on a specialised topic. The topic and nature of supervision will be arranged between the student and an appropriate supervisor, subject to the approval of the Coordinator of the Neuroscience Program. This unit of study is available only to students enrolled in the Graduate Diploma of Applied Science (Neuroscience) or in the Master in Applied Science (Neuroscience). It would normally be available only after a student has completed four units of study in the Neuroscience program or equivalent units of study approved by the Dean.

This is similar to NEUR 5002, but would involve a different supervisor and a topic in a different discipline from those for the project a student undertook for NEUR 5002. A student is normally required to complete NEUR 5002 before enrolling in NEUR 5003.

This is similar to NEUR 5002 and 5003. A student is normally required to complete NEUR 5002 and NEUR 5003 before enrolling in NEUR 5004.

The goal of this course is to develop knowledge of the aspects of neuroscience that underpin current understanding of drug addiction. It examines patterns of use, prevalence, harms and social costs of the major addictive drugs: opioids, psychostimulants, alcohol, nicotine, and cannabinoids. Major topics include common features of addictive drugs such as the psychology and neuroanatomy of reward and reinforcement, as well as the particular molecular and neurochemical targets of individual drugs and their molecular and cellular mechanisms of tolerance and dependence. Finally, it will examine current treatment of addictive disorders.

The unit of study will examine changes with age in the structure of the brain and the various forms of neuropathology and types of dementia that can occur. Models of Alzheimer's disease are covered, from tissue culture and cell biology to transgenic mice. Topics also include aspects of the neuropsychology of aging, including testing for different types of dementia, and the use of PET and MRI scans to assess aging of the brain.

The topics covered will include: neuronal induction; mechanisms of cell generation and migration; gene expression and environmental factors in the determination of cell fate; the growth cone; general development of early neural pathways; transient neurons; the external environment and neonatal development; cell death in the developing brain; glial cells; early vascular invasion; and the process of regeneration during development and in adulthood.

The topics covered will include: types of learning and memory; current models at a psychological level; procedures for testing animal models of human learning and memory; memory disorders (amnesia); clinical and brain scan evidence on neural structures involved in learning and memory; synaptic plasticity and long term potentiation; pharmacological factors; neurological diseases affecting human memory.

Major topics include: control of contraction in muscle cells; the neuromuscular junction; organization and recruitment of the motor neuron pool; action potential propagation in myelinated nerves; activation of motor neurons in antagonist muscles; sensory afferents and reflexes; neuronal integration of excitatory and inhibitory synaptic inputs to the motor neuron; development of central pattern generators in the spinal cord; motor neuron diseases; descending projections from the brain; disorders affecting motor projections, including multiple sclerosis and paraplegia; learning to move, the development of gross and skilled movements, and training following damage to the motor system.

This unit will look at concepts of pain, including the view that pain is not only sensory event, but also a motivational state. It will evaluate current knowledge of transduction mechanisms and central representations of acute pain. Further topics include: the change from acute pain to chronic pain; mechanisms and central representations of chronic pain; central modulation of acute and chronic pain; and neuropharmacological research on endogenous analgesia.

The topics covered will include: the optics, image properties, and contrast properties of visual stimuli; colour vision and defects; the development of the visual system; retinal mechanisms such as transduction, synaptic action and receptive fields; organization of optic pathways, including streams, columns, areas and maps; the neural basis of form perception, from centre/surround to models from information technology; visual perception of motion, from magnocellular to Movshon; binocular vision, including stereoscopy, binocular single vision, and binocular suppression; and visual loss, including scotomas, achromatopsia, akinetopsia and acatadorgad.
field who are interested in gaining formal qualifications in photonics or extending their knowledge of the subject.

Upon completion of the Graduate Certificate, graduates will possess a practical and theoretical background in the fundamentals of photonics. This can be further supplemented by completion of the Graduate Diploma, and further extended to include research skills by completion of the Masters.

Students completing the full postgraduate program will have a solid grounding in all basics areas of photonics, enabling them to understand this rapidly expanding technology, and to have the knowledge and skills to solve problems relating to the applications of photonics.

**Admission Requirements**

Applicants for the Graduate Certificate in Applied Science (Photonics) should hold either a bachelor's degree in Science, Engineering or similar technical area, or possess experience which is considered to demonstrate the knowledge and aptitude required to undertake the course.

Applicants for the Graduate Diploma in Applied Science (Photonics) should hold either a bachelor's degree in Science, Engineering or similar technical area, or possess an equivalent standard of knowledge, or have completed the Graduate Certificate in Applied Science (Photonics) or an equivalent course.

Applicants for the Master of Applied Science (Photonics) should hold either a bachelor's degree in Science, Engineering or similar technical area, or possess an equivalent standard of knowledge, or have completed the Graduate Diploma in Applied Science (Photonics) or an equivalent course.

**Course Requirements**

To qualify for award of the Graduate Certificate in Applied Science (Photonics) candidates must complete 24 credit points of core units of study as described in the table below.

To qualify for award of the Graduate Diploma in Applied Science (Photonics) candidates must complete 36 credit points of units of study, including 30 credit points of core units of study and 6 credit points of optional units of study, as described in the table below.

To qualify for award of Master of Applied Science (Photonics) candidates must complete 48 credit points of units of study, including 42 credit points of core units of study and 6 credit points of optional units of study, as described in the table below.

All units of study may not be available every semester. The faculty may allow substitution of any unit of study by another approved unit of study, including units of study from other postgraduate coursework programs in the faculty or elsewhere in the University.

**Credit for previous study**

See Graduate Certificate, Graduate Diploma and Master of Applied Science in this chapter or Course Resolutions in chapter 7.

**Master of Applied Science (Photonics)**

**Unit of study**

Core/option

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Points</th>
<th>Session</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHOT 5001</td>
<td>Fundamentals of Photonics</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>PHOT 5002</td>
<td>Passive Photonics Components</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>PHOT 5003</td>
<td>Active Photonics Components</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>PHOT 5010</td>
<td>Experimental Photonics I</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>PHOT 5011</td>
<td>Experimental Photonics II</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>PHOT 5021</td>
<td>Photonics Project B</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>PHOT 5020</td>
<td>Photonics Project A</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>PHOT 5004</td>
<td>Optical Networks</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>PHOT 5005</td>
<td>Advanced Photonics I</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>PHOT 5006</td>
<td>Advanced Photonics II</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>PHOT 5001</td>
<td>Fundamentals of Photonics</td>
<td>6</td>
<td>2</td>
</tr>
</tbody>
</table>

**PHOT 5002 — Passive Photonics Components**

6 credit points. Session: 1.

NB: Department permission required for enrolment.

This is a core unit for the Graduate Certificate, the Graduate Diploma and the Masters program. It covers components of a photonic system including optical fibres, planar waveguides, couplers, multiplexers and demultiplexers, wavelength division multiplexers, filters, gratings, bragg gratings, long period gratings, isolators and circulators, dispersion compensators.

**PHOT 5003 — Active Photonics Components**

6 credit points. Session: 2.

NB: Department permission required for enrolment.

This is a core unit for the Graduate Certificate, the Graduate Diploma and the Masters program. It covers light sources, detectors, modulators, amplifiers, fibre lasers, optical switching and wavelength conversion.

**PHOT 5004 — Optical Networks**

6 credit points. Session: 1, 2.

This is an optional elective unit for the Graduate Diploma and the Masters program. It covers network architectures, fundamentals of optical networks, communications systems, networks, current leading edge systems and network protocols.

**PHOT 5005 — Advanced Photonics I**

6 credit points. Session: 1.

NB: Department permission required for enrolment.

This is an optional elective unit for the Graduate Diploma and the Masters program. It covers optical fibre based sensors, fibre interferometry, confocal and near field optical microscopy, data storage, and medical applications.

**PHOT 5006 — Advanced Photonics II**

6 credit points. Session: 2.

NB: Department permission required for enrolment.

This is an optional elective unit for the Graduate Diploma and the Masters program. It covers nonlinear optics, optical switching, soliton systems, and optical memory.

**PHOT 5010 — Experimental Photonics I**

6 credit points. Session: 1.

NB: Department permission required for enrolment.

This is a core unit for the Graduate Certificate, the Graduate Diploma and the Masters program. It will include a number of laboratory based practical exercises relevant to the core units of the Graduate Certificate.

**PHOT 5011 — Experimental Photonics II**

6 credit points. Session: 2.

NB: Department permission required for enrolment.

This is a core unit for the Graduate Diploma and the Masters program. It will include a number of laboratory based practical exercises relevant to the core units of the Graduate Diploma.

**PHOT 5020 — Photonics Project A**

6 credit points. Session: 1, 2.

NB: Department permission required for enrolment.

This is a core unit for the Masters program. It consists of a supervised theoretical or experimental research project on a topic determined by consultation with the supervisor. Projects may be on a topic related to the student's employment.

**PHOT 5021 — Photonics Project B**

6 credit points. Session: 1, 2.

NB: Department permission required for enrolment.

This is a core unit for the Masters program. It consists of a supervised theoretical or experimental research project on a topic determined by consultation with the supervisor. Projects may be on a topic related to the student's employment.

■ **Psychology of Coaching**

**Graduate Certificate in Applied Science (Psychology of Coaching)**

**Graduate Diploma in Applied Science (Psychology of Coaching)**

**Course Overview**

The Graduate Diploma in Applied Science (Psychology of Coaching) and Graduate Certificate in Applied Science (Psychology of Coaching) programs provide students with a
sound grounding in the theoretical and methodological aspects of coaching psychology, teach fundamental applied coaching skills, and prepare graduates to work as Executive or Life coaches. This is the world’s first university-based graduate degree program in Coaching Psychology. This course is not available via distance education mode. The core units of study are PSYC 4721, 4722, and 4724.

There are three key themes to our courses in Coaching:

1. The Behavioural Science of Coaching: This theme is concerned with developing critical understandings and applied applications of the behavioural and cognitive scientific underpinnings of coaching.
2. The applied ‘art’ of Coaching: This theme is about developing the applied skills or the ‘art’ of coaching the core coaching micro skills. This theme is also concerned with self-development; that is, developing one’s unique signature presence as a coach and the ability to work with a wide range of client types.
3. Ethical and Professional Practice: The Coaching Psychology unit places great emphasis on ethical and professional practice. Training in ethical and professional issues is integrated into the content of each unit of study. The Coaching Psychology unit has chosen to work within the Ethical and professional framework as delineated by the International Coach Federation.

Admission Requirements
Primary consideration will be given to applicants who have completed a 4-year full-time (or equivalent part-time) course in Applied Science. The core units of study are described in the table below.

Course Requirements
To qualify for award of the Graduate Certificate in Applied Science (Psychology of Coaching) candidates must complete 18 credit points of units of study, including 18 credit points of core units of study and 6 credit points from elective units of study, as described in the table below.

Credit for previous study
See Graduate Certificate, Graduate Diploma, and Master of Applied Science in this chapter or Course Resolutions in chapter 7.

Graduate Diploma in Applied Science (Psychology of Coaching)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Core/option</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSYC 4721 Theories &amp; Techniques of Coaching</td>
<td>C</td>
</tr>
<tr>
<td>PSYC 4722 Fundamentals of Coaching Practice</td>
<td>C</td>
</tr>
<tr>
<td>PSYC 4724 Coaching Practice: Co coaching &amp; Groups</td>
<td>C</td>
</tr>
<tr>
<td>Elective units</td>
<td></td>
</tr>
<tr>
<td>PSYC 4723 Socio cognitive Issues in Coaching Psych</td>
<td>O</td>
</tr>
<tr>
<td>PSYC 4725 Assessment &amp; Selection</td>
<td>O</td>
</tr>
<tr>
<td>PSYC 4726 Foundational Psychology for Coaching</td>
<td>O</td>
</tr>
<tr>
<td>PSYC 4727 Coaching in Organisations</td>
<td>O</td>
</tr>
<tr>
<td>PSYC 4721 Theories &amp; Techniques of Coaching Psych</td>
<td>6 credit points. Session: 1.2.</td>
</tr>
</tbody>
</table>

This unit will introduce students to some of the major assessment instruments used in coaching psychology. This course may not accredit students to administer any of the instruments examined in this unit of study. Rather, the unit focuses on critical evaluation of assessment instruments and on fostering an understanding of where each may be best utilised. Assessment instruments include: NEO-4; 16PF5; Myers Briggs Type Inventory; the DISK; Human Synergistics; BarOn EQI; WAIS; MMP; Self directed Search; Strong Interest Inventory; Multi factor Leadership Questionnaire.

PSYC 4722 Fundamentals of Coaching Practice
6 credit points. Session: 1.2. Corequisite: PSYC 4721.

This unit teaches the Fundamentals of coaching, and lays the foundations for sound contemporary practice. Drawing on established approaches (eg, Egan, 1974; Whitmore, 1992) students will be trained in the core micro skills of coaching. The unit details key coaching strategies in relation to common applications of coaching; workplace coaching, executive coaching, and personal or life coaching. Core issues relating to mental health problems and coaching practice are addressed, and we explore the essentials of professional practice development, marketing and Ethical (ICF) practice. Each seminar has a lecture component and an experiential learning component. The experiential learning component requires students to evaluate each topic in relation to their own personal life/work experience and to participate in group discussion. Practical experience of self-coaching and co-coaching are central aspects of this unit, students will apply self-coaching strategies to their own lives.

PSYC 4723 Socio cognitive Issues in Coaching Psych

The aim of this unit is to give students an understanding of key socio cognitive issues related to coaching and behaviour change. The focus of this unit is on critical appraisal of theory and the relation of theory to practice and research. Topics covered in this unit include models of self-regulated behaviour, personality type, the relationships between emotion, cognition and behaviour, and the roles of learnt resourcefulness, learned optimism, psychological mindedness, self reflection and insight in behaviour change. The unit also critically evaluates contemporary understandings and assessments of emotional intelligence. Current topics and research methods in coaching psychology are also examined. Each weekly seminar has a lecture component and an experiential learning component. The experiential learning component requires students to evaluate each week’s topic in relation to their own personal life/work experience and to participate in group discussion.

PSYC 4724 Coaching Practice: Co Coaching & Groups
6 credit points. Session: 1, 2. Prerequisite: PSYC 4721 and 4722.

Students will consolidate the theory and skills acquired in previous units through a semester-long co-coaching practice. Using real life issues in a supportive and confidential environment, students will co-coach each other in achieving desired goals. This unit gives students experience in being both a coach and a client. Students will have practice in both phone coaching and face-to-face coaching. Total time in coaching practice will be approximately 40 hours over the unit of study. To maximise learning and aid recognition of personal strengths and weaknesses, students will keep a coaching journal and self-assessment record. This unit also covers key issues in group coaching processes. Each weekly seminar requires students to evaluate each week’s topic in relation to their own personal life/work experience and to participate in group discussion.

PSYC 4725 Assessment and Selection
6 credit points. Session: 2. Corequisite: PSYC 4721 and 4722 and 4724.

This unit will introduce students to some of the major assessment instruments used in coaching psychology. This course does not accredit students to administer any of the instruments examined in this unit of study. Rather the unit focuses on critical evaluation of assessment instruments and on fostering an understanding of where each may be best utilised. Assessment instruments include: NEO-4; 16PF5; Myers Briggs Type Inventory; the DISK; Human Synergistics; BarOn EQI; WAIS; MMP; Self directed Search; Strong Interest Inventory; Multi factor Leadership Questionnaire.

PSYC 4726 Foundational Psychology for Coaching
6 credit points. Session: 1.2.

This unit is a prerequisite for all students who do not have a 3 year psychology degree and who are enrolled in the Human Resource Management and Coaching program through the Faculty of Economics and Business. This unit will provide students with a foundational knowledge of the theoretical and applied aspects of organisational and coaching psychology. Topics covered include fundamentals of learning; the basic dimensions of coaching psychology (individual differences in ability, personality, attitudes); methods and techniques in
undertake further studies in Human Resource Management and Coaching. Participation in a self coaching program is a central part of the experiential learning section of this program.

PSYC 4727  Coaching in Organisations
6 credit points. Session: 2 Intensive. Prerequisite: PSYC (4721 and 4722 and 4724).

Executive and management coaching have emerged as key factors in the enhancement of performance within organisations and corporations. This unit examines key issues in contemporary executive and management coaching and equips students with the knowledge and skills to provide world class executive and management coaching. The emphasis is on critical evaluation of theory and application to practice. Although primarily focused on solution focused and cognitive behavioural approaches to executive coaching, psychodynamic (eg, Kilburg) and systems (eg, O’Neill) approaches are also considered. The course covers issues in senior executive coaching, coaching middle management, establishing manger as coach programs, mentoring in the workplace, and the coaching and facilitation of groups. This unit of study is run in block intensive mode.

Surface Coatings

Graduate Certificate in Applied Science (Surface Coatings)

Graduate Diploma in Applied Science (Surface Coatings)

May not be offered in 2003

Course Overview
The Graduate Certificate in Science (Surface Coatings) and Graduate Diploma in Applied Science (Surface Coatings) articulated coursework programs provide a professional qualification to workers in the surface coatings industry or those seeking to work in that field. The program is primarily web based, with two intensive weeks of lecture and practical work each semester.

Course Outcomes
On completion of the Graduate Certificate, the graduate will possess a sound theoretical and practical background in the formulation and testing of a range of surface coatings, and have the skills to design and carry out development work in the surface coatings field.

On completion of the Graduate Diploma, the graduate will have the knowledge and skills to devise novel surface coatings and create significant improvements in the production and application of pre-existing surface coatings.

Admission Requirements
Applicants for the Graduate Certificate in Applied Science (Surface Coatings) should hold either a bachelor's degree in Science, Engineering or similar technical area, or possess experience which is considered to demonstrate the knowledge and aptitude required to undertake the course.

Applicants for the Graduate Diploma in Applied Science (Surface Coatings) should hold either a bachelor's degree in Science, Engineering or similar technical area, or possess an equivalent standard of knowledge, or have completed the Graduate Certificate in Applied Science (Surface Coatings) or an equivalent course.

Course Requirements
To qualify for award of the Graduate Certificate in Applied Science (Surface Coatings) candidates must complete 24 credit points of core units of study as described in the table below.

To qualify for award of the Graduate Diploma in Applied Science (Surface Coatings) candidates must complete 36 credit points of core units of study as described in the table below.

All units of study may not be available every semester. The faculty may allow substitution of any unit of study by an approved unit of study, including units of study from other postgraduate coursework programs in the faculty or elsewhere in the University.

Credit for previous study
See Graduate Certificate, Graduate Diploma and Master of Applied Science in this chapter or Course Resolutions in chapter 7.

Graduate Diploma in Applied Science (Surface Coatings)

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Core/option</th>
</tr>
</thead>
<tbody>
<tr>
<td>All units are worth 6 credit points</td>
<td></td>
</tr>
</tbody>
</table>

Core units all degrees

- SUKO4001 Polymer Science, Emulsion C
- SUKO 4002 Synthetic Resin Technology & Design C
- SUKO 4003 Interfacial Science & Technology & Design C
- SUKO 4004 Coating Formulation, Manufacture & Application C

Additional core units Graduate Diploma

- SUKO 4005 Surface Coatings Project A C
- SUKO 4006 Surface Coatings Project B C
- SUKO 4001 Polymer Science, Emulsion Polymerisation 6 credit points. Session: 1.2.

NB: Department permission required for enrolment.

The first part of this unit deals with the chemistry of synthetic resins used in adhesive, ink and surface coatings applications. It addresses hard resins, alkyl and water reducible resins; saturated and unsaturated polyesters; formaldehyde resins; solution acrylic resins; urethane resins; epoxy resins; emulsions; silicone and non-convertible resins. The second part of this unit deals with the formulation, synthesis and testing of synthetic resins, through a selection of laboratory experiments on specific resin types. Exercises deal with: (a) formulation, manufacture and evaluation of a number of synthetic resin types; (b) characterisation of synthetic resins and composites using various analytical techniques; and (c) a design study of the formulation of a specific synthetic resin.

SUO 4003 Interfacial Sci & Coatings Tech & Design

6 credit points. Session: 1.2.

NB: Department permission required for enrolment.

The first part of this unit deals with principles of surface and interfacial science and the modification of surfaces by coatings. It addresses surface tension and the effect of solutes on surface tension; solid liquid and solid gas interfaces; principles of coatings manufacture; product types and application; evaluation of coating performance. The second part of this unit aims to teach practical skills in relating to aspects of design, production, and testing of surface coatings. Practical exercises involve work on the formulation of coatings and related products, and their testing by standard methods.

SUKO 4004 Coating Formulation, Manufacture & App 6 credit points. Session: 1.2.

NB: Department permission required for enrolment.

The first part of this unit deals with the theoretical framework necessary to formulate products for the decorative coatings industry. It addresses formulation parameters in paint manufacture; dispersion theory; dispersion equipment and methods; classifications of decorative coatings; properties of solvent based and latex based decorative coatings. The second part of this unit deals with the theoretical framework necessary to formulate products for the non decorative surface coatings.

225
industry. It addresses automotive coatings; anti-fouling marine paints; industrial coatings; powder coatings; coil coatings; packaging coatings; inks. The third part deals with substrates, substrate preparation, and the application of surface coatings to substrates. It addresses inert and reactive substrates (masonry, timber, metal); methods of applying industrial coatings; corrosion and its prevention; paint defects; rheology of surface coating dispersion.

SUCO 4005 Surface Coatings Project A
6 credit points. Session: 1, 2.
NB: Department permission required for enrolment.
This unit consists of a supervised theoretical or experimental research project on a topic determined by consultation with the supervisor. Projects may be on a topic related to the student's employment.

SUCO 4006 Surface Coatings Project B
6 credit points. Session: 1, 2.
NB: Department permission required for enrolment.
This unit consists of a supervised theoretical or experimental research project on a topic determined by consultation with the supervisor. Projects may be on a topic related to the student's employment.

Wildlife Health and Population Management

Graduate Certificate in Applied Science (Wildlife Health and Population Management)
Graduate Diploma in Applied Science (Wildlife Health and Population Management)
Master of Applied Science (Wildlife Health and Population Management)

Course Overview
The Graduate Certificate in Applied Science (Wildlife Health and Population Management), Graduate Diploma in Applied Science (Wildlife Health and Population Management) and Master of Applied Science (Wildlife Health and Population Management) are articulated award courses that provide a professional qualification to biologists and veterinarians working in private practice, industry, research and education. The award program brings together the disciplines of animal health and wildlife population management, developing and enhancing skills in conservation techniques for native fauna, diagnosis and management of wildlife health, and management of native and pest species populations.

Course Outcomes
The aim of this articulated coursework program is to provide students with a coordinated and interdisciplinary approach to wildlife health and wildlife management, thus developing expertise to recognise and solve a broad range of problems in field populations. Upon completion of the Graduate Certificate, Graduate Diploma or Masters, graduates will have a broad understanding of the topic of wildlife management and practical skills developed from field studies. In addition, the Masters will provide experience in designing, carrying out and completing a research project and thesis.

Admission Requirements
Applicants for the Graduate Certificate in Applied Science (Wildlife Health and Population Management) should hold a first degree in science or veterinary science, or have the knowledge and aptitude obtained from professional or other experience required to undertake the award course.
Applicants for the Graduate Diploma in Applied Science (Wildlife Health and Population Management) similarly should hold a first degree in science or veterinary science, or have the knowledge and aptitude obtained from professional or other experience required to undertake the award course, or have completed the Graduate Certificate in Applied Science (Wildlife Health and Population Management).
Applicants for the Master of Applied Science (Wildlife Health and Population Management) should hold a first degree in science or veterinary science, or have the knowledge and aptitude obtained from professional or other experience required to undertake the award course, or have completed the Graduate Diploma in Applied Science (Wildlife Health and Population Management).
Applicants for the Master of Applied Science (Wildlife Health and Population Management) should hold a first degree in science or veterinary science, or have the knowledge and aptitude obtained from professional or other experience required to undertake the award course, or have completed the Graduate Diploma in Applied Science (Wildlife Health and Population Management).

Course Requirements
To qualify for award of the Graduate Certificate in Applied Science (Wildlife Health and Population Management), candidates must complete 24 credit points from the two six credit point core units and two of the six optional units of study, as described in the table below.

To qualify for award of the Graduate Diploma in Applied Science (Wildlife Health and Population Management), candidates must complete 36 credit points from the two six credit point core units and four of the six optional units of study, as described in the table below.

To qualify for award of the Master of Applied Science (Wildlife Health and Population Management), candidates must complete 48 credit points from all the core units and a selection of the optional units of study, as described in the table below.

Not all units of study will be available every semester. The Faculty may allow substitution of any unit of study by an approved unit of study, including units of study from other postgraduate coursework programs in the Faculty or elsewhere in the University.

Credit for previous study
See Graduate Certificate, Graduate Diploma and Master of Applied Science in this chapter or Course Resolutions in chapter 7.

Master of Applied Science (Wildlife Health and Population Management)

Unit of study Core/ option

<table>
<thead>
<tr>
<th>Credit for previous study</th>
<th>Core/ option</th>
</tr>
</thead>
<tbody>
<tr>
<td>WILD 5001 Australian Wildlife: Introduction</td>
<td>C</td>
</tr>
<tr>
<td>WILD 5002 Australian Wildlife: Field Studies</td>
<td>C</td>
</tr>
<tr>
<td>WILD 5009 Research Project (12cp)</td>
<td>C</td>
</tr>
</tbody>
</table>

Optional units

<table>
<thead>
<tr>
<th>Credit for previous study</th>
<th>Core/ option</th>
</tr>
</thead>
<tbody>
<tr>
<td>WILD 5003 Wildlife Health</td>
<td>O</td>
</tr>
<tr>
<td>WILD 5004 Vertebrate Pest Management</td>
<td>O</td>
</tr>
<tr>
<td>WILD 5005 In Situ Wildlife Management</td>
<td>O</td>
</tr>
<tr>
<td>WILD 5006 Ex Situ Wildlife Management</td>
<td>O</td>
</tr>
<tr>
<td>WILD 5007 Sustainable Wildlife Use &amp; Stewardship</td>
<td>O</td>
</tr>
<tr>
<td>WILD 5008 Community Relations &amp; Education</td>
<td>O</td>
</tr>
</tbody>
</table>

WILD 5001 Australian Wildlife: Introduction
6 credit points. Session: 1.
NB: Core
This unit of study provides an introduction to the wildlife of Australasia, an overview of the present status of that wildlife, and an understanding of both conservation problems and management solutions. Issues in wildlife management are exemplified using a broad range of vertebrate species occupying different environments. Emphasis is placed on providing students with a coordinated and interdisciplinary approach to wildlife health and management, and on developing expertise in recognising and solving a broad range of problems in field populations. The unit integrates lectures, practical work and supervised study, and offers students the opportunity to work through real world wildlife conservation problems relevant to their individual backgrounds.

WILD 5002 Australian Wildlife: Field Studies
6 credit points. Session: 1.
NB: Core
This unit of study provides a first hand introduction to the wildlife of Australasia, a practical overview of the present status of that wildlife, and an understanding of both conservation problems and management solutions. Issues in wildlife management are exemplified using sampling and diagnostic methods on a broad range of vertebrate species occupying different environments. The unit follows on from WILD 5001 and provides practical experience via a five day field trip.

WILD 5009 Research Project
12 credit points. Session: 1, 2.
Wildlife Health and Population Management

The unit considers the potential for sustainable use of wildlife to contribute to the conservation of biodiversity and the economic well being of local communities. There will be consideration of both consumptive and non consumptive utilisation programs, using both Australian and international examples. Ethical and animal welfare issues will be considered in some detail.

A case study on the Australian kangaroo harvesting industry will provide an opportunity to examine all the factors that need to be taken into account: biological, socio cultural, economic and animal welfare issues.

The unit is presented by Associate Professor Tony English from the Faculty of Veterinary Science.

**WILD 5008 Community Relations and Education**

6 credit points. Session: 2.

**NB:** Optional

Techniques in wildlife health and population management are sometimes developed and used with little regard for the people for whom the management is designed. This unit provides an understanding of how management is assisted by the inclusion of all stakeholders at different stages of program development and implementation. Issues of community involvement and 'ownership' are illustrated using case studies with indigenous and non indigenous peoples in the Australasian region.

**Wildlife Health and Population Management optional units of study**

The following optional units are available. For detailed descriptions see the listings under the appropriate headings of postgraduate Degrees in Applied Science articulated coursework programs. Special attention should be paid to any prerequisite studies that may be required.

- ENV15808 Applied Ecology for Environmental Scientists
- ICOM 5002 Science Communication
- QMEC 5110 Structure and Management of Research Projects.

---

**WILD 5003 Wildlife Health**

6 credit points. Session: 1.

**NB:** Optional

This unit of study provides an introduction to the health issues confronting wildlife in Australasia, an overview of the health status of that wildlife, and an understanding of both the investigation of health problems and the effective management of these. Issues in wildlife disease management are exemplified using a broad range of vertebrate species occupying different environments. Emphasis is placed on providing students with a coordinated and interdisciplinary approach to wildlife health, and on developing expertise in recognising and solving a broad range of health problems in field populations. The unit integrates lectures, practical work and supervised study, and offers students the opportunity to work through real world wildlife conservation problems relevant to their individual backgrounds.

**WILD 5004 Vertebrate Pest Management**

6 credit points. Session: 2.

**NB:** Optional

Vertebrate pests occur in many parts of the world, and can pose significant problems for management of habitat, agricultural productivity, human and wildlife health. This unit focuses on vertebrates that have been introduced to new environments, and considers in detail the impacts and management of pest vertebrates in Australia. Steps in pest management are reviewed, from problem analysis to acceptable levels of control, using case studies of cane toads, rabbits, house mice and red foxes. Traditional mortality methods of management are reviewed, and emphasis placed on developing methods based on fertility control via immunocontraception.

**WILD 5005 In Situ Wildlife Management**

6 credit points. Session: 1, 2.

**NB:** Optional

Wildlife populations do not remain static, but change in size and composition over both time and space. The challenge for managers is to recognise when change in target populations exceeds acceptable limits and intervention is necessary. This unit of study develops skills in assessing population status and recognising differences between 'small populations' and 'declining populations'. It introduces methods used in population pattern analysis, demographic analysis, threat and resource assessment, and determination of health, emphasising the value of a coordinated and interdisciplinary approach to problem recognition and resolution.

**WILD 5006 Ex Situ Wildlife Management**

6 credit points. Session: 2.

**NB:** Optional

Wildlife populations are under a variety of threats, most of which result from human activities. Modern conservation biology seeks practical solutions to these problems, using a wide variety of options. These options may include captive breeding and re introduction programs, provided that a range of biological, ethical and politico economic issues are addressed. This unit of study will provide students with the ability to evaluate the likely cost effectiveness of such programs. It will also develop knowledge of the technologies available to capture and translocate wildlife, and of the planning required to ensure the best possible chance of success. The unit integrates lectures, tutorials, practical work and supervised study, and offers students the opportunity to examine real world problems in the conservation and management of threatened wildlife populations using case studies relevant to their individual backgrounds.

**WILD 5007 Sustainable Wildlife Use and Stewardship**

6 credit points. Session: 2.

**NB:** Optional
7 Postgraduate degree regulations

The postgraduate degrees in the Faculty of Science are:

**Degrees of Doctor**
- DSc Doctor of Science
- PhD Doctor of Philosophy
- DCP/PhD Doctor of Clinical Psychology/Doctor of Philosophy
- DCP/MSc Doctor of Clinical Psychology/Master of Science

**Degrees of Master**
- MSc Master of Science
- MSci(EnvirnSc) Master of Science (Environmental Science)
- MSci(Micr&An) Master of Science (Microscopy and Microanalysis)
- MInfTech Master of Information Technology
- MAPplIT Master of Applied Information Technology
- MNutrDiet Master of Nutrition and Dietetics
- MNutrSc Master of Nutritional Science
- MPSych Master of Psychology
- MEnviScLaw Master of Environmental Science and Law
- MQuantMarEcol Master of Quantitative Marine Ecology
- MAPplSc Master of Applied Science
- MAPplSc(Bioinf) Master of Applied Science (Bioinformatics)
- MAPplSc(Coastal Mgt) Master of Applied Science (Coastal Management)
- MAPplSc(EnvSc) Master of Applied Science (Environmental Science)
- MAPplSc(Micro & Microanal) Master of Applied Science (Microscopy & Microanalysis)
- MAPplSc(MBT) Master of Applied Science (Molecular Biotechnology)
- MAPplSc( NeuroSc) Master of Applied Science (Neuroscience)
- MAPplSc(Photonics) Master of Applied Science (Photonics)

**Diplomas**
- GradDipSc Graduate Diploma in Science
- GradDipSc(Micr&An) Graduate Diploma in Science (Microscopy and Microanalysis)
- GradDiplPsych Graduate Diploma in Science (Psychology)
- GradDiplInfTech Graduate Diploma in Information Technology
- GradDiplAppUT Graduate Diploma in Applied Information Technology
- GradDipPsych Graduate Diploma in Psychology
- GradDipQuantMarEcol Graduate Diploma in Quantitative Marine Ecology
- GradDipApplSc Graduate Diploma in Applied Science
- GradDipApplSc(Bioinf) Graduate Diploma in Applied Science (Bioinformatics)
- GradDipApplSc(Coastal Mgt) Graduate Diploma in Applied Science (Coastal Management)
- GradDipApplSc(EnvSc) Graduate Diploma in Applied Science (Environmental Science)
- GradDipApplSc(Inf&Comm) Graduate Diploma in Applied Science (Informatics and Communication)
- GradDipApplSc(Micro & Microanal) Graduate Diploma in Applied Science (Microscopy & Microanalysis)
- GradDipApplSc(MBT) Graduate Diploma in Applied Science (Molecular Biotechnology)
- GradDipApplSc( NeuroSc) Graduate Diploma in Applied Science (Neuroscience)
- GradDipApplSc(Photonics) Graduate Diploma in Applied Science (Photonics)

**Certificates**
- GradCertSc(HPS) Graduate Certificate in Science (History and Philosophy of Science)
- GradCertSc(Micr&An) Graduate Certificate in Science (Microscopy and Microanalysis)
- GradCertInfTech Graduate Certificate in Information Technology
- GradCertApplIT Graduate Certificate in Applied Science (Information Technology)
- GradCertQuantMarEcol Graduate Certificate in Quantitative Marine Ecology
- GradCertApplSc(Bioinf) Graduate Certificate in Applied Science (Bioinformatics)
- GradCertApplSc(Inf&Comm) Graduate Certificate in Applied Science (Informatics and Communication)
- GradCertApplSc(Micro & Microanal) Graduate Certificate in Applied Science (Microscopy and Microanalysis)
- GradCertApplSc(MBT) Graduate Certificate in Applied Science (Molecular Biotechnology)
- GradCertApplSc( NeuroSc) Graduate Certificate in Applied Science (Neuroscience)
- GradCertApplSc(Photonics) Graduate Certificate in Applied Science (Photonics)
- GradCertApplSc(PsychCoach) Graduate Certificate in Applied Science (Psychology of Coaching)
- GradCertApplSc(SurfCoatings) Graduate Certificate in Applied Science (Surface Coatings)

Prospective candidates for these awards should consult with the appropriate postgraduate adviser (see chapter 2) or Head of the Department most closely concerned, as early as possible.

---

University of Sydney (Coursework) Rule 2000

**Preliminary**

1. **Commencement and purpose of Rule**

   (1) This Rule is made by the Senate pursuant to section 37(1) of the University of Sydney Act 1989 for the purposes of the University of Sydney By law 1999.

   (2) This Rule comes into force on 1 January 2001.

   (3) This Rule governs all coursework award courses in the University. It is to be read in conjunction with the University of Sydney (Amendment Act) Rule 1999 and the Resolutions of the Senate and the faculty resolutions relating to each award course in that faculty.

---

**Rules relating to coursework award courses**

1. **Definitions**

   In this Rule:

   - **award course** means a formally approved program of study which can lead to an academic award granted by the University.
   - **coursework** means an award course not designated as a research award course. While the program of study in a coursework award course may include a component of original, supervised research, other forms of instruction and learning normally will be dominant. All undergraduate award courses are coursework award courses.
   - **credit** means advanced standing based on previous attainment in another award course at the University or at another institution. The advanced standing is expressed as credit points granted towards the award course. Credit may be granted as specific credit or non specific credit.
   - **Specific credit** means the recognition of previously completed studies as directly equivalent to units of study.

---

228
Non specific credit means a ‘block credit’ for a specified number of credit points at a particular level. These credit points may be in a particular subject area but are not linked to a specific unit of study.

credit points mean a measure of value indicating the contribution each unit of study provides towards meeting award course completion requirements stated as a total credit point value;

dean means the dean of a faculty or the director or principal of an academic college or the chairperson of a board of studies;

degree means a degree at the level of bachelor or master for the purpose of this Rule;

embedded courses/programs means award courses in the graduate certificate/graduate diploma/master's degree by coursework sequence which allow unit of study credit points to count in more than one of the awards;

faculty means a faculty, college board, a board of studies or the Australian Graduate School of Management Limited as established in each case by its constitution and in these Rules refers to the faculty or faculties responsible for the award course concerned;

major means a defined program of study, generally comprising specified units of study from later stages of the award course;

minor means a defined program of study, generally comprising units of study from later stages of the award course and requiring a smaller number of credit points than a major;

postgraduate award course means an award course leading to the award of a graduate certificate, graduate diploma, degree of master or a doctorate. Normally, a postgraduate award course requires the prior completion of a relevant undergraduate degree or diploma.

research award course means an award course in which students undertake and report systematic, creative work in order to increase the stock of knowledge. The research award courses offered by the University are: higher doctorate, Doctor of Philosophy, doctorates by research and advanced coursework, and certain degrees of master designated as research degrees. The systematic, creative component of a research award course must comprise at least 66% of the overall award course requirements;

stream means a defined program of study within an award course, which requires the completion of a program of study specified by the award course rules for the particular stream, in addition to the core program specified by award course rules for the award course.

student means a person enrolled as a candidate for a course;

testamur means a certificate of award provided to a graduate, usually at a graduation ceremony;

transcript or academic transcript means a printed statement setting out a student’s academic record at the University;

unit of study means the smallest stand alone component of a student’s award course that is recordable on a student’s transcript. Units of study have an integer credit point value, normally in the range 3–24;

undergraduate award course means an award course leading to the award of an associate diploma, diploma, advanced diploma or degree of bachelor.

2. Authorities and responsibilities

(1) Authorities and responsibilities for the functions set out in this Rule are also defined in the document Academic Delegations of Authority. The latter document sets out the mechanisms by which a person who has delegated authority may appoint an agent to perform a particular function.

(2) The procedures for consideration of, and deadlines for submission of, proposals for new and amended award courses will be determined by the Academic Board.

Division 1 Award course requirements, credit points and assessment

3. Award course requirements

(1) To qualify for the award of a degree, diploma or certificate, a student must:

(a) complete the award course requirements specified by the Senate for the award of the degree, diploma or certificate concerned;

(b) complete any other award course requirements specified by the Academic Board on the recommendation of the faculty and published in the faculty resolutions relating to the award course;

(c) complete any other award course requirements specified by the faculty in accordance with its delegated authority and published in the faculty resolutions relating to the award course; and

(d) satisfy the requirements of all other relevant by laws, rules and resolutions of the University.

4. Units of study and credit points

(1) (a) A unit of study comprises the forms of teaching and learning approved by a faculty. Where the unit of study is being provided specifically for an award course which is the responsibility of another faculty, that faculty must also provide approval.

(b) Any faculty considering the inclusion of a unit of study in the tables of units available for an award course for which it is responsible may review the forms of teaching and learning of that unit, may consult with the approving faculty about aspects of that unit and may specify additional conditions with respect to inclusion of that unit of study.

(2) A student completes a unit of study if the student:

(a) participates in the learning experiences provided for the unit of study;

(b) meets all examination, assessment and attendance requirements for the unit of study; and

(c) passes the required assessments for the unit of study.

(3) Each unit of study is assigned a specified number of credit points by the faculty responsible for the unit of study.

(4) The total number of credit points required for completion of an award course will be as specified in the Senate resolutions relating to the award course.

(5) The total number of credit points required for completion of award courses in an approved combined award course will be specified in the Senate or faculty resolutions relating to the award course.

(6) A student may, under special circumstances, and in accordance with faculty resolutions, be permitted by the relevant dean to undertake a unit or units of study other than those specified in the faculty resolutions relating to the award course and have that unit or those units of study counted towards fulfilling the requirements of the award course in which the student is enrolled.

5. Unit of study assessment

(1) A student who completes a unit of study will normally be awarded grades of high distinction, distinction, credit or pass, in accordance with policies established by the Academic Board. The grades high distinction, distinction and credit indicate work of a standard higher than that required for a pass.

(2) A student who completes a unit of study for which only a pass/fail result is available will be recorded as having satisfied requirements.

(3) In determining the results of a student in any unit of study, the whole of the student’s work in the unit of study may be taken into account.

(4) Examination and assessment in the University are conducted in accordance with the policies and directions of the Academic Board.

6. Attendance

(1) A faculty has authority to specify the attendance requirements for courses or units of study in that faculty. A faculty must take into account any University policies concerning modes of attendance, equity and disabled access.

(2) A faculty has authority to specify the circumstances under which a student who does not satisfy attendance requirements may be deemed not to have completed a unit of study or an award course.

Division 2 Enrolment

7. Enrolment restrictions

(1) A student who has completed a unit of study towards the requirements of an award course may not re enrol in that unit of study, except as permitted by faculty resolution or with the written permission of the dean. A student permitted to re enrol may receive a higher or lower grade, but not additional credit points.

(2) Except as provided in sub section (1), a student may not enrol in any unit of study which overlaps substantially in content with a unit that has already been completed or for which credit or exemption has been granted towards the award course requirements.
3. A student may not enrol in units of study additional to award course requirements without first obtaining permission from the relevant dean.

4. Except as prescribed in faculty resolutions or with the permission of the relevant dean:
   (a) a student enrolled in an undergraduate course may not enrol in units of study with a total value of more than 32 credit points in any one semester, or 16 credit points in the summer session; and
   (b) a student enrolled in a postgraduate award course may not enrol in units of study with a total value of more than 24 credit points in any one semester, or 12 credit points in the summer session.

Division 3 Credit, cross institutional study and their upper limits

8. Credit for previous studies
   (1) Students may be granted credit on the basis of previous studies.
   (2) Notwithstanding any credit granted on the basis of work completed or prior learning in another award course at The University of Sydney or in another institution, in order to qualify for an award a student must:
      (a) for undergraduate award courses, complete a minimum of the equivalent of two full-time semesters of the award course at the University; and
      (b) for postgraduate award courses, complete at least sixty percent of the requirements prescribed for the award course at the University.
   These requirements may be varied where the work was completed as part of an embedded program at the University or as part of an award course approved by the University in an approved conjoint venture with another institution.
   (3) The dean may, where good cause has not been established:
      (1) for undergraduate award courses, permit the student to complete the requirements for the award course through study at another institution other than a university normally should not exceed one third of the overall award course requirements.
      (4) A faculty has authority to establish embedded academic sequences in closely related graduate certificate, graduate diploma and master's degree award courses. In such embedded sequences, a student may be granted credit for all or some of the units of study completed in one award of the sequence towards any other award in the sequence, irrespective of whether or not the award has been conferred.
   (5) In an award course offered as part of an approved conjoint venture the provisions for the granting of credit are prescribed in the Resolutions of the Senate and the faculty resolutions relating to that award course.

9. Cross institutional study
   (1) The relevant dean may permit a student to complete a unit or units of study at another university or institution and have that unit or those units of study credited to the student's award course.
   (2) The relevant dean has authority to determine any conditions applying to cross institutional study.

Division 4 Progression

10. Repeating a unit of study
   (1) A student who repeats a unit of study shall, unless granted exemption by the relevant dean:
      (a) participate in the learning experiences provided for the unit of study; and
      (b) meet all examination, assessment and attendance requirements for the unit of study.
   (2) A student who presents for reassessment in any unit of study is not eligible for any prize or scholarship awarded in connection with that unit of study without the permission of the relevant dean.

11. Time limits
    A student must complete all the requirements for an award course within ten calendar years or any lesser period if specified by Resolution of the Senate or the faculty.

Division 5 Discontinuation of enrolment and suspension of candidature

12. Discontinuation of enrolment
    (1) A student who wishes to discontinue enrolment in an award course or a unit of study must apply to the relevant dean and will be presumed to have discontinued enrolment from the date of that application, unless evidence is produced showing:
        (a) that the discontinuation occurred at an earlier date; and
        (b) that there was good reason why the application could not be made at the earlier time.
    (2) A student who discontinues enrolment during the first year of enrolment in an award course may not re-enrol in that award course unless:
       (a) the relevant dean has granted prior permission to re-enrol; or
       (b) the student is reselected for admission to candidature for that course.
    (3) No student may discontinue enrolment in an award course or unit of study after the end of classes in that award course or unit of study, unless he or she produces evidence that:
        (a) the discontinuation occurred at an earlier date; and
        (b) there was good reason why the application could not be made at the earlier time.
    (4) A discontinuation of enrolment may be recorded as Withdrawn (W) or Discontinued not to count as failure (DNF) where that discontinuation occurs within the time-frames specified by the University and published by the faculty, or where the student meets other conditions as specified by the relevant faculty.

13. Suspension of candidature
    (1) A student must be enrolled in each semester in which he or she is actively completing the requirements for the award course. A student who wishes to suspend candidature must first obtain approval from the relevant dean.
    (2) The candidature of a student who has not re-enrolled and who has not obtained approval from the dean for suspension will be deemed to have lapsed.
    (3) A student whose candidature has lapsed must apply for re-admission in accordance with procedures determined by the relevant faculty.
    (4) A student who enrolls after suspending candidature shall complete the requirements for the award course under such conditions as determined by the dean.

Division 6 Unsatisfactory progress and exclusion

14. Satisfactory progress
    A faculty has authority to determine what constitutes satisfactory progress for all students enrolled in award courses in that faculty, in accordance with the policies and directions of the Academic Board.

15. Requirement to show good cause
    (1) For the purposes of this Rule, good cause means circumstances beyond the reasonable control of a student, which may include serious ill health or misadventure, but does not include demands of employers, pressure of employment or time devoted to non University activities, unless these are relevant to serious ill health or misadventure. In all cases the onus is on the student to provide the University with satisfactory evidence to establish good cause. The University may take into account relevant aspects of a student's record in other courses or units of study within the University and relevant aspects of academic studies at other institutions provided that the student presents this information to the University.
    (2) The relevant dean may require a student who has not made satisfactory progress to show good cause why he or she should be allowed to re-enrol.
    (3) The dean will permit a student who has shown good cause to re-enrol.

16. Exclusion for failure to show good cause
    The dean may, where good cause has not been established:
    (1) exclude the student from the relevant course; or
    (2) permit the student to re-enrol in the relevant award course subject to restrictions on units of study, which may include, but are not restricted to:
        (a) completion of a unit or units of study within a specified time;
        (b) exclusion from a unit or units of study, provided that the dean must first consult the head of the department responsible for the unit or units of study; and
        (c) specification of the earliest date upon which a student may re-enrol in a unit or units of study.

17. Applying for re-admission after exclusion
    (1) A student who has been excluded from an award course or from a unit or units of study may apply to the relevant dean for readmission to the award course or re-enrolment in the unit or
18. Appeals against exclusion

(1) In this Rule a reference to the Appeals Committee is a reference to the Senate Student Appeals Committee (Exclusions and Readmissions).

(2) (a) (i) A student who has been excluded in accordance with this Rule may appeal to the Appeals Committee.
(ii) A student who has applied for readmission to an award course or re enrolment in a unit of study after a period of exclusion, and who is refused readmission or re enrolment may also apply to the Appeals Committee.

(b) The Appeals Committee shall comprise:
(i) 3 ex officio members (the Chancellor, the Deputy Chancellor and the Vice Chancellor and Principal);
(ii) The Chair and Deputy Chairs of the Academic Board;
(iii) 2 student Fellows; and
(iv) up to 4 other Fellows.

(c) The Appeals Committee may meet as one or more sub-committees providing that each sub committee shall include at least 1 member of each of the categories of:
(i) ex officio member;
(ii) Chair or Deputy Chair of the Academic Board;
(iii) student Fellow; and
(iv) other Fellows.

(d) Three members shall constitute a quorum for a meeting of the Appeals Committee or a sub committee.

(e) The Appeals Committee and its sub committees have authority to hear and determine all such appeals and must report its decision to the Senate annually.

(f) The Appeals Committee or a sub committee may uphold or disallow any appeal and, at its discretion, may determine the earliest date within a maximum of four semesters at which a student who has been excluded shall be permitted to apply to re enrol.

(g) No appeal shall be determined without granting the student the opportunity to appear in person before the Appeals Committee or sub committee considering the appeal. A student appearing may be accompanied by a friend or adviser.

(h) The Appeals Committee or sub committee may hear the relevant dean but that dean may only be present at those stages at which the student is permitted to be present. Similarly, the dean is entitled to be present when the Committee or sub committee hears the student.

(i) If, due notice having been given, a student fails to attend a meeting of the Appeals Committee or sub committee scheduled to consider that student's appeal, the Appeals Committee or sub committee, at its discretion, may defer consideration of the appeal or may proceed to determine the appeal.

(j) A student who has been excluded in accordance with these resolutions and has lodged a timely appeal against that exclusion may re enrol pending determination of that appeal if it has not been determined by the commencement of classes in the next appropriate semester.

Division 7 Exceptional circumstances

19. Variation of award course requirements in exceptional circumstances

The relevant dean may vary any requirement for a particular student enrolled in an award course in that faculty where, in the opinion of the dean, exceptional circumstances exist.

Division 8 Award of degrees, diplomas and certificates

20. Classes of award

(1) Undergraduate diplomas may be awarded in five grades pass, pass with merit, distinction, pass with high distinction or honours.

(2) Degrees of bachelor may be awarded in two grades pass or honours.

(3) Graduate diplomas and graduate certificates may be awarded in one grade only pass.

(4) Degrees of master by coursework may be awarded three grades pass, pass with merit or honours.

21. Award of the degree of bachelor with honours

(1) The award of honours is reserved to indicate special proficiency. The basis on which a student may qualify for the award of honours in a particular award course is specified in the faculty resolutions relating to the course.

(2) Each faculty shall publish the grading systems and criteria for the award of honours in that faculty.

(3) Classes which may be used for the award of honours are:
   First Class
   Second Class/Division 1
   Second Class/Division 2
   Third Class.

(4) With respect to award courses which include an additional honours year:
   (a) a student may not graduate with the pass degree while enrolled in the honours year;
   (b) on the recommendation of the head of the department concerned, a dean may permit a student who has been awarded the pass degree at a recognised tertiary institution to enrol in the honours year in that faculty;
   (c) faculties may prescribe the conditions under which a student may enrol part time in the honours year;
   (d) the student who fails or discontinues the honours year may not re enrol in it, except with the approval of the dean.

22. University Medal

An honours bachelor degree student with an outstanding academic record throughout the award course may be eligible for the award of a University medal, in accordance with Academic Board policy and the requirements of the faculty resolutions relating to the award course concerned.

23. Award of the degree of master with honours or merit

The award of honours or pass with merit is reserved to indicate special proficiency or particular pathways to completion. The basis on which a student may qualify for the award of honours or the award in particular degree is specified in the faculty resolutions relating to that degree.

24. Transcripts and testamurs

(1) A student who has completed an award course or a unit of study at the University will receive an academic transcript upon application and payment of any charges required.

(2) Transcripts may indicate streams or majors or both as specified in the relevant faculty resolutions.

Division 9 Transitional provisions

25. Application of this Rule during transition

This Rule applies to all candidates for degrees, diplomas and certificates who commence candidature after 1 January 2001. Candidates who commenced candidature prior to this date may choose to proceed in accordance with the resolutions of the Senate in force at the time they enrolled, except that the faculty may determine specific conditions for any student who has re enrolled in an award course after a period of suspension.

Degrees of Doctor

Doctor of Science (DSc)

Resolutions of the Senate

The Resolutions of the Senate relating to the degree of Doctor of Science are printed in The University of Sydney Calendar, the following Resolutions of the Faculty also apply:

Resolutions of the Faculty

(i) Published work which a candidate for the degree of Doctor of Science submits for examination must, in addition to satisfying the requirements of the resolutions of the Senate relating to the degree, be in a field with which the Faculty is concerned.

(ii) A candidate for the degree is required, by way of an introduction, to describe the theme of the published work submitted and, where there is a large number of publications whose dates range over a period of time and which contain some range of subject matter, to state how these are related to one another and to the theme.

(iii) If a prospective candidate, as a first step tenders the introduction called for in (ii) above, together with a list of the published work which it is proposed to submit for examination, the Faculty will endeavour to make an
POSTGRADUATE DEGREE REGULATIONS

Degrees of Doctor

assessment as to whether the published work is in a field with which the Faculty is concerned and, if so, an assessment also of the prima facie worthiness for examination of the published work.

(iv) A prospective candidate who tends the introduction together with the list of published work shall not be debarred from subsequently submitting the published work for examination.

Doctor of Philosophy (PhD)

Resolutions of the Senate

The Resolutions of the Senate and Academic Board relating to the degree of Doctor of Philosophy are printed in The University of Sydney Calendar.

Doctor of Clinical Psychology/Doctor of Philosophy (DCP/PhD)

Resolutions of the Senate

Award of the degrees

1. The degrees of Doctor of Clinical Psychology and Doctor of Philosophy shall only be awarded on satisfactory completion of the requirements for both degrees, except as provided by the Resolutions of the Academic Board relating to the degree of Doctor of Philosophy.

Eligibility for admission

2. The Dean of the Faculty of Science may admit to candidature:

(l) graduates of The University of Sydney holding the degree of Bachelor of Psychology, Bachelor of Science (Honours), Bachelor of Arts (Honours), Bachelor of Economics (Social Sciences) (Honours), or Bachelor of Liberal Studies (Honours) in psychology with a result of 2:1 or better or any other equivalent award of The University of Sydney; or

(b) graduates of other universities who have qualifications equivalent to those specified in subsection (1); and

(2) who have satisfied the Department of their personal suitability for the practice of clinical psychology determined by personal interview and by analysis of units of study completed.

Availability

3. (1) Admission to candidature may be limited by a quota. In determining the quota, the University will take into account:

(a) availability of resources including space, laboratory and computing facilities; and

(b) availability of adequate and appropriate supervision.

(2) In considering an application for admission to candidature, the Head of Department, the Director of Clinical Training and the Dean shall take account of the quota and shall select, in preference, applicants who are most meritorious in terms of section 2 above.

Method of progression

4. A candidate for the combined award course shall proceed by completing units of study, clinical internships, research and thesis in accordance with Sections 7 and 8.

Table 7.1: DCP/PhD requirements

<table>
<thead>
<tr>
<th>Year</th>
<th>Sem.</th>
<th>Therapy Knowledge and Skills</th>
<th>Assessment Knowledge and Skills</th>
<th>Clinical Internships</th>
<th>Ethics and Professional Practice</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Adult Psychological Disorders</td>
<td>Psychological Assessment of Adults</td>
<td>Clinical Internships 1</td>
<td>Ethics and Professional Practice 1</td>
<td>Research 1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Child and Family Psychology</td>
<td>Psychological Assessment of Children</td>
<td>Clinical Internships 2</td>
<td>Ethics and Professional Practice 2</td>
<td>Research 2</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>Adult and Health Psychology</td>
<td>Cognitive Neuropsychology</td>
<td>Clinical Internships 3</td>
<td>Ethics and Professional Practice 3</td>
<td>Research 3</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
<td>Specialist Seminars</td>
<td>Neuropsychological Disorders</td>
<td>Clinical Internships 4</td>
<td>Ethics and Professional Practice 4</td>
<td>Research 4</td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>Advanced Seminars</td>
<td>Nil</td>
<td>Clinical Internships 5</td>
<td>Ethics and Professional Practice 5</td>
<td>Research 5</td>
</tr>
<tr>
<td>2</td>
<td>6</td>
<td>Nil</td>
<td>Nil</td>
<td>Clinical Internships 6</td>
<td>Ethics and Professional Practice 6</td>
<td>Research 6</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>NIL</td>
<td>Research 7</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>NIL</td>
<td>Research 8</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>NIL</td>
<td>Research 9</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>NIL</td>
<td>Research 10</td>
</tr>
</tbody>
</table>

Time limits

5. (1) A candidate may proceed on either a full time or a part time basis.

(2) A candidate shall complete the requirements for the combined award course in a minimum of nine semesters and a maximum of fifteen semesters, and except with permission of the Dean within nine calendar years of admission to candidature.

(3) The Director of Clinical Training in consultation with the members of the Clinical Psychology unit shall approve any period of absence.

Requirements for the combined award course

6. Candidates for the combined award course are required to:

(l) complete satisfactorily 96 credit points from approved units of study. A unit of study shall consist of such lectures, seminars, tutorial instruction, essays, exercises, practical work, or project work as may be prescribed. In these resolutions, 'to complete a unit of study' or any derivative expression means:

(a) to attend all the lectures and the meetings, if any, for seminars or tutorial instruction;

(b) to complete satisfactorily the essays, exercises, practical and project work if any; and

(c) to pass any other examination of the unit of study that may apply;

(2) pursue a course of advanced study and research leading to the submission of a thesis in an area of clinical research (3) complete satisfactorily clinical internships in accordance with Sections 7 and 8; and

(4) complete satisfactorily two specialist seminars in clinical psychology.

7. The following are the requirements for the combined award course: The structure of the course is arranged to cover areas from five key topics, namely: Therapy Knowledge and Skills, Assessment Knowledge and Skills, Clinical Internships, Ethics and Professional Practice and Research arranged as shown in Table 7.1: ‘DCP/PhD requirements’.

Examination

8. The procedures for the examination and award of the Doctor of Philosophy (including the provision for transfer to Master's candidature if the degree is not awarded) shall be prescribed in the Resolutions of the Academic Board and Senate relating to that degree.

9. On completion of the requirements for the combined award course, the Faculty, on the recommendation of the Head of Department and the Director of Clinical Training, shall determine the results of the candidature.

Progress

10. (l) The Dean may:

(a) call upon any candidate to show cause why that candidature should not be terminated by reason of unsatisfactory progress towards the completion of the combined award course; and

(b) terminate the candidature where the candidate does not show good cause.
(2) Satisfactory progress is prescribed as:
(a) a candidate for the combined award course must complete satisfactorily a unit of study at the first attempt, they can make a second attempt at completing that unit of study. They may not begin the next unit of study within the same key topic area until the previous unit of study has been satisfactorily completed.
(b) any candidate who fails to complete satisfactorily a unit of study at the second attempt will normally be deemed to have failed to complete the course requirements and their candidature will be terminated by the Dean.
(c) if a candidate fails to complete satisfactorily two units of study within the same key topic area at the first attempt, they will normally be deemed to have failed to complete the course requirements and their candidature will be terminated by the Dean.

Credit
11. A candidate who, before admission to candidature, has spent time in graduate study and, within the previous three years, has completed coursework considered by the Dean to be equivalent to units of study prescribed for the combined award course, may receive credit of up to 48 credit points towards the requirements for the Doctor of Clinical Psychology provided that the completed work was not counted toward the requirements of another degree.

Transfer to Doctor of Philosophy candidature
12. The Director of Clinical Training in consultation with the Head of Department may recommend that a candidate withdraw from candidature for the combined award course and complete requirements for the degree of Doctor of Philosophy under such conditions as the Dean may determine.

Doctor of Clinical Psychology/Master of Science (DGP/MSc)

Resolutions of the Senate
Award of the degrees
1. The degrees of Doctor of Clinical Psychology and Master of Science shall only be awarded on satisfactory completion of the requirements for both degrees, except as provided by the Resolutions of the Senate relating to the degree of Master of Science.

Eligibility for admission
2. The Dean of the Faculty of Science may admit to candidacy: (1) graduates of The University of Sydney holding the degree of Bachelor of Psychology, Bachelor of Science (Honours), Bachelor of Economics (Social Sciences) (Honours), Bachelor of Liberal Studies (Honours) in psychology with a result of 2:1 or better or any other equivalent award of The University of Sydney; or (b) graduates of other universities who have qualifications equivalent to those specified in subsection (1); and (2) who have satisfied the Department of their personal suitability for the practice of clinical psychology determined by personal interview and by analysis of units of study completed.

Availability
3. (1) Admission to candidature may be limited by a quota. In determining the quota, the University will take into account: (a) availability of resources including space, laboratory and computing facilities; and (b) availability of adequate and appropriate supervision. (2) In considering an application for admission to candidature, the Head of Department, the Director of Clinical Training and the Dean shall take account of the quota and shall select, in preference, applicants who are most meritorious in terms of section 2 above.

Method of progression
4. A candidate for the combined award course shall proceed by completing units of study, clinical internships, research and thesis in accordance with Sections 7 and 8.

Time limits
5. (1) A candidate may proceed on either a full time or a part time basis. (2) A candidate shall complete the requirements for the combined award course in a minimum of six semesters and a maximum of twelve semesters, and except with permission of the Dean within nine calendar years of admission to candidature.

Requirements for the combined award course
6. Candidates for the combined award course are required to: (1) complete satisfactorily 96 credit points from approved units of study. A unit of study shall consist of such lectures, seminars, tutorial instruction, essays, exercises, practical work, or project work as may be prescribed. In these resolutions, 'to complete a unit of study' or any derivative expression means: (a) to attend all the lectures and the meetings, if any, for seminars or tutorial instruction; (b) to complete satisfactorily the essays, exercises, practical and project work if any; and (c) to pass any other examination of the unit of study that may apply; (2) pursue a course of advanced study and research leading to the submission of a thesis in an area of clinical research; (3) complete satisfactorily clinical internships in accordance with Sections 7 and 8; and (4) complete satisfactorily two specialist seminars in clinical psychology.

Examination
7. The following are the requirements for the combined award course. The structure of the course is arranged to cover areas from five key topics, namely: Therapy Knowledge and Skills, Assessment Knowledge and Skills, Clinical Internships, Ethics and Professional Practice and Research arranged as shown in Table 7.2: 'DGP/MSc requirements'.

Table 7.2: DGP/MSc requirements

<table>
<thead>
<tr>
<th>Year</th>
<th>Sem.</th>
<th>Therapy Knowledge and Skills</th>
<th>Assessment Knowledge and Skills</th>
<th>Clinical Internships</th>
<th>Ethics and Professional Practice</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Adult Psychological Disorders</td>
<td>Psychological Assessment of Adults</td>
<td>Clinical Internships 1</td>
<td>Ethics and Professional Practice 1</td>
<td>Research 1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Child and Family Psychology</td>
<td>Psychological Assessment of Children</td>
<td>Clinical Internships 2</td>
<td>Ethics and Professional Practice 2</td>
<td>Research 2</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>Adult and Health Psychology</td>
<td>Cognitive Neuropsychology</td>
<td>Clinical Internships 3</td>
<td>Ethics and Professional Practice 3</td>
<td>Research 3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Specialist Seminars</td>
<td>Neuropsychological Disorders</td>
<td>Clinical Internships 4</td>
<td>Ethics and Professional Practice</td>
<td>Research 4</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Advanced Seminars</td>
<td>Nil</td>
<td>Clinical Internships 5</td>
<td>Ethics and Professional Practice 5</td>
<td>Research 5</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Nil</td>
<td>Clinical Internships 6</td>
<td>Ethics and Professional Practice 6</td>
<td>Research 6</td>
<td></td>
</tr>
</tbody>
</table>
POSTGRADUATE DEGREE REGULATIONS

Progress

10.1 (1) The Dean may:
(a) call upon any candidate to show cause why that candidate should not be terminated by reason of unsatisfactory progress towards the completion of the combined award course; and
(b) terminate the candidature where the candidate does not show good cause.

(2) Satisfactory progress is prescribed as:
(a) a candidate for the combined award course must complete satisfactorily (at a pass level) all units of study;
(b) a candidate fails to complete satisfactorily a unit of study at the first attempt, they can make a second attempt at completing that unit of study. They may not begin the next unit of study within the same key topic area until the previous unit of study has been satisfactorily completed;
(c) any candidate who fails to complete satisfactorily a unit of study at the second attempt will normally be deemed to have failed to complete the course requirements and their candidature will be terminated by the Dean; and
(d) if a candidate fails to complete satisfactorily two units of study within the same key topic area at the first attempt, they will normally be deemed to have failed to complete the course requirements and their candidature will be terminated by the Dean.

Credit

11. A candidate who, before admission to candidature, has spent time in graduate study and, within the previous three years, has completed coursework considered by the Dean to be equivalent to units of study prescribed for the combined award course, may receive credit of up to 48 credit points towards the requirements for the Doctor of Clinical Psychology provided that the completed work was not counted toward the requirements of another degree.

Transfer to Master of Science candidature

12. The Director of Clinical Training in consultation with the Head of the Department may recommend that a candidate withdraw from candidature for the combined award course and complete requirements for the degree of Master of Science under such conditions as the Dean may determine.

Degrees of Master

Master of Science (MSc)

Resolutions of the Senate

1. (1) The Faculty of Science may, on the recommendation of the Head of the Department concerned, admit to candidature for the degree of Master of Science an applicant who:
(a) has completed coursework considered by the Dean to be equivalent to units of study prescribed for the combined award course, or
(b) has, in the opinion of the Faculty, attained a first or second class Honours standard:
(i) in the final year of an Honours unit of study for the degree of Bachelor of Science; or
(ii) in a unit of study considered by the Faculty to be equivalent to a unit of study referred to in subsection (i), or has, in some other manner, acquired a standard of knowledge considered by the Faculty to be equivalent to a first or second class Honours standard in a unit of study referred to in subsection (i).
(2) Notwithstanding subsection (1), the Academic Board may admit a person to candidature for the degree in accordance with the provisions of Part 9 of The University of Sydney (Amendment Act) Rule 1999.

2. Subject to the approval of the Head of the Department, a candidate for the degree shall elect to proceed:
(a) either as a full time or as a part time candidate;
(b) either by research and thesis in accordance with section 6 or by coursework and essay in accordance with section 7; and
(c) except in the case of a candidate proceeding in accordance with Part 9 of The University of Sydney (Amendment Act) Rule, either within The University of Sydney or elsewhere.

3. (1) A candidate shall not present for examination for the degree earlier than one year after commencement of candidature.
(2) Except with the permission of the Faculty, a full time candidate providing by research and thesis or any candidate proceeding by coursework and essay shall complete the requirements for the degree not later than two years after the commencement of candidature.
(3) Except with the permission of the Faculty, a part time candidate proceeding by research and thesis shall complete the requirements for the degree not later than four years after the commencement of candidature.

4. Time spent by a candidate in advanced study in The University of Sydney before admission to candidature may be deemed by the Faculty to be time spent after such admission.

5. (1) The Dean of the Faculty, on the recommendation of the Head of the Department concerned, shall appoint a full time member of the academic staff or research staff of the University to act as supervisor of each candidate.
(2) Where the supervisor is a member of the research staff, the Dean of the Faculty, on the recommendation of the Head of the Department concerned, shall also appoint a member of the full time academic staff as associate supervisor. Any person so appointed as associate supervisor must be capable of acting as supervisor in the event that the supervisor is no longer able to act.

(3) The Dean of the Faculty, on the recommendation of the Head of the Department concerned, may appoint a full time member of the academic staff or other appropriately qualified person to act as associate supervisor.
(4) The supervisor shall report annually to the Faculty, through the Head of Department, on the progress towards completion of the requirements for the degree of each candidate under his or her supervision.
(5) The Faculty, on the recommendation of the Head of the Department concerned, may terminate the candidature of any candidate who has not shown evidence of sufficient progress, in the opinion of the Faculty.

6. (1) A candidate proceeding by research and thesis shall:
(a) carry out an original investigation on a topic approved by the Head of the Department concerned;
(b) write a thesis embodying the results of this investigation and state in the thesis generally in a preface and specifically in notes, the sources from which the information was taken, the extent to which the work of others has been used, and the proportion of the thesis claimed as original;
(c) lodge with the Registrar three copies of the thesis, typewritten and bound; and
(d) if required by the examiners, sit for an examination in the branch or branches of science to which the thesis relates.
(2) The thesis shall be accompanied by a certificate from the supervisor stating whether in the supervisor's opinion the form of presentation of the thesis is satisfactory.
(3) The Dean of the Faculty of Science on the recommendation of the head of department concerned, shall appoint two, or where the Dean considers it appropriate, more than two examiners of whom at least one shall be external to the University, i.e., not being a member of the staff of the University or holding a clinical academic title, and of whom one may be the person appointed to act as supervisor of the candidate.
(4) The examiners shall report to the Faculty which shall determine the result of the examination.
(5) A candidate may not present as the thesis any work which has been presented for a degree or diploma at this or another tertiary institution, but the candidate shall not be precluded from incorporating such work in the thesis, provided that in presenting the thesis the candidate indicates the part of the work which has been so incorporated.
(6) The Registrar shall lodge one copy of the thesis with the Librarian if the degree is awarded.

7. (1) A candidate proceeding by course work and essay shall:

1. The Faculty has resolved that, for the time being, recreation leave shall be four weeks per year and that substantial employment shall mean more than 6 hours per week or 180 hrs per annum, whichever shall be less.
Master of Science (Environmental Science) (MSc(EnvironmentalSc))

Resolutions of the Senate

Eligibility for admission

1. The Dean of the Faculty of Science may admit to candidature:
   (i) graduates who have completed an Honours degree majoring in a Science discipline that has a significant environmental emphasis, or in Environmental Science, or equivalent;
   (ii) graduates who have completed the requirements for a Graduate Diploma majoring in a Science discipline that has a significant environmental emphasis, or in Environmental Science, or equivalent as per section 9;
   (iii) graduates who have completed prior postgraduate study in a Science discipline that has a significant environmental emphasis, or in Environmental Science.

Availability

2. (1) Admission to candidacy may be limited by a quota. In determining the quota the University will take into account:
   (i) availability of resources including space, laboratory and computing facilities; and
   (ii) availability of adequate and appropriate supervision.

3. (2) In considering an application for admission to candidacy the Program Committee for Environmental Science and the Faculty shall take account of the quota and will select, in preference, applicants who are most meritorious in terms of section 1 above.

Method of progression

3. (1) A candidate for the degree shall proceed by research and thesis in accordance with section 6.

4. (2) A candidate for the degree must complete all other requirements for the degree as dictated by the Chair of the Program Committee for Environmental Science and in accordance with section 6.

Time limits

4. A candidate may proceed on either a full time or a part time basis.

5. (1) A full time candidate shall complete the requirements for the degree not earlier than the end of the third semester and not later than the end of the fourth semester of candidature, except as described in Section 10 or unless otherwise determined by the Faculty. A full time candidate shall not keep the normal semesters but shall pursue candidature continuously throughout the year, except for periods of leave approved by the candidate's supervisor, and shall not have any substantial employment during the day.

6. (2) A part time candidate shall complete the requirements for the degree not earlier than the end of the third semester and not later than the end of the eighth semester of candidature, except as described in Section 10 or unless otherwise determined by the Faculty.

7. (3) Any candidate who does not comply with subsection 1 shall be deemed to be a part time candidate.

Requirements for the degree

8. (1) A candidate for the degree is required to:

   (a) attend such course of study and pass such examinations in each unit of study as the Faculty, on the recommendation of the Department concerned, shall by resolution prescribe;
   (b) write a substantial essay on a topic approved by the Head of the Department concerned and state in the essay, generally in a preface and specifically in notes, the sources from which the information was taken and the extent to which work of others has been used; and
   (c) lodge with the Registrar two typewritten copies of the essay.

9. (2) The Dean of the Faculty, on the recommendation of the Head of the Department concerned, shall appoint two examiners to examine the essay. One may be the person appointed to act as supervisor of the candidate.

10. (3) The examiners shall report to the Faculty which shall determine the result of the examination.

11. (4) The candidate may not present as the essay any work which has been presented for an award course at this or another tertiary institution, but the candidate will not be precluded from incorporating such in the essay, provided that in presenting the essay the candidate indicates the part of work which has been so incorporated.

12. (5) A candidate may not present as the thesis any work which has been presented for a degree or diploma at this or any other tertiary institution, but the candidate will not be precluded from incorporating such work in the thesis, provided that in presenting the thesis the candidate indicates the part of work which has been so incorporated.

13. (6) The candidate shall complete the requirements for the degree as dictated by the Chair of the Program Committee for Environmental Science. This can include up to 24 credit points of coursework covering material new to the candidate and selected from units of study approved from time to time by the Faculty. A unit of coursework study shall consist of such lectures, seminars, tutorial instruction, essays, exercises or practical work as may be prescribed. In these resolutions, 'to complete a unit of study' or any derivative expression means:
   (i) to attend the lectures, and the meetings, if any, for seminars or tutorial instruction;
   (ii) to complete satisfactorily the essays, exercises and practical work if any; and
   (iii) to pass any other examination of the unit of study that may apply.

Examination

7. (1) A candidate shall:
   (a) attend such course of study and pass such examinations in each unit of study as the Faculty, on the recommendation of the Chair of the Program Committee for Environmental Science, shall by resolution prescribe;
   (b) carry out an original investigation on a topic approved by Chair of the Program Committee for Environmental Science;
   (c) write a thesis embodying the results of this investigation, stating in the thesis the sources from which the information was taken, the extent to which the work of others has been used, and the proportion of the thesis claimed as original work.

8. (2) Candidates for the degree must prove to the satisfaction of the Program Committee for Environmental Science a breadth of knowledge in environmental issues.

9. (3) Candidates for the degree must satisfactorily complete any coursework requirements prescribed by the Chair of the Program Committee for Environmental Science. This can include up to 24 credit points of coursework covering material new to the candidate and selected from units of study approved from time to time by the Faculty. A unit of coursework study shall consist of such lectures, seminars, tutorial instruction, essays, exercises or practical work as may be prescribed. In these resolutions, 'to complete a unit of study' or any derivative expression means:
   (i) to attend the lectures, and the meetings, if any, for seminars or tutorial instruction;
   (ii) to complete satisfactorily the essays, exercises and practical work if any; and
   (iii) to pass any other examination of the unit of study that may apply.

10. (2) The thesis shall be accompanied by a certificate from the supervisor stating whether in the supervisor's opinion the form of presentation of the thesis is satisfactory.

11. (3) The Dean of the Faculty of Science on the recommendation of the head of department concerned, shall appoint two, or where the Dean considers it appropriate, more than two examiners of whom at least one shall be external to the University i.e., not being a member of the staff of the University or holding a clinical academic title, and of whom one may be the person appointed to act as supervisor of the candidate.

12. (4) The examiners shall report to the Faculty which shall determine the result of the examination.

13. (5) A candidate may not present as the thesis any work which has been presented for a degree or diploma at this or any other tertiary institution, but the candidate shall not be precluded from incorporating such work in the thesis. Provided that in presenting the thesis the candidate indicates the part of the work which has been so incorporated.

14. (6) The Registrar shall lodge one copy of the thesis with the Librarian if the degree is awarded.
(1) A candidate who has fully completed the requirements for a Graduate Diploma of Science or Applied Science is eligible to apply for admission into the MSc(Environmental Science). Candidates who are considered not to have the required breadth of knowledge in environmental issues may need to complete some further coursework as per section 6.

(2) A candidate who has completed 24 credit points of Environmental Science coursework at Credit grade or above towards the requirements for a postgraduate qualification in Science or Applied Science may apply for admission into the MSc (Environmental Science). Candidates who gain admission in this manner may still need to complete some further coursework as per section 6.

10. For a candidate who gains admission into the MSc(Environmental Science) from a Graduate Diploma of Science or Applied Science, the duration of candidature is as follows:

(1) Where a full time candidate has completed the requirements for a Graduate Diploma of Science or Applied Science immediately prior to admission into the MSc(Environmental Science), the minimum duration for completion of the requirements of the MSc(Environmental Science) is two semesters.

(2) Where a part time candidate has completed the requirements for the Graduate Diploma of Science or Applied Science immediately prior to admission into the MSc(Environmental Science), the minimum duration for completion of the requirements of the MSc(Environmental Science) is three semesters.

In these resolutions, the term ‘immediately’ means that the Graduate Diploma requirements were completed in the previous semester.

Master of Science (Microscopy and Microanalysis) (MSc(Micr&An))

Note: This degree is no longer available to new students from 2002.

Resolutions of the Senate

Eligibility for admission

1. An applicant for admission to candidature for the degree shall, except as provided in Part 9 of The University of Sydney (Amendment Act) Rule 1999:

(i) have completed a degree in Science, Engineering or equivalent; or

(ii) have completed the requirements for the Graduate Diploma of Science (Microscopy and Microanalysis) at credit level.

Availability

2. (1) Admission to candidature may be limited by a quota. In determining the quota, the University will take into account:

(a) availability of resources including space, laboratory and computing facilities; and

(b) availability of adequate and appropriate supervision.

(2) In considering an application for admission to candidature the Faculty shall take account of the quota and will select, in preference, applicants who are most meritorious in terms of section 1 above.

Method of progression

3. (1) A candidate for the degree shall proceed by completing units of study and a project as prescribed by the Faculty.

(2) A unit of study shall consist of such lectures, seminars, tutorial instruction, essays, exercises or practical work as may be prescribed. In these resolutions, ‘to complete a unit of study’ or any derivative expression means:

(i) to attend the lectures and the meetings, if any, for seminars or tutorial instruction;

(ii) to complete satisfactorily the essays, exercises and practical work if any; and

(iii) to pass any other examination of the unit of study that may apply.

Time limits

4. A candidate may proceed on either a full time or a part time basis.

5. (1) A full time candidate shall complete the requirements for the degree not earlier than the end of the third semester and not later than the end of the fifth semester of candidature, unless otherwise determined by the Faculty.

(2) A part time candidate shall complete the requirements for the degree not earlier than the end of the fourth semester and not later than the end of the eighth semester of candidature, unless otherwise determined by the Faculty.

Requirements for the degree

6. Candidates for the degree are required to complete satisfactorily:

(i) units of coursework granting a minimum of 48 credit points of study selected from units of study satisfying the conditions approved from time to time by the Faculty; and

(ii) supervised projects and essays worth 24 credit points.

Examination

7. On completion of the requirements for the degree, the Faculty shall determine the results of the candidature, on the recommendation of the Head of the School of Physics.

Progress

8. The Faculty may:

(i) call upon any candidate to show cause why that candidature should not be terminated by reason of unsatisfactory progress towards completion of the degree; and

(ii) terminate the candidature where the candidate does not show good cause.

Credit

9. A candidate who, before admission to candidature, has spent time in graduate study and has completed coursework considered by the Faculty to be equivalent to units of study prescribed for the degree, may receive credit of up to 48 credit points towards the requirements for the degree, provided that the completed work was not counted towards the requirements of another degree.

Master of Information Technology (MInfTech)

Resolutions of the Senate

Eligibility for admission

1. The Dean of the Faculty of Science may admit to candidature:

(1) graduates who have completed a Bachelor's degree, with results equivalent to Credit average or above in a major sequence of study in any aspect of Information Technology; or

(2) graduates who have completed a Bachelor of Engineering degree with results equivalent to Credit average or above in a major sequence of study in Computer Engineering, Software Engineering or Telecommunications Engineering; or

(3) persons who have completed the GradDiplIT at The University of Sydney, with Credit average results or above.

Eligibility for admission to majors

2. The Dean of the Faculty of Science shall only admit students to units of study in the defined majors in the Master of Information Technology, who have completed preliminary study in the relevant major area of study.

Availability

3. (1) Admission to the Master of Information Technology may be limited by a quota.

(2) In determining the quota the University will take into account:

(a) availability of resources including space, laboratory and computing facilities; and

(b) availability of adequate and appropriate supervision.

(3) In considering an application for admission to candidature, the Head of the School of Information Technologies and the Dean shall select, in preference, applicants who are most meritorious in terms of section 1 above.

Time limits

4. A candidate may proceed on either a full time or a part time basis.

(1) A full time candidate shall complete the requirements for the award not earlier than the end of the second semester of candidature, and not later than the end of the fourth semester of candidature, unless otherwise determined by the Dean.

(2) A part time candidate shall complete the requirements of the award not earlier than the end of the fourth semester of candidature, and not later than the end of the eighth semester of candidature, unless otherwise determined by the Dean.
Resolutions of the Faculty
Requirements for the courses (Graduate Certificate in Information Technology, Graduate Diploma in Information Technology and Master of Information Technology)

1. (1) Candidates for the Graduate Certificate in Information Technology are required to complete satisfactorily units of study granting a minimum of 24 credit points selected from units of study, excluding IT project units of study, for the Master of Information Technology.

2. (1) To qualify for the award of Master of Information Technology students must complete one of the defined majors.

3. A candidate may proceed on either a full time or a part time basis. In determining the length of candidacy below, the Dean shall include time previously spent as a candidate for the GradCertApplIT or the GradDipApplIT course.

Requirements for the Faculty
Requirements for the courses (Graduate Certificate in Applied Information Technology, Graduate Diploma in Applied Information Technology and Master of Applied Information Technology)

1. (1) Candidates for the Graduate Certificate in Applied Information Technology are required to complete satisfactorily units of study granting a minimum of 36 credit points selected from units of study approved for the Master of Applied Information Technology. Of the 36 credit points, a maximum of 24 credit points can be selected from Foundational units; and at least 12 credit points should come from Specialist units of study, excluding IT project units of study.

2. (1) To qualify for the award of Master of Applied Information Technology students must complete one of the defined majors.

3. The Dean shall select, in preference, applicants who are most meritorious in terms of section 1 above.

Time limits
3. A candidate may proceed on either a full time or a part time basis. In determining the length of candidacy below, the Dean shall include time previously spent as a candidate for the GradCertApplIT or the GradDipApplIT course.

Examination
2. On completion of the requirements for the course, the Faculty shall determine the results of the candidature.

Progress
3. The Dean may:

Examination
2. On completion of the requirements for the course, the Faculty shall determine the results of the candidature.

Progress
3. The Dean may:

Availability
2. (1) Admission to the Master of Applied Information Technology may be limited by a quota.

(2) In determining the quota, the University will take into account:

(a) availability of resources including space, laboratory and computing facilities; and

(b) availability of adequate and appropriate supervision.

Credit
4. Credit is not available in the Graduate Certificate in Applied Information Technology, Graduate Diploma in Applied Information Technology and Master of Applied Information Technology.
Technology for postgraduate study which has not been undertaken in these award courses within the previous three years.

Master of Nutrition and Dietetics (MNutrDiet)

Resolutions of the Senate

Award of the Degree

The degree of Master of Nutrition and Dietetics shall be awarded in two grades, namely Pass and, in the case of an outstanding candidate, Pass with Merit.

Eligibility for Admission

2. (1) The Faculty of Science, on the recommendation of the Nutritional Science Program Committee, may admit to candidature for the degree:
(i) graduates of The University of Sydney who have, unless exempted by the Nutritional Science Program Committee, completed acceptable units of study in Biochemistry and Physiology;
(ii) persons who have satisfied the requirements for the award of the Diploma of Nutrition and Dietetics.

Method of Progression and Degree Requirements

3. (1) (a) A candidate for the degree shall proceed full time and, except with the permission of the Faculty of Science, shall complete the requirements for the degree no later than two years from the date of first enrolment.
(b) Entry to the second year of candidature shall be subject to satisfactory progress in the first year. If progress is not considered satisfactory, a candidate may be asked by the Faculty to show cause why he or she should be permitted to re enrol.
(c) A candidate for the degree who has been admitted on the basis of having satisfied the requirements for the award of the Diploma in Nutrition and Dietetics, may elect to proceed as a full time or part time candidate and shall complete the requirements for the degree no later than six months from the date of first enrolment, in the case of a full time candidate and not more than twelve months from the date of enrolment, in the case of a part time candidate.
(d) A unit of study shall consist of lectures together with such tutorial instruction, essays, exercises or practical work as may be prescribed.
(2) A candidate shall complete in the first year of candidature such courses as may be prescribed by the Nutritional Science Program Committee in: Nutritional Biochemistry, Nutritional Science, Foods and Food Science, Nutrition in Individuals, Nutrition in Populations, Principles of Dietetic Practice, Clinical Nutrition, Nutrition Management, Communications.
(3) In the second year of candidature a candidate will:
(a) undertake training in the dietetics departments of primary health care settings;
(b) complete further units of study as prescribed by the Nutritional Science Program Committee; and
(c) undertake a project approved by the Head of the Human Nutrition unit.
(4) The result of this project shall be presented for examination in the form of a long essay.

Examination

5. On completion of the requirements for the degree, the Faculty shall determine the result of the candidature, on the recommendation of the Nutritional Science Program Committee, acting on a report from the Head of the Human Nutrition unit.

Master of Nutritional Science (MNutrSc)

Resolutions of the Senate

Award of the degree

1. The degree of Master of Nutritional Science shall be awarded in two grades, namely Pass and, in the case of an outstanding candidate, Pass with Merit.

Eligibility for admission

2. (1) The Faculty of Science, on the recommendation of the Nutritional Science Program Committee, may admit to candidature for the degree graduates of The University of Sydney, who have, unless exempted by the Nutritional Science Program Committee, completed acceptable units of study in Biochemistry and Physiology.
(2) The Academic Board, on the recommendation of the Nutritional Science Program Committee and of the Faculty, may admit to candidature for the degree graduates of other universities who have qualifications equivalent, in the opinion of the Academic Board, to those specified in subsection (1), and on such conditions as the Nutritional Science Program Committee may prescribe.

Method of progression and degree requirements

3. (1) (a) A candidate for the degree shall proceed full time and, except with the permission of the Faculty of Science, shall complete the requirements for the degree no later than two years from the date of first enrolment.
(b) Entry to the second year of candidature shall be subject to satisfactory progress in the first year. If progress is not considered satisfactory, a candidate may be asked by the Faculty to show cause why he or she should be permitted to re enrol.
(c) A unit of study shall consist of lectures together with such tutorial instruction, essays, exercises or practical work as may be prescribed.
(2) A candidate shall complete in the first year of candidature such courses as may be prescribed by the Nutritional Science Program Committee in: Nutritional Biochemistry, Nutritional Science, Foods and Food Science, Nutrition in Individuals, Nutrition in Populations, Principles of Dietetic Practice, Clinical Nutrition, Nutrition Management, Communications.
(3) A candidate in the second year of candidature shall proceed by research and thesis. A candidate shall:
(a) carry out an original investigation on a topic approved by the Head of the Human Nutrition unit;
(b) write a short thesis embodying the results of the investigation and state in the thesis, generally in a preface and specifically in notes, the sources from which the information was taken, the extent to which the work of others has been made use of, and the proportion of the thesis which the student claims as original; and
(c) lodge with the Registrar three copies of the thesis, typewritten and bound.

4. (1) The thesis shall be accompanied by a certificate from the supervisor stating whether in his or her opinion the form of the presentation of the thesis is satisfactory.
(2) A candidate may not present as the thesis any work which has been presented for a degree at this or another tertiary institution, but shall not be precluded from incorporating such work in the thesis, provided that in presenting the thesis indications are given to the part of the work which has been so incorporated.
(3) The Registrar shall lodge one copy of the thesis with the Librarian if the degree is awarded.

Examination

5. The Faculty of Science shall appoint, on the recommendation of the Head of the Human Nutrition unit, a full time member of the teaching staff of the University to act as the supervisor for each candidate.

Supervision

6. The Dean of the Faculty, on the recommendation of the Head of the Human Nutrition unit, shall appoint two or, where the Dean considers it appropriate, more than two examiners of the teaching staff of the University to act as the supervisor of the candidate.
7. On completion of the requirements for the degree, the Faculty shall determine the results of the candidature, on the recommendation of the Nutritional Science Program Committee, acting on a report from the Head of the Human Nutrition unit.

Master of Psychology (MPsych)

Note: This degree is no longer available to new students from 2002.

Resolutions of the Senate

Award of the degree

1. The degree of Master of Psychology shall be awarded in two grades, namely Pass and, in the case of an outstanding candidate, Pass with Merit.
Eligibility for admission

2. An applicant for admission to candidature for the degree shall, except as provided in Part 9 of The University of Sydney (Amendment Act) Rule 1999:
(a) have completed units of study in Abnormal Psychology acceptable to the Faculty; and
(b) be a Bachelor of Arts or Bachelor of Science of The University of Sydney; and
(c) have obtained fourth year Honours in Psychology; or
(d) be a graduate of the University other than as specified in (b) and hold qualifications considered by the Faculty to be equivalent to fourth year Honours in Psychology at The University of Sydney; or
(e) have completed the requirements for the degree of Master of Science in Psychology or Master of Arts (Honours) or Master of Philosophy in Psychology of The University of Sydney; and
(f) have satisfied the Faculty of their personal suitability for the practice of clinical psychology. When evaluating personal suitability the Faculty may take into account previous relevant experience, reports of the referees and the outcome of selection interviews.

Method of progression

3. (1) A candidate for the degree shall proceed by completing units of study as prescribed by the Faculty.
(2) A unit of study shall consist of lectures, together with such seminars, tutorial instruction, essays, exercises or practical work as may be prescribed.
(3) In these resolutions the expression 'to complete a unit of study' means:
(a) to attend the lectures, and the meetings, if any, for seminars or tutorial instruction;
(b) to complete satisfactorily the essays, exercises and practical work if any; and
(c) to pass the examinations of the unit of study.

Time limits

4. A candidate may proceed on either a full time or a part time basis.
5. (1) A full time candidate shall complete the requirements for the degree within two years of enrolment of candidature, unless otherwise determined by the Faculty.
(2) A part time candidate shall complete the requirements for the degree not later than the end of the fourth year of enrolment of candidature, unless otherwise determined by the Faculty.

Requirements for the degree

6. The following are the requirements for the degree of Master of Psychology:
(i) Candidates for the degree are required to complete satisfactorily:
   (a) a coursework component according to the syllabus approved by the Faculty;
   (b) a practicum component involving both training in therapeutic and assessment techniques and field placements; and
   (c) a research project and submit a dissertation on that project.
(2) The requirements for the degree shall be completed in two Parts, namely Part I and Part II.
(3) A candidate must complete Part I to the satisfaction of the Faculty before proceeding to Part II.
(4) Full time candidates are required, except with permission of the Faculty, to complete the requirements of Part I of the course within one year of first enrolment and to complete Part II of the course within two years of first enrolment.
(5) Part time candidates are required, except with the permission of the Faculty, to complete the requirements of Part I within two years of first enrolment and to complete Part II within four years of first enrolment.

Master of Psychology/Doctor of Philosophy

[See also Master of Psychology/PhD Resolutions below.]

7. A person may proceed concurrently as a candidate for the degree of Master of Psychology and Doctor of Philosophy. For further details refer to the resolutions of the Senate for the combined award course for the degrees of Master of Psychology and Doctor of Philosophy.

Examination

8. On completion of requirements for the degree, the Faculty shall determine the results of the candidature, on the recommendation of the Head of the Department of Psychology.

Progress

9. The Faculty may:
(a) call upon any candidate to show cause why that candidate should not be terminated by reason of unsatisfactory progress towards completion of the degree; and
(b) terminate the candidature where the candidate does not show good cause.

Master of Psychology/PhD (MPsych/PhD)

Note: This degree is no longer available to new students from 1999.

Resolutions of the Senate

The Resolutions of the Senate relating to candidature for the degrees of Master of Psychology and Doctor of Philosophy shall apply to the combined award course for the degrees of Master of Psychology and Doctor of Philosophy except for sections 1, 5, 6 and 7 of the resolutions of the Senate relating to the degrees of Master of Psychology and sections 7 and 8 of the resolutions of the Senate relating to the degrees of Doctor of Philosophy, which are replaced by the following:

Award of the degrees

1. (1) The degrees of Master of Psychology shall be awarded in two grades, namely Pass and, in the case of an outstanding candidate, Pass with Merit.
(2) The degrees of Master of Psychology shall only be awarded on satisfactory completion of the requirements for the degrees of Doctor of Philosophy, except as provided by section 15 of the Resolutions of the Senate relating to the degrees of Doctor of Philosophy.

Time limits

2. (1) A full time candidate shall complete the requirements for both degrees not earlier than the end of the fourth year of candidature and, unless otherwise determined by the Faculty, not later than the end of the sixth year of candidature.
(2) A part time candidate shall complete the requirements for both degrees not earlier than the end of the fourth year of candidature and, unless otherwise determined by the Faculty, not later than the end of the seventh year of candidature.
(3) Notwithstanding subsections (1) and (2), a candidate who meets the requirements of sections 7(2) and 3(3) of the Resolutions of the Senate relating to the degrees of Doctor of Philosophy may be permitted to complete the requirements at an earlier date.

Requirements for the Degrees

3. The following are the requirements for the combined award course for the degrees of Master of Psychology and Doctor of Philosophy:
(1) Candidates for the degrees are required
(a) to complete satisfactorily a coursework component according to the syllabus approved by the Faculty;
(b) to complete satisfactorily a practicum component involving both training in therapeutic and assessment techniques and field placements; and
(c) to pursue a course of advanced study and research leading to the submission of a thesis in an area of clinical research as approved by the Head of the Department of Psychology.
(2) The requirements for both degrees shall be completed in three parts, namely Part I, Part IIA and Part III.
(3) A candidate must complete Part I to the satisfaction of the Faculty before proceeding to Part IIA.
(4) Full time candidates are required, except with permission of the Faculty, to complete the requirements of Part I within one year of first enrolment, to complete Part IIA within two years of first enrolment and to complete Part III within six years of first enrolment.
(5) Part time candidates are required, except with the permission of the Faculty, to complete the requirements of Part I within two years of first enrolment and to complete Part IIA within seven years of first enrolment.
(6) Part III of the requirements for the degrees of Master of Psychology is satisfied under sub section (1)(c) above.

Transfer to Master of Psychology candidature

4. The Head of the Department of Psychology may recommend that a candidate withdraw from candidature for the combined degrees and complete the requirements for the degrees of Master of Psychology under such conditions as the Faculty may determine.
Examination
5. The procedures for the examination and award of the degrees of Doctor of Philosophy (including the provision for transfer to Master's candidature if the degree is not awarded) shall be as prescribed in the resolutions of the Senate and of the Academic Board relating to that degree.

6. On completion of Parts I, IIA and III of the requirements for the degrees, and following the award of the degree of Doctor of Philosophy, the Faculty shall determine the results of the candidature for the degrees of Master of Psychology, on the recommendation of the Head of the Department of Psychology.

Master of Environmental Science and Law (MEnviSciLaw)

Resolutions of the Senate
Eligibility for admission
1. The Dean of the Faculty of Science may admit to candidature:
   (i) graduates of The University of Sydney holding the degree of Bachelor of Science or Bachelor of Laws; or
   (ii) graduates of other universities or other appropriate institutions who have qualifications equivalent to those specified in subsection (1).

Availability
2. (1) Admission to candidacy may be limited by a quota. In determining the quota, the Dean will take into account:
   (a) availability of resources including space, laboratory and computing facilities; and
   (b) availability of adequate and appropriate supervision.

   (2) In considering an application for admission to candidacy the Dean shall take account of the quota and will select, in preference, applicants who are most meritorious in terms of section 1 above.

Availability of units of study
3. All units of study for a particular subject area may not be available every semester. The Dean may allow substitution of any unit of study by another unit of study, including units of study from other postgraduate coursework programs in the Faculties of Science and Law, or elsewhere in the University.

Time limits
4. A candidate may proceed on either a full time, or a part time basis.

   A candidate for the Master of Environmental Science and Law shall complete the requirements for the award in a minimum of two semesters and a maximum of ten semesters, and except with permission of the Faculty within six calendar years of admission to candidacy.

Authority of the Deans
5. The Deans of Science and Law shall jointly exercise authority in any matter concerning the course not otherwise dealt with in these resolutions.

Resolutions of the Faculty
Requirements for the degree
1. Candidates for the Master of Environmental Science and Law are required to complete satisfactorily 48 credit points selected from units of study approved by the Faculties of Science and Law including:
   (1) a core unit of study (LAWS 6044); and
   (2) a minimum of 24 credit points selected from units of study offered by each Faculty.

Examination
2. On completion of the requirements for the degree, the Dean shall determine the results of the candidature.

Progress
3. The Dean may:
   (1) call upon any candidate to show cause why that candidature should not be terminated by reason of unsatisfactory progress towards completion of the degree; and
   (2) terminate the candidature where the candidate does not show good cause.

Credit
4. A candidate who, before admission to candidature, has spent time in graduate study and, within the previous three years, has completed coursework considered by the Faculty to be equivalent to units of study prescribed for the degree, may receive credit of up to 12 credit points towards the requirements for the degree of Masters of Environmental Science and Law.

Graduate diplomas

Graduate Diploma in Science (GradDipSc)

Resolutions of the Senate
Eligibility for admission
1. (1) The Faculty may, on the recommendation of the head of the department concerned, admit to candidature for the Graduate Diploma in Science an applicant who is a holder of a Bachelor's degree from the Faculty of Science, from The University of Sydney.

   (2) The Academic Board, in accordance with the provisions of Part 9 of The University of Sydney (Amendment Act) Rule 1999, on the recommendation of the relevant Head of Department and of the Faculty, may admit to candidature for the graduate diploma graduates who have qualifications equivalent, in the opinion of the Academic Board, to those specified in subsection (1).

Availability
2. (1) Admission to the graduate diploma may be limited by quota.

   (2) In determining the quota the University will take into account:
      (a) availability of resources including space, library, equipment, laboratory and computing facilities; and
      (b) availability of adequate and appropriate supervision.

Method of progression and time limits
3. A candidate shall engage in a program of work equivalent to that required for completion of the relevant fourth year of a Bachelor's degree in the Faculty of Science by completing the Honours units of study offered by the department concerned either as a full time student for a period of one year or, with the approval of the head of department concerned, as a part time student for a period of two years.

Examination
4. The award of the graduate diploma shall be subject to the completion of the program of work and examinations to the satisfaction of the Faculty.

Progress
5. The Faculty may call upon any candidate to show cause why that candidature should not be terminated by reason of unsatisfactory progress towards completion of the graduate diploma and where, in the opinion of the Faculty, the candidate does not show good cause, terminate the candidature.

Graduate Diploma in Science (Microscopy and Microanalysis) (GradDipSc(Micr&An))

Note: This degree is no longer available to new students from 2002.

Graduate Diploma in Science (Psychology) (GradDipSci(Psych))

Resolutions of the Senate
Eligibility for admission
1. (1) The Faculty of Science, on the recommendation of the appropriate Interdepartmental Committee, may admit to candidacy the following:
   (a) Graduate Diploma in Science (Microscopy and Microanalysis): An applicant who is a holder of the award course of Bachelor of Science or Bachelor of Engineering, or any other award course of The University of Sydney.
   (b) Graduate Diploma in Science (Psychology): An applicant who is a holder of a Bachelor's degree with an APS accredited major in Psychology from a recognised tertiary institution within the past ten years and who has achieved a minimum of credit average in Senior (third year) units of study which includes units of study in statistics/research methods which meet the requirements of the Department.
Availability

2. (1) Admission to the graduate diploma may be limited by quota.
(2) In determining the quota the University will take into account:
(a) availability of resources including space, library, equipment, laboratory and computing facilities; and
(b) availability of adequate and appropriate supervision.
(3) In considering an application for admission to candidature the Interdepartmental Committee and the Faculty shall take account of the quota and will select in preference applicants who are most meritorious in terms of section 1 above.

Time limits

3. A candidate for the Graduate Diploma in Science (Microscopy and Microanalysis) shall proceed as a full-time student for a period of two semesters or, with the approval of the Interdepartmental Committee, as a part-time student for four semesters; a candidate for the Graduate Diploma in Science (Microscopy and Microanalysis) shall proceed as a full-time student for a period of two semesters or as a part-time student for up to eight semesters.

Method of progression

4. A candidate shall complete coursework for the graduate diploma as prescribed from time to time by resolution of the Faculty.

Examination

5. A candidate may be tested by written and oral examinations, assignments, exercises and practical work or any combination of these.

6. On completion of the requirements for the graduate diploma the results of the examination of the coursework and participation in the seminar series shall be reported by the Interdepartmental Committee to the Faculty which shall determine the result of the candidature.

Progress

7. The Faculty may call upon any candidate to show cause why that candidature should not be terminated by reason of unsatisfactory progress towards completion of the graduate diploma and where, in the opinion of the Faculty, the candidate does not show good cause, terminate the candidature.

Graduate Diploma in Science (Microscopy and Microanalysis) (GradDipSc(Micr&An))

Note: This degree is no longer available to new students from 2002.

Resolutions of the Senate

See above.

Resolutions of the Faculty

1. A unit of study shall consist of lectures together with such tutorial instruction, essays, exercises or practical work in the laboratory as may be prescribed. In these resolutions, to 'complete a unit of study' and derivative expressions shall mean:
   (i) to attend the lectures, laboratories, tutorials and meetings as recommended;
   (ii) to complete satisfactorily any practical and theoretical assignments; and
   (iii) to pass the examination on the unit of study.
2. All units of study will be offered in February and July semesters.
3. A candidate shall complete coursework to the value of 48 credit points comprising ten core units of study, worth 32 credit points, and optional units of study worth 16 credit points selected from the following table:

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Credit points</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCAN 4001 Principles of Microscopy and Microanalysis</td>
<td>2</td>
</tr>
<tr>
<td>MCAN 4301 Instrumentation - Introduction to Light Microscopy</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Credit points</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCAN 4302 Instrumentation Introduction to Transmission Electron Microscopy</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4007 Instrumentation Monitoring &amp; Maintenance of Electron Microscopes</td>
<td>2</td>
</tr>
<tr>
<td>MCAN 4303 Instrumentation Introduction to Scanning Electron Microscopy</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4008 Introductory Specimen Preparation for Optical Microscopy</td>
<td>2</td>
</tr>
<tr>
<td>MCAN 4102 Specimen Preparation (Materials) TEM &amp; SEM</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4101 Specimen Preparation (Biological) TEM &amp; SEM</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4105 Optical X Ray &amp; Electron Spectroscopy</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4304 Instrumentation Introduction to Confocal Microscopy</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4108 Independent Project and Report</td>
<td>4</td>
</tr>
<tr>
<td>Optional units of study</td>
<td></td>
</tr>
<tr>
<td>MCAN 4305 Instrumentation Advanced Transmission Electron Microscopy</td>
<td>2</td>
</tr>
<tr>
<td>MCAN 4306 Instrumentation Advanced Scanning Electron Microscopy</td>
<td>2</td>
</tr>
<tr>
<td>MCAN 4307 Instrumentation Advanced Confocal Microscopy</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4109 Introduction to Diffraction</td>
<td>2</td>
</tr>
<tr>
<td>MCAN 4201 Advanced Diffraction Techniques</td>
<td>2</td>
</tr>
<tr>
<td>MCAN 4103 Surface Microscopy</td>
<td>2</td>
</tr>
<tr>
<td>MCAN 4104 Signal/Image Processing</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4202 Microanalysis for Materials Electron</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4203 Microanalysis for Materials Non electron</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4204 Microanalysis in Life Sciences</td>
<td>2</td>
</tr>
<tr>
<td>MCAN 4205 Advanced Techniques in Biological Electron Microscopy</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4308 Image Analysis</td>
<td>4</td>
</tr>
<tr>
<td>MCAN 4209 Stereology</td>
<td>2</td>
</tr>
<tr>
<td>MCAN 4207 Image Capture/Recording</td>
<td>2</td>
</tr>
</tbody>
</table>

4. Satisfactory progress shall be as determined by the Faculty.

Graduate Diploma in Science (Psychology) (GradDipSc(Psych))

Resolutions of the Senate

See above.

Resolutions of the Faculty

1. A unit of study shall consist of lectures together with such tutorial instructions, essays, exercises or practical work as may be prescribed. In these resolutions, to 'complete a unit of study' and derivative expressions shall mean:
   (i) to attend the lectures and the meetings, if any, for tutorial instruction;
   (ii) to complete satisfactorily the essays, exercises and the practical work, if any; and
   (iii) to pass the examination on the unit of study.
2. A candidate shall complete coursework to the value of 48 credit points. The structure of the program is:

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Credit points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semester 1 Core units 24 credit points</td>
<td></td>
</tr>
<tr>
<td>PSYC 4710 Research Project (A)</td>
<td>9</td>
</tr>
<tr>
<td>PSYC 4711 Psychological Research Methods</td>
<td>5</td>
</tr>
<tr>
<td>PSYC 4715 Special Fields Topic (A)</td>
<td>5</td>
</tr>
<tr>
<td>PSYC 4719 Special Fields Topic (B)</td>
<td>5</td>
</tr>
<tr>
<td>Semester 2 Core units 24 credit points</td>
<td></td>
</tr>
<tr>
<td>PSYC 4720 Research Project (B)</td>
<td>9</td>
</tr>
<tr>
<td>PSYC 4712 Ethics and Current Issues in Psychology</td>
<td>5</td>
</tr>
<tr>
<td>Optional units of study (select 2 electives)</td>
<td></td>
</tr>
<tr>
<td>PSYC 4716 Health &amp; Safety Psychology Issues</td>
<td>5</td>
</tr>
<tr>
<td>PSYC 4717 Counselling Psychology</td>
<td>5</td>
</tr>
<tr>
<td>PSYC 4718 Psychology of Addiction</td>
<td>5</td>
</tr>
<tr>
<td>Part time students</td>
<td></td>
</tr>
<tr>
<td>Year 1, Semester 1 14 credit points</td>
<td></td>
</tr>
<tr>
<td>PSYC 4710 Research Project (A)</td>
<td>9</td>
</tr>
</tbody>
</table>
Availability

2. (1) Admission to the Graduate Diploma in Applied Information Technology may be limited by a quota.
   (2) In determining the quota, the University will take into account:
   (a) availability of resources including space, laboratory and computing facilities; and
   (b) availability of adequate and appropriate supervision.
   (3) In considering an application for admission to candidature, the Head of the School of Information Technologies and the Dean shall select, in preference, applicants who are most meritorious in terms of section 1 above.

Time limits

3. A candidate may proceed on either a full time or a part time basis. In determining the length of candidacy below, the Dean shall include time previously spent as a candidate for the GradCertApplIT course.
   (1) A full time candidate shall complete the requirements for the award not earlier than the end of the second semester of candidature, and not later than the end of the fourth semester of candidature, unless otherwise determined by the Dean.
   (2) A part time candidate shall complete the requirements of the award not earlier than the end of the fourth semester of candidature, and not later than the end of the eighth semester of candidature, unless otherwise determined by the Dean.

Resolutions of the Faculty

See entry for the Master of Applied Information Technology.

Graduate Diploma in Psychology (GradDipPsych)

Resolutions of the Senate

Eligibility for admission

1. The Faculty of Science may admit to candidature applicants who hold the degree of Bachelor of Science, Bachelor of Arts, Bachelor of Economics (Social Science), or Bachelor of Liberal Studies from The University of Sydney, or an equivalent degree as deemed by the Faculty, who have not previously completed a major in Psychology. When assessing an applicant, both undergraduate record and UAI (or equivalent) may be taken into account.

2. Applicants must have already successfully completed 12 credit points of Junior Psychology (currently PSYC 1001 and 1002) or equivalent.

Time limits

3. A candidate shall complete coursework in Psychology which must, except with Departmental approval, comprise the GradDipPsych course.
   (1) A full time candidate shall complete the requirements for the award not earlier than the end of the second semester of candidature, and not later than the end of the third semester of candidature.
   (2) A part time candidate shall complete the requirements of the award not earlier than the end of the third semester of candidature, and not later than the end of the sixth semester of candidature.

Resolutions of the Faculty

See entry for the Master of Psychology.

Graduate Diploma in Applied Information Technology (GradDipApplIT)

Resolutions of the Senate

Eligibility for admission

1. The Dean of the Faculty of Science may admit to candidature:
   (1) graduates who have completed a Bachelor's degree in any aspect of Information Technology; or
   (2) graduates who have completed a Bachelor of Engineering degree with a major sequence of study in Computer Engineering, Software Engineering or Telecommunications Engineering; or
   (3) persons who have completed the GradCertIT at The University of Sydney, with Credit average results or above.

Availability

2. (1) Admission to the Graduate Diploma in Information Technology may be limited by a quota.
   (2) In determining the quota the University will take into account:
   (a) availability of resources including space, laboratory and computing facilities; and
   (b) availability of adequate and appropriate supervision.
   (3) In considering an application for admission to candidature, the Head of the School of Information Technologies and the Dean shall select in preference applicants who are most meritorious in terms of section 1 above.

Time limits

3. A candidate shall complete coursework in Information Technology which must, except with Departmental approval, comprise the GradDipApplIT course.
   (1) A full time candidate shall complete the requirements for the award not earlier than the end of the second semester of candidature, and not later than the end of the third semester of candidature.
   (2) A part time candidate shall complete the requirements of the award not earlier than the end of the third semester of candidature, and not later than the end of the sixth semester of candidature.

Resolutions of the Faculty

See entry for the Master of Applied Information Technology.

Graduate Diplomas
Progress
8. Satisfactory progress shall be as determined by the Faculty.
9. The Faculty may call upon any candidate to show cause why that candidate should not be terminated by reason of unsatisfactory progress towards completion of the GradDipPsych and where, in the opinion of the Faculty, the candidate does not show good cause, terminate the candidate.

Credit
10. Students may apply for credit (up to 24 credit points) for unit(s) of study where they have already completed studies which the Faculty deems equivalent to unit(s) in the GradDipPsych. Such units of study must have been completed within the previous ten years.

Graduate certificates

Graduate Certificate in Science (History and Philosophy of Science)

Resolutions of the Senate
Eligibility for admission
1. (1) The Dean of the Faculty of Science, on the recommendation of the appropriate committee, may admit to candidature for the Graduate Certificate in Science (History and Philosophy of Science) an applicant who is the holder of the degree of Bachelor of Science or Bachelor of Medical Science or Bachelor of Arts or Bachelor of Liberal Studies, or any other award of The University of Sydney; or
(b) a graduate of another university or other appropriate institution who has qualifications equivalent to those specified in subsection (a).

Time limits
2. A candidate shall complete the course within the previous ten years.

Requirements
3. The requirements for the graduate certificate shall be as prescribed by the Resolution of the Faculty.

Resolutions of the Faculty
1. A unit of study shall consist of seminars together with such essays, exercises or practical work as may be prescribed. In these resolutions, to 'complete a unit of study' and derivative expressions shall mean:

(i) to attend seminars and other meetings as recommended; and
(ii) to complete satisfactorily any practical and theoretical assignments.

2. A candidate shall complete course work to the value of 24 credit points selected from the following table and including HPSC 4108 (if they have not completed a major in History and Philosophy of Science, or equivalent program of study, at another institution).

<table>
<thead>
<tr>
<th>Unit of study</th>
<th>Credit points</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPSC 4108 Core Topics in HPS</td>
<td>6</td>
</tr>
<tr>
<td>HPSC 4101 Philosophy of Science</td>
<td>6</td>
</tr>
<tr>
<td>HPSC 4102 History of Science</td>
<td>6</td>
</tr>
<tr>
<td>HPSC 4103 Sociology of Science</td>
<td>6</td>
</tr>
<tr>
<td>HPSC 4104 Recent Topics in HPS</td>
<td>6</td>
</tr>
<tr>
<td>HPSC 4105 HPS Research Methods</td>
<td>6</td>
</tr>
</tbody>
</table>

Graduate Certificate in Science (Microscopy and Microanalysis) (GradCertSc(Micr&An))

Note: This degree is no longer available to new students from 2002.

Resolutions of the Senate
Eligibility for admission
1. (1) The Faculty of Science, on the recommendation of the appropriate Committee, may admit to candidature for the Graduate Certificate in Science (Microscopy and Microanalysis) an applicant who is the holder of the degree of Bachelor of Science or Bachelor of Engineering, or any other award of The University of Sydney.

Availability
2. (1) Admission to the Graduate Certificate in Information Technology may be limited by a quota.
2. (2) In determining the quota the University will take into account:
(a) the availability of resources including space, library, equipment, laboratory and computing facilities; and
(b) the availability of adequate and appropriate supervision.

Time limits
3. A candidate shall proceed as a full time student for a period of one semester or as a part time student for up to three semesters.

Requirements
4. The requirements for the Graduate Certificate shall be as prescribed by Resolution of the Faculty.
Eligibility for admission

4. The Dean may:
   (a) call upon any candidate to show cause why that
       candidate should not be terminated by reason of
       unsatisfactory progress towards the completion of
       the requirements for the Graduate Certificate; and
   (b) terminate the candidature where the candidate does
       not show good cause.

Resolutions of the Senate

1. The Dean of the Faculty of Science may admit to candidature:
   (l) graduates who have completed a Bachelor's degree in
       Physical Science or Engineering, or a Bachelor's degree with
       some background in Information Technology or
       Mathematics; or
   (2) persons who have worked in the area of Information
       Technology for more than eight years and can offer evidence
       of recognized prior learning which is considered to
       demonstrate the knowledge and aptitude required to
       undertake the units of study.

Availability

2. (1) Admission to the Graduate Certificate in Applied
       Information Technology may be limited by a quota.

   (2) In determining the quota, the University will take into
       account:
           (a) availability of resources including space, laboratory
               and computing facilities; and
           (b) availability of adequate and appropriate supervision.

   (3) In considering an application for admission to candidature
       the Dean shall take account of the quota and will select, in
       preference, applicants who are most meritorious in terms of section 1 above.

Time limits

3. A candidate may proceed on either a full time or a part time
   basis.

   (1) A full time candidate shall complete the requirements for
       the award not earlier than the end of the second semester
       of candidature, and not later than the end of the second semester
       of candidature, unless otherwise determined by the Dean.

   (2) A part time candidate shall complete the requirements of
       the award not earlier than the end of the second semester
       of candidature, and not later than the end of the fifth semester
       of candidature, unless otherwise determined by the Dean.

Resolutions of the Faculty

See entry for the Master of Applied Information Technology.
(3) A candidate for the Master of Quantitative Marine Ecology shall normally complete the requirements for the award in a minimum of three semesters and a maximum of twelve semesters, and except with permission of the Dean within nine calendar years of admission to candidature.

Requirements for the degree

6. (1) Candidates for the Graduate Certificate in Quantitative Marine Ecology are required to complete satisfactorily units of study granting a minimum of 24 credit points selected from units of study approved from time to time by the Faculty.

2. (1) The Dean of the Faculty of Science may admit to candidacy for:

Eligibility for admission

2. (1) The Dean of the Faculty of Science may admit to candidature for:

(i) the Graduate Certificate in Applied Science:
(a) graduates of The University of Sydney holding the degree of Bachelor of Science or any other equivalent award of The University of Sydney;
(b) graduates of other universities or other appropriate institutions who have qualifications equivalent to those specified in subsection (a); or
(c) persons who have experience which is considered to demonstrate the knowledge and aptitude required to undertake the units of study;

(ii) the Graduate Diploma in Applied Science:
(a) graduates of The University of Sydney holding the degree of Bachelor of Science or any other equivalent award of The University of Sydney;
(b) graduates of other universities or other appropriate institutions who have qualifications equivalent to those specified in subsection (a); or
(c) persons who have completed requirements for the Graduate Certificate in Applied Science, or equivalent;

(iii) the Master of Applied Science:
(a) graduates of The University of Sydney holding the degree of Bachelor of Science or any other equivalent award of The University of Sydney;
(b) graduates of other universities or other appropriate institutions who have qualifications equivalent to those specified in subsection (a); or
(c) persons who have completed requirements for the Graduate Diploma in Applied Science, or equivalent.

2. (2) A candidate for the Graduate Diploma in Quantitative Marine Ecology may undertake the units of study; and

(c) receive credit for up to 36 credit points from the Graduate Diploma in Quantitative Marine Ecology.

(3) A candidate who has qualified for the award of the Graduate Diploma in Quantitative Marine Ecology may transfer within three years to the Graduate Diploma in Quantitative Marine Ecology and receive credit for up to 24 credit points from the Graduate Certificate in Quantitative Marine Ecology.

(3) A candidate who has qualified for the award of the Graduate Diploma in Quantitative Marine Ecology may transfer, within three years, to the Master of Quantitative Marine Ecology and receive credit for up to 36 credit points from the Graduate Diploma in Quantitative Marine Ecology.

(4) A candidate who has completed units of study in the Quantitative Marine Ecology program within the previous three years, but has not qualified for an award, may transfer to another award within the Quantitative Marine Ecology program and receive credit for the units of study completed.

Eligibility for admission

2. (1) The Dean of the Faculty of Science may admit to candidature for:

(i) the Graduate Certificate in Applied Science:
(a) graduates of The University of Sydney holding the degree of Bachelor of Science or any other equivalent award of The University of Sydney;
(b) graduates of other universities or other appropriate institutions who have qualifications equivalent to those specified in subsection (a); or
(c) persons who have experience which is considered to demonstrate the knowledge and aptitude required to undertake the units of study;

(ii) the Graduate Diploma in Applied Science:
(a) graduates of The University of Sydney holding the degree of Bachelor of Science or any other equivalent award of The University of Sydney;
(b) graduates of other universities or other appropriate institutions who have qualifications equivalent to those specified in subsection (a); or
(c) persons who have completed requirements for the Graduate Certificate in Applied Science, or equivalent;

(iii) the Master of Applied Science:
(a) graduates of The University of Sydney holding the degree of Bachelor of Science or any other equivalent award of The University of Sydney;
(b) graduates of other universities or other appropriate institutions who have qualifications equivalent to those specified in subsection (a); or
(c) persons who have completed requirements for the Graduate Diploma in Applied Science, or equivalent.

Availability

3. (1) Admission to candidature may be limited by a quota. In determining the quota, the University will take into account:

(i) availability of resources including space, laboratory and computing facilities; and
(ii) availability of adequate and appropriate supervision.

2. (2) In considering an application for admission to candidature the Dean shall take account of the quota and will select, in preference, applicants who are most meritorious in terms of section 2 above.

Method of progression

4. (1) A candidate for the course shall proceed by completing units of study as prescribed by the Faculty.

2. (2) A unit of study shall consist of such lectures, seminars, tutorial instruction, essays, exercises, practical work, or project work as may be prescribed. In these resolutions, ‘to complete a unit of study’ or any derivative expression means:

(i) to attend the lectures and the meetings, if any, for seminars or tutorial instruction;
(ii) to complete satisfactorily the essays, exercises, practical and project work if any; and
(iii) to pass any other examination of the unit of study that may apply.

Availability of unit of study

5. All units of study for a particular subject area may not be available every semester. The Dean may subordinate the substitution of any unit of study by another unit of study, including units of study from other postgraduate coursework programs in the Faculty or elsewhere in the University.

Time limits

6. A candidate may proceed on either a full time or a part time basis.

7. (1) A candidate for the Graduate Certificate in Applied Science shall complete the requirements for the award in a minimum of one semester and a maximum of four semesters, and except with permission of the Dean within three calendar years of admission to candidature.

2. (2) A candidate for the Graduate Diploma in Applied Science shall complete the requirements for the award in a minimum of two semesters and a maximum of eight semesters, and except with permission of the Dean within six calendar years of admission to candidature.
(3) A candidate for the Master of Applied Science shall proceed complete the requirements for the award in a minimum of two semesters and a maximum of twelve semesters, and except with permission of the Dean within nine calendar years of admission to candidature.

**Requirements for the course**

8. (1) Candidates for the Graduate Certificate in Applied Science are required to complete satisfactorily units of study granting a minimum of 24 credit points selected from units of study approved from time to time by the Faculty.

(2) Candidates for the Graduate Diploma in Applied Science are required to complete satisfactorily units of study granting a minimum of 36 credit points selected from units of study approved from time to time by the Faculty.

(3) Candidates for the Master of Applied Science are required to complete satisfactorily units of study granting a minimum of 48 credit points selected from units of study approved from time to time by the Faculty.

9. Candidates for the Master of Applied Science can enrol in 12 credit point project units of study only after successful completion of at least 24 credit points of study.

**Examination**

10. On completion of the requirements for the course, the Faculty shall determine the results of the candidature.

**Progress**

11. The Faculty may:

(1) call upon any candidate to show cause why that candidature should not be terminated by reason of unsatisfactory progress towards completion of the course; and

(2) terminate the candidature where the candidate does not show good cause.

**Credit**

12. (1) Credit is not available in the Graduate Certificate in Applied Science, Graduate Diploma in Applied Science and Master of Applied Science for postgraduate study which has not been undertaken in these award courses within the previous three years, except at the discretion of the Dean.

(2) A candidate who has qualified for the award of the Graduate Certificate in Applied Science may transfer, within three years, to the Graduate Diploma in Applied Science and receive credit for up to 24 credit points from the Graduate Certificate in Applied Science.

(3) A candidate who has qualified for the award of the Graduate Diploma in Applied Science may transfer, within three years, to the Master of Applied Science and receive credit for up to 36 credit points from the Graduate Diploma in Applied Science.

(4) A candidate who has completed units of study in the Applied Science program within the previous three years, but has not qualified for an award, may transfer to another award within the same Applied Science program and receive credit for the units of study completed.

**Resolutions of the Faculty**

**Graduate Certificate in Applied Science (Bioinformatics) (GradCertApplSc(Bioinf))**

**Graduate Diploma in Applied Science (Bioinformatics) (GradDiplApplSc(Bioinf))**

**Master of Applied Science (Bioinformatics) (MApplSc(Bioinf))**

**Requirements for the degree**

1. (1) Candidates for the Graduate Certificate in Applied Science (Bioinformatics) are required to complete satisfactorily four core units of study (BIOL 5001, BIOL 5002, BCHM 5001, STAT 5001, COMP 5213, COMP 5214) and 18 credit points from optional units of study.

**Graduate Certificate in Applied Science (Coastal Management) (GradCertApplSc(Coastal Mgt))**

**Graduate Diploma in Applied Science (Coastal Management) (GradDiplApplSc(Coastal Mgt))**

**Master of Applied Science (Coastal Management) (MApplSc(Coastal Mgt))**

**Requirements for the degree**

1. (1) Candidates for the Graduate Certificate in Applied Science (Coastal Management) are required to complete satisfactorily at least two core units of study (MARS 5001, MARS 5002, MARS 5003, GEOG 5001) and 12 credit points from the following optional units of study: MARS 5001, MARS 5002, MARS 5003, GEOG 5001, CHEM 5001, ENVI 5705, ENVI 5803, ENVI 5808, ENVI 5809, ICOM 5002, ICOM 5003, QMEC 5110, QMEC 5150.

(2) Candidates for the Graduate Diploma in Applied Science (Coastal Management) are required to complete satisfactorily four core units of study (MARS 5001, MARS 5002, MARS 5003, GEOG 5001) and 24 credit points from the following optional units of study: MARS 5001, MARS 5002, MARS 5003, CHEM 5001, ENVI 5705, ENVI 5803, ENVI 5808, ENVI 5809, ICOM 5002, ICOM 5003, QMEC 5110, QMEC 5150.

(3) Candidates for the Master of Applied Science (Coastal Management) are required to complete satisfactorily four core units of study (MARS 5001, MARS 5002, MARS 5003, GEOG 5001) and 24 credit points from the following optional units of study: MARS 5001, MARS 5002, CHEM 5001, ENVI 5705, ENVI 5803, ENVI 5808, ENVI 5809, ICOM 5002, ICOM 5003, QMEC 5110, QMEC 5150.

**Graduate Certificate in Applied Science (Environmental Science) (GradCertApplSc(EnvSc))**

**Graduate Diploma in Applied Science (Environmental Science) (GradDiplApplSc(EnvSc))**

**Master of Applied Science (Environmental Science) (MApplSc(EnvSc))**

**Requirements for the degree**

1. (1) Candidates for the Graduate Certificate in Applied Science (Environmental Science) are required to complete satisfactorily complete one of two core units of study ENVI5708 or ENV15808 and 18 credit points from optional units of study.

(2) Candidates for the Graduate Diploma in Applied Science (Environmental Science) are required to complete satisfactorily four core units of study (ENVI 5705 and ENVI 5708 and ENVI 5809) and 24 credit points from optional units of study.

(3) Candidates for the Master of Applied Science (Environmental Science) are required to complete satisfactorily three core units of study (ENV 5705 and ENVI 5708 and ENVI 5809) and 30 credit points from optional units of study.

**Graduate Certificate in Applied Science (Informatics and Communication) (GradCertApplSc(Inf&Comm))**

**Graduate Diploma in Applied Science (Informatics and Communication) (GradDiplApplSc(Inf&Comm))**

**Master of Applied Science (Informatics and Communication) (MApplSc(Inf&Comm))**

**Requirements for the degree**

1. (1) Candidates for the Graduate Certificate in Applied Science (Informatics and Communication) are required to complete satisfactorily four core units of study (BIOL 5002, BCHM 5001, STAT 5001, COMP 5213, COMP 5214) and 18 credit points from optional units of study.
Graduate Certificate in Applied Science (Microscopy and Microanalysis) (GradCertAppSc (Microsc & Microanal))
Graduate Diploma in Applied Science (Microscopy and Microanalysis) (GradDipApplSc (Microsc & Microanal))
Master of Applied Science (Microscopy and Microanalysis) (MApplSc (Microsc & Microanal))

Requirements for the degree
1. (1) Candidates for the Graduate Certificate in Applied Science (Microscopy & Microanalysis) are required to complete satisfactorily 12 credit points from core units of study and 12 credit points from optional units of study.

2. Candidates for the Graduate Diploma in Applied Science (Microscopy & Microanalysis) are required to complete satisfactorily 12 credit points from core units of study and a further 24 credit points from optional units of study.

3. Candidates for the Master of Applied Science (Microscopy & Microanalysis) are required to complete satisfactorily 12 credit points from core units of study and a further 24 credit points from optional units of study, and an independent research project and report.

Graduate Certificate in Applied Science (Molecular Biotechnology) (GradCertApplSc(MBT))
Graduate Diploma in Applied Science (Molecular Biotechnology) (GradDipApplSc(MBT))
Master of Applied Science (Molecular Biotechnology) (MApplSc(MBT))

Requirements for the degree
1. (1) Candidates for the Graduate Certificate in Applied Science (Molecular Biotechnology) are required to complete satisfactorily two core units of study (MOBT 5101 and MOBT5102).

2. Candidates for the Graduate Diploma in Applied Science (Molecular Biotechnology) are required to complete satisfactorily two core units of study (MOBT 5101 and MOBT 5102) and 12 credit points from optional units of study.

3. Candidates for the Master of Applied Science (Molecular Biotechnology) are required to complete satisfactorily three core units of study (MOBT 5101, MOBT 5102 and MOBT 5103) and 12 credit points from optional units of study.

Graduate Certificate in Applied Science (Neuroscience)(GradCertApplSc(NeuroSc))
Graduate Diploma in Applied Science (Neuroscience) (GradDipApplSc(NeuroSc))
Master of Applied Science (Neuroscience) (MApplSc(NeuroSc))

Requirements for the degree
1.(1) Candidates for the Graduate Certificate in Applied Science (Neuroscience) are required to complete satisfactorily four units of study selected from NEUR 5101, NEUR 5102, NEUR 5103, NEUR 5104, NEUR 5105, NEUR 5106, NEUR 5107 or NEUR 5108.

2. Candidates for the Graduate Diploma in Applied Science (Neuroscience) are required to complete satisfactorily five units of study selected from NEUR 5101, NEUR 5102, NEUR 5103, NEUR 5104, NEUR 5105, NEUR 5106, NEUR 5107 or NEUR 5108 and either NEUR 5001 or NEUR 5002.

3. Candidates for the Master of Applied Science (Neuroscience) are required to complete satisfactorily five units of study selected from NEUR 5101, NEUR 5102, NEUR 5103, NEUR 5104, NEUR 5105, NEUR 5106, NEUR 5107 or NEUR 5108 and three units of study selected from NEUR 5001, NEUR 5002, NEUR 5003, NEUR 5004.

Graduate Certificate in Applied Science (Photonics) (GradCertApplSc(Photonics))
Graduate Diploma in Applied Science (Photonics) (GradDipApplSc(Photonics))
Master of Applied Science (Photonics) (MApplSc(Photonics))

Requirements for the degree
1. (1) Candidates for the Graduate Certificate in Applied Science (Photonics) are required to complete four core 6 credit point units (PHOT 5001, PHOT 5002, PHOT 5003, PHOT 5010).

2. Candidates for the Graduate Diploma in Applied Science (Photonics) are required to complete five core 6 credit point units (PHOT 5001, PHOT 5002, PHOT 5003, PHOT 5010, PHOT 5011), and one 6 credit point optional unit chosen from PHOT 5004, PHOT 5005, and PHOT 5006.

3. Candidates for the Master of Applied Science (Photonics) are required to complete five core 6 credit point coursework units (PHOT 5001, PHOT 5002, PHOT 5003, PHOT 5010, PHOT 5011), one 6 credit point optional coursework unit chosen from PHOT 5004, PHOT 5005, and PHOT 5006, and 12 credit points of project work (PHOT 5020 and PHOT 5021).

Graduate Certificate in Applied Science (Psychology of Coaching) (GradCertApplSc(PsychCoach))
Graduate Diploma in Applied Science (Psychology of Coaching) (GradDipApplSc (PsychCoach))

Eligibility for admission
1. An applicant for admission will satisfy the admission requirements for the Graduate Certificate in Applied Science or the Graduate Diploma in Applied Science and:
   (1) have completed a 4 year full time (or equivalent part time) course in Psychology; or
   (2) have a 3 year sequence in Psychology and/or relevant work/life experience.

Requirements for the degree
2. (1) Candidates for the Graduate Certificate in Applied Science (Psychology of Coaching) are required to satisfactorily complete three core units of study PSYC 4721, PSYC 4722 and PSYC 4724 and 6 credit points from elective units.

3. Candidates for the Graduate Diploma in Applied Science (Psychology of Coaching) are required to satisfactorily complete three core units of study PSYC 4721, PSYC 4722 and PSYC 4724 and 18 credit points from elective units.

Graduate Certificate in Applied Science (Surface Coatings) (GradCertApplSc(SurfaceCoatings))
Graduate Diploma in Applied Science (Surface Coatings) (GradDipApplSc(SurfaceCoatings))

Requirements for the degree
1. (1) Candidates for the Graduate Certificate in Applied Science (Surface Coatings) are required to complete SUCO 4001, SUCO 4002, SUCO 4003 & SUCO 4004.

2. Candidates for the Graduate Diploma in Applied Science (Surface Coatings) are required to complete SUCO 4001, SUCO 4002, SUCO 4003, SUCO 4004, SUCO 4005 & SUCO 4006.

Graduate Certificate in Applied Science (Wildlife Health and Population Management) (GradCertApplSc(WildHlthPopMan))
Graduate Diploma in Applied Science (Wildlife Health and Population Management) (GradDipApplSc(WildHlthPopMan))
Master of Applied Science (Wildlife Health and Population Management) (MApplSc(WildHlthPopMan))

Requirements for the degree
1. (1) Candidates for the Graduate Certificate in Applied Science (Wildlife Health and Population Management) are required to complete satisfactorily two core units of study (WILD 5001 and WILD 5002) and 12 credit points from optional units of study.

2. Candidates for the Graduate Diploma in Applied Science (Wildlife Health and Population Management) are required to complete satisfactorily two core units of study (WILD 5001 and WILD 5002) and 24 credit points from optional units of study.

3. Candidates for the Master of Applied Science (Wildlife Health and Population Management) are required to complete satisfactorily three core units of study (WILD 5001, WILD 5002 and WILD 5009) and 24 credit points from optional units of study.
8 Staff

■ Faculty of Science

Dean
Professor Beryl Hesketh, BA(Hons) C'Town MA Well PhD Massey, FAPs
Pro Dean
Associate Professor Christopher B Gillies, MAgSc Qld PhD Alta
Associate Deans
Associate Professor Deirdre Dragovich, MA Adel PhD
Associate Professor Alan Fekete, PhD Harv BSc
Professor David Feng, ME SJTU MS PhD UCLA
Professor Philip W Kuchel, BMedSc MB BS Adel PhD ANU, FAA
David J Livesey, BSc PhD WAust

Dean's Office
Executive Officer
Kim P Schwieters, BA Well MA
Executive Assistant
Christine Askew
Administrative Assistant
Sutira Teh

Faculty Office
Faculty Manager
Barbara Chmielewski, BA(Comm) NSWIT
Assistant Faculty Manager
Martin Hesse, BA Macq
Postgraduate Manager
Michele Zaronias
Postgraduate Student Adviser
Di Taylor, BA Macq
Postgraduate Assistant
Josh Fry
Undergraduate Manager
Kath Farrell, BSc
Undergraduate Student Adviser
Lynley Matthews, BSc
Undergraduate Assistant
Linda Kristian, MA(Journalism) UTS BA
International Student Adviser
Eva Papas, DipEd UNSW BA
Faculty Finance Manager
Helen Kwan, BCom UNSW
Computer Systems Officer
Anthony Butler, BA Melb GradDipCompStud Canberra

Marketing
Marketing Manager
Jasmine Chambers, GDipComm UTS BSc
Marketing Assistant
Penny Buchanan, GradCertMktg SIT BA
Web Developer
Minh Nguyen, BA/LLB UTS/MA UNSW

■ Agricultural Chemistry and Soil Science

Professor and Dean, Faculty of Agriculture
Les Copeland, BSc PhD, MRACI CChem. Appointed 2001
Professor in Agricultural and Environmental Chemistry
(Regional Chair)
Ivan R Kennedy, PhD DSc(Agric) WAust FRACI CChem.
Appointed 1996
Professor in Soil Science
Alexander B McBratney, BSc PhD Aberd. Appointed 1995

Senior Lecturers
Robert A Caldwell, MSc PhD, MRACI CChem
Stephen R Cattle, BSc Agr PhD
Edith M Lees, BSc PhD Lond
Balwant Singh, MSc Haryana Agric Univ HISAR India
PhD WAust

McCaughey Lecturer in Hydrology and Catchment Management
R Willem Vervoort, Agr Eng Wageningen PhD Georgia

Senior Research Associates
Inakwu OA Odeh, BSc Ibadan PhD Adel
John Triantifilis, BSc Agr PhD

Research Associates
Rosalind Deaker, BSc MSc Agr PhD
Damian Field, BSc PhD
Namjoon Lee, BSc Agr PhD
Budiman Minasny, BSc Semarata Utara MSc Agr PhD
Raphael Viscara Rossell, BSc Agr PhD
Shuo Wang MSc Agr PhD
Brett Whelan BSc Agr PhD

Senior Technical Officers
Colin Bailey, BAppSc UNSW

Emeritus Professor
Neville Collis George, MSc Man PhD Camb. HonDSc Agr FRChem

Honorary Associates
Harold R Geering, MSc C'nell
Rodney J Roughley, PhD Lond MSc Agr

Norman K Matheson, PhD Edin MSc

■ Anatomy and Histology

Challis Professor of Anatomy
Jonathan Stone, BSc(Med) PhD DSc, FAA. Appointed 1987
Chair of Anatomy and Pain Management
Richard J Bandier, BA Miami (Ohio) PhD Carnegie Mellon DSc

Personal Chair in Visual Neuroscience
Bogdan Dreher, MS PhD Warsaw DSc

Professors
Cristobal G dos Remedios, PhD DSc
Johnston W McAvoy, BSc Belfast PhD Flin. Appointed 2001
Christopher R Murphy, BSc Adelaide PhD Flin DSc

Associate Professor and Head of Department
William S Webster, BSc Lond

Associate Professor
Marie Byrne, BSc Galway PhD VicBC
Tailoi Chan Ling, MOptom PhD UNSW, FAAO
Jan M Provis, BSc PhD UNSW

Senior Lecturers
Robin Arnold, MSc
Vladimir J Balcar, BSc Sheffield PhD ANU
Kevin A Keay, BSc Leeds PhD Sheffield
John Mitrovánis, BSc UNSW PhD
Margaret A Swan, BSc PhD
Lecturers
Deborah Bryce, BSc N’cle(NSW) MChiroprac Macq
Karen Cullen, BSc PhD
Denise A Donlon, BA PhD NE BSc DipEd
Frank Lovice, BSc PhD
Associate Lecturers
Fiona Stewart, BSc MB MB BS
Richard Ward, BMedSci MB BS Monash
Senior Research Fellows
Julian A Barden, PhD Macq
Coral G Chamberlain, MSc PhD
Thomas Fitzgerald, BSc UBC PhD
Research Fellows
David Cameron BA PhD ANU
Luke Henderson, BSc PhD
Neil Nosworthy, BSc PhD
Michael Slater, BSc Macq PhD
Postdoctoral Fellows
Viado Buljan, PhD
Kyle Mervin, BSc PhD
Claudia Monassi
Diana Oakes, BSc UNSW PhD
Kirzstina Valter, MBBS Hung
Professional Officer
Peter R Mills, DipMT AIMLS, AAIMLS
Senior Technical Officers
Darryl R Cameron
Clive H Jeffrey
Roland A Smith
Technical Officers
Peiren Kent
Marcus Robinson
Michael White
Computer Systems Manager
Danny Yee
Administrative Officers
Debbi Douglass
Sue Freeman Levy
Lena Ting, DipPublAdmin HK
Administrative Assistants
Mai Pharm, BSc UTs
Honorary Associates
Louise Baxter
Lavender C Marks, BSc PhD
Peter O Bishop, MB BS DSc MD, FRS FAA
William Burke, BSc PhD Lond
Arthur V Everitt, BSc PhD
Andrew Howe, BDS PhD, FRACDS
Robbert de Jongh, MSc PhD
Estelle Lazer, BA PhD
Anne Macintosh
 Lynette A Moffat, BSc PhD
Robert R Munro, MD BS, FRACS
Suzanne Olfenshaw, BSc PhD
John K Pollock, BSc PhD
Cedric D Shorey, MSc PhD UNSW, CGIA FCGI
Richard Wright, BA Camb MA

BIOLOGICAL SCIENCES
Challis Professor of Biology
Ian Douglas Hume, BSc(Agric) PhD W Aust DSc NE, FAIBiol.
Appointed 1987
Professor of Biology
David Joseph Patterson, PhD Brst DSc Qu. Appointed 1992
Professor in Evolutionary Biology (Personal Chair)
Richard Shine, BSc ANU PhD NE DSc. Appointed 1993
Professor of Biology (Genetics)
Ronald Anthony Skurray, AUPharm PhD DSc Adel, MASM
FAIBiol. Appointed 1991
Professor in Experimental Ecology (Personal Chair)
Antony J Underwood, PhD DSc Brst, FAA FLS FIbBiol FAIBiol
CBIol. Appointed 1992
Reader
Christopher Dickman, BSc Leeds PhD ANU
Associate Professor and Head of School
Rosalind T Hinde, BSc PhD
Associate Professors
William G Allaway, MA Camb PhD Lane
Christopher B Gillies, MAgrSc Qld PhD Alta
Robyn L Overall, BSc UNSWPhD ANU
Mary Peat, BSc Birm PhD Brst
Michael B Thompson, BSc PhD Adel
Senior Lecturers
Susan Franklin, BSc Aberystwyth MSc Storn PhD
Murray J Henwood, BSc Well PhD ANU
Brace Lyon, BSc PhD Monash
Peter McGee, BAgSc PhD Adel DipEd UNSW
Jan Marc, BSc PhD UNSW
Benjamin Oldroyd, BScAgr PhD
Lecturers
Neville Firth, BSc PhD Monash
Dieter Hochuli, BSc Monash PhD LaTrobe
Lars Jermin, Cand Scient Aarhus PhD LaTrobe
Rosanne Quinnell, BSc PhD ANU
Kathryn Raphael, BA PhD Macq
Jennifer Saleeba, BSc PhD Melb
Frank Seebacher, PhD Qld BSc
Charlotte Taylor, BSc Dunl PhD Adel
Murray Thomson, BSc Macq MSc UNSWPhD N’cle
Glenda Wardle, MSc Aus MS PhD Chic
Associate Lecturers
Simon Hudson, BSc Brst PhD
Alison Lewis, BSc DipEd
Osu Lilje, BSc PhD
Elizabeth May, BSc DipEd PhD UNSW
ARC Senior Research Fellow
Thomas Madsen, PhD Lund
ARC Postdoctoral Research Fellows
Jonathan Webb, BSc PhD
U2000 University of Sydney Postdoctoral Fellow
Stephan Wroe, BSc PhD UNSW
Grant Funded Postdoctoral Staff
Cindy An, BSc Fudan MSc Peking Union PhD Glas
Madeleine Beckman, MSc PhD Amsterdam
Melissa H Brown, BSc PhD Adel
Louise Cole, BSc Exe MSc Ox f
A Stewart Gilchrist, BSc LLB PhD
School Funded Postdoctoral Staff
Adrienne Grant, BSc PhD ANU
Professional Officer Grade III
Michael Joseph, BSc
Resources Officer
Mark Alhern, BSc
Senior Technical Officers
George Barrett, HNC(AppBiol) UK
Virginia Klomp, BioTechCert BioTechHigherCert STC
Robert Mackay Wood, BSc Cant
Claudio Muhlrad, BioTechCert STC
Andrew Oulianoff
Basil Panayotakos
Malcolm Ricketts, BSc Macq PhotogCert STC
Salvatore Ruggeri
Heather Sadwell, BioTechCert STC
Multimedia Courseware Developer
Aida Yalcin, BSc MSc Aegean Univ Turkey
Technical Officers
Leslie Edwards, BioTechCert STC AssDipBioTech STC BSc UTS
Milly Ferenczi, BAgSc Godallo
Margaret Gilchrist, BioCert STC
Joanna Hines, BSc GradDipSci(Env Sci)
Helen Kranidiotis, BSc
Xiuimei Liang
Hamish MacKenzie, BioCert STC
Ralph Maddox, BioTechCert ArmTC
Christine Newman, BAppSc UTs
Technical Officer (half time)
Mark Dickson, BSc
Laboratory Assistant
Hamlet Giragosyan
Computer Systems Officer
Andrew Oulianoff
Administrative Officer
Maureen Claxton, BA R’dg DipEd NE
Finance Officer
Louie Briskoski, AssDip (Accounting) TAFE
Professor of Chemistry (Organic Chemistry)
Maxwell J Crossley, BSc PhD Melb, FAA FRACI CChem.
Appointed 1999

Professor in Chemistry (Organic Chemistry)(Personal Chair)
Leslie D Field, PhD DSc, FAA FRACI CChem. Appointed 1994

Professor in Chemistry (Polymer Chemistry)(Personal Chair)
Robert G Gilbert, PhD ANU BSc, FAA FRACI CChem.
Appointed 1992

Professor in Chemistry (Inorganic Chemistry)(Personal Chair)
Peter A Lay, BSc Melb PhD ANU, FRACI CChem.
Appointed 1997

Professor of Chemistry (Inorganic Chemistry)
Len Lindoy, PhD DSc UNSW, FAA FRACI CChem FRSC.
Appointed 1996

Professor of Chemistry (Physical Chemistry)
Donald Harold Napper, PhD Camb MSc, FAA FRACI CChem.
Appointed 1985

Professor and Head of School
Trevor W Hambley, BSc WAus PhD Adel, FRACI CChem.
Appointed 2002

Readers
George Baekskay, BSc Melb PhD Camb
Associate Professors
James K Beattie, BA Prin MA Camb PhD Northwestern,
FAAAS FRACI FRSC CChem
Margaret M Harding, PhD DSc, FRACI CChem
Peter R Harrowell, BSc PhD Chic
Scott H Kable, BSc PhD GradBusAdmin QLT
Brendan J Kennedy, BEd Melb SC PhD Monash
John C Mackie, PhD DSc, FRACI CChem
Anthony F Masters, BSc Melb PhD ANU, FRACI CChem
Damon D Ridley, BSc PhD, FRACI CChem
Gregory G Warr, BSc PhD Melb, FRACI CChem
Director of First Year Studies
Adrian George, BSc PhD Rdg, MRSC MAIC CChem
Senior Lecturers
Robert W Baker, BSc PhD WAus
Cameron J Keptor, BSc UWA PhD Lond
Anthony R Lacey, MSc PhD, MAIC CChem
Siegbert A Schmid, Dipl Chem DrReNat, Tuebingen Grad Dip
HEd UNSW, MAIC CChem

Lecturers
Ronald J Clarke, BSc PhD Adel
Rachel Codd, BSc PhD James Cook
Noel J Dickson, BSc PhD GradBusAdmin QLT
Christopher Fellows, BSc PhD JamesCook
Ronald R Fenton, BSc PhD Macq MRACI CChem
Craig A Hutton, BSc PhD Adel
Meredith J T Jordan, BSc PhD
Malcolm D McLeod, BSc Monash PhD Camb
ARC Senior Research Fellows
Jeffery R Reimers, BSc PhD ANU, MAIC CChem
David R Williams, BSc PhD Camb
ARC QEII Fellows
Katrina A Jolliffe, BSc PhD UNSW, MAIC CChem
Hui Yang Zhu, BSc Inner Mongolia MSc Nankai PhD Antwerp
Senior Research Fellow
Simone C Vonwiller, BSc PhD
Research Fellow
Christopher Fellows, BSc PhD JamesCook
Principal Research Fellow
Brian Hawkett, BSc PhD DipEd
ARC Postdoctoral Fellow
David E Hibbs, BSc PhD Cardiff
U2000 Postdoctoral Fellow
Heaping Zeng, BSc Peking PhD Chinese Acad Sc
Senior Research Associates
Antonio M Bonin, PhD
Carolyn Dillon, BSc PhD
Aviva Levinia, MSc PhD Riga
Research Associates
Zhengli Cai, MSc PhD Chinese AcadSci
Scott Cohen, BSc San Diego PhD CalTech
Hsu Lin Li, BSc PhD Monash
Gang Wei, MSc Hangzhou PhD N'cle (NSW)

Level A Academics
Hank de Bruyn, BSc PhD
Christopher J Ferguson, BSc PhD Cant

Postdoctoral Fellows
Ante Bilk, MSc Zagreb PhD N'cle(NSW)
Iain M Blake, MChem StAnd DPhil Ox

Professional Officers
Robert J Hughes, BSc PhD Flin
Alexander Djerdjev, BSc PhD
DPhil Iain M Blake, MChem StAnd
StAnd Oxf

Ante Bilk, MSc PhD N'cle(NSW)

Christopher J Ferguson, BSc PhD Cant

Hank de Bruyn, BSc PhD

N'cle (NSW)
Hangzhou

Gang Wei, MSc

Monash

Hsiu Lin Li, BSc PhD

Geosciences
Dundee

PhD Lond

Philip Hirsch, BA Ocf MPhil

Emeritus Professors
Hovell Lecturer
Edgeworth David Professor of Geology and William Hilton

Honorary Senior Lecturer
Donald V Radford, MSc PhD DipEd

Raymond K Pierens, MSc PhD, MRSC MRACI CChem

MRACI CChem

Lond,
Julia M James, BSc PhD

Lond, WAust

Robert A Jones, BEng

MSc Lond

Mark Hutchinson

Ronald Horvath, MA PhD

Robert A Jones, BEng MEng Auck MSc Lond

Keith Klepeis

Louis Moresi, PhD

Gordon Packham, BSc PhD

Graeme Philip, AM OBE, PhD DSc, FRACI FRSC CChem

Hans L Emb, AcadAthen

Robert J Hunter, BSc PhD, FAA FRACI CChem

Julia M James, BSc PhD Lond, MRACI CChem

Raymond K Pierens, MSc PhD, MRSC MRACI CChem

Honoray Senior Lecturer
Donald V Radford, MSc PhD DipEd NE

Honoray Lecturer
Alan J Williams, MSc PhD, MRACI CChem

Honoray Associates
Craig Barnes, BSc PhD, MRACI

Michael M Bishop, BSc PhD Cant

Christopher J Burns, BSc PhD Melb

Barbara Messerle, BSc PhD, MRACI CChem

Richard W O'Brien, BE UNSW PhD Camb

Jane Weder, BPharm PhD

Paul Wormald, BSc PhD

Geosciences
Professor and Head of School
John Connell, BA PhD Lond. Appointed 2001

Edgeworth David Professor of Geology and William Hilton

Hovell Lecturer
Peter John Davies, BSc Leic PhD Sheff. Appointed 1991

Professor of Geophysics
Iain M Mason, BScEng CapeTed Edin. Appointed 1995

Associate Professors
Deirdre Dragovich, MA Adel PhD

Philip Hirsch, BA Ocf MPhil Dundee PhD Lond

Jock B Keene, BAgEc ME PhD Cali"/BSc

Andrew D Short, MA Hawaii PhD Louisiana State BA

Senior Lecturers
Gavin F Birch, MSc PhD GradDiplIndAdmin CapeT

Eleanor M Bruce, PhD W Aust

Geoffrey L Clarke, BSc PhD Melb

Peter J Cowell, BA PhD

Stephen J Gale, MA 0cf PhD Keele

Dietmar Muller, BSc Kiel PhD Calif

Thomas CT Hubble, MAAppSc UNSW MSc DipEd

Michael Green Hughes, BSc PhD

Philip McManus, BA GradDip MES PhD

Melissa R Neave, PhD N. Y. State

Philip Turner, BSc Flind MSc PhD NE

Z John Trafalski (Electronics)

Chuan Liang Xie, PhD

II (NMR and EPR)

Catherine H Woods, BA

Administrative Assistants
Sophie Patalsides

Philip Penwright

Anne Woods

Lisa Wu, BBus

Emeritus Professors
Hans C Freeman, MSc PhD, FAA FRACI FRSC CChem

Noel S Hush, DSc Manes MSc, FAA FRACI

Sever Sternhell, PhD DSc DIC Lond MSc, FAA FRACI CChem

Walter C Taylor, PhD DSc Manes MSc, FRACI CChem

Professorial Fellow

Dalway J Swaine, MSc Melb PhD Aberd, FRACI CChem

(Inorganic Chemistry)

Honorary Professor
John T Pinhey, PhD DSc, FRACI CChem

Honorary Associate Professors
Robert S Armstrong, MSc PhD, MRACI CChem

Manuel Aroney, AM OBE, PhD DSc, FRACI FRSC CChem

CormM emb AcadAthen

Robert J Hunter, BSc PhD, FAA FRACI CChem

Julia M James, BSc PhD Lond, MRACI CChem

Raymond K Pierens, MSc PhD, MRSC MRACI CChem

Honoray Senior Lecturer
Donald V Radford, MSc PhD DipEd NE

Honorory Lecturer
Alan J Williams, MSc PhD, MRACI CChem

Honorory Associates
Craig Barnes, BSc PhD, MRACI

Michael M Bishop, BSc PhD Cant

Christopher J Burns, BSc PhD Melb

Barbara Messerle, BSc PhD, MRACI CChem

Richard W O’Brien, BE UNSW PhD Camb

Jane Weder, BPharm PhD

Paul Wormald, BSc PhD
Information Technologies

Professor & Head of School
Peter Eades, BA PhD ANU. Appointed BT Financial Services Chair of Software Technology, 2000

Professors
David Everett, BE PhD Qld. Appointed Chair of Internetworking 2001

David Feng, ME SJTU MS PhD UCL. Appointed 2000

Jon D Patrick, BSc Deakin MSc Dub DipBehHealthPsych LaTrobe DipSurv RMTPH Monash. Appointed 1998

Albert Zomaya, BEng Cairo MSc PhD Eng. Appointed Cisco Systems Chair of Internetworking, 2001

Associate Professors
Joseph G Davis, BSc Calicat PostGradDipMgmt IIMA PhD Pitt
Alan Fukete, PhD Harv BSc
Jesse Jin, BSc SJTU MSc CTU PhD Otago

Judy Kay, BSc PhD
Robert J Kummerfeld, BSc PhD

Senior Lecturers
Edmund Balnaves, BA CCA MBA NTU
Sanjay Chawla, BA Delhi PhD Tennessee

Tony Greening, MA DeptEng Stud CSTurt Med Sc Cross Med Admin UNE BDS CQU

Geoffrey Kennedy, MA Kent BSc UNSW MSc MacPh PhD Otago Bjorn Landfield, PhD UNSW. Cisco Senior Lecturer in Internet Technologies (jointly with EIE)

Ian A Parkin, PhD Adel BSc
Andrea Stern, BA Macq Diploma UNSW

Masahiro Takatsuka, ME TokyoInStTech PhD Monash

Weidong (Tom) Cai, BSc HuaQiao PhD

Vera Chung, PhD QUT

Qingwen (Wendy) Feng, BS Nanjing MS East China PhD N’ceI(NSW)

Seok Hee Hong, MS PhD Ewha
Liaquat Hossain, BBA MSc Assumption PhD W’gong

Irena Koprinka, MSc TU Sofia PhD Sofia

Nicole Lesley, BSc ANU MSc Colorado GradDipArts PhD JamesCook

Josiah Poon, BSc Mane GradCertEd UQ MSc PhD Deakin

Mark Sifer, PhD UTS
Kalina Yacef, MSc PhD Paris

Associate Lecturers
Darren Louie, BSc VictoriaBCH Med

Simon Poon, BSc GradCertMathsSci MEng UTS

Postdoctoral Fellows
Carsten Friedrich, Diplom Passau PhD (submitted)

Senior Research Fellow
Aaron Quigley, BS(Mod)Hons Dub PhD N’cIe(UK)

Computer Systems Supervisor
Greg Ryan, BSc(Hons)

Computer Systems Officers
Roy Giles, BSc Wales
Prabhat Gupta
Bruce Janson, BSc(Hons)
Ronald Jure, BSc(Hons) TU Berlin

Abdallah (Abed) Kassis

Mathematics and Statistics

Professor and Head of School
Edward Norman Dancer, BSc AM/PdCmb. Appointed 1993

Professor in Mathematical Statistics (Personal Chair)
John Robinson, BSc Qld PhD. Appointed 1991

Professor in Pure Mathematics (Personal Chair)
Gustav Isaac Lehrer, PhD UTex. Appointed 1993

Professors
John J Cannon, MSc PhD. Appointed 2000

Nalini Joshi, MA PhD Prin BSc. Appointed 2002

Eugene Seneta, MSc Adel PhD ANU, FAA. Appointed 1979

Readers
Donald I Cartwright, PhD///BSc

Jonathan Hillman, BSc W’gong AM Harv PhD ANU

King Fai Lai, BSc Lond Mphil PhD Yale

Associate Professors
Terence M Gagen, BSc Qld PhD ANU

William G Gibson, MSc Lond PhD UNSW

Robert B Howlett, BA PhD Adel

Ronald W James, BSc PhD

Charles C Macaskill, BSc PhD Adel

Malcolm P Quine, MSc Lond PhD ANU

Donald E Taylor, MSc Monash DPhil Oxford

Neville C Weber, MSc PhD

Director of Junior Studies
Sandra C Britton, BSc UNSW MA
Senior Lecturers
Peter W Buchen, PhD Camb BSc
Koo Guan Choo, BSc Nan MSc Or PhD BrCol
Christopher M Cosgrove, BSc PhD
David Easdown, BA ANU PhD Monash
Roger W Eyland, PhD Camb MSc
David J Galloway, BA PhD Camb
Jenny Henderson, DipEd Flm MSc
Hugh C Luckock, BSc Auck PhD Ncle(uk), ASIA
Alexander I Molev, Diploma Diploma Mscol
Gordon P Monaco, BSc Monash PhD Brist
Mary R Myersonough, DPhil Oxf MSc
Nigel R O'Brien, MA Camb PhD Varw
William D Palmer, MLitt MA NE BSc PhD DipEd
M Shelton Peiris, DipMath MSc Peradeniya PhD Monash
Mary C Phipps, MsC
Rosemary S Thompson, BSc ANU PhD
James N Ward, BSc PhD
Lecturers
Sanjeeva Balasuriya, BS Lafayette Scm PhD Brown
Clare Coleman, BSc DipEdAdel DipSc PhD
Howard J D'Abrella, PhD Calif Bsc
Daniel Daners, PhD Zurich
Humphrey M Gastineau Hills, MSc PhD
Georg Gottwald, PhD Monash Diploma Dusseldorf
David J Ivers, BSc PhD
David R Kohel, BSc Texas A&M PhD Berkeley
Andrew P Mathas, BSc MSc PhD III
Adrian M Nelson, PhD Lonl Bsc
Laurentiu Paunescu, MSc Bucharest PhD
Marc Raimondo, MSc DipStats PhD Paris VII
Qiyong Wang, BSc Anhui MSc &T China PhD W'gong
Associate Lecturer
Michael Stewart, BSc MA PhD
ARC Senior Research Fellow
Rubin Zhang, BSc Shandong Phd Tas
Postdoctoral Fellows
Anthony Henderson, PhD Mass Bsc
Stephen G Lask, BSc PhD Camb
Shusen Yan, MS South China Unitech Phd Wuhan Inst
Sesqui Postdoctoral Fellow
Scott Murray, BSc ANU SM PhD Chic
U2000 Postdoctoral Fellow
Joost van Hamel, PhD Amsterdam
Research Fellows
Claus Fieker, DipMath Heinrich Heine PhD Berlin
Volker Gebhardt, Dipl Friedrich Alexander PhD Essen
Senior Research Associates
Nils Bruen Phd Leiden
Leslie Farnell, MA Dphil Oxf DipEd Canberra
Alan K Steel, BA
William R Unger, BSc PhD
Research Associates
Geoffrey Bailey, BSc
Paulette Lieby, BCS PhD NtTerritory
Research Assistants
Anne P Cannon, BA Mphil
Nicole J Sutherland, BSc Macq
Comput. Manager
James S Richardson, PhD Warw MSc
Computer Systems Officers
Robert B Pearson, BSc BIT CSsturt ADipA Mitchell CAE
Paul Szabo, BSc Havana
Michael R Wilson, BSc
Damien Fisher BSc UNSW
Administration Manager
Paul Harbon, MBA DipMngmt Deakin ADipMath SQld BSc
Finance Officer
Julie Small
Administrative Assistants
Flora Armaghanian
Janet Doyle
Jan Love
Sonia Morr
Emeritus Professors
Gregory Maxwell Kelly, BA PhD Camb BSc, FAA
Gordon Elliott Wall, BSc Adel PhD Camb, FAA
Peter Robert Wilson, BA MSc Melb PhD, FRAS
Visiting Professors
Richard Cowan, BSc PhD GradDip
Nicholas I Fisher, PhD NhCarolina Dsc
Honorary Reader
Tze Char Kuo, BS Natnl Taiwain PhD Chic
Honorary Associate Professors
Edward D Fackrell, MSc PhD
John M Mack, MA Camb BSc PhD
Robert FC Walters, MSc Qld PhD ANU
Denis E Winch, MSc PhD, Fras
Honorary Senior Lecturer
W Barrie Fraser, Bsc ME Can Sm PhD Harv
Karl H Wehrhahn, BSc Alta PhD
Honorary Associates
Geoffrey R Ball, BA
Donald W Barnes, Dphil Oxf Bsc
Diana Combe MSc London Bsc PhD
Wen Dai, BSc Yunnan MSc Beijing PhD ANU
David C Edelman, SM MIT Mphil PhD Col
Brian Gray, BSc PhD Man, FRACIFRSC
Joseph Hammer
Michael S Johnson, BSc PhD
Arjen Lenstra, MA PhD Amsterdam
Rupert Littlewood, PhD
Philip Lo, BA BSc Melb Dipl Vienna
Leanne Rylands, MSc PhD
Jane Sexton, BSc PhD Qld
Ross H Street, Bsc PhD
Molecular and Microbial Biosciences
Biochemistry
Professor and Head of School
Richard I Christopherson, BSc PhD Melb (Personal Chair).
Appointed 1998
McCaughey Professor
Philip W Kuchel, BMedSc MB BS Adel PhD ANU, FAA.
Appointed 1980
Associate Professors
Arthur D Conigrove, Bsc(Med) MB BS MSc PhD, FRACP
Alan R Jones, PhD Manc MSc
Anthony S Weiss, BSc PhD
Emma Whitelaw, BSc ANU Dphil Oxf
Senior Lecturers
W Burt Church, BSc UNSW DipEd NE PhD, MRACI
Charles A Collyer, BSc Flin PhD
P Merlin Crossley, Bsc Melb Dphil Oxf
Gareth S Denyer, BA Dphil Oxf
Kevin M Downward, BSc PhD Adel
Simon B Easterbrook Smith, Bsc Well PhD Adel
Joel P Mackay, BSc Auck PhD Camb Lecturer
Jill M Johnston, BSc Qld DipEd CatholicCE(Syd)
Associate Lecturer
Dale P Hancock, BSc PhD
Principal Research Fellow
J Mitchell Guss, BSc PhD
Senior Research Fellows
William A Bubb, DSc Lond Bsc PhD
Barry A Fields, BSc PhD
ARC Australian QEII Fellow
Elizabeth J Harry, Bsc PhD
ARC Australian Research Fellow
Jacqueline M Matthews, BSc UNSWPhd Camb
Cl J Martin Fellow
Peter J Mulquiney, Bsc PhD
NHMRC R. D. Wright Research Fellow
Caroline Rae, Bsc PhD
Research Fellows
Adrienne Adams, Bsc PhD, Melb
Larissa Belov Bsc, Qld PhD Macq
Bogdan E Chapman, Bsc PhD ANU
Margaret Sunde, Bsc CapeT PhD Camb (part time)
Allan H Torres, Bsc Uplb PhD Alberta
Jeremy Turner, BSc PhD
ARC Australian Postdoctoral Fellow
Megan Maher, BSc Qld Bsc PhD Melb

253
Postdoctoral Fellows
Suyynn Chong, BAppSc PhD TechnolSyd
Anthony P Duft, BSc PhD UNSW
Thomas R Eykyn, BSc Oxf PhD Lausanne
Alison Franks, BSc PhD
David A Gell, BSc PhD Camb
Slade Jensen, BMedSci PhD
Mohammad A Kamal, MSc Gomal PhD Islamia
David Langley, BSc PhD
Konstantin Momot, BSc Novosibirsk PhD Arizona
Jose S Perdomo, BAppSc(BCT) Oxf PhD Lausanne
Thomas R Eykyn, BSc PhD Paris
Anthony P Duff, BSc PhD UNSW

Senior Technical Officers
Alexis Verger, BSc PhD Paris

Technical Officers
Cesar De La Paz

Research Assistants
Roberta Donadini, BSc PhD
Pauline Y H Huang, BAppSc(MedSci) QldUTBSc Qld MScMed
Cy M Jeffries, BSc ANU (part time)

Glassware Cleaners
Heather Hutchings (part time)
Joyce Menouhous (part time)

Lab Assistant
Peter W Ken

Emeritus Professors
Hans C Freeman, MSc PhD, FAA FRACIF RSCC Chem
Clifford H Gallagher, PhD Lond DVSc, FACVSc FRCPath
Noel S Hush, DSc Mane MSc, FRSA FAA FRACI

Adjunct Professor
Robert C Baxter, PhD DSc, FAACB

Adjunct Senior Lecturer
Stephen P Mulligan, MB BS UNSW PhD, FRACP FRCPA

Honorary Associates
Nihal S Agar, MVetSci PhD Agra
Renze Bais, BSc PhD Adel
Leslie Burnett, BSc Melp MB BS PhD
Roderick JD Clifton Bligh, BSc(Med) MB BS PhD Camb
Ivan Darvey, BSc PhD ANU
Christopher J Garvey, MSc
Uwe Himmelreich, MSc(Dipl Chem) PhD Leipzig
Glenn F King, BSc PhD
Michael A Messer, MSc PhD Melp
Hossein Nouri Sorkhabi, BSc Tabriz, PhD Wales
Michael Slaytor, MSc PhD
Robert G Wake, MSc PhD, FAA
Vivian KL Whittaker, MB BS Qld PhD ANU

James S Wiley, BA Oxf MB BS MD

Human Nutrition Unit

Boden Professor of Human Nutrition
Ian D Caterson, BSc MB BS PhD, FRACP. Appointed 1997

Professor
Janette C Brand Miller, BSc PhD UNSW, FAIFST (Personal Chair). Appointed 2002

Senior Lecturers
Samir Samman, BSc PhD
Karen Webb, BSc MPH UC Berkeley PhD

Lecturer
Soumela Amanatidh, BSc DipNutrDiet, APD (half time)

Kellogg Lecturer
Dianne H Volker, BHSc PhD NcLe(Asian), APD

Clinical Lecturers
Jenny Ravens, BSc CertDiet MHM NE
Beth Rohrlach, BSc DipNutrDiet, APD
Global Associate Lecturer
Maria Kokkinakos, BSc DipNutrDiet

Associate Lecturer
Nicola Riley, BSc MNutrDiet, APD
NHMRC Senior Research Officer
Janet Bryson, BSc NE MSc
Research Manager, RTOF
Timothy P Gill, BSc Tao BSc GradDiplDiet PhD Deakin

Clinical Trials Manager
Alissa J Cook, BSc PhD

Postdoctoral Staff
Kim Bell Anderson, BSc PhD UNSW
Bing Wang, MD Tianjin PhD

Research Manager, SUGIRS
Susanna Holt, BSc MNutrDiet PhD
Business Manager, GI Symbol Program
Tony Irwin BSc DipNutrDiet (part time)

Professional Officer
Ziaul I Ahmad, MAppSc TechnolSyd

Laboratory Assistant
Sally McEwan, MSc

Administrative Assistants
Isa Hopwood
Joyce Calvitto
Marianne Alexander (part time)

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff

Postdoctoral Staff
**Pathology**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>Nicholas H Hunt</td>
<td>BSc PhD, Aston. Appointed 1989</td>
</tr>
<tr>
<td>Associate Professor</td>
<td>John Hilton</td>
<td>RDF MB ChB, St Andrews, FRCPA</td>
</tr>
<tr>
<td>Senior Lecturer</td>
<td>Nicholas JC King</td>
<td>MB ChB, Cape Town PhD, ANU</td>
</tr>
<tr>
<td>Visiting Scholars</td>
<td>Shishan Bao, MB BS, Shanghai PhD</td>
<td>Brett D Hamby, BSc(Med) MB BS PhD</td>
</tr>
<tr>
<td>School Administrative Officer</td>
<td>Danielle Wells</td>
<td>BSc UNSW</td>
</tr>
<tr>
<td>School Finance Officer</td>
<td>Stephen P Conaghan</td>
<td></td>
</tr>
<tr>
<td>School Information Technology Officer</td>
<td>Douglas J Chappell, BA, BSc PhD DipEd</td>
<td></td>
</tr>
<tr>
<td>School Computer Systems Manager</td>
<td>Jennifer Wong</td>
<td>BSc</td>
</tr>
<tr>
<td>School Administrative Assistant</td>
<td>Bronwyn G Ferguson (part time)</td>
<td></td>
</tr>
<tr>
<td>School Attendant</td>
<td>Christopher Trott, BA (part time)</td>
<td></td>
</tr>
</tbody>
</table>

**Microbiology**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>Peter Richard Reeves</td>
<td>BSc PhD, Lond, FAA MASM. Appointed 1985</td>
</tr>
<tr>
<td>Reader</td>
<td>Thomas Ferenci</td>
<td>BSc Lond PhD Leic</td>
</tr>
<tr>
<td>Senior Lecturers</td>
<td>Dee A Carter, BSc Otago PhD Lond</td>
<td>Andrew Holmes, BSc PhD Qld</td>
</tr>
<tr>
<td>Peter B New</td>
<td>B AgrSc Tas PhD Adel Lecturer</td>
<td>Helen M Agus, MSc UNSW, MASM</td>
</tr>
<tr>
<td>Postdoctoral Fellow</td>
<td>Gabrielle N Samuel</td>
<td>BSc Birn PhD Adel</td>
</tr>
<tr>
<td>Research Assistants</td>
<td>Tien MT Bui</td>
<td>BMedSc</td>
</tr>
<tr>
<td>Kathy M Donohoe</td>
<td>BSc (Molecular Biology &amp; Genetics)</td>
<td>Lucinda S McRobb, BSc (part time)</td>
</tr>
<tr>
<td>Shona J Seeto</td>
<td>BSc</td>
<td>Gordon Stevenson, BSc Adel</td>
</tr>
<tr>
<td>Technical Officers</td>
<td>John C Foster, BSc</td>
<td>UNSW GradDip (Env Stud) Macq</td>
</tr>
<tr>
<td>Katrina A Gilchrist</td>
<td>BiomedAdvTechCert</td>
<td>Vincent Lai, BMedSc •</td>
</tr>
<tr>
<td>Laboratory Assistant</td>
<td>Emma Hastings, BSc</td>
<td></td>
</tr>
<tr>
<td>Glassware Cleaners</td>
<td>Ana M Julea (part time)</td>
<td></td>
</tr>
<tr>
<td>Trudie T Smith (part time)</td>
<td>Administrative Assistant</td>
<td>Annie Au</td>
</tr>
<tr>
<td>Adjunct Professor</td>
<td>Timothy G Littlejohn, BSc PhD Melb, CIAR (Associate) Honorary Senior Lecturer</td>
<td>Trevor Duxbury, BSc PhD Liv, MASM</td>
</tr>
<tr>
<td>Gordon Stevenson</td>
<td>BSc</td>
<td>K Yip Cho, BSc UNSWPhDANU</td>
</tr>
<tr>
<td>William M Gurrell, PhD OxDS Agr</td>
<td>FAPJST MASM</td>
<td></td>
</tr>
</tbody>
</table>

**Virtual Department of Molecular Biotechnology**

**Director**

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthony S Weiss</td>
<td>BSc PhD</td>
</tr>
<tr>
<td>Senior Lecturers</td>
<td>W Bret Church, BSc UNSW PhD</td>
</tr>
<tr>
<td>Kevin Downard, BSc PhD Adel Lecturers</td>
<td>Rachel Codd, BSc Macq PhD</td>
</tr>
<tr>
<td>Christopher Fellows, BSc PhD James Cook</td>
<td>Neville Firth, BSc PhD Monash</td>
</tr>
<tr>
<td>Honorary Appointments</td>
<td>Adjunct Professor</td>
</tr>
<tr>
<td>Keith Williams, BAGSc Melb PhD ANU Visiting Scholars</td>
<td>Shoba Ranganathan, BSc PhD NUSing</td>
</tr>
<tr>
<td>Carl J Sundberg, MD PhD Karolinska</td>
<td>Victor Wong, BSc PhD NUSing</td>
</tr>
</tbody>
</table>

**School Administrative Staff**

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Laboratory Manager</td>
<td>Terry P Brown, MASM</td>
</tr>
</tbody>
</table>
Physics

Professor in Physics (Applied Physics)
Marcela M Bilek, BSc PhD Camb MBA Roch. Appointed 2001

Professor of Physics (Astrophysics)
Lawrence Edward Cram, BSc BE PhD. Appointed 1987

Professor in Physics (Materials Physics)
David R McKenzie, BSc PhD UNSW

Professor in Physics (Electromagnetic Physics)
Ross C McPhedran, BSc PhD Tas

Professor of Physics (Theoretical Physics)
Donald B Melrose, BSc PhD

Professor in Physics
Peter A Robinson, BSc PhD. Appointed 2000

Professor of Physics (Physical Optics)
Colin JR Sheppard, MA PhD Camb DSc Ox. Appointed 1989

Readers
Dixon Kwok, BSc, PhD

Murray Winn, BSc PhD

Lawrence S Peak, BSc PhD

Brian Mclnnes, BSc PhD

Honorary Research Associates
Richard Donnelly, MB ChB MD Birm PhD Glasgow, MRCP
FRACP

Peter Gray, BSc PhD

Annette S Gross, BPharm PhD

Herbert F Jelinek, BSc [WSWGradDipNeurosciAM/PhD

David IB Kerr, BSc PhD Adel

Desmond J Maddalena, MAppSc DipTech NSWLTPhD

Karen McKay, BSc PhD

Jennifer Ong, BSc PhD Adel

Xianqiu Qu, PhD

Diana M Temple, AM, BSc WAust MSc PhD

Christopher WVaughan, BEMBiomedE UNSW PhD

Sandra N Webb, BPharm VICThD Strath

---

L Brace Cobbin, BSc Melb PhD
Gavin Dixon, PhD
Richard Donnelly, MB ChB MD Birm PhD Glasgow, MRCP
FRACP

---

256

Stephen Bosi, BSc PhD UNSW
Michael Breakspear, BA BSc MB BS
Christopher Dey, BSc PhD

Bee Kwan Gan, BSc PhD Curtin
Alexei Ivanov, MSc Tadjik State Moscow

Zdenka Kuncic, BSc PhD ANU

Manfred Lenzen, PhD Diploma Bonn
Bo L Li, MSc Nankai PhD JamesCook

Nigel Marks, BSc PhD

Senthilvelan Murugaiyan, BSc Madras MSc MPhil PhD

Bharathidasan Uni

Nicolae Nicolovici, MSc PhD InstAtPhys Bucharest

Andrew Norton, PhD UNSW/BSc

Michael Proskach, BSc PhD Technische Vienna

Alon Retter, MSc Hebrew Uni PhD Tel Aviv

Maitreyee Roy, MSc MPhil Rani Dorgauati PhD

George Warr, BSc Cant PhD ANU

Jeanette J Weise, BSc PhD Melb

Chengmin Zhang, MSc Dalian PhD HK

Level A Research only

Richard Tarrant, BA MSc

Julius Sumner Miller Fellow

Karl Krasselnicki, BSc MBioMedE UNSW MB BS

Professional Officers

Duncan Campbell Wilson, BSc ANU

Administrations Manager

Leanne Howie, BA

Outreach Officer

Owen Shepperd, BSc UNSW

Physics Workshop Manager

Graham Marines

Emeritus Professors

Maxwell Howard Brennan, AO, HonDSc Flins BSc PhD, FAA

Richard Edward Collins, PhD IVYBSc, FTS FIE

John Davis, BSc PhD ManC

Charles BA McCusker, DSc Mane, MRIA

Harry Messel, CBE, BSc Qu PhD NUJ

Bernard Y Mills, BSc ME DSciEng, FAA FRS

Adjunct Professors

Russell D Cannon, MA PhD Camb

Michael M Gore, AM, BSc PhD Leeds, FIE MAIP

Richard N Manchester, BSc Cant PhD D-Ncle(NSW)

Honorary Professors

David J H Cockayne, MSc MPhil DPhil Ox. FAIP FInstP FRS

Barry S Thornton, AM, MSc PhD UNSW DSc, FRAd FInstP

FBBCS FACs FIREE FIE

Honorary Reader

Graham Derrick, BSc Qld PhD

Honorary Associate Professors

Veronica James, BA BSc UQ PhD UNSW, OAM

Ian D S Johnston, BSc Qld PhD

Brian McInnes, BSc PhD Qld

Lawrence S Peak, BSc PhD

Murray Winn, BSc PhD Birm

Honorary Senior Lecturers

Roy Allen, BSc PhD Manes (Jodrell Bank)

Ian M Bassett, MSc PhD Melb

G Fergus Brand, MSc Otago PhD

Carol Cogswell, MA MArch Oregon

David F Crawford, BSc PhD

Ian S Falconer, MSc NZ PhD ANU

Bruce McAdam, MSc NZ PhD Camb

James B T McCaughan, MSc PhD ManC

Ian Selton, MSc

Robert Shobbrook, BSc StAnd PhD ANU

Anthony J Turtle, BA PhD Camb

Juris Ulrichs, BSc PhD

Honorary Research Associates

Ara Asatryan, MSc Yerevan State Uni PhD Moscow

Andrew Bakich, MSc

Lewis T Ball, BSc PhD

Joss Blvd Hawthorn, BSc Aston Uni (B’ham) PhD Sussex Uni

& Royal G’wich Observ

Lindsay C Botten, BSc Tas PhD

Pal Fekete, BSc PhD

Anthony Fischer Cripps, BAppSc UTS PhD

Catherine Foley, PhD DipEd Macq BSc

Peter French, PhD Deakin MSc

Julienne I Harnett, BA Macy DipT TasCAE PhD

---

256
Rolf Howlett, BVSc PhD, MRCVS MRCVSce FBSE
Carole Jackson, MA PhD Camb
David L Jauncey, BSc PhD
Tim Langtry, BA PhD UWSW MAppSc UTS,
Maryanne Large, BSc PhD Dub
James K Lowry, BA Richm Virg MA Coll William and Mary Virg
PhD Cant
Pamela McNamara, BSc Wales(Swansea) MSc SheffPhD
Wales(Bangor)
Phillip Martin, BSc Aston Uni (B'ham) PhD ANU
Graham Morrison, BE PhD Melb
Bhasak Mukherjee, BE Calcutta, MSc PhD Technish
Andrew R Parker, BSc John Moores Liv PhD Macq
Christopher Rennie, BSc AM/MBioEng UNSW PhD
Michael Scholz, BSc Tuebingen MSc PhD Hamburg
Geoff Smith, MScWith PhD UNSW
Lindsey F Smith, BSc PhD ANU
Natalika Suchowerska, BSc Birm MSc UTS PhD
Mark J Wardle, MSc Auck PhD Princ
Kirinwa Wu, BSc HK MSc PhD Louisiana

■ Physiology

Professors
John Atherton Young, AO, BSc(Path) MD BS DSc Qld, FRACP
FAA. Appointed 1976
Maxwell Richard Bennett, BE MSc PhD Melb DSc, FAA.
Appointed 1983
David Grant Allen, BSc MB BS PhD Lond. Appointed 1989
Roger AL Dampney, PhD DSc. Appointed 1990
David I Cook, BSc(ed) MB BS MSc (the University of Sydney
Medical Foundation). Appointed 1997
Brian J Morris, BSc Adel PhD Monash DSc. Appointed 1999
Reader
Joseph F Y Hoh, PhD ANU BSc(Med) MB BS DSc
Associate Professors
Rebecca S Mason, MB BS PhD
Christopher O’Neill, BSc PhD N’cle(NSW) (Clinical Associate
Professor at Royal North Shore Hospital)
Paul Pilowsky, BMedSc BMBS PhD Flina (Principal Research
Fellow at NHRM)
Simon Carlile, BSc PhD
Senior Lecturers
William D Phillips, BSc PhD
Lynne J Cottey, BSc PhD (half time & Research Officer)
Miriam Fromner, PhD Lond BSc
Lecturers
Margot Day, BSc PhD NHMRC
Francoise Janod Groves, BSc iVSWTMApplSc UTS
Ann Goodchild, BSc PhD
Irene Schneider, BSc UW/SMSci(Prelim)
Visiting Professor
Martin Johnson
Joint Appointee
Annick Asselin, BA Macq MSc PhD (Lecturer)
Visiting Fellow/Scholar
Meloni Muir, BSc Purdue PhD McG
Postdoctoral Research Fellows
Anuwa Diudom, MSc PhD Medical Foundation
Xiaohui Xiao, MD PhD Beijing Med Uni
Jouji Merivuchi
Andrea Markus
Youkaka Hosoda
Craig Jin
Oliver Behrend
Meloni M Muir
Senior Research Officers
Yue Kun Ju, MD Xian PhD ANU NHMRC
Permsak Komwatana, MS PhD Charlottesville NHMRC
Anne Nelson, BSc PhD NHMRC
Qi Jian Sun, BSc China PhD ANU
Research Officers
Jouji Hortuchi, PhD
Wenhing Huang
Qun Li, MM Shanghai PhD
William Lin
Guo Jun Liu
Christine Lucas, BSc PhD NHMRC
ANGELES Sanchez Perez, BSc PhD Salamanca
Eliza Whiteside, BSc PhD
Research Assistants
Paul Dickens, BSc(Adv)(Hons)
Suzanne Killinger, BMedSc(Hons)
Helena Mangs
Lauren OMullane, BBiomedSc W‘gong
Leonie Wood
Research Laboratory Staff
Judith O’Neill, RN BA(Health Sci Nursing) CStart
Class Laboratory Staff
John F Cossey, BTC STC Senior Technical Officer (in charge)
Adel Mitry, BVSc Cairo ACC STC Senior Technical Officer
Electronics Workshop Staff
Vincent HW Cheung, HND H K Polytechnic CEI Part 2 UK
Senior Technical Officer
Computing Staff
John WA Dodson, HNC Lond MIEEIEI Eng Computer
Network Manager
LI Jin
Joseph Pridham
Department Manager
Louise Loomes, BA GradDipAcctg
Administrative Officers
Louise Harrison
Lali Jo Jacob
David Lawrey
Emeritus Professor
William Burke, BSc PhD Lond
Ann E Selton, BSc(Med) MB BS DSc
Honorary Associate Professors
Barry S Gow, MDS PhD, FRACDS
David F Davey, BSc PhD MC
Honorary Senior Lecturer
Annick Asselin, BA Macq MSc PhD
Honorary Associates
David le Couteur
Peter Matiz
William Wang
Ainsley Marsh
Elaine Mulcahy, PhD

■ Psychology

Head of School and Professor of Vestibular Function
(Personal Chair)
Iain S Curthoys, BA PhD Monash. Appointed 1997
McCaughey Professor of Psychology
Robert Alan Boakes, BA Cant PhD Harv. Appointed 1989
Professor of Clinical Psychology
Stephen W Touyz, BSc PhD Cape T BSc Witw. Appointed 1996
Professors
Sally Andrews, BA PhD UNSW. Appointed 2002
AlexBlaszczymski, MA PhD UNSW. Appointed 2001
Lazar Stankov, MA Belgrade PhD Denver. Appointed 2001
Associate Professors
David Grayson, BA PhD
Cyril R Latimer, BA PhD
Iain McGregor, MA Ostf PhD
Joel B Michell, BA PhD
R F Soames Job, BA PhD
Senior Lecturers
Diana Caine, BA NE BSc MA Melb PhD
Colin Clifford, MA Camb MSc Sussex PhD Lond
Brian D Crabbe, BA PhD
Alan E Caddick, BA PhD
Pauline Howie, BA PhD UNSW
Caroline Hunt, BSc MPsychol PhD UNSW
David J Livesey, BSc PhD W’ast
John M Predebon, BA PhD
Michael B Walker, BSc UWA BA Adel DPhil Ostf
Leanne Williams, BScSc BA PhD NE
Lecturers
Margaret A Charles, BA PhD
Karen Croot, BA Macq PhD Camb
Julie Hartfield, BA PhD
Sandra Heriot, BA Well MA Auck PhD Waikato
Fiona Hibberd, BA PhD
Sunny Lah, BA Zagreb MSc PhD Macq
Andrew Grigaliunas, BSc Jorge Tadeo Colombia
Grad Dip Int Environ Manage Los Andes Colombia
Penny Harrington, Adv Cert Accounting Assoc Dip Welfare Work
TAFE

Robert Hunt, BSc JCU Grad Dip Sc (Environ Sc)
Grant Kaplan, BAppSc SCL
Elena Lazzorotto, BAppSc (Hons) BSc (Hons) Deakin
Kade Mills, BSc (Hons) Deakin
Craig Myers, BSc (Hons)
Amy Palmer, BSc
Hwee Ying Pulford, BAppSc RMLT
Alison Bashford, PhD

Honorary Appointments

Brian L Bayne, BSc PhD Wales
L Benedetti Checci, PhD Pisa
K R Clarke, BSc PhD Plymouth
J S Gray, BSc Lond PhD Wales
Stephen J Kennelly, PhD DSc
M J Keough, BSc PhD Adel
G C B Poore, PhD Cant
R M Warwick, PhD DSc Exe

Coastal Studies Unit

Director
Andrew D Short, MA Hawaii PhD Louisana State BA

Members
Eleanor M Bruce, PhD W Aust
David E M Chapman, MEngSc UNSW BA PhD
Peter J Cowell, BA PhD

History and Philosophy of Science Unit

Director
Rachel A Ankeny, BA St John's College MA PhD Pitt

Lecturers
Jason Grossman, MA Camb MPH
L Claire Hooker, BA PhD
Katherine M Neal, BSc Houston MA PhD Tor

Visiting Professor
Evelleen Richards, BSc Qld MA PhD UNSW
Alan Chalmers, BSc Brist MSc Mane PhD Lond

Visiting Lecturer
Susan Hardy, BA PhD UNSW

Administrative Assistant
Gail Stewart, BA GDipSecStudies

Honorary Associates
Peter Anstey, BA PhD
Alison Bashford, PhD
David Braddon Mitchell, BA PhD ANU
Mark Cortiula, BA PhD Guelph

Stephen Gaukroger, BA (Hons) Camb, BA (Defence Studies)

Jacqui Harrison, BA BA (Police Studies) Grad Dip Arts (Music)
Grad Dip Arts (Asian Studies) Monash, BA (Defence Studies)
Deakin, CertBusAdmin & Acc OTEN BA (Hons)

Administrative Assistant
Patricia Matterson

Honorary Associate Professor
Michael Montiero, MSc PhD Griff

Honorary Lecturer
Richard Hughes, BSc

Honorary Research Associates
Peter Hidi, BSc Bud, BSc FRACI MIACIS

University of Sydney Institute of Marine Science

Director
Dietmar Müller, BSc Kiel PhD Calif

Members
Eleanor M Bruce, PhD W Aust
Maria Byrne, BSc Galway PhD VwBC
Peter J Cowell, BA PhD
Rosalind T Hinde, BSc PhD
Michael Glen Hughes, BSc PhD

University of Sydney Institute of Marine Science

Director
Dietmar Müller, BSc Kiel PhD Calif

Members
Eleanor M Bruce, PhD W Aust
Maria Byrne, BSc Galway PhD VwBC
Peter J Cowell, BA PhD
Rosalind T Hinde, BSc PhD
Michael Glen Hughes, BSc PhD

University of Sydney Institute of Marine Science

Director
Dietmar Müller, BSc Kiel PhD Calif

Members
Eleanor M Bruce, PhD W Aust
Maria Byrne, BSc Galway PhD VwBC

Administrative Assistant
Carmen Gaina
9 Scholarships

These tables contain simplified details of some of the prizes and scholarships offered by the University. Further information regarding scholarships is available from the university scholarships Web site at www.usyd.edu.au/study/scholarships.shtml and from the Research Office Web site at www.usyd.edu.au/su/reschols/welcome.html.

Additional criteria are attached to each award below and for full details you are advised to consult the administering unit. In particular, requirements of sufficient merit or of a higher year enrolment in particular subjects or degrees are common. The University may not offer an award every year. The values of the awards are indicative only and may vary without notice.

The scholarships and prizes fall into two broad categories:

- Prizes awarded automatically: See the Scholarships Office and Research Office web sites for more information. Applications usually close in September each year for the following year.

- Prizes awarded on application: See the Scholarships Office and Research Office web sites for more information. Applications generally close in the third week of second semester.

Prizes awarded automatically: Successful students are notified of these either by the Faculty or the Student Centre. Nearly all the prizes in these tables are awarded without application.

Undergraduate prizes and scholarships

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (p.a.)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Alumni Entry Scholarship</td>
<td>$1000</td>
<td>5</td>
<td>6</td>
<td>Awarded to highly ranked University of Sydney Undergraduate Scholarship applicants who do not obtain one of these scholarships. Minimum UAI 98.</td>
</tr>
<tr>
<td>Science Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>6</td>
<td>Awarded to highly ranked University of Sydney Undergraduate Scholarship applicants who do not obtain one of these scholarships. Minimum UAI 95.</td>
</tr>
<tr>
<td>Science Alumni Achievement Scholarship</td>
<td>$1000</td>
<td>2</td>
<td>7</td>
<td>Awarded automatically on the basis of academic merit in the HSC to intending BSc Biology majors. Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Biology Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>2</td>
<td>Awarded automatically on the basis of academic merit in the HSC to intending BSc Chemistry majors. Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Chemistry Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>2</td>
<td>Awarded automatically on the basis of academic merit in the HSC to intending BSc Geography majors. Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Environmental Science Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>1</td>
<td>Awarded automatically on the basis of UAI to students entering the BSc (Environmental). Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Geography Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>1</td>
<td>Awarded automatically on the basis of academic merit in the HSC to intending BSc Mathematics majors. Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Information Technology Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>2</td>
<td>Awarded automatically on the basis of UAI to students entering the BSCT or BIT. Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Liberal Studies Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>1</td>
<td>Awarded automatically on the basis of UAI to students entering the BLibStud. Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Mathematics Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>2</td>
<td>Awarded automatically on the basis of academic merit in the HSC to intending BSc Mathematics majors. Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Molecular Biology &amp; Genetics Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>1</td>
<td>Awarded automatically on the basis of UAI to students entering the BSc (Molecular Biology and Genetics). Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Medical Science Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>2</td>
<td>Awarded automatically on the basis of UAI to students entering the BMedSc. Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Physics Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>2</td>
<td>Awarded automatically on the basis of academic merit in the HSC to intending BSc Physics majors. Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Psychology Entry Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>2</td>
<td>Awarded automatically on the basis of UAI to students entering the BPsych. Cannot be held with other scholarships of equal or greater value.</td>
</tr>
<tr>
<td>Farrand Science Scholarships</td>
<td>$2500</td>
<td>1</td>
<td>11</td>
<td>Eleven scholarships for full time first year BSc students who have not undertaken previous tertiary study. Awarded automatically on the basis of academic merit in the HSC (or equivalent).</td>
</tr>
<tr>
<td>Liversidge Scholarship</td>
<td>$1000</td>
<td>3</td>
<td>2</td>
<td>Awarded automatically to the Chemistry student who, in the immediately preceding year, achieved the highest number of marks in HSC Chemistry.</td>
</tr>
<tr>
<td>Plumbian Scholarship</td>
<td>$400</td>
<td>2</td>
<td>1</td>
<td>Awarded automatically for general proficiency at the HSC to a student enrolled in Biology, Geology or Geography in the candidate’s first year.</td>
</tr>
<tr>
<td>Science Scholarships</td>
<td>$500</td>
<td>1</td>
<td>10</td>
<td>Awarded automatically to the Junior Geology student gaining the highest place in Earth and Environmental Science at the NSW HSC.</td>
</tr>
<tr>
<td>AJ Shearsby Prize</td>
<td>$100</td>
<td>1</td>
<td>1</td>
<td>Awarded automatically to the Junior Geology student gaining the highest place in Earth and Environmental Science at the NSW HSC.</td>
</tr>
</tbody>
</table>
### Undergraduate prizes and scholarships (continued)

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (p.a.)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Sydney Scholarships with Distinction</td>
<td>$8000</td>
<td>5</td>
<td>approx 10</td>
<td>Awarded on basis of application to the Scholarships Unit. Applications close 30 September in the year prior to enrolment. Selection based on academic merit and other achievements. Minimum UAI 98.</td>
</tr>
<tr>
<td>University of Sydney Scholarships with Merit</td>
<td>$5000</td>
<td>5</td>
<td>approx 24</td>
<td>Awarded on basis of application to the Scholarships Unit. Applications close 30 September in the year prior to enrolment. Selection based on academic merit and other achievements. Minimum UAI 95.</td>
</tr>
<tr>
<td>University of Sydney Scholarships</td>
<td>$3000</td>
<td>1</td>
<td>approx 60</td>
<td>Awarded on basis of application to the Scholarships Unit. Applications close 30 September in the year prior to enrolment. Selection based on academic merit and other achievements. Minimum UAI 95.</td>
</tr>
<tr>
<td>University of Sydney Outstanding Achievement Scholarships</td>
<td>$5000</td>
<td>5</td>
<td>Varies</td>
<td>Awarded to any student enrolling at the University of Sydney who scores a UAI of 100 or 99.95 in the NSW HSC or equivalent in the preceding year.</td>
</tr>
<tr>
<td>Access Scholarships</td>
<td>$3000</td>
<td>5</td>
<td>approx 60</td>
<td>Access Scholarships are available to students who demonstrate academic ability as well as meeting the criteria of one or more of the following categories: financial disadvantage, disability or rural/remote area. Applications to the Scholarships Unit by 30 September in the year preceding first enrolment.</td>
</tr>
<tr>
<td>Group of Eight (Go8) Access Scholarships</td>
<td>$3000</td>
<td>4</td>
<td>approx 4</td>
<td>Awarded to school leavers on the basis of academic merit and financial need as part of an initiative launched in 2001 by the group of Australia's eight leading research universities (the Go8). Scholarship holders may apply to transfer to another Group of Eight University after successfully completing the first year of undergraduate study. Applications to the Scholarships Unit by 30 September in the year prior to enrolment.</td>
</tr>
<tr>
<td>International Undergraduate Scholarships</td>
<td>$5000</td>
<td>5</td>
<td>Varies</td>
<td>Awarded on merit to International students who completed the NSW HSC or an approved equivalent and who apply through the UAC for entry to the University of Sydney. Min UAI 95. Applications to the Scholarships Unit close 30 September in the year prior to admission.</td>
</tr>
<tr>
<td>Bruton Educational Trust Scholarship</td>
<td>$10000</td>
<td>5</td>
<td>1</td>
<td>Scholarship to support candidate relocating from regional NSW to attend any degree at the University of Sydney. Awarded on the basis of the NSW HSC examination results, financial need and other criteria. Applications to the Scholarships Unit in the year preceding enrolment.</td>
</tr>
<tr>
<td>Barker Scholarship No. III</td>
<td>$600</td>
<td>1</td>
<td>1</td>
<td>Awarded automatically after enrolment for proficiency in Mathematics in the HSC. Must enrol in 12 credit points of Junior Mathematics in the Faculties of either Arts, Engineering or Science.</td>
</tr>
<tr>
<td>Trenchard Miller Memorial Scholarships</td>
<td>$1000</td>
<td>5</td>
<td>8</td>
<td>Awarded automatically after enrolment for general proficiency in the HSC.</td>
</tr>
<tr>
<td>G.C. Halliday Scholarship</td>
<td>$200</td>
<td>3</td>
<td>1</td>
<td>Awarded for general proficiency in the HSC to a Sydney Grammar School student enrolling into the faculties of Arts, Law, Science, or Engineering.</td>
</tr>
<tr>
<td>Homer Exhibition</td>
<td>$500</td>
<td>1</td>
<td>1</td>
<td>Awarded on basis of application to the Scholarships Unit. Applications close 30 September in the year prior to enrolment.</td>
</tr>
<tr>
<td>Killeen Prize</td>
<td>$190</td>
<td>1</td>
<td>1</td>
<td>Awarded on the recommendation of the Principal of the Fort Street High School to a student proceeding from that school to the University.</td>
</tr>
<tr>
<td>John West Medal</td>
<td>$400</td>
<td>1</td>
<td>1</td>
<td>Awarded automatically after enrolment for general proficiency in the HSC.</td>
</tr>
<tr>
<td>Faculty prizes and scholarships for continuing students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helen Beh Award for Citizenship</td>
<td>$250</td>
<td>1</td>
<td>1</td>
<td>Awarded annually to the Science student who has contributed most to the Faculty’s non academic activities and interests. May not be held with the Dean's Award for Citizenship.</td>
</tr>
<tr>
<td>Dean's Award for Citizenship</td>
<td>$100</td>
<td>1</td>
<td>Varies</td>
<td>Awarded annually to the Science student who has contributed most to the Faculty’s non academic activities and interests. May not be held with the Dean's Award for Citizenship.</td>
</tr>
<tr>
<td>Dean's Honour List</td>
<td></td>
<td></td>
<td></td>
<td>Students of the Faculty of Science (including students in the Bachelor of Liberal Studies) earn a place on the Dean's Honour List if they achieve a WAM at the High Distinction level over at least 48 credit points in the given academic year.</td>
</tr>
<tr>
<td>Dean's Honour List Prize</td>
<td>$500</td>
<td>1</td>
<td>3</td>
<td>Highest WAM of all candidates in junior, intermediate and senior years of study who have attempted at least 48 credit points in the year.</td>
</tr>
<tr>
<td>Dean's Scholarship in Science</td>
<td>$3000</td>
<td>1</td>
<td>3</td>
<td>Awarded on basis of academic merit to candidates enrolled full time for courses offered by the Faculty who have completed between 2 and 6 semesters and are not holders of a University of Sydney Undergraduate Scholarship.</td>
</tr>
<tr>
<td>Brian Rawson Memorial Prize</td>
<td>$250</td>
<td>1</td>
<td>1</td>
<td>Most improved performance from Junior to Intermediate Science.</td>
</tr>
<tr>
<td>Henry Chamberlain Russell Prize</td>
<td>$1400</td>
<td>1</td>
<td>1</td>
<td>Essay, thesis or research report on Astronomy.</td>
</tr>
<tr>
<td>Korner Prize</td>
<td>$100</td>
<td>1</td>
<td>1</td>
<td>Awarded for proficiency in the Intermediate year of the Bachelor of Medical Science.</td>
</tr>
<tr>
<td>Science Achievement Prize</td>
<td>$500</td>
<td>1</td>
<td>1</td>
<td>Highest WAM for all units of study to a student completing the requirements for a Faculty degree in six semesters.</td>
</tr>
<tr>
<td>Science Staff Prize</td>
<td>$300</td>
<td>1</td>
<td>Varies</td>
<td>On academic merit to full time candidates in an award course in the Faculty of Science.</td>
</tr>
<tr>
<td>USA Foundation Scholarship for Women in Science</td>
<td>$800</td>
<td>1</td>
<td>1</td>
<td>The scholarship shall be awarded on merit to a woman who is a citizen or permanent resident of Australia enrolling in an honours program in the Faculty of Science at the University of Sydney.</td>
</tr>
<tr>
<td>Scholarships Office prizes and scholarships for continuing students</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuing Undergraduate Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>approx 60</td>
<td>Awarded without application to continuing undergraduate students in the Faculty of Science on the basis of merit.</td>
</tr>
<tr>
<td>Full Fee Scholarship</td>
<td>$4000</td>
<td>1</td>
<td>Varies</td>
<td>Awarded on the basis of equity to new students and continuing students. Valued at $4000 to be offset against course fees.</td>
</tr>
<tr>
<td>Honours Scholarship</td>
<td>$2000</td>
<td>1</td>
<td>approx 60</td>
<td>Awarded on the basis of merit or equity and merit to students enrolled in an honours program at the University of Sydney. Equity applications to the Scholarships Unit usually close at the end of March in the year of candidature.</td>
</tr>
</tbody>
</table>
### Undergraduate prizes and scholarships (continued)

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (AUS)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Merit Scholarship</td>
<td>$262</td>
<td>1</td>
<td>Up to 8</td>
<td>Half fee scholarships awarded on academic merit to International students who have completed at least 36 credit points at the University of Sydney.</td>
</tr>
</tbody>
</table>

#### Scholarships and prizes awarded by Schools and Departments

**Anatomy and Histology**

- **J.L. Shillibeer Memorial Prize** $100, Merit in practical Anatomy to a student in the Bachelor of Medical Science.
- **J. Wilson Memorial Prize** $100, Merit in practical Anatomy to a student in the Bachelor of Medical Science.
- **Luma Brewer Prize** $600, Merit in Intermediate or Senior invertebrate zoology.
- **Mary Bely Memorial Prize** $650, Merit in Senior plant biology to a student proceeding to plant biology honours.
- **G.S. Caird Scholarship in Zoology** $650, Merit in Senior animal biology to a student proceeding to animal biology honours.
- **Eleanor Chase Memorial Prize** $200, Merit in Intermediate animal biology.
- **George Herbert Clarke Prize** $100, Merit in Intermediate plant morphology to a student born in Australia.
- **Collie Prize** $160, Merit in Intermediate animal biology.
- **William John Dakin Memorial Prize in Zoology** $250, Merit in Intermediate animal biology.
- **John H. Elliott Memorial Prize** $120, Merit in Intermediate animal biology.
- **Haswell Prize** $120, Merit in Intermediate animal biology.
- **N.E. (Ted) O'Reilly Memorial Prize** $275, Merit in Intermediate animal biology.
- **Eva Saunders Memorial Prize** $60, Merit in Intermediate animal biology.
- **Slade Prize in Junior Biology** $80, Merit in Intermediate animal biology.
- **Professor Spencer Smith-White Prize** $200, Merit in Intermediate animal biology.
- **Gabriella Wittman Prize** $140, Merit in Intermediate animal biology.
- **Chemistry**
  - **Arthur Hollis Memorial Prize** $150, Merit in Intermediate Chemistry.
  - **Australia-USA Foundation Prize** $250, Merit in Intermediate Chemistry.
  - **C.H. Wilson Prize** $70, Merit in Intermediate Chemistry.
  - **Charles E. Fawcett Prize** $120, Merit in Intermediate Chemistry.
  - **Edna Maude Goolstan Prize in Organic Chemistry** $275, Merit in Intermediate Chemistry.
  - **Frank E. Dixon Scholarship** $650, Merit in Intermediate Chemistry.
  - **G.S. Caird Scholarships in Chemistry** $800, Merit in Intermediate Chemistry.
  - **Hush Prize in Theoretical Chemistry** $350, Merit in Intermediate Chemistry.
  - **Inglis Hudson Scholarships** $100, Merit in Intermediate Chemistry.
  - **Iredale Prize** $95, Merit in Intermediate Chemistry.
  - **Janet Elspeth Crawford Prize in Chemistry** $140, Merit in Intermediate Chemistry.
  - **Levey Scholarship No. 2** $525, Merit in Intermediate Chemistry.
  - **Levey Scholarship No. 3** $300, Merit in Intermediate Chemistry.
  - **RJW Le Fevre-DAASN Rao Prize in Physical Chemistry** $350, Merit in Intermediate Chemistry.
  - **Slade Prize in Intermediate Chemistry Practical** $80, Merit in Intermediate Chemistry.
  - **Walter Burdett Scholarship No. 1** $750, Merit in Intermediate Chemistry.
- **Environmental Science**
  - **University of Sydney Prize for Junior Environmental Science** $1000, Merit in Intermediate Environmental Science.
  - **University of Sydney Prize for Intermediate Environmental Science** $1000, Merit in Intermediate Environmental Science.
  - **University of Sydney Prize for Senior Environmental Science** $2000, Merit in Intermediate Environmental Science.
  - **University of Sydney Achievement Prize in Environmental Science** $500, Merit in Intermediate Environmental Science.
  - **University of Sydney Prize for Honours in Environmental Science** $500, Merit in Intermediate Environmental Science.
<table>
<thead>
<tr>
<th>Award</th>
<th>Value (p.a.)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geosciences</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AustIMM: Mining and Metallurgical Bursaries</td>
<td>$500 + $100</td>
<td>3</td>
<td>1</td>
<td>Awarded annually by the New South Wales and ACT Branch of the Australian Institute of Mining and Metallurgy for the best intermediate, senior and honours students in a geoscience, mining or extractive metallurgical engineering department in NSW and the ACT. Application forms become available in March each year. Completed forms must be submitted to the Head of School of Geosciences by the end of April each year.</td>
</tr>
<tr>
<td>Olga Marian Browne Prize</td>
<td>$50</td>
<td>1</td>
<td>1</td>
<td>For merit in Intermediate Geology fieldwork.</td>
</tr>
<tr>
<td>G.S. Caird Scholarship (in Geography)</td>
<td>$650</td>
<td>1</td>
<td>1</td>
<td>For merit in Senior Geography.</td>
</tr>
<tr>
<td>Leo A Cotton Prize in Exploration Geophysics</td>
<td>$80</td>
<td>1</td>
<td>1</td>
<td>For proficiency in Senior year studies in the field of Exploration Geophysics.</td>
</tr>
<tr>
<td>Dean-Thomson Scholarship in Mineralogy</td>
<td>$1000</td>
<td>1</td>
<td>1</td>
<td>For proficiency in Senior Geology to a student who proceeds to Honours in Geology and/or Geophysics.</td>
</tr>
<tr>
<td>Earth Resources Foundation First Year Scholarships</td>
<td>$600</td>
<td>1</td>
<td>4</td>
<td>Merit in first semester Junior Geology.</td>
</tr>
<tr>
<td>Earth Resources Foundation Second Year Scholarships</td>
<td>$800</td>
<td>1</td>
<td>4</td>
<td>For merit in Junior Geology to students proceeding to Intermediate Geology.</td>
</tr>
<tr>
<td>Earth Resources Foundation Third Year Scholarships</td>
<td>$1000</td>
<td>1</td>
<td>3</td>
<td>For merit in Intermediate Geology to students proceeding to Senior Geology and/or Geophysics.</td>
</tr>
<tr>
<td>Earth Resources Foundation Honour Year Scholarships</td>
<td>$1000</td>
<td>1</td>
<td>2</td>
<td>For merit in Senior Geology and/or Geophysics to students proceeding to honours in these areas.</td>
</tr>
<tr>
<td>Edgeworth David Prize for Palaeontology</td>
<td>$60</td>
<td>1</td>
<td>1</td>
<td>For proficiency in Senior palaeontology.</td>
</tr>
<tr>
<td>Elliston Medal</td>
<td>Medal</td>
<td>1</td>
<td></td>
<td>For proficiency in Geology Honours.</td>
</tr>
<tr>
<td>Edgar Ford Memorial Scholarship</td>
<td>$275</td>
<td>1</td>
<td>1</td>
<td>For proficiency in Senior Geography to the student who proceeds to Geography Honours.</td>
</tr>
<tr>
<td>Fugro Geophysics Prize</td>
<td>$1000</td>
<td>1</td>
<td>1</td>
<td>For proficiency in Senior Geophysics for a student proceeding to geophysics honours.</td>
</tr>
<tr>
<td>Roy Lindseth Bursary</td>
<td>$180</td>
<td>1</td>
<td>1</td>
<td>Awarded to a candidate for a bachelor’s degree enrolled in a unit of study or units of study in Geology and/or Geophysics who requires financial assistance to meet student expenses and who has demonstrated academic merit.</td>
</tr>
<tr>
<td>Jack Mahoney Memorial Prize</td>
<td>$90</td>
<td>1</td>
<td>1</td>
<td>Proficiency in the practical component of Junior Geology.</td>
</tr>
<tr>
<td>C.E. Marshall Scholarship</td>
<td>$525</td>
<td>1</td>
<td>1</td>
<td>Proficiency in Junior Geology to a student proceeding to Intermediate Geology.</td>
</tr>
<tr>
<td>MIM Exploration Honours Scholarship in Economic Geology</td>
<td>$6000</td>
<td>1</td>
<td>1</td>
<td>A scholarship for an honours student to undertake research in economic geology, or exploration geophysics. Students should send an application stating why they feel their results and future potential are deemed to be outstanding; including their past academic record together with a brief c.v., and also indicate the project they wish to undertake. Applications must be endorsed by the School of Geosciences. Applications close 31 January each year.</td>
</tr>
<tr>
<td>Professor Griffith Taylor Prize</td>
<td>$100</td>
<td>1</td>
<td>1</td>
<td>Awarded to the woman student who gains the highest marks in the GEOG 1001 and 1002 examinations in the Faculty of Science.</td>
</tr>
<tr>
<td>Professor James Macdonald Holmes Prize</td>
<td>$100</td>
<td>1</td>
<td>1</td>
<td>Awarded to the degree student who gains the highest marks in the GBOG 1001 and 1002 examinations, provided the student's work is of sufficient merit.</td>
</tr>
<tr>
<td>WH Maze Prize in Intermediate Geography</td>
<td>$250</td>
<td>1</td>
<td>1</td>
<td>Awarded to the most proficient student in two units of study from GEOG 2001, 2002, 2101, 2102, 2201 and 2202 if the student's work is of sufficient merit.</td>
</tr>
<tr>
<td>Rev. AS McCook Memorial Scholarship</td>
<td>$700</td>
<td>1</td>
<td>1</td>
<td>Awarded for merit in Senior Geography to a student proceeding to Geography or Geomorphology honours, to assist in the expenses for field work connected with the thesis.</td>
</tr>
<tr>
<td>Sheila Mitchell Swain Memorial Prize</td>
<td>$210</td>
<td>1</td>
<td>1</td>
<td>Awarded to the Senior Geology student who submits the best field report.</td>
</tr>
<tr>
<td>Qudling Testimonial Prize</td>
<td>$200</td>
<td>1</td>
<td>1</td>
<td>Awarded to a student in Senior Geology and/or Geophysics who has shown proficiency in petrology.</td>
</tr>
<tr>
<td>Ken Richards Memorial Scholarship</td>
<td>$1230</td>
<td>1</td>
<td>1</td>
<td>For an honours student with interest and aptitude in applied geosciences.</td>
</tr>
<tr>
<td>Slade Prize in Junior Geology Practical</td>
<td>$100</td>
<td>1</td>
<td>1</td>
<td>Proficiency in Junior Geology practicals.</td>
</tr>
<tr>
<td>Slade Prize in Intermediate Geology Practical</td>
<td>$80</td>
<td>1</td>
<td>1</td>
<td>Proficiency in Intermediate Geology practicals.</td>
</tr>
<tr>
<td>University Prize for Geology</td>
<td>$10</td>
<td>1</td>
<td>1</td>
<td>Awarded to the first year student who gains the highest marks in the class examination in geology.</td>
</tr>
<tr>
<td>History and Philosophy of Science</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr GAM Heydon Prize</td>
<td>$60</td>
<td>1</td>
<td>1</td>
<td>Merit in Intermediate History ad Philosophy of Science.</td>
</tr>
<tr>
<td>Ian Langham Memorial Prize</td>
<td>$150</td>
<td>1</td>
<td>1</td>
<td>Merit in Senior History and Philosophy of Science.</td>
</tr>
<tr>
<td>Information Technologies</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accenture Prize</td>
<td>$1000</td>
<td>1</td>
<td>1</td>
<td>Established in 2000 with the offer of an annual donation by Andersen Consulting. The prize will be shared equally by the students in that group which is judged to have performed its project in ISYS3207 Information Systems Project at the highest professional standard.</td>
</tr>
</tbody>
</table>
### Undergraduate prizes and scholarships (continued)

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (AUD)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avaya Labs Prize for Top Female First Year Student (Proceeding to Second Year)</td>
<td>$1000</td>
<td>1</td>
<td>The prize is awarded annually to the female student with the best results in 1000 level units of study in computer science or information systems.</td>
<td></td>
</tr>
<tr>
<td>Avaya Labs Prize for Top Third Year Student (Proceeding to Honours)</td>
<td>$1000</td>
<td>1</td>
<td>The prize is awarded annually to the most proficient final year student who subsequently enrols in Honours in the School of Information Technologies.</td>
<td></td>
</tr>
<tr>
<td>GS Caird Scholarship (in Computer Science)</td>
<td>$650</td>
<td>1</td>
<td>1</td>
<td>Awarded for proficiency in Intermediate Computer Science. The scholar is required to attend Senior Computer Science during tenure of the scholarship.</td>
</tr>
<tr>
<td>CISCO Prize</td>
<td>$500</td>
<td>1</td>
<td></td>
<td>The prize will be awarded annually to the student with the best overall result in the Senior unit of study Networked Systems.</td>
</tr>
<tr>
<td>Foundation for Information Technology Prizes</td>
<td>$300200</td>
<td>2</td>
<td></td>
<td>One prize, valued at $300, shall be awarded annually to the most proficient student in Junior Computer Science and the other prize, valued at $200, shall be awarded to the next most proficient student, provided that the work is of sufficient merit.</td>
</tr>
<tr>
<td>Foundation for Information Technology Portfolio Entry Prizes</td>
<td>$500250</td>
<td>2</td>
<td></td>
<td>Awarded annually to the two students who enrol in the BIT, BCSY or BCS(T) (Adv), who have submitted the highest quality portfolios of their programming work as an additional selection criterion. $500 (first prize), $250 (second prize).</td>
</tr>
<tr>
<td>Ian Jackson Memorial Prize</td>
<td>$50</td>
<td>1</td>
<td></td>
<td>Awarded for proficiency in Senior Computer Science.</td>
</tr>
<tr>
<td>Professor John Rosenberg Prize for Excellence in Computer Science</td>
<td>$550</td>
<td>1</td>
<td></td>
<td>The prize will be awarded to the student with the most outstanding performance in senior systems units of study.</td>
</tr>
<tr>
<td>Soprano Software Engineering Prize</td>
<td>$1000</td>
<td>1</td>
<td></td>
<td>For excellence in Computer Science or Information Systems honours.</td>
</tr>
</tbody>
</table>

### Marine Science

<table>
<thead>
<tr>
<th>Prize in Marine Sciences</th>
<th>Value (AUD)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$100</td>
<td>1</td>
<td></td>
<td>For merit in Senior Marine Science</td>
<td></td>
</tr>
</tbody>
</table>

### Mathematics and Statistics

<table>
<thead>
<tr>
<th>George Allen Scholarship</th>
<th>Value (AUD)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$40 each</td>
<td>1</td>
<td>3</td>
<td>Three scholarships: one to a student proceeding to honours in Applied Mathematics, one to a student proceeding to honours in Mathematical Statistics and one to a student proceeding to honours in Pure Mathematics, each one of whom has shown proficiency in at least 24 credit points of Senior units of study in the School of Mathematics &amp; Statistics.</td>
<td></td>
</tr>
<tr>
<td>The A J and M Ashley Prize for Mathematics in Science</td>
<td>$250</td>
<td>1</td>
<td></td>
<td>For the best essay, submitted by a student in the Faculty of Science, that forms part of the requirements of Pure Mathematics Honours, Applied Mathematics Honours or Mathematical Statistics Honours.</td>
</tr>
<tr>
<td>Australian Federation of University Women (NSW) Prize in Mathematics</td>
<td>$100</td>
<td>1</td>
<td></td>
<td>Awarded to the most distinguished woman candidate for the degree of Bachelor of Arts or Bachelor of Science who graduates with first class honours in Applied Mathematics, Pure Mathematics or Mathematical Statistics.</td>
</tr>
<tr>
<td>Barker Prize</td>
<td>$375</td>
<td>1</td>
<td></td>
<td>Awarded at the fourth (honours) year examination for proficiency in Pure Mathematics, Applied Mathematics or Mathematical Statistics.</td>
</tr>
<tr>
<td>Barker Scholarship, No. I</td>
<td>$600</td>
<td>1</td>
<td>1</td>
<td>The scholar is required to have attended 48 credit points of Senior units of study in the School of Mathematics and Statistics by the end of the year of the tenure of the scholarship.</td>
</tr>
<tr>
<td>Barker Scholarship, No. II</td>
<td>$600</td>
<td>1</td>
<td>1</td>
<td>Awarded for proficiency in Intermediate Mathematics. The scholar is required to attend 24 credit points of Intermediate units of study in the School of Mathematics and Statistics during the tenure of the scholarship.</td>
</tr>
<tr>
<td>Tim Brown Prize No. 1</td>
<td>$130</td>
<td>1</td>
<td>1</td>
<td>For proficiency in 16 credit points of Intermediate Statistics.</td>
</tr>
<tr>
<td>Tim Brown Prize No. 2</td>
<td>$210</td>
<td>1</td>
<td>1</td>
<td>For proficiency in 24 credit points of Senior Statistics.</td>
</tr>
<tr>
<td>KE Bullen Memorial Prize</td>
<td>$650</td>
<td>1</td>
<td>1</td>
<td>To the most proficient student in Applied Mathematics Honours.</td>
</tr>
<tr>
<td>KE Bullen Scholarships No. I &amp; II</td>
<td>$1250</td>
<td>1</td>
<td>2</td>
<td>Proficiency in Senior Mathematics &amp; Statistics to the student who enrols full-time in Applied Mathematics Honours.</td>
</tr>
<tr>
<td>KE Bullen Scholarship No. III</td>
<td>$1000</td>
<td>1</td>
<td>1</td>
<td>Proficiency in Intermediate Mathematics &amp; Statistics to the student who enrols full-time in Applied Mathematics Honours, provided that the candidate has not received any other K E Bullen Scholarship.</td>
</tr>
<tr>
<td>David GA Jackson Prize</td>
<td>$200</td>
<td>1</td>
<td></td>
<td>Awarded for creativity and originality in any undergraduate Pure Mathematics unit of study.</td>
</tr>
<tr>
<td>Merrill Lynch Scholarship No. I</td>
<td>$3000</td>
<td>1</td>
<td>1</td>
<td>To the student who enrols full-time in Honours in the School who has shown the greatest academic merit in Mathematics and Statistics. May not be held together with another award offered by the School of Mathematics and Statistics of equal or greater value.</td>
</tr>
<tr>
<td>Merrill Lynch Scholarship No. II</td>
<td>$2000</td>
<td>1</td>
<td>1</td>
<td>To the student who enrols full-time in Honours in the School who has shown great academic merit in Mathematics and Statistics. May not be held together with another award offered by the School of Mathematics and Statistics of equal or greater value.</td>
</tr>
<tr>
<td>Merrill Lynch Scholarship No. III</td>
<td>$1000</td>
<td>1</td>
<td>1</td>
<td>To the student who enrols full-time in Honours in the School who has shown great academic merit in Mathematics and Statistics. May not be held together with another award offered by the School of Mathematics and Statistics of equal or greater value.</td>
</tr>
<tr>
<td>Norbert Quirk Prizes</td>
<td>$130</td>
<td>4</td>
<td></td>
<td>For the best essay on a given mathematical subject by a student enrolled in a Junior, Intermediate, Senior and Honours units of study in Mathematics (Pure Mathematics, Applied Mathematics or Mathematical Statistics).</td>
</tr>
<tr>
<td>Veronica Thomas Prize</td>
<td>$100</td>
<td>1</td>
<td></td>
<td>For proficiency in the combined units of study STAT 1021 and 1022.</td>
</tr>
<tr>
<td>Wadsworth Publishers Prize</td>
<td>$125</td>
<td>1</td>
<td>1</td>
<td>For proficiency in Junior Mathematics.</td>
</tr>
</tbody>
</table>
### Undergraduate prizes and scholarships (continued)

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (p.a.)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Molecular and Microbial Biosciences</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G.S. Caird Scholarship (in Biochemistry)</td>
<td>$650</td>
<td>1</td>
<td>1</td>
<td>Awarded for greatest proficiency in the units of study MBLG 2001 and either BCHM 2002 or BCHM 2902.</td>
</tr>
<tr>
<td>Roslyn Flora Goulston Prize</td>
<td>$530</td>
<td>1</td>
<td>1</td>
<td>Awarded for greatest proficiency in BCHM 3001 and either 3002 or 3902 OR BCHM 3901 and either 3902 or 3902 to an undergraduate in science who intends proceeding to a BSc degree with honours in that subject.</td>
</tr>
<tr>
<td>Slade Prize in Intermediate Biochemistry</td>
<td>$80</td>
<td>1</td>
<td>1</td>
<td>Awarded for proficiency in the units of study MBLG 2001 and either BCHM 2002 or BCHM 2902.</td>
</tr>
<tr>
<td>Sydney Chinese Association Prize</td>
<td>$100</td>
<td>1</td>
<td>1</td>
<td>To the student in the Faculty of Science or Agriculture who shows the greatest proficiency in the units of study MIRC (3001 or 3901) and (3002 or 3902), or Agricultural Microbiology MIRC 3102 or in TSP units.</td>
</tr>
<tr>
<td><strong>Pharmacology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dorothy Thorp Prize in Science Communication</td>
<td>$200</td>
<td>1</td>
<td>1</td>
<td>Merit in Pharmacology Honours.</td>
</tr>
<tr>
<td>Roland H. Thorp Prize</td>
<td>$200</td>
<td>1</td>
<td>1</td>
<td>Merit in Senior Pharmacology.</td>
</tr>
<tr>
<td><strong>Physics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian Institute of Physics (N.S.W. Branch) Prize in Physics</td>
<td>$200</td>
<td>1</td>
<td>1</td>
<td>To the student graduating with the degree of Bachelor of Science with Honours in Physics who shows greatest proficiency.</td>
</tr>
<tr>
<td>Geoffrey Bailey - AWA Prize</td>
<td>$250</td>
<td>1</td>
<td>1</td>
<td>Awarded annually to a student for proficiency in practical work in Intermediate Physics.</td>
</tr>
<tr>
<td>Walter Burfitt Scholarship No. 1</td>
<td>$750</td>
<td>1</td>
<td>1</td>
<td>Awarded annually, on the recommendation of the Head of the School of Physics, for proficiency in Senior Physics in the Faculty of Science.</td>
</tr>
<tr>
<td>Cadbury - Julius Sumner Miller Scholarships for Academic Excellence No. 1</td>
<td>$700</td>
<td>1</td>
<td>2</td>
<td>To the most proficient students in Junior Physics provided that their work is of sufficient merit and they enrol in 16 credit points of Intermediate Physics.</td>
</tr>
<tr>
<td>Cadbury - Julius Sumner Miller Scholarships for Academic Excellence No. 2</td>
<td>$800</td>
<td>1</td>
<td>2</td>
<td>To the most proficient students in Intermediate Physics provided that their work is of sufficient merit and they enrol in 24 credit points of Senior Physics.</td>
</tr>
<tr>
<td>Cadbury - Julius Sumner Miller Scholarships for Academic Excellence No. 3</td>
<td>$900</td>
<td>1</td>
<td>2</td>
<td>To the most proficient students in Senior Physics provided that their work is of sufficient merit and they enrol in Physics Honours.</td>
</tr>
<tr>
<td>Dean-Thomson Scholarship in Physics</td>
<td>$6500</td>
<td>1</td>
<td>1</td>
<td>To the student in either the Faculty of Arts or the Faculty of Science who demonstrates the greatest proficiency in Senior Physics, provided the student's work is of sufficient merit. The student is required to enrol in Physics Honours at the University.</td>
</tr>
<tr>
<td>Levey Scholarships</td>
<td>$825</td>
<td>1</td>
<td>1</td>
<td>Awarded for proficiency in Junior Physics to a student in the Faculty of Arts, Science or Engineering who enrols in 16 credit points of Intermediate Physics.</td>
</tr>
<tr>
<td>Science Foundation for Physics Scholarships No. 1</td>
<td>$750</td>
<td>1</td>
<td>5</td>
<td>Up to five scholarships for proficiency in Junior Physics, provided that the student enrols in 16 credit points of Intermediate Physics.</td>
</tr>
<tr>
<td>Science Foundation for Physics Scholarships No. 2</td>
<td>$800</td>
<td>1</td>
<td>5</td>
<td>Up to five scholarships for proficiency in Intermediate Physics, provided that the student enrols in 24 credit points of Senior Physics.</td>
</tr>
<tr>
<td>Science Foundation for Physics Scholarships No. 3</td>
<td>$900</td>
<td>1</td>
<td>5</td>
<td>Up to five scholarships for proficiency in Senior Physics, provided that the student enrols in Physics Honours.</td>
</tr>
<tr>
<td>Shiroki Prize</td>
<td>$500</td>
<td>1</td>
<td>1</td>
<td>Awarded to the student who submits the best project in Physics Honours provided the candidate's work is of sufficient merit.</td>
</tr>
<tr>
<td>Slade Prize in Intermediate Physics Practical</td>
<td>$80</td>
<td>1</td>
<td></td>
<td>Proficiency in Intermediate Physics practicals.</td>
</tr>
<tr>
<td>Smith Prize</td>
<td>$200</td>
<td>1</td>
<td>1</td>
<td>Awarded to the best undergraduate in Junior Experimental Physics.</td>
</tr>
<tr>
<td>WIB Smith Prize</td>
<td>$300</td>
<td>1</td>
<td>1</td>
<td>Awarded to the student who best combines the characteristics of experimental skill, proficiency and exceptional motivation in the Senior laboratory classes.</td>
</tr>
<tr>
<td>Malcolm Turkle Memorial Scholarship</td>
<td>$1500</td>
<td>1</td>
<td>1</td>
<td>To encourage and assist an outstanding student within the School of Physics in the completion of Physics Honours who might not otherwise be able to do so due to insufficient financial support.</td>
</tr>
<tr>
<td><strong>Physiology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claude Bernard Prize</td>
<td>$150</td>
<td>1</td>
<td>1</td>
<td>Proficiency in PHSI 3003/3903.</td>
</tr>
<tr>
<td>Colin Dunlop Prize</td>
<td>$100</td>
<td>1</td>
<td>1</td>
<td>Merit in Physiology Honours.</td>
</tr>
<tr>
<td>YE Knight Neuroscience Essay Prize</td>
<td>$100</td>
<td>1</td>
<td>1</td>
<td>For the best essay or report in PHSI 3001/3901.</td>
</tr>
<tr>
<td>David J. Monk Adams Award</td>
<td>$600</td>
<td>1</td>
<td>1</td>
<td>Travel assistance for a student enrolled in Physiology Honours.</td>
</tr>
<tr>
<td><strong>Psychology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australian Psychological Society Prize in Psychology</td>
<td>$200</td>
<td>1</td>
<td>1</td>
<td>For distinction in Psychology Honours. As well as the cash prize, the winner will have the opportunity to present a paper to the annual APS conference, with substantial costs covered.</td>
</tr>
<tr>
<td>Blanka Buring Prize</td>
<td>$400</td>
<td>1</td>
<td>1</td>
<td>Awarded to the student enrolled in Arts who demonstrates the greatest proficiency in a minimum of 32 credit points of Psychology 3000 level units of study.</td>
</tr>
<tr>
<td>Dick Champion Prize</td>
<td>$200</td>
<td>1</td>
<td>1</td>
<td>Awarded to the Psychology 4 Honours student who presents the best Empirical Thesis in the areas of learning or motivation, providing the thesis is of sufficient merit.</td>
</tr>
<tr>
<td>Dick Thomson Prize</td>
<td>$200</td>
<td>1</td>
<td>1</td>
<td>Awarded to the best student in Psychology Honours provided the performance is of sufficient merit.</td>
</tr>
<tr>
<td>Frank Albert Prize in Psychology</td>
<td>$200</td>
<td>1</td>
<td>1</td>
<td>For merit in Intermediate Psychology.</td>
</tr>
<tr>
<td>Lithgow Scholarship No. V</td>
<td>$650</td>
<td>1</td>
<td>1</td>
<td>Awarded for proficiency in Psychology 1001 and 1002. The scholar is required to attend PSYC 2111 and 2112, PSYC 2113 and 2114.</td>
</tr>
</tbody>
</table>
Undergraduate prizes and scholarships (continued)

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (p.a.)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lithgow Scholarship No. VI</td>
<td>$650</td>
<td>1</td>
<td>1</td>
<td>Awarded for proficiency in PSYC 2111 and 2112, PSYC2113 and 2114. The scholar is required to attend a minimum of 32 credit points of Psychology 3000 level units of study.</td>
</tr>
<tr>
<td>Lithgow Scholarship No. VII</td>
<td>$650</td>
<td>1</td>
<td>1</td>
<td>Awarded for proficiency in a minimum of 32 credit points of Psychology 3000 level units of study. The scholar is required to attend Fourth Year Psychology (Honours) or GDS).</td>
</tr>
<tr>
<td>O’Neil Prize in Psychology 4 Honours</td>
<td>$200</td>
<td>1</td>
<td></td>
<td>The prize may be awarded to the student who shows greatest proficiency in the theoretical thesis in Psychology Honours.</td>
</tr>
<tr>
<td>Winifred O’Neil Sydney University Undergraduate Scholarship</td>
<td>$2500</td>
<td>Up to 3</td>
<td>1</td>
<td>For full time students in Psychology who achieve the best results in the first or second years of study in Psychology, and who enrol in either 16 credit points of intermediate or 32 credit points of senior units of study in Psychology in the following year. Preference is to be given to students who are blind or who are visually impaired. The scholarship may be awarded to a student who has a different disability.</td>
</tr>
</tbody>
</table>

Westmead Institute for Cancer Research

| WICR Scholarship | $5000 | 1 | | Awarded by application following advertisement to the Westmead Institute for Cancer Research to an honours student in the Bachelor of Science or Bachelor of Medical Science undertaking cancer research. Applications close with the Director, Westmead Institute for Cancer Research, Westmead Hospital on 30 September each year. |

Postgraduate prizes and scholarships

Research Office

Postgraduate and intending postgraduate research students are advised to consult the Research Office Web site for comprehensive information on a wide range of scholarships available: www.usyd.edu.au/su/reschols/welcome.html.

Postgraduate prizes and scholarships

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (p.a.)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian Postgraduate Awards (APAs)</td>
<td>$17609</td>
<td>3.5 max vanes</td>
<td></td>
<td>For local students enrolling into a higher research degree at the University. Applications close 31 October each year. Applications from the Research Office or Web site: <a href="http://www.usyd.edu.au/su/reschols/welcome.html">www.usyd.edu.au/su/reschols/welcome.html</a>.</td>
</tr>
<tr>
<td>University of Sydney Same as APA Postgraduate Awards (UPAs)</td>
<td>$130</td>
<td>3.5 max vanes</td>
<td></td>
<td>For local students enrolling into a higher research degree at the University. Applications close 31 October each year. Applications from the Research Office or Web site: <a href="http://www.usyd.edu.au/su/reschols/welcome.html">www.usyd.edu.au/su/reschols/welcome.html</a>.</td>
</tr>
<tr>
<td>Henry Chamberlain Russell Prize</td>
<td>$1400</td>
<td>1</td>
<td>1</td>
<td>Essay, thesis or research report on Astronomy.</td>
</tr>
</tbody>
</table>

Scholarships awarded by the International Office

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (p.a.)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>International Postgraduate Research Scholarships</td>
<td>up to 3 approx 25</td>
<td></td>
<td></td>
<td>For International students enrolling into a higher research degree at the University. Applications open between 1 May and 31 August each year. Scholarship covers tuition fees, a living allowance of approx. $16,700 p.a. and health cover. Application forms from the International Office.</td>
</tr>
</tbody>
</table>

Scholarships and prizes awarded by Faculty, Schools and Departments

Biological Sciences

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (p.a.)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jabez King Heydon Memorial Prize</td>
<td>$700</td>
<td>1</td>
<td></td>
<td>For the most meritorious PhD in the preceding 12 months in the School of Biological Sciences.</td>
</tr>
<tr>
<td>Postgraduate Excellence Prize in Biological Sciences</td>
<td>$500</td>
<td>1</td>
<td></td>
<td>For research students in the School of Biological Sciences. Awarded after application and seminar to the student who best communicates the aims of their research, it's contribution to its field and its likelihood of timely completion.</td>
</tr>
<tr>
<td>$3000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Chemistry

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (p.a.)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CG and RJW Le Fevre Postgraduate Student Lectures Dr Joan R Clark Research Scholarship</td>
<td>$130</td>
<td>up to 3</td>
<td></td>
<td>Awarded to postgraduate students of Chemistry on the recommendation of the Council of the Sydney University Chemistry Society. Awarded to a PhD student in Inorganic Chemistry to assist with costs of travel and subsistence while persuing their research at a leading overseas university for a period of between 6 and 26 weeks.</td>
</tr>
<tr>
<td>Varieties</td>
<td>0.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>George Harris Scholarships</td>
<td>$1200</td>
<td>1</td>
<td></td>
<td>Awarded to a meritorious candidate for the degree of Doctor of Philosophy in Chemistry.</td>
</tr>
<tr>
<td>RJW Le Fevre Research Travelling Scholarship</td>
<td>$2500</td>
<td>1</td>
<td></td>
<td>Assists an outstanding female postgraduate research student to present a paper or poster at a major international conference.</td>
</tr>
</tbody>
</table>

Faculty of Science

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (p.a.)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td>John Courts Scholarship</td>
<td>$2750</td>
<td>1</td>
<td></td>
<td>Awarded to the top Honours student in the Faculty of Science proceeding to postgraduate study at the University the following year.</td>
</tr>
<tr>
<td>Science Centenary Fund Scholarship</td>
<td>$2500</td>
<td>1</td>
<td></td>
<td>Awarded to the Honours student from the Faculty of Science who is ranked highest over four years and proceeds to a postgraduate research degree in the Faculty.</td>
</tr>
</tbody>
</table>

Postgraduate Travelling Scholarships

Each year the University offers five or six travelling scholarships with a closing date in March. Generally, applicants need to have a first class honours degree approaching medal standard to be considered.

Applications for the major travelling scholarships offered by external bodies generally close in August or September. All postgraduate scholarships are advertised in the Bulletin Board, which is available in departments or from the Research Office in the Main Quadrangle.
### Postgraduate prizes and scholarships (continued)

<table>
<thead>
<tr>
<th>Award</th>
<th>Value (p.a.)</th>
<th>Tenure (years)</th>
<th>Number</th>
<th>Brief description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Geosciences</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geosciences Deas Thomson Scholarship in Geology</td>
<td>$6500</td>
<td>1</td>
<td>1</td>
<td>For proficiency in Geology Honours to the student who proceeds to postgraduate study with the School of Geosciences.</td>
</tr>
<tr>
<td>George Harris Scholarships</td>
<td>$1200</td>
<td>1</td>
<td>1</td>
<td>Awarded to a candidate for the degree of Doctor of Philosophy in Geology and Geophysics.</td>
</tr>
<tr>
<td>LA Richardson Memorial Prize</td>
<td>$3000</td>
<td>1</td>
<td>1</td>
<td>For the most outstanding thesis in the field of exploration geophysics in either Geophysics Honours or Geology Honours by a student who enrols as a full-time research student in the following year.</td>
</tr>
<tr>
<td><strong>Mathematics and Statistics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TG Room Medal</td>
<td>Medal</td>
<td>1</td>
<td>1</td>
<td>For a PhD thesis in Pure Mathematics which is considered of outstanding merit.</td>
</tr>
<tr>
<td><strong>Molecular and Microbial Biosciences</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Jo Rogers Memorial Prize</td>
<td>Varies</td>
<td>1</td>
<td>1</td>
<td>Awarded annually to the top student in the final year of the Master of Nutrition and Dietetics course at the University of Sydney.</td>
</tr>
<tr>
<td><strong>Psychology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lucy Firth Sydney University Postgraduate Scholarship</td>
<td>$10000</td>
<td>3</td>
<td>1</td>
<td>Scholarship holders must be enrolled for a full-time Doctoral postgraduate research degree at the University of Sydney. They must be Australian citizens or permanent residents with a Class 1 or high Class II Honours degree.</td>
</tr>
<tr>
<td>AH Martin Scholarship</td>
<td>$550</td>
<td>1</td>
<td>1</td>
<td>for the degree of Doctor of Clinical Psychology who performs best in Part I of the course, preferably in the fields of vocational guidance and vocational selection or a related field.</td>
</tr>
<tr>
<td>Martin and Elizabeth Jane Simmat Prize No1</td>
<td>$250</td>
<td>1</td>
<td>1</td>
<td>The prize shall be awarded to the candidate most distinguished in meeting the requirements for the award of the Graduate Diploma in Science (Psychology).</td>
</tr>
<tr>
<td>Martin and Elizabeth Jane Simmat Prize No2</td>
<td>$250</td>
<td>1</td>
<td>1</td>
<td>Awarded to the student with the best performance in Part II of the Doctor of Clinical Psychology course.</td>
</tr>
<tr>
<td>Margaret Stewart Fund</td>
<td>Same as University of Sydney APA Scholarship</td>
<td>Up to 4</td>
<td>1</td>
<td>The scholarship is open to suitably qualified graduates in Psychology of the University of Sydney or any other university who wish to undertake research into ethics and behaviour, towards a higher degree.</td>
</tr>
<tr>
<td>HTasman Lo veil Memorial Medal</td>
<td>Medal</td>
<td>1</td>
<td>1</td>
<td>The medallion is awarded to the candidate who submits the best thesis for the degree of Doctor of Philosophy in the School of Psychology, provided the thesis is of sufficient merit.</td>
</tr>
</tbody>
</table>
See also the Glossary for administrative information relating to particular terms.

**Accommodation Service**

The Accommodation Service assists students to find off campus accommodation by maintaining an extensive database of suitable accommodation in various areas but primarily close to University or within easy access via public transport.

Level 7, Education Building, A35
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 3312
Fax: (02) 9351 8262
Email: accomm@stuserv.usyd.edu.au
Web: www.usyd.edu.au/accom

**Admissions Office**

The Admissions Office (see address below) is responsible for overseeing the distribution of offers of undergraduate admission and can advise prospective local undergraduate students regarding admission requirements. Postgraduate students should contact the appropriate faculty. If you are an Australian citizen or a permanent resident but have qualifications from a non-Australian institution, phone (02) 9351 4118 for more information. For enquiries regarding Special Admissions (including Mature Age Entry), phone (02) 9351 3615.

Applicants without Australian citizenship or permanent residency should contact the International Office.

Student Centre
Ground Floor, Carslaw Building, F07
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 4117 or (02) 9351 4118
Fax: (02) 9351 4869
Email: admissions@records.usyd.edu.au

**Applying for a course**

**Local applicants for undergraduate courses and programs of study**

Citizens and permanent residents of Australia and citizens of New Zealand are considered local applicants for the purpose of admission and enrolment. If you are in this group and you wish to apply for admission into an undergraduate course, you would generally apply through the Universities Admissions Centre (UAC) by the last working day of September of the year before enrolment. Go to www.uac.edu.au for more information.

Note that some faculties, such as Pharmacy, the Sydney Conservatorium of Music and Sydney College of the Arts, have additional application procedures.

**Local applicants for postgraduate courses and programs of study**

Citizens and permanent residents of Australia and citizens of New Zealand are considered local applicants for the purpose of admission and enrolment. Application is direct to the faculty (not to the department, Student Centre or the Admissions Office) which offers the course in which you are interested. Application forms for postgraduate coursework, postgraduate research and the Master's qualifying or preliminary program, or for non-award postgraduate study can be found at www.usyd.edu.au/stu/studentcentre/applications/applications.html.

Please note that not all faculties use these application forms for admission into their courses. Some faculties prefer to use their own specially tailored application forms rather than the standard ones. Please contact the relevant faculty.

**International applicants for all course types (undergraduate and postgraduate)**

All applicants other than Australian citizens, Australian permanent residents and citizens of New Zealand are considered to be international applicants. In the vast majority of cases applicants apply for admission through the University’s International Office. All of the information international applicants need, as well as downloadable application forms, is available from the International Office's section of the University's Web site, www.usyd.edu.au/io.

**Assessment**

For matters regarding assessment, refer to the relevant department or school.

**Careers information**

Provides careers information and advice, and help in finding course related employment both while you’re studying and when you commence your career.

**Careers Centre**

Ground Floor, Mackie Building, KOI
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 3481
Fax: (02) 9351 5134
Email: info@careers.usyd.edu.au
Web: www.careers.usyd.edu.au

**Casual Employment Service**

The Casual Employment Service helps students find casual and part-time work during their studies and in University vacations.

Level 7, Education Building, A35
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 8714
Fax: (02) 9351 8717
Email: cas_emp@stuserv.usyd.edu.au
Web: www.usyd.edu.au/cas_emp

**Centre for Continuing Education**

Bridging courses, study skills courses, essay writing courses, accounting extension courses, university preparation courses, access to university courses, non award short courses.

**Centre for English Teaching**

The Centre for English Teaching (CET) offers a range of English language courses including Academic English, General & Business English and IELTS preparation. CET programs help international students to reach the required English language levels for entry to degrees at the University. Students have the opportunity to take the CET university direct entry test at the completion of their language programs.

Level 2, Building F, 88 Mallett St
University of Sydney (M02)
NSW 2006 Australia
Phone: (02) 9351 0706
Fax: (02) 9351 0710
Email: info@cet.usyd.edu.au
Web: www.usyd.edu.au/cet

**Child care**

Contact the Child Care Coordinator for information about children's services for students and staff of the University who are parents.

**Child Care Coordinator**

Level 7, Education Building, A35
Phone: (02) 9351 5667
Fax: (02) 9351 7055
Email: childcare@stuserv.usyd.edu.au
Web: www.usyd.edu.au/childcare
The Co op Bookshop
As well as providing textbooks for all courses, the Co op stocks a wide range of supplementary material including recommended readings, course notes, study aids, reference titles, general fiction, non fiction, academic and professional tides. Co op members receive up to 15 per cent discount and the shop stocks software at up to 70 per cent off for students and academics.
The Co op is located in the Sydney University Sports and Aquatic Centre.
Phone: (02) 9351 3705 or (02) 9351 2807
Fax: (02) 9660 5256
Email: sydu@mail.coop_bookshop.com.au
Web: www.coop_bookshop.com.au

Counselling Service
The Counselling Service aims to help students fulfil their academic, individual and social goals through professional counselling which is free and confidential. Counselling presents an opportunity to: gain greater self awareness; learn to cope more efficiently with the problem at hand; discuss any work related, social or personal issues that cause concern; explore options with professionally trained staff. In addition, workshops are offered each semester on topics such as stress management, relaxation, exam anxiety, communication skills and others.
Level 7, Education Building, A35
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 2228
Fax: (02) 9351 7055
Email: counsel@mail.usyd.edu.au
Web: www.usyd.edu.au/counsel

Disability Services
Disability Services is the principal point of contact and advice on assistance available for students with disabilities. The Service works closely with academic and administrative staff to ensure that students receive reasonable accommodations in all areas of their study. Assistance available includes the provision of notetaking, interpreters, and advocacy with academic staff to negotiate assessment and course requirement modifications where appropriate.
Level 7, Education Building, A35
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 7040
Fax: (02) 9351 3320
TTY: (02) 9351 3412
Email: disserv@stuserv.usyd.edu.au
Web: www.usyd.edu.au/disability

Enrolment and pre enrolment

Students entering first year
Details of the enrolment procedures will be sent with the UAC Offer of Enrolment. Enrolment takes place at a specific time and date, depending on your surname and the Faculty in which you are enrolling, but is usually within the last week of January. You must attend the University in person or else nominate, in writing, somebody to act on your behalf. On the enrolment day, you pay the compulsory fees for joining the Student Union, the Students' Representative Council and sporting bodies and nominate your preferred 'up front' or deferred payment for your Higher Contribution Scheme (HECS) liability. You also choose your first year units of study, so it's important to consult the Handbook before enrolling.
All other students
A pre enrolment package is sent to all enrolled students in late September, and contains instructions on the procedure for pre enrolment.

Examinations
The Examinations and Exclusions Office (see address below) looks after the majority of exam papers, timetables and exclusions. Some faculties, such as the Sydney Conservatorium of Music, make all examination arrangements for the units of study that they offer.
Examinations and Exclusions Office
Student Centre
Level 1, Carslaw Building, F07
The University of Sydney
NSW 2006 Australia

Phone: (02) 9351 4005 or (02) 9351 4006
Fax: (02) 9351 7330
Email: exams.office@exams.usyd.edu.au

Fees
For information on how to pay, where to pay, and if payments have been received.
Fees Office
Margaret Telfer Building, K07
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 5222
Fax: (02) 9351 4202

Financial Assistance Office
The University has a number of loan funds and bursaries to assist students who experience financial difficulties. Assistance is not intended to provide the principal means of support but to help in emergencies and to supplement other income.
Level 7, Education Building, A35
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 2416
Fax: (02) 9351 7055
Email: fao@stuserv.usyd.edu.au
Web: www.usyd.edu.au/fin/assist

Freedom of information
The University of Sydney falls within the jurisdiction of the NSW Freedom of Information Act, 1989. The Act:
• requires information concerning documents held by the University to be made available to the public;
• enables a member of the public to obtain access to documents held by the University;
• enables a member of the public to ensure that records held by the University concerning his or her personal affairs are not incomplete, incorrect or out of date.
(Note that a 'member of the public' includes staff and students of the University)
It is a requirement of the Act that applications be processed and a determination be made within a specified time period, generally 21 days. Determinations are made by the University's Registrar.
While application may be made for access to access University documents, some may not be released in accordance with particular exemptions provided by the Act. There are review and appeal mechanisms which apply when access has been refused.
The University is required to report to the public on its FOI activities on a regular basis. The two reports produced are the Statement of Affairs and the Summary of Affairs. The Statement of Affairs contains information about the University, its structure and function and the kinds of documents held. The Summary of Affairs identifies the University's policy documents and provides information regarding how to make application for access to University documents.
Further information, and copies of the current reports may be found at www.usyd.edu.au/arms/foi.

Graduations Office
The Graduations Office is responsible for organising graduation ceremonies and informing students of their graduation arrangements.
Student Centre
Carslaw Building, F07
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 3199, (02) 9351 4009, Protocol (02) 93514612
Fax: (02) 9351 5072

(Grievances) appeals
Many decisions about academic and non academic matters are made each year and you may consider that a particular decision affecting your candidature for a degree or other activities at the University may not have taken into account all the relevant matters.
In some cases the by laws or resolutions of the Senate (see University Calendar) specifically provide for a right of appeal against particular decisions; for example, there is provision for appeal against academic decisions, disciplinary decisions and exclusion after failure.
A document outlining the current procedures for appeals against academic decisions is available at the Student Centre, at the SRC, and on the University's Web site at www.usyd.edu.au/planning/policy/.

If you wish to seek assistance or advice regarding an appeal, contact:

Students’ Representative Council

Level 1, Wentworth Building, G01

The University of Sydney

NSW 2006 Australia

Phone: (02) 9660 5222

HECS

Student Centre

Ground Floor, Carslaw Building, F07

The University of Sydney

NSW 2006 Australia

Phone: (02) 9351 5659, (02) 9351 5062, (02) 9351 2086

Fax: (02) 9351 5081

Information Technology Services (ITS)

Information Technology Services oversees the University's computing infrastructure. Students can contact ITS either through the ITS Helpdesk (helpdesk.usyd.edu.au) located in the University Computer Centre (Building H08), or through the University Access Labs (www.usyd.edu.au/su/is/labs/). The access labs on main campus are located in:

• Fisher Library (Level 2)
• Carslaw (Room 201)
• Education (Room 232)
• The Link Building (Room 222)
• Pharmacy (Room 510)

Other labs are available at the Law, Orange, Westmead and Cumberland campuses.

The labs allow students free access to computers, including office and desktop publishing software and storage, at cost Internet access, printing facilities and the opportunity to host their own Web site.

Each student is supplied with an account, called a ‘Unikey’ or ‘extro’ account, which allows access to a number of services including:

Free email (www.mail.usyd.edu.au);

Access to the Internet both from home and from the access labs (helpdesk.usyd.edu.au/services.html);

Online course material (groucho.ucc.usyd.edu.au:9000/webct/public/home.pl);

Student facilities via the intranet (www.intranet.usyd.edu.au), including exam results and seating, student timetables and bulletin boards; and

Free courses in Microsoft Word and Excel, Photoshop, Internet use and html.

International Student Centre

The International Student Centre consists of the International Office (IO), the International Student Services unit (ISSU) and the Study Abroad and Exchange Office. The International Office provides access to computer, office and desktop publishing software and storage, Internet access, Internet access, printing facilities and the opportunity to host their own Web site.

Each student is supplied with an account, called a ‘Unikey’ or ‘extro’ account, which allows access to a number of services including:

Free email (www.mail.usyd.edu.au);

Access to the Internet both from home and from the access labs (helpdesk.usyd.edu.au/services.html);

Online course material (groucho.ucc.usyd.edu.au:9000/webct/public/home.pl);

Student facilities via the intranet (www.intranet.usyd.edu.au), including exam results and seating, student timetables and bulletin boards; and

Free courses in Microsoft Word and Excel, Photoshop, Internet use and html.

International Student Centre

Services Building, G12

The University of Sydney

NSW 2006 Australia

Phone: (02) 93514079

Fax: (02) 9351 4013

Email: info@io.usyd.edu.au

Web: www.usyd.edu.au/io

International Student Services Unit

Phone: (02) 9351 4749

Fax: (02) 9351 6818

Email: info@issu.usyd.edu.au

Web: www.usyd.edu.au/issu

Study Abroad and Exchange Unit

Study Abroad

Phone: (02) 9351 3699

Fax: (02) 9351 2795

Email: studyabroad@io.usyd.edu.au

Web: www.usyd.edu.au/io/studyabroad

Exchange

Phone: (02) 9351 3699

Fax: (02) 9351 2795

Email: exchange@io.usyd.edu.au

Web: www.usyd.edu.au/io/exchange

Intranet

The University is continually increasing the amount of information and services it provides through the Web. This can be seen in the University's intranet, called USYDnet. Here, students and staff can find information on everything, from University policies, through to courses and units of study. As well as delivering this information, USYDnet provides interactive services such as a calendar of events, where students and staff can enter events and publish them on the Web, access to a single point of email, the ability to search for housing and casual jobs, and other student/staff specific information.

MyUni is the personalised section of USYDnet. All staff and students are provided with access to MyUni through a login name and password. MyUni enables them to receive delivery of personal information such as exam results, enrolment variations and seat numbers. MyUni is a portal from which students and staff can complete tasks that were previously only able to be done in person, offline.

Koori Centre and Yooroang Garang

The Koori Centre provides tutorial assistance: access to computers, Indigenous counsellor, Aboriginal Studies library study rooms, Orientation program at the beginning of the year, and assistance in study and learning skills. Education unit: courses in Education for ATSIs. Indigenous Studies unit: aims to increase the awareness of Indigenous Australian issues through courses across the University.

Ground Floor, Old Teachers’ College, A22

The University of Sydney

NSW 2006 Australia

Phone: (02) 9351 2046 general enquiries, (02) 9351 7003 Liaison Officer

Fax: (02) 9351 6923

Email: koori@koori.usyd.edu.au

Web: www.koori.usyd.edu.au

Language Centre

Provides self access course materials in over 140 languages. Beginner and intermediate courses in Modern Spanish, Modern Russian, Modern Welsh, Modern Irish, Modern Portuguese languages and cultures; Diploma course in Modern Language Teaching.

Level 2, Christopher Brennan Building, A18

The University of Sydney

NSW 2006 Australia

Phone: (02) 9351 2371

Fax: (02) 9351 3626

Email: language.enquiries@language.usyd.edu.au

Web: www.arts.usyd.edu.au/Arts/departs/langcent/home.html

Learning Centre

The Learning Centre helps students to develop the generic learning and communication skills which are necessary for university study and beyond. The Centre's program includes a wide range of workshops on study skills, academic reading and writing, oral communication skills and postgraduate writing and research skills. Other services are an Individual Learning Program, a special program for international students, faculty based workshops, computer based learning resources, publications of learning resources and library facilities.

Level 7, Education Building, A35

The University of Sydney

NSW 2006 Australia

Phone: (02) 9351 3853

Fax: (02) 9351 4865

Email: lc@stuserv.usyd.edu.au

Web: www.usyd.edu.au/lc
Library
Students are welcome to use any of the 20 libraries in the University. The student card is also the library borrower's card. Further details of the libraries, including services provided, locations and opening hours are available on the Library's Web page, www.library.usyd.edu.au, as well as in the printed Library Guide, available at any library. Consult the Library staff for assistance.

The libraries listed below are located on the Camperdown/Darlington campus unless otherwise specified.

Architecture Library
Wilkinson Building, G04
Phone: (02) 9351 2775
Fax: (02) 9351 4782
Email: architecture@library.usyd.edu.au

Badham Library
Badham Building, A16
Phone: (02) 9351 2728
Fax: (02) 9351 3852
Email: badham@library.usyd.edu.au

Biochemistry Library
Biochemistry Building, G08
Phone: (02) 9351 2231
Fax: (02) 9351 7699
Email: biochemistry@library.usyd.edu.au

Burkitt Ford Library
Sir Edward Ford Building, A27
Phone: (02) 9351 4364
Fax: (02) 9351 7125
Email: burkittford@library.usyd.edu.au

Camden Library
University Farms, Werombi Rd, Camden, C15
Phone: (02) 9351 6127
Fax: (02) 4655 6719
Email: camden@library.usyd.edu.au

Chemistry Library
From December 2002, merged with the Geosciences Library in the Madsen Building

Curriculum Resources Library
Relocated to Fisher Library, Floor 1
Phone: (02) 9351 6254
Fax: (02) 9351 7766
Email: curriculum@library.usyd.edu.au

Dentistry Library
United Dental Hospital, 2 Chalmers St, Surry Hills, C12
Phone: (02) 9351 8331
Fax: 92125149
Email: dentistry@library.usyd.edu.au

Engineering Library
PN Russell Building, J02
Phone: (02) 9351 2138
Fax: (02) 9351 7466
Email: engineering@library.usyd.edu.au

Fisher Library
Eastern Ave, F03
Phone: (02) 9351 2993
Fax: (02) 9351 4328
Email: fishinf@library.usyd.edu.au

Geosciences Library
Madsen Building, F09
Phone: (02) 9351 6456
Fax: (02) 9351 6459
Email: geosciences@library.usyd.edu.au

Health Sciences Library
East St, Lidcombe, C42
Phone: (02) 9351 9423
Fax: (02) 9351 9421
Email: library@hs.usyd.edu.au

Law Library
Law School, 173 175 Phillip St, Sydney, C13
Phone: (02) 9351 0216
Fax: (02) 9351 0301
Email: library@law.usyd.edu.au

Mathematics Library
Carslaw Building, F07
Phone: (02) 9351 2974
Fax: (02) 9351 5766
Email: mathematics@library.usyd.edu.au

Medical Library
Bosch Building, D05
Phone: (02) 9351 2413
Fax: (02) 9351 2427
Email: medical@library.usyd.edu.au

Music Library
Scyem Centre, J09
Phone: (02) 9351 3534
Fax: (02) 9351 7343
Email: music@library.usyd.edu.au

Nursing Library
88 Mallett St, Camperdown, M02
Phone: (02) 9351 0541
Fax: (02) 9351 0634
Email: nursing@library.usyd.edu.au

Orange Library
Leeds Parade, Orange
Phone: (02) 6360 5593
Fax: (02) 6360 5637
Email: library@orange.usyd.edu.au

Physics Library
New Wing, Physics Building, A29
Phone: (02) 9351 2550
Fax: (02) 9351 7767
Email: physics@library.usyd.edu.au

Schaeffer Fine Arts Library
Mills Building, A26
Phone: (02) 9351 2413
Fax: (02) 9351 2427
Email: john.spencer@arthist.usyd.edu.au

Sydney College of the Arts Library
Balmain Rd, Rozelle, N01
Phone: (02) 93511036
Fax: (02) 93511043
Email: scalib@sca.usyd.edu.au

Sydney Conservatorium of Music Library
Macquarie St (opposite Bridge St), Sydney, C41
Phone: (02) 9351 1316
Fax: (02) 9351 1372
Email: library@conmusic.usyd.edu.au

Mathematics Learning Centre
The Mathematics Learning Centre assists students to develop the mathematical knowledge, skills and confidence that are needed for studying mathematics or statistics at university. The Centre runs bridging courses in mathematics at the beginning of the academic year (fees apply). The Centre also provides on going support during the year through individual assistance and small group tutorials to eligible students.
Level 4, Carslaw Building, F07
Phone: (02) 9351 4061
Fax: (02) 9351 5797
Email: mlc@stuserv.usyd.edu.au

Web: www.usyd.edu.au/mlc

Part time, full time
Undergraduate students
Undergraduate students are normally considered as full time if they have a HECS weighting of at least 0.375 each semester. Anything under this amount is considered a part time study load.
Note that some faculties have minimum study load requirements for satisfactory progress.

Postgraduate students (coursework)
Whether a postgraduate coursework student is part time or full time is determined solely by credit point load for all coursework programs. A students is classed as enrolled full time in a semester if he/she is enrolled in units of study which total at least 18 credit points. Anything under this amount is considered a
part time study load. Please note that classes for some coursework programs are held in the evenings (generally 6 pm).

**Postgraduate students (research)**

Full time candidates for research degrees do not keep to the normal semester schedule but work continuously throughout the year except for a period of four weeks' recreation leave. There is no strict definition of what constitutes full time candidature but, generally speaking, if you have employment or other commitments that would prevent you from devoting at least the equivalent of a 35 hour working week to your candidature (including attendance at the University for lectures, seminars, practical work and consultation with your supervisor as may be required) you should enrol as a part time candidate. If in doubt you should consult your faculty or supervisor.

**International students**

International students who are resident in Australia are normally required under the terms of their entry visa to undertake full time candidature only.

**Privacy**

The University is subject to the NSW Privacy and Personal Information Protection Act 1998 (the Act). Central to the Act are the twelve Information Protection Principles (IPPs) which regulate the collection, management, use and disclosure of personal information. The University has developed a Privacy Management Plan which includes the University Privacy Policy. The Privacy Management Plan sets out the IPPs and how they apply to functions and activities carried out by the University.

Further information and a copy of the Plan may be found at [www.usyd.edu.au/arms/privacy](http://www.usyd.edu.au/arms/privacy).

Any questions regarding the Freedom of Information Act, the Privacy and Personal Information Protection Act or the Privacy Management Plan should be directed to:

Tim Robinson: (02) 9351 4263; or Anne Picot: (02) 9351 7262
Email: foi@mail.usyd.edu.au

**Scholarships for undergraduates**

Scholarships Unit, Room 147
Ground Floor, Mackie Building, KO1
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 2717
Fax: (02) 9351 5134
Email: scholarships@careers.usyd.edu.au
Web: [www.usyd.edu.au/study/scholarships.shtml](http://www.usyd.edu.au/study/scholarships.shtml)

**Student Centre**

Ground Floor, Carslaw Building, F07
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 3023 General Enquiries
(02) 9351 4109 Academic Records
(02) 9351 3023 Discontinuation of Enrolment
(02) 9351 5057 Handbooks
(02) 9351 5060 Prizes
Fax: (02) 9351 5081, (02) 9351 5350 Academic Records

**Student identity cards**

The student (identity card functions as a library borrowing card, transport concession card, when suitably endorsed, and a general identity card for a range of purposes within the University. The card must be carried at all times on the grounds of the University and must be shown on demand. Students are required to provide a passport sized colour photograph incorporating head and shoulders only for lamination to this card. Free lamination is provided at a range of sites throughout the University during the January/February enrolment/pre enrolment period. Cards which are not laminated or do not include a photograph will not be accepted. New identity cards are required for each year of a student enrolment.

**Student Services**

Student Services exists to help you achieve your educational goals by providing personal, welfare, and academic support services to facilitate your success at University. Many factors can impact on your well being while studying at University and Student Services can assist you in managing and handling these more effectively. Refer to Accommodation Service, Casual Employment Service, Child Care, Counselling Service, Disability Services, Financial Assistance Office, Learning Centre, Mathematics Learning Centre. The Web site is at [www.usyd.edu.au/stuserv](http://www.usyd.edu.au/stuserv).

**The Sydney Summer School**

Most faculties at the University offer units of study from undergraduate degree programs during January/February. There are also some units of study available from postgraduate coursework programs from some faculties. As the University uses all of its HECS quota in first and second semester, these units are full fee paying for both local and international students and enrolment is entirely voluntary. However, Summer School units enable students to accelerate their degree progress, make up for a failed unit or fit in a unit which otherwise would not suit their timetables. New students may also gain a head start by completing requisite subjects before they commence their degrees. Units start on 6 January and run for up to six weeks (followed by an examination week). Notice of the units available is contained in the various faculty handbooks, on the summer school Web site ([www.summer.usyd.edu.au](http://www.summer.usyd.edu.au)) and is usually circulated to students with their results notices.

**Timetabling unit**

The timetabling unit in the Student Centre is responsible for producing students' class and tutorial timetables. Students can obtain their Semester 1 timetables from the Wednesday of Orientation Week via the Web.

The Sydney Conservatorium of Music operates in accordance with a local calendar of dates and produces a complete timetable for all teaching that it delivers. The timetable is available on enrolment at the Conservatorium.

**University Health Service**

Provides full general practitioner services and emergency medical care to the University community.

Email: director@unihealth.usyd.edu.au
Web: [www.unihealth.usyd.edu.au](http://www.unihealth.usyd.edu.au)

**University Health Service (Wentworth)**

Level 3, Wentworth Building, G01
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 3484
Fax: (02) 9351 4110

**University Health Service (Holme)**

Science Rd Entry, Holme Building, A09
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 4095
Fax: (02) 9351 4338

**SUPRA**

SUPRA is an organization which provides services to and represents the interests of postgraduate students. All postgraduate students at the University of Sydney are members of SUPRA.

**Students’ Representative Council**

Level 1, Wentworth Building, GO 1
The University of Sydney
NSW 2006 Australia
Phone: (02) 9660 5222 Editors, Honi Soit/Legal Aid
(02) 9660 4756 Second hand Bookshop
(02) 9351 0691 Mallett St
(02) 9351 1291 Pitt St Conservatorium
Fax: (02) 9660 4260
Email: postmaster@src.usyd.edu.au
Web: [www.unihealth.usyd.edu.au](http://www.unihealth.usyd.edu.au)

SUPRA is an organization which provides services to and represents the interests of postgraduate students. All postgraduate students at the University of Sydney are members of SUPRA.

**SUPRA**

SUPRA is an organization which provides services to and represents the interests of postgraduate students. All postgraduate students at the University of Sydney are members of SUPRA.

**SUPRA**

SUPRA is an organization which provides services to and represents the interests of postgraduate students. All postgraduate students at the University of Sydney are members of SUPRA.
**Sydney University Sports Union**
Services, facilities and clubs for sport, recreation and fitness.
Noel Martin Sports and Aquatic Centre, G09
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 4960
Fax: (02) 9351 4962
Email: sports_union@susu.usyd.edu.au

**University of Sydney Union**
Main provider of catering facilities, retail services, welfare programs, and social and cultural events for the University community on the Camperdown and Darlington campuses, and at many of the University's affiliated campuses.
University of Sydney Union
Box 500, Holme Building, A09
The University of Sydney
NSW 2006 Australia
Phone: (02) 9563 6000 Switchboard/Enquiries
Fax: (02) 9563 6239
Email: email@usu.usyd.edu.au
Web: www.usu.usyd.edu.au

**Women's Sports Association**
Provides for students, predominantly women, to participate in sport and recreation through the provision of facilities, courses and personnel.
The Arena Sports Centre, A30
The University of Sydney
NSW 2006 Australia
Phone: (02) 9351 8111
Fax: (02) 9660 0921
Email: secretary@suwsa.usyd.edu.au
Web: www.suwsa.usyd.edu.au
This glossary describes terminology in use at the University of Sydney.

**Academic Board**
The Academic Board is the senior academic body within the University. In conjunction with faculties, the Academic Board has responsibility for approving, or recommending to Senate for approval, new or amended courses and units of study and policy relating to the admission of students. (For further information, see the University Calendar.)

**Academic cycle**
The Academic cycle is the program of teaching sessions offered over a year. Currently the cycle runs from the enrolment period for Semester 1 through to the completion of the processing of results at the end of Semester 2. (See also Stage.)

**Academic record**
The academic record is the complete academic history of a student at the University. It includes, among other things, personal details, all units of study and courses taken, assessment results (marks and grades), awards and prizes obtained, infringements of progression rules, approvals for variation in course requirements and course leave, thesis and supervision details.

Access to a student's academic record is restricted to authorised University staff. A student's academic record is not released to a third party without the written authorisation of the student. (See also Academic transcript.)

**Academic transcript**
An academic transcript is a printed statement setting out a student's academic record at the University. There are two forms of academic transcript: external and internal. (See also External transcript, Internal transcript.)

**Academic year**
An academic year is a normal full time program taken in a course in a year. Some courses consist of stages, which may readily be equated with academic year. Others use the aggregation of credit points to do this (eg, 48 credit points = an academic year). (See also Academic cycle, Stage.)

**Addresses**
All enrolled students need to have a current postal address recorded on FlexSIS to which all official University correspondence is sent. (See also Business address, Permanent home address, Semester address, Temporary address.)

**Admission**
Admission is governed by the University’s admission policy and is the process for identifying applicants eligible to receive an initial offer of enrolment in a course at the University. Admission to most courses is based on performance in the HSC with applicants ranked on the basis of their UAI. Other criteria such as a portfolio, interview, audition, or results in standard tests may also be taken into account for certain courses.

**Admission basis**
The main criterion used by a faculty in assessing an application for admission to a course. The criteria used include, among other things, previous secondary, TAFE or tertiary studies, work experience, special admission and the Universities Admission Index (UAI).

**Admission (deferment)**
An applicant who receives an offer of admission to a course may apply to defer enrolment in that course for one semester or one academic cycle.

**Admission mode**
Admission mode is a classification based on how a student was admitted to a course, for example 'UAC or 'direct'.

**Admission period**
The period during which applications for admission to courses are considered. The main admission period takes place before Semester 1, but there may also be an admission period for mid-year applicants before the beginning of Semester 2 and other admission periods.

**Admission reply**
A code used by FlexSIS to indicate whether an applicant who has received an offer has accepted the offer or not.

**Admission result**
A code used by FlexSIS to indicate the result of a direct application to study at the University (eg, offer, unsuccessful, withdrawn).

**Admission year**
The year the student began the course.

**Advanced diplomas**
See Award course.

**Advanced standing**
See Credit.

**Advisor**
A member of academic staff appointed in an advisory role for some postgraduate coursework students. (See also Associate supervisor, Instrumental supervisor (teacher), Research supervisor, Supervision.)

**Annual Progress Report**
The Annual Progress Report is a form issued by faculties which is used to monitor a research student’s progress each year. The form provides for comments by the student, the supervisor, the head of the department and the dean (or nominee). The completed form is attached to the student's official file. FlexSIS records that the form has been sent out and that it has been satisfactorily completed.

**APA**
Australian Postgraduate Awards. (See also Scholarships, UPA.)

**Appeals**
Students may lodge appeals against academic or disciplinary decisions. FlexSIS will record an academic appeal (eg, against exclusion) while they are under consideration and will record the outcome of the appeal. Disciplinary (that is, non academic) appeals are not recorded on FlexSIS.

**ARTS**
Automated Results Transfer System. This system was developed on behalf of ACTAC (Australasian Conference of Tertiary Admissions Centres) to allow the electronic academic record of a student to be accessible, via an admission centre, between tertiary institutions.

**Assessment**
The process of measuring the performance of students in units of study and courses. The assessment of performance in a unit of study may include examinations, essays, laboratory projects, or assignments. (See also Board of examiners, Result processing, Result processing schedule.)

**Associate supervisor**
A person who is appointed in addition to the supervisor of a research student who can provide the day to day contact with the candidate or provide particular expertise or additional experience in supervision. (See also Advisor, Instrumental supervisor (teacher), Research supervisor, Supervision.)

**Assumed knowledge**
For some units of study, a student is assumed to have passed a relevant subject at the HSC and this is called assumed knowledge. While students are generally advised against taking a unit of study for which they do not have the assumed knowledge, they are not prevented from enrolling in the unit of study. (See also Prerequisite.)

**Attendance mode**
A DEST classification defining the manner in which a student is undertaking a course ie, internal, external, mixed or offshore.

**Attendance pattern/type**
Refers to whether the student is studying part time or full time. For coursework students this is a function of course load ie, the
proportion being undertaken by the student of the normal full time load specified for the course in which the student is enrolled. To be considered full time, a coursework student must undertake at least 0.75 of the normal full time load over the academic cycle or at least 0.375 if only enrolling in half of an academic year. It is important to note, however, that, for some purposes, to be considered full time a student may need to be enrolled in at least 0.375 in each half year. Research students, with the approval of their faculty, nominate whether they wish to study part time or full time. The attendance status is then recorded on FlexSIS as part of the application or enrolment process. (See also Coursework, Student load.)

**AusAID**
Australian Agency for International Development.

**AUSCHECK**
AUSCHECK is the software provided by Centrelink to validate data prior to reporting to Centrelink.

**AUSTUDY**
Replaced by Youth Allowance. (See also Youth Allowance.)

**Award course**
An award course is a formally approved program of study that can lead to an academic award granted by the University. An award course requires the completion of a program of study specified by course rules. (See also Course rules.) Award courses are approved by Senate, on the recommendation of the Academic Board. Students normally apply to transfer between Award courses through the UAC. The award course name will appear on testamurs. The University broadly classifies courses as undergraduate, postgraduate coursework or postgraduate research. The award courses offered by the University are:
- Higher doctorates
- Doctor of philosophy (PhD)
- Doctorates by research and advanced coursework
- Master's degree by research
- Master's degree by coursework
- Graduate diploma
- Graduate certificate
- Bachelor's degree
- Advanced diplomas
- Diplomas
- Certificates
(See also Bachelor's degree, Course rules, Diploma, Doctorate, Major, Master's degree, Minor, PhD, Stream.)

**Bachelor's degree**
The highest undergraduate award offered at the University of Sydney. A bachelor's degree course normally requires three or four years of full time study or the part time equivalent. (See also Award course.)

**Barrier**
A barrier is an instruction placed on a student's FlexSIS record that prevents the student from re enrolling or graduating. (See also Deadline (fees), Suppression of results.)

**Board of examiners**
A Board of examiners was a body appointed by a faculty or board of studies which met to approve tie results of all students undertaking courses supervised by that faculty or board of studies. Boards of examiners were dis established following revision of the University's examination procedures in 2000. (See also Assessment, Result processing, Result processing schedule.)

**Board of studies**
An academic body which supervises a course or courses and which is similar to a faculty except that it is headed by a chair rather than a dean and does not supervise PhD candidates.

**Bursaries**
See Scholarships.

**Business address**
FlexSIS can record a student's business address and contact details. (See also Addresses, Permanent home address, Semester address, Temporary address.)

**Cadigal Program**
The Cadigal Program is a University wide access and support scheme for Aboriginal and Torres Strait Islanders.

**Campus**
The grounds on which the University is situated. There are eleven campuses of the University of Sydney: Burren Street (Institute for International Health, Institute of Transport Studies), Camperdown and Darlington (formerly known as Main Campus), Camden (Agriculture and Veterinary Science), Conservatorium (Conservatorium of Music), Cumberland (Health Sciences), Mallett Street (Nursing), Orange (Faculty of Rural Management), Rozelle (Sydney College of the Arts), St James (Law) and Surry Hills (Dentistry).

**Census date**
See HECS census date.

**Centre for Continuing Education**
The Centre for Continuing Education develops and conducts courses, conferences and study tours for the general public and professional groups. The Centre offers approximately 1,000 courses for approximately 20,000 students each year. Most of these courses are held over one of the four main sessions that are conducted each year, though the Centre is offering an increasing number of ad hoc courses in response to increased competition and changing demands. The Centre operates on a cost recovery/income generation basis. (See also Continuing professional education.)

**Centrelink**
Centrelink is the agency responsible for providing information and assistance on a range of Commonwealth Government programs including Youth Allowance. (See also Youth Allowance.)

**Ceremony**
See Graduation ceremony.

**Chancellor**
The non executive head of the University. An honorary position, the Chancellor chairs meetings of the University's governing body, the Senate, and presides over graduation ceremonies amongst other duties.

**Class list**
A listing of all currently enrolled students in a particular unit of study. (See also Unit of study.)

**Combined course**
A course which leads to two awards. For example the Arts/Law course leads to the separate awards of Bachelor of Arts and Bachelor of Laws.

**Combined degree**
See Combined course.

**Comencing student**
A student enrolling in an award course at the University of Sydney for the first time. The DEST glossary provides a more detailed definition.

**Comp subs**
See Compulsory subscriptions.

**Compulsory subscription rates**
There are two rates for some annual subscriptions: full time and part time. (See also Compulsory subscriptions.)

**Compulsory subscription waiver provision**
Certain students over a certain age or with disabilities or medical conditions may be exempted from the subscription to the sports body.

**Students with a conscientious objection to the payment of subscriptions to unions of any kind may apply to the Registrar for exemption. The Registrar may permit such a student to make the payment to the Jean Foley Bursary Fund instead.**
(See also Compulsory subscriptions.)

**Compulsory subscriptions**
Each enrolled student is liable to pay annual (or semester) subscriptions as determined by the Senate to the student organisations at the University. These organisations are different on different campuses. There are different organisations for undergraduate and postgraduate students.

At the Camperdown/Darlington campus (formerly known as Main Campus), compulsory submissions depend on the level of study.

Undergraduate: the University of Sydney Union, Students' Representative Council (SRC) and the University of Sydney Sports Union or the Sydney University Women's Sports Association.

Postgraduate: the University of Sydney Union and the Sydney University Postgraduate Representative Association (SUPRA).

Student organisations at other campuses include: the Conservatorium Student Association, the Cumberland Student Guild, the Orange Agricultural College Student Association and
the Student Association of Sydney College of the Arts. (See also Compulsory subscription rates, Compulsory subscription waiver provision, Joining fee, Life membership.)

**Confirmation of Enrolment form**

A Confirmation of Enrolment form is issued to students after enrolment showing the course and the units of study they are enrolled in, together with the credit point value of the units of study and the HECS weights. Until all fees are paid, it is issued provisionally. A new Confirmation of Enrolment form is produced every time a student's enrolment is varied.

For postgraduate research students the form also lists candidate details and supervisor information. Where students have an appointed advisor, the advisor information is also shown.

**Continuing professional education**

The continuing professional education process provides a number of programs of continuing education courses for professionals as they move through their career. These programs are presently administered by the Centre for Continuing Education and a number of departments and Foundations across the University. This process supports the whole of life learning concept and requires/promotes the maintenance of a long term relationship between the student and the University. It is envisaged that the importance of this mode of education will increase in the future. (See also Centre for Continuing Education.)

**Convocation**

Convocation is the body comprising all graduates of the University.

**Core unit of study**

A core unit of study which must be taken in the same semester or year as a given unit of study (unless it has already been completed). These are determined by the faculty or board of studies concerned, published in the faculty handbook and shown in FlexSIS. (See also Prerequisite, Waiver.)

**Course**

An award course or non award course undertaken at the University of Sydney. (See also Award course, Non award course.)

**Course alias**

Each course in FlexSIS is identified by a unique five digit alphanumeric code.

**Course code**

See Course alias.

**Course leave**

Students (undergraduate and postgraduate) are permitted to apply for a period away from their course without losing their place, course leave is formally approved by the supervising faculty for a minimum of one semester and recorded on FlexSIS (leave for periods of less than one semester should be recorded internally by the faculty). Students on leave are regarded as having an active candidature, but they are not entitled to a student card. At undergraduate level leave is not counted towards the total length of the course. Students who are absent from study without approved leave may be discontinued and may be required to reapply formally for admission. The term 'suspension of candidature' was previously used to describe research students on course leave.

**Course (research)**

A classification of courses in which students undertake supervised research leading to the production of a thesis or other piece of written or creative work over a prescribed period of time. The research component of a research course must comprise 66 per cent or more of the overall course requirements.

**Course rules**

Course rules govern the allowable enrolment of a student in a course; eg, a candidate may not enrol in units of study having a total value of more than 32 credit points per semester. Course rules also govern the requirements for the award of the course; eg, a candidate must have completed a minimum of 144 credit points. Course rules may be expressed in terms of types of units of study taken, length of study, and credit points accumulated. (See also Award course.)

**Course suspension**

See Course leave.

**Course transfer**

A course transfer occurs where a student changes from one course in the University to another course in the University without the requirement for an application and selection (eg, from a PhD to a master's program in the same faculty).

**Course type**

Course type is a DEST code.

**Coursework**

Coursework is a classification used to describe those courses that consist of units of study rather than research work. All undergraduate courses are coursework programs. Postgraduate courses can be either research courses or coursework courses. (See also Course (research).)

**Credit**

The recognition of previous studies successfully completed at this or another recognised (by the University of Sydney) university or tertiary institution as contributing to the requirements for the award of the course in which the applicant requesting such recognition has been admitted. Where the University agrees to recognise successfully completed previous studies, their contribution to the requirements for the award of the course, in which the applicant has been admitted, will be expressed as specific or non specific credit.

Credit awarded to a credit applicant whether specific or non­specific will be recorded with a mark and grade of 50 pass, unless in individual cases the credit is assessed by the faculty as having a mark and grade greater than 50 pass. This equivalent mark and grade will be used for the purposes of calculating a student's weighted average mark and for the purposes of satisfying prerequisite rules where a level of passing grade is specified. (See also Precedents, Specific credit, Non specific credit, Waiver, Weighted average mark (WAM)).

**Credit points**

Credit points are a measure of value indicating the contribution each unit of study provides towards meeting course completion requirements stated as a total credit point value. Each unit of study will have a credit point value assigned to it, normally in the range 3 to 24. Resolutions of Senate set the number and level of credit points required for graduation.

**Cross institutional enrolment**

Cross institutional enrolment is an enrolment in units of study at one university to count towards an award course at another university. Cross institutional enrolments incur a HECS liability or tuition fee charge at the institution at which the unit of study is being undertaken. Students pay compulsory subscriptions to one university only (usually their home university i.e, the university which will award their degree). (See also Non award course, Enrolment non award.)

**DAC (Data Audit Committee)**

DAC is a sub committee of the VCAC Enrolment Working Party, chaired by the Registrar, with membership including the deans, the Student Centre, FlexSIS and the Planning Support Office. Its role is to oversee the integrity and accuracy of the course and unit of study data as strategic university data. It has a role in advising the Academic Board on suggested policy changes with relation to course and unit of study data.

**Deadlines (enrolment variations)**

See Enrolment variations.

**Deadlines (fees)**

The University has deadlines for the payment of fees (eg, HECS, compulsory subscriptions, course fees, etc). Students who do not pay fees by these deadlines may have their enrolment cancelled or they may have a barrier placed on the release of their record. (See also Barrier.)

**Dean**

The head of a faculty or the principal or director of a college (such as the Conservatorium of Music or the Sydney College of Arts).

**Dean's certificate**

A statement from the dean certifying that all requirements, including fieldwork and practical work, have been met and that the student is eligible to graduate. Not all faculties use dean's
certificates. In faculties that do, qualified students have ‘dean’s certificate’ noted on their academic record.

**Deferment**
See Admission (deferment), Leave.

**Degree**
(See also Award course, Bachelor’s degree.)

**Delivery mode**
Indicates the mode of delivery of the instruction for a unit of study—eg, normal (ie, by attending classes at a campus of the University), distance (ie, remotely by correspondence or other distance means eg, Web delivery). The delivery mode must be recorded for each unit as distinct from the attendance mode of the student—ie, an internal student may take one or more units by distance mode and an external student may attend campus for one or more units.

**Department**
For the purposes of FlexSIS, a department is the academic unit, which is responsible for teaching and examining a unit of study. It may be called a school, a department, a centre or a unit within the University.

**DEST**
The Department of Education, Science and Training is the Commonwealth Government department responsible for higher education. The University is required to provide DEST with information about its students several times a year. The Government uses this information in its funding deliberations.

**Differential HECS**
See Higher Education Contribution Scheme (HECS).

**Diploma**
The award granted following successful completion of diploma course requirements. A diploma course usually requires less study than a degree course. Graduate diploma courses are only available to students who already hold an undergraduate degree. (See also Award course.)

**Direct admissions**
For some courses, applications may be made directly to the University. Applications are received by faculties or the International Office, registered on FlexSIS and considered by the relevant department or faculty body. Decisions are recorded on FlexSIS and FlexSIS produces letters to applicants advising them of the outcome. (See also Admission, UAC admissions.)

**Disability information**
Students may inform the University of any temporary or permanent disability, other than a financial disability, which affects their life as a student. Disability information is recorded in FlexSIS but it is only visible to particular authorised users because of its sensitive nature.

**Discipline codes**
Discipline codes are four letter codes for each area of study available at the university (eg, CHEM Chemistry, ECON Economics).

**Discipline group**
A DEST code used to classify units of study in terms of the subject matter being taught or being researched.

**Discontinuation (course)**
See Enrolment variation.

**Discontinuation (unit of study)**
See Enrolment variation.

**Dissertation**
A dissertation is a written exposition of a topic and may include original research or material substantiated by reference to acknowledged subject matter being taught or being researched.

**Degree**
(See also Award course, Bachelor’s degree.)

**Doctorate**
The doctorate and the PhD are high level postgraduate awards available at the University of Sydney. A doctorate course normally involves research and coursework; the candidate submits a thesis that is an original contribution to the field of study. Entry to a doctorate course often requires completion of a master’s degree course. Note that the doctorate course is not available in all departments at the University of Sydney. (See also Award course, PhD.)

**Earliest date**
See Research candidature.

**EFTSU**
The equivalent full time student unit (EFTSU) is a measure of student load expressed as a proportion of the workload for a standard annual program for a student undertaking a full year of study in a particular award course. A student undertaking the standard annual program of study (normally 48 credit points) generates one EFTSU.

**EFTYR**
The effective full time enrolment year (EFTYR) is a calculation of how long, in terms of equivalence to full time years of enrolment, a student has been enrolled in a course. If a student has always been full time, the calculation is straightforward (eg, the fifth year of enrolment is EFTYR 5). If the student has had a mixture of part time and full time enrolment, this can be equated with an EFTYR. (See also Stage.)

**Enrolment**
A student enrolls in a course by registering with the supervising faculty in the units of study to be taken in the coming year, semester or session. The student pays whatever fees are owing to the University by the deadline for that semester. New students currently pay on the day they enrol which is normally in early February. Students already in a course at the University re enrol each year or semester, for most students pre enrolment is required. (See also Pre enrolment.)

**Enrolment non award**
Non award enrolment is an enrolment in a unit or units of study, which does not count towards a formal award of the University. Non award enrolments are recorded in various categories used for reporting and administrative purposes. (See also Cross institutional enrolment, Non award course.)

**Enrolment status**
A student’s enrolment status is either ‘enrolled’ or ‘not enrolled’. An enrolment status is linked to an enrolment status reason or category.

**Enrolment status reason/category**
Not enrolled status reasons/categories include: withdrawn, totally discontinued, cancelled, on leave (suspended), transferred, lapsed, terminated, qualified and conferred.

**Enrolment variation**
Students may vary their enrolment at the beginning of each semester. Each faculty determines its deadlines for variations, but HECS liability depends on the HECS census date. (See also HECS.)

**Enrolment year**
See EFTYR, Stage.

**Examination**
See Examination paper code, Examination period, Supplementary exams.

**Examination paper code**
A code that identifies each individual examination paper. Used to help organise examinations.

**Examination period**
The examination period is the time set each semester for the conduct of formal examinations.

**Exchange student**
An exchange student is either a student of the University of Sydney who is participating in a formally agreed program involving study at an overseas university or an overseas student who is studying here on the same basis. The International Office provides administrative support for some exchanges.

**Exclusion**
The faculty may ask a student whose academic progress is considered to be unsatisfactory to ‘show cause’ why the student should be allowed to re enrol. If the faculty deems the student’s explanation unsatisfactory, or if the student does not provide an explanation, the student may be excluded either from a unit of study or from a course. An excluded student may apply to the faculty for permission to re enrol. Normally at least two years must have elapsed before such an application would be considered.
Graduation is the formal conferring of awards either at a ceremony or in absentia. (See also In absentia, Potential graduand.)

Graduation ceremony
A graduation ceremony is a ceremony where the Chancellor confers awards upon graduands. The Registrar publishes annually the schedule of graduation ceremonies.

HECS
See Higher Education Contribution Scheme (HECS).

HECS census date
The date at which a student's enrolment, load and HECS liability are finalised before reporting to DEST. The following dates apply:
- Semester 1: 31 March
- Semester 2: 31 August

HECS code
A code used by DEST to identify the HECS status of a student.

Higher doctorates
See Award course.

Higher Education Contribution Scheme (HECS)
All students except international students, local fee paying students and holders of certain scholarships are obliged to contribute towards the cost of their education under the Higher Education Contribution Scheme (HECS). HECS liability depends on the load being taken.

Honorary degrees
A degree honoris causa (translated from the Latin as 'for the purpose of honouring') is an honorary award, which is conferred on a person whom the University wishes to honour.

Honours
Some degrees may be completed 'with Honours'. This may involve either the completion of a separate Honours year or additional work in the later years of the course or meritorious achievement over all years of the course. Honours are awarded in a class (Class I, Class II, Class III) and sometimes there are two divisions within Class II.

HSC
The HSC is the NSW Higher School Certificate, which is normally completed at the end of year 12 of secondary school.

In absentia
In absentia is Latin for 'in the absence of'. Awards are conferred in absentia when a graduand does not, or cannot, attend the graduation ceremony scheduled for them.

Instrumental supervisor (teacher)
All students at the Conservatorium of Music and BMus students on the Camperdown campus have an instrumental teacher appointed.

Internal
See Attendance mode.
Internal transcript
An Internal transcript is a record of a student's academic record for the University's own internal use. It includes the student's name, SID, address, all courses in which the student was enrolled and the final course result, and all units of study attempted within each course together with the unit of study result. (See also Academic transcript, External transcript.)

International student
An International student is required to hold a visa to study in Australia, and may be liable for international tuition fees. Any student who is not an Australian or New Zealand citizen or a permanent resident of Australia is an international student. New Zealand citizens are not classified as international students but have a special category under HECS that does not permit them to defer their HECS liability. (See also Local student, Student type.)

Joining fee
Students enrolling for the first time pay, in addition, a joining fee for the University of Sydney Union or equivalent student organisation. (See also Compulsory subscription.)

Leave
See Course leave.

Load
Load for an individual student is the sum of the weights of all the units of study in which the student is enrolled. (See also EFTSU, HECS.)

Local student
A local student is either an Australian or New Zealand citizen or Australian permanent resident. New Zealand citizens are required to pay their HECS upfront. (See also Fee type, HECS, International student.)

Major
A major is a defined program of study, generally comprising specified units of study from later stages of the award course. Students select and transfer between majors by virtue of their selection of units of study. One or more majors may be prescribed in order to satisfy course requirements. Majors may be included on testamurs. (See also Award course, Minor, Stream.)

Major timetable clash
Used by FlexSIS to denote occasions when a student attempts to enrol in units of study which have some identical times of teaching.

Mixed mode
See Attendance mode.

Mode
See Attendance mode and Delivery mode.

Mutually exclusive units of study
See Prohibited combinations of units of study.

MyUni
MyUni is a personalised space for staff and students on the University of Sydney's intranet, called USYDNet. MyUni is used to deliver information and services directly through a central location, while also allowing users to customise certain information. Students are able to access such services as exam seat numbers, results, timetables and FlexSIS pre-enrolment and enrolment variations on MyUni. (See also UsydNet.)

Non award course
Non award courses are courses undertaken by students who are seeking an award from the University. These may be students enrolled in an award course at another institution or students not seeking an award from any institution. Non award courses are assigned a course code in the same way as award courses. A separate course code is assigned for each faculty, level (undergraduate or postgraduate) and method (research or coursework) which offers a non award course. Various categories of non award enrolment are recorded on FlexSIS for reporting and administrative purposes. (See also Course, Cross institutional enrolment, Enrolment non award.)

Non award enrolment
See Enrolment non award.

Non specific credit
Non specific credit is awarded when previous studies are deemed to have satisfied defined components of a course other than named units of study. These components include, but are not limited to:
• entire years in courses that progress through the successful completion of a set of prescribed units of study per year
• a set number of credit points within a particular discipline or level (ie, first, second or third year)
• one or more semesters for research courses.
(See also Credit, Specific credit.)

Non standard Teaching Period
A non standard teaching period is when a unit of study is delivered in a teaching session of less than a standard semester (6 months). Summer School units of study, which are delivered and assessed in intensive mode during January of each year, are an example of non standard teaching periods. (See also Semester, Session.)

OPRS
Overseas Postgraduate Research Scholarship.

Orientation Week
Orientation or 'O Week', takes place during the week prior to lectures in Semester 1. During O Week, students can join various clubs, societies and organisations, register for courses with departments and take part in activities provided by the University of Sydney Union.

Part time student
See Attendance status, EFTSU.

PELS
See Postgraduate Education Loans Scheme.

Permanent home address
The permanent home address is the address for all official University correspondence both inside and outside of semester time (eg, during semester breaks), unless overridden by semester address. (See also Addresses, Business address, Semester address, Temporary address.)

PhD
The Doctor of Philosophy (PhD) and other doctorate awards are the highest awards available at the University of Sydney. A PhD course is normally purely research based; the candidate submits a thesis that is an original contribution to the field of study. Entry to a PhD course often requires completion of a master's degree course. Note that the PhD course is available in most departments in the University of Sydney. (See also Award course, Doctorate.)

Postgraduate
A term used to describe a course leading to an award such as graduate diploma, a master's degree or PhD, which usually requires prior completion of a relevant undergraduate degree (or...
potential graduand

Potential gradands are students who have been identified as being eligible to graduate on the satisfactory completion of their current studies. See also Graduand, Graduation.

Precedents

Where a credit applicant has credit approved in terms of the granting of specific or non specific credit on the basis of study previously taken, a precedent is established at system level. Any other credit applicant subsequently seeking credit on the basis of the same pattern of previous study will be eligible to have the item of credit to be immediately approved on the basis of the previously approved precedent. (See also Credit.)

Prerequisite

A prerequisite is a unit of study that is required to be completed before another unit of study can be attempted. Prerequisites can be mandatory (compulsory) or advisory. (See also Assumed knowledge, Corequisite, Prerequisite, Waiver.)

Prizes

Prizes are awarded by the University, a faculty or a department for outstanding academic achievement. Full details can be found in the University Calendar.

Probationary candidature

A probationary candidate is a student who is enrolled in a postgraduate course on probation for a period of time up to one year. The head of department is required to consider the candidate’s progress during the period of probation and make a recommendation for normal candidature or otherwise to the faculty.

Progression

See Course progression.

Prohibited combinations of units of study

When two or more units of study contain a sufficient overlap of content, enrolment in any one such unit prohibits enrolment in any other identified unit. A unit related in this way to any other unit is linked in tables of units of study via use of the symbol N to identify related prohibited units.

Provisional re enrolment

Pre enrolment

Pre enrolment takes place in October for the following year. Students indicate their choice of unit of study enrolment for the following year. After results are approved, registered students are regarded as enrolled in those units of study they chose and for which they are qualified. Their status is ‘enrolled’ and remains so provided they pay any money owing or comply with other requirements by the due date. Re enrolling students who do not successfully register in their units of study for the next regular session are required to attend the University on set dates during the January/February enrolment period. Pre enrolment is also known as provisional re enrolment. (See also Enrolment.)

Examination

A mark of 46 49. Use of this grade is restricted to those courses that allow for a concessional pass of some kind to be awarded. A student may re enrol in a unit of study for which the result was PCON.

Passed (concessional)

A mark of 46 49. Use of this grade is restricted to those courses that allow for a concessional pass of some kind to be awarded. A student may re enrol in a unit of study for which the result was PCON. Each faculty will determine and state in its course regulations what proportion, if any, may count e.g., 'no more than one sixth of the total credit points for a course can be made up from PCON results'.

Fail

This grade may be used for students with marks of 46 49 in those faculties which do not use PCON.

Absent fail

Includes non submission of compulsory work (or non attendance at compulsory labs, etc) as well as failure to attend an examination.

Qualification

A qualification is an academic attainment recognised by the University.

Qualifier

A mandatory (compulsory) pre requisite unit of study which must have a grade of Pass or better. (See also Assumed knowledge, Corequisite, Prerequisite, Waiver.)

Registrar

The Registrar is responsible to the Vice Chancellor for the keeping of official records and associated policy and procedures within the University. (See the University Calendar for details.)

Research course

See Course (research).

Research supervisor

A supervisor is appointed to each student undertaking a research postgraduate degree. The person will be a full time member of the academic staff or a person external to the University appointed in recognition of their association with the clinical teaching or the research work of the University. A research supervisor is commonly referred to as a supervisor. (See also Advisor, Associate supervisor, Instrumental supervisor (teacher), Supervision.)

Research Training Scheme (RTS)

The RTS provides Commonwealth funded higher degree by research (HDR) students with an ‘entitlement’ to a HECS exemption for the duration of an accredited HDR course, up to a maximum period of four years’ full time equivalent study for a Doctorate by research and two years’ full time equivalent study for a Masters by research.

Resolutions of Senate

Regulations determined by the Senate of the University of Sydney that pertain to degree and diploma course requirements and other academic or administrative matters.

Result processing

Refers to the processing of assessment results for units of study. Departments tabulate results for all assessment activities of a unit of study and assign preliminary results for each unit of study. Preliminary results are considered by the relevant board of examiners, which approves final results. Students are notified of results by result notices that list final marks and grades for all units of study. (See also Assessment, Examination period.)

Result processing schedule

The result processing schedule will be determined for each academic cycle. It is expected that all departments and faculties will comply with this schedule. (See also Assessment, Examination period, Result processing.)

Results

The official statement of the student's performance in each unit of study attempted, as recorded on the academic transcript, usually expressed as a grade:
GLOSSARY

W Widened
Not recorded on an external transcript. This is the result that obtains where a student applies to discontinue a unit of study by the HECS census date (ie, within the first four weeks of enrolment).

DNF Discontinued not to count as failure
Recorded on external transcript. This result applies automatically where a student discontinues after the HECS Census Date but before the end of the seventh week of the semester (or before half of the unit of study has run, in the case of units of study which are not semester length). A faculty may determine that the result of DNF is warranted after this date if the student has made out a special case based on illness or misadventure.

DF Discontinued fail
Recorded on transcript. This applies from the time DNF ceases to be automatically available up to the cessation of classes for the unit of study.

MNC Incomplete with a mark of at least 50
This result may be used when examiners have grounds (such as illness or misadventure) for seeking further information or for considering additional work from the student before confirming the final mark and passing grade. Except in special cases approved by the Academic Board, this result will be converted to a normal passing mark and grade either: (a) by the dean at the review of examination results conducted pursuant to section 2 (4) of the Academic Board policy 'Examinations and Assessment Procedures'; or (b) automatically to the indicated mark and grade by the third week of the immediately subsequent academic session. Deans are authorised to approve the extension of a MINC grade for individual students having a valid reason for their incomplete status.

INC Incomplete
This result is used when examiners have grounds (such as illness or misadventure) for seeking further information or for considering additional work from the student before confirming the final result. Except in special cases approved by the Academic Board, this result will be converted to a normal permanent passing or failing grade either: (a) by the dean at the review of examination results conducted pursuant to section 2 (4) of the Academic Board policy 'Examinations and Assessment Procedures'; or (b) automatically to an AF grade by the third week of the immediately subsequent academic session. Deans are authorised to approve the extension of a MINC grade for individual students having a valid reason for their incomplete status.

UCN Incomplete
A MINC or INC grade is converted, on the advice of the dean, to UCN when all or many students in a unit of study have not completed the requirements of the unit. The students may be engaged in practicum or clinical placements, or in programs extending beyond the end of semester (eg, Honours).

RTS See Research Training Scheme.
Scholarships
Scholarships are financial or other forms of support made available by sponsors to assist Australian and international students to pursue their studies at the University. When a student's means are a criterion, scholarships are sometimes called bursaries. (See also Prizes.)

School See Department.

SCR System change request.

Semester
A semester is a half yearly teaching session whose dates are determined by the Academic Board. Normally all undergraduate sessions will conform to the semesters approved by the Academic Board. Any offering of an undergraduate unit not conforming to the semester dates (non standard teaching period) must be given special permission by the Academic Board. (See also Session, Non Standard Teaching Period.)

Semester address
The semester address is the address to which all official University correspondence is sent during semester time, if it is different to the permanent address. Unless overridden by a temporary address all official University correspondence during semester (including Session 4 for students enrolled in Summer School) will be sent to this address. (See also Addresses, Business address, Permanent home address, Temporary address.)

Senate
The Senate of the University is the governing body of the University. (See the University Calendar.)

Senate appeals
Senate appeals are held for those students who, after being excluded from the faculty or a course, appeal to the Senate for readmission. While any student may appeal to the Senate against an academic decision, such an appeal will normally be heard only after the student has exhausted all other avenues i.e., the department, faculty, board of study and, in the case of postgraduates, the Committee for Graduate Studies. (See also Exclusion.)

Session
A session is any period of time during which a unit of study is taught. A session differs from a semester in that it need not be a six month teaching period, but it cannot be longer than six months. Each session maps to either Semester 1 or 2 for DEST reporting purposes. Session offerings are approved by the relevant dean, taking into account all the necessary resources, including teaching space and staffing. The Academic Board must approve variation to the normal session pattern. (See also Semester, Non Standard Teaching Period.)

Session address
See Semester address.

Special consideration
Candidates who have medical or other serious problems, which may affect performance in any assessment, may request that they be given special consideration in relation to the determination of their results.

They can obtain an official form from the Student Centre. The Student Centre stamps the form and the medical or other document. The student gives a copy of the material to the Student Centre staff and takes copies to the relevant departments. The student retains the originals. The dates for which special consideration is sought are recorded on FlexSIS and printed on the examination register.

Specific permission
See Waiver.

Specific credit
Specific credit is awarded when previous studies are entirely equivalent to one or more named units of study offered by the University of Sydney that contribute to the course in which the applicant has been admitted. (See also Credit, Non specific credit.)

Sponsorship
Sponsorship is the financial support of a student by a company or government body. Sponsors are frequently invoiced directly.

SRS
SRS is the student record system responsible, prior to FlexSIS, for the processing of student records. The functions of SRS are gradually being incorporated into FlexSIS. (See also FlexSIS.)

Stage
For the purposes of administration, a course may be divided into stages to be studied consecutively. The stages may be related to sessions or they may relate to an academic cycle. Part time students progress through a course more slowly and would often enrol in the same stage more than once.

Status
Status is a variable for students both with relation to course and unit of study. With relation to course, students can have the status of enrolled or not enrolled. 'Not enrolled' reasons can be: totally discontinued, withdrawn, suspended, cancelled, awarded, etc. With relation to unit of study, students can have the status of CURENR or WITHDN, discontinued, etc.
Stream
A stream is a defined program of study within an award course, which requires the completion of a program of study specified by the course rules for the particular stream, in addition to the core program specified by the course rules for the award course. Students enrolled in award courses that involve streams will have the stream recorded in their enrolment record. Students normally enter streams at the time of admission, although some award courses require students to enrol in streams after the completion of level 1000 units of study. Where permitted to do so by faculty resolution, students may transfer from one stream to another within an award course, provided they meet criteria approved by the Academic Board on the advice of the faculty concerned. A stream will appear with the award course name on testamurs, eg, Bachelor of Engineering in Civil Engineering (Construction Management). (See also Award course, Major, Minor.)

Student ID card
All students who enrol are issued with an identification card. The card includes the student name, SID, the course code, and a library borrower's bar code. The card identifies the student as eligible to attend classes and must be displayed at formal examinations. It must be presented to secure student concessions and to borrow books from all sections of the University Library.

Student identifier (SID)
A 9 digit number which uniquely identifies a student at the University.

Student load
See Load.

Study Abroad Program
A scheme administered by the International Education Office which allows international students who are not part of an exchange program, to take units of study at the University of Sydney, but not towards an award program. In most cases, the student's course that is recordable on a student's transcript. Units of study can be grouped by subject and level. (See also Core unit of study, Course, Major.)

Supervision
See Course leave.

Sydney Summer School
Sydney Summer School is a program of accelerated, intensive study running for approximately 6 weeks during January and February each year. Both undergraduate and postgraduate units are offered. Summer School provides an opportunity for students at Sydney and other universities to catch up on needed units of study, to accelerate completion of a course or to undertake a unit that is outside their award course. All units are full fee paying and enrolled students are also liable for compulsory subscriptions. Some fee waiver scholarships are available.

Teaching department
See Department.

Temporary address
Students may advise the University of a temporary address. Correspondence will be sent to this address between the dates specified by the student. (See also Addresses, Business address, Permanent home address, Semester address.)

Testamur
A testamur is a certificate of award provided to a graduate usually at a graduation ceremony.

Thesis
A thesis is a major work that is the product of an extended period of supervised independent research. 'Earliest date' means the earliest date at which a research student can submit the thesis. 'Latest date' means the latest date at which a research student can submit the thesis.

Timetable
Timetable refers to the schedule of lectures, tutorials, laboratories and other academic activities that a student must attend.

Transcript
See Academic transcript.

Transfer
See Course transfer.

Tuition fees
Tuition fees may be charged to students in designated tuition fee paying courses. Students who pay fees are not liable for HECS.

UAC
The Universities Admissions Centre (UAC) receives and processes applications for admission to undergraduate courses at recognised universities in NSW and the ACT. Most commencing undergraduate students at the University apply through UAC.

UAC admissions
Most local undergraduates (including local undergraduate fee payers) apply through the Universities Admission Centre (UAC). The University Admissions Office coordinates the processing of UAC applications with faculties and departments and decisions are recorded on the UAC system. Applicants are notified by UAC and an electronic file of applicants who have been made offers of admission to courses at the University is loaded onto FlexSIS. (See also Admission, Direct admissions.)

UAI (Universities Admission Index)
The Universities Admission Index (UAI) is a number between 0.00 and 100.00 with increments of 0.05. It provides a measure of overall academic achievement in the HSC that assists universities in ranking applicants for university selection. The UAI is based on the aggregate of scaled marks in ten units of the HSC.

Undergraduate
A term used to describe a course leading to a diploma or bachelor's degree. An 'undergraduate' is a student enrolled in such a course.

Unit of study
A unit of study is the smallest stand-alone component of a student's course that is recordable on a student's transcript. Units of study have an integer credit point value, normally in the range 3-24. Each approved unit of study is identified by a unique sequence of eight characters, consisting of a four character alphabetical code which usually identifies the department or subject area, and a four character numeric code which identifies the particular unit of study. Units of study can be grouped by subject and level. (See also Core unit of study, Course, Major.)
**Unit of study enrolment status**
The enrolment status indicates whether the student is still actively attending the unit of study (i.e., currently enrolled) or is no longer enrolled (withdrawn or discontinued).

**Unit of study group**
A grouping of units of study within a course. The units of study which make up the groups are defined within FlexSIS.

**Unit of study level**
Units of study are divided into Junior, Intermediate, Senior, Honours, Year 5, and Year 6. Most majors consist of 32 Senior credit points in a subject area (either 3000 level units of study or a mix of 2000 and 3000 level units of study).

**University**
Unless otherwise indicated, University in this document refers to the University of Sydney.

**University Medal**
A faculty may recommend the award of a University Medal to students qualified for the award of an undergraduate Honours degree or some master's degrees, whose academic performance is judged outstanding.

**UPA**
University Postgraduate Award.

**USYDnet**
USYDnet is the University of Sydney's intranet system. In addition to the customised MyUni service, it provides access to other services such as directories (maps, staff and student, organisations), a calendar of events (to which staff and students can submit entries), and a software download area. (See also MyUni.)

**Variation of enrolment**
See Enrolment variation.

**Vice Chancellor**
The chief executive officer of the University, responsible for its leadership and management. The Vice Chancellor is head of both academic and administrative divisions.

**Waiver**
In a prescribed course, a faculty may waive the prerequisite or corequisite requirement for a unit of study or the course rules for a particular student. Unlike credit, waivers do not involve a reduction in the number of credit points required for a course. (See also credit.)

**Weighted average mark (WAM)**
The Weighted Average Mark (WAM) is the average mark in the unit of study completed, weighted according to credit point value and level. The formulae used to calculate the WAMs are course specific; there are many different WAMs in the University.

**Year of first enrolment (YFE)**
The year in which a student first enrols at the University.

**Youth Allowance**
Youth Allowance is payable to a full-time student or trainee aged 16–24 years of age; and enrolled at an approved institution such as a school, college, TAFE or university, and undertaking at least 15 hours a week face-to-face contact. Youth Allowance replaces AUSTUDY.
Genetic Engineering see Biochemistry, Biological Sciences, BMedSc, BSc (Molecular Biology and Genetics), BSc (Molecular Biotechnology), Microbiology

Geochemistry see Chemistry, Geography, Geology and Geophysics

Geographical Information Systems (GIS) see Agricultural Chemistry and Soil Science, Geography, Marine Sciences

Geomagnetism see Mathematics and Statistics

Geometry see Mathematics and Statistics

Geomorphology see Geography, Marine Sciences

Geostatistics see Agricultural Chemistry and Soil Science, Mathematics and Statistics

Geophysics see Geology and Geophysics

Haematology see Histology, BMedSc, Immunology, Physiology

Histochemistry see Histology, BMedSc

Histology see Anatomy and Histology

History and Philosophy of Psychology see Psychology

History of Science see BMedSc, History and Philosophy of Science

Human Life Sciences see Anatomy, Biochemistry, Biological Sciences, BMedSc, BSc (Molecular Biotechnology), Cell Pathology, Histology, Immunology, Physiology

Human Nutrition see Biochemistry, Master of Nutritional Science, Master of Nutrition and Dietetics

Hydrology see Agricultural Chemistry and Soil Science, BSc (Environmental), Geography

Image Processing see Physics

Immunology see Biochemistry, Biological Sciences, BMedSc, BSc (Molecular Biotechnology), Cell Pathology, Immunology, Microbiology

Inflammation see Cell Pathology, Immunology

Information Systems see Computer Science

Information Technology see Computer Science

Instrumentation see Physics

Inorganic Chemistry see Chemistry

Intelligence see Psychology

Intertidal Ecology see Biological Sciences, Marine Sciences

Invertebrate Zoology see Biological Sciences

Land Resources see Agricultural Chemistry and Soil Science, Geography

Lasers see Physics

Learning and Motivation see Psychology

Macromolecular Structure see Biochemistry, BSc (Molecular Biology and Genetics), Key Centre for Polymer Colloids

Magnetic Resonance Imaging see Chemistry, Biochemistry, BMedSc

Mammalian Biology see Biological Sciences

Marine Biology see Biological Sciences, Marine Science

Marine Ecology see Biological Sciences, Marine Science

Marine Geology see Geology and Geophysics, Marine Science

Marine Geophysics see Geology and Geophysics, Marine Science

Marine Science see Biological Sciences, Chemistry, Geography, Geology and Geophysics

Materials Science see Chemistry, Physics

Mathematical Modelling see Mathematics and Statistics, Physics

Mathematical Statistics see Mathematics and Statistics

Measurement Science see Physics

Medical Biochemistry see Biochemistry, BMedSc, BSc (Molecular Biology and Genetics), BSc (Molecular Biotechnology)

Medical Microbiology see BMedSc, Microbiology

Medical Molecular Biology see Biochemistry, BMedSc, BSc (Molecular Biology and Genetics), BSc (Molecular Biotechnology)

Medical Physics see Physics

Medicinal Chemistry see Chemistry, BMedSc, BSc (Molecular Biotechnology), Pharmacology

Membrane Biology see Biological Sciences

Metabolism see Agricultural Chemistry and Soil Science, Biochemistry, Biological Sciences, BMedSc, Microbiology

Microanalysis see Australian Key Centre for Microscopy and Microanalysis, Chemistry, Physics, GradCertAppSc (Microscopy and Microanalysis), GradDipAppSc (Microscopy and Microanalysis), MAppSc (Microscopy and Microanalysis)

Microscopy see Australian Key Centre for Microscopy and Microanalysis, Agricultural Chemistry and Soil Science, Biological Sciences, BMedSc, Histology, Microbiology, Physics, GradCertAppSc (Microscopy and Microanalysis), GradDipAppSc (Microscopy and Microanalysis), MAppSc (Microscopy and Microanalysis)

Microtechniques see Histology, BMedSc

Mineralogy see Geology and Geophysics

Molecular Biology see Biochemistry, Biological Sciences, BMedSc, BSc (Molecular Biology and Genetics), BSc (Molecular Biotechnology), Cell Pathology, Chemistry, Immunology, Microbiology, Physiology

Molecular Biotechnology see BSc (Molecular Biotechnology)

Molecular Engineering see BSc (Molecular Biotechnology), Chemistry

Molecular Genetics see Biochemistry, Biological Sciences, BMedSc, BSc (Molecular Biology and Genetics), BSc (Molecular Biotechnology)

Molecular Modeling see BSc (Molecular Biotechnology), Chemistry, Pharmacology

Molecular Pharmacology see BSc (Molecular Biotechnology), Pharmacology

Molecular Physics see Physics

Morphology see BMedSc

Muscle see Cell Pathology, BMedSci, Physiology

Mycology see Biological Sciences, BMedSc

Natural Hazards see Geography, Geology and Geophysics

Natural Products Chemistry see Agricultural Chemistry and Soil Science, Chemistry

Neural Networks see Mathematics and Statistics, Physiology, BMedSc

Neuroanatomy see BMedSc, Anatomy and Histology

Neurochemistry see Pharmacology

Neuroengineering see BSc (Molecular Biotechnology), Chemistry

Neurophysiology see BMedSc, Pharmacology

Neurophysiology see Physics

Neuroscience see Anatomy and Histology, BMedSc, Pharmacology, Physiology, Psychology

Nitrogen Fixation see Agricultural Chemistry and Soil Science, Biological Sciences, Chemistry, Microbiology

Nonlinear Analysis see Mathematics and Statistics

Nonlinear Optics see Physics

Nuclear Magnetic Resonance (NMR) see Chemistry, Biochemistry

Nuclear Physics see Physics

Nutrition see Biochemistry, BMedSc, Postgraduate study MNutrSc and MNutrDiet

Oceanography see Biological Sciences, Geology and Geophysics, Marine Sciences

Optics and Optical Fibres see Physics

Organic Chemistry see Chemistry

Organisation see Psychology

Organometallic Chemistry see Chemistry

Paleontology see Geology and Geophysics

Parasitology see BMedSc

Pathology see Cell Pathology

Pathogeny see Microbiology

Pedogeomorphology see Geography

Pedology see Agricultural Chemistry and Soil Science

Perception see Psychology

Personality see Psychology

Pesticide Chemistry see Agricultural Chemistry and Soil Science, Chemistry

Petroleum Geology see Geology and Geophysics

Petroleum Geology see Geology and Geophysics

Pharmaceutical Chemistry see BSc (Molecular Biotechnology), Chemistry, Pharmacology

Pharmacognosics see BSc (Molecular Biotechnology), Pharmacology

Philosophy of Science see History and Philosophy of Science

Photonics see Physics

Physiology see Biological Sciences

Physical Anthropology see Anatomy and Histology

Physical Chemistry see Chemistry

Plant Management see Biological Sciences

Plant Metabolism see Agricultural Chemistry and Soil Science, Biological Sciences
Plant Molecular Biology see Biological Sciences
Plant Physiology see Biological Sciences
Plant Science see Biological Sciences
Plasma Physics see Physics
Plate Tectonics see Geology and Geophysics
Polymer Science see Chemistry, Key Centre for Polymer Colloids
Programming see Computer Science
Protein Crystallography see Biochemistry
Proteins see Biochemistry, Chemistry
Proteomics see Biochemistry, BSc (Molecular Biotechnology)
Protozoology see Biological Sciences
Psychological Assessment see Psychology
Public Health see BMedSc
Pure Mathematics see Mathematics and Statistics
Quantum Mechanics see Chemistry, Physics
Recombinant DNA Technology see Biochemistry, Biological Sciences, BMedSc, BSc (Molecular Biology and Genetics), BSc (Molecular Biotechnology), Microbiology, Physiology
Resource Management see Biological Sciences, Geography
Respiratory disease see Cell Pathology, Immunology
Rheology see Key Centre for Polymer Colloids
River Systems see BSc (Environmental), Geography
Robotics see Computer Science
Scientific Revolution see History and Philosophy of Science
Sedimentology see Geography, Geology and Geophysics, Marine Studies
Social Relations of Science see History and Philosophy of Science
Software Engineering see Computer Science
Soil Chemistry see Agricultural Chemistry and Soil Science, BSc (Molecular Biotechnology)
Soil Physics see Agricultural Chemistry and Soil Science
Soil Science see Agricultural Chemistry and Soil Science
Solar Physics see Physics
Solid State Chemistry see Chemistry
Solid State Physics see Physics
Solid State Science see Chemistry, Physics
Space Physics see Physics
Spectroscopy see Chemistry, Physics
Statistics see Mathematics and Statistics
Structural Biology see Biochemistry
Structural Geology see Geology and Geophysics
Surface Science see Chemistry, Key Centre for Polymer Colloids, Graduate Applied Science (Surface Coatings), Physics
Systems Analysis see Computer Science
Therapeutics see BMedSc, BSc (Molecular Biotechnology), Pharmacology
Theoretical Chemistry see Chemistry
Theoretical Physics see Physics
Thermal Physics see Physics
Topographical Anatomy see Anatomy and Histology
Toxicology see Chemistry, Pharmacology
Vertebrate Zoology see Biological Sciences
Virology see BMedSc, BSc (Molecular Biology and Genetics), BSc (Molecular Biotechnology), Microbiology, Pathology
Volcanology see Geology and Geophysics
X Ray Crystallography see Chemistry, Biochemistry
Zoology see Biological Science
INDEX

291

INFS 6004 Change Agent Consulting for IT Industry, 204
INFS 6001 Management Information Systems, 204
Information Technology project COMP 5704, 205
Information Technology project C COMP 5704, 205
Information Technology Strategy and Mgmt INFS 6002, 204
Information Theory MATH 3010,143
INFS 6000 Business Information Systems, 202
INFS 6001 Management Information Systems, 204
INFS 6002 Information Technology Strategy and Mgmt, 204
INFS 6004 Change Agent Consulting for IT Industry, 204
INFS 6005 Internet for Commerce, 218
INFS 6010 Databases, 218
INFS 6012 Integrated Enterprise Systems, 204
INFS 6013 IT Risk Management and Assurance, 204
INFS 6014 IT Project Management, 204
INFS 6015 Business Process Analysis and Design, 205
INFS 6017 INFS Knowledge Management, 205
INFS 6010 Internet for Commerce, 218
INFS 6015 Business Process Analysis and Design, 205
INFS 6017 INFS Knowledge Management, 205
INFS 6019 Special Topic in Business Info Systems, 205
Integral Calculus and Modelling Advanced MATH 1903, 138
Integral Calculus and Modelling MATH 1003, 137
Integrated Circuit Design ELEC 6404, 201
Integrated Enterprise Systems INFS 6012, 204
Integrated Physiology A (Advanced) PHSI2901, 162
Integrated Physiology A PHSI 2901, 162
Integrated Physiology B (Advanced) PHSI 2902, 163
Integrated Physiology B PHSI 2102, 163
Intelligence PSYC 3208, 166
Interaction with External Environment BMED 2505, 149
Interfacial Sci & Coatings Tech & Design SUCO 4003, 225
International Environmental Law LAWS 6061, 197
Internet for Commerce INFS 6005, 218
Internet Programming COMP 5315, 202
Internship Project MECO 3702, 148
Intro Assessment Living Marine Resources QMEC 5140, 208
Intro Pharmacology Drugs and People PCOL 2002, 156
Intro to Mathematical Computing (Adv) MATH 2903, 141
Intro to Environmental Chemistry ENVIT 5708, 217
Introduction to Food Service NUTR 2006, 211
Introduction to Mathematical Computing MATH 2003, 140
Introduction to Media Studies 1 MECO 1001, 146
Introduction to Modern Algebra (Adv) MATH 2918, 141
Introduction to Modern Algebra MATH 2008, 140
Introduction to Probability (Advanced) STAT 2901, 142
Introductory Food Science (Advanced) NUTR 2901,153
Introductory Immunology BIOL 3106, 174
Introductory Marine Science A MARS 2001, 132
Introductory Marine Science B MARS 2002,132
Introductory Microbiology (Advanced) MICR 2901, 151
Introductory Microbiology (Nutrition) MICR 2011, 151
Introductory Microbiology MICR 2001, 150
Introductory Nutritional Science (Adv) NUTR 2902, 155
Invertebrate Zoology Theory BIOL 2101, 104
Invertebrate Zoology (Advanced) BIOL 2901, 104
Invertebrate Zoology BIOL 2001, 104
ISYS 1003 Foundations of Information Technology, 126
ISYS 2006 Information Systems in Organisations, 127
ISYS 2007 Distributed Information Systems, 127
ISYS 3012 Project Management and Practice, 128
ISYS 3015 Analytical Methods for IS Professionals, 128
ISYS 3113 Arts Informatics Systems, 128
ISYS 3120 Project Management and Modelling, 129
ISYS 3207 Information Systems Project, 129
ISYS 3208 Special Topic in Business Informatics, 129
ISYS 3209 Information Systems in Organisations, 127
ISYS 3210 Information Systems Management, 128
ISYS 3217 Information Systems Project, 129
IT Project Management INFS 6014, 204
IT Risk Management and Assurance INFS 6013, 204
K
Knowledge, Discovery and Data Mining COMP 5318, 202
L
Lagrangian Dynamics (Advanced) MATH 2904, 141
Lagrangian Dynamics MATH 2004, 140
Language and Image ENGL 1905,191, 146
Languages and Logic (Advanced) COMP 2903, 126
Languages and Logic COMP 2003, 126
Law and the Environment ENVI 3003, 118
Law and the Environment ENVI 5803, 217
Law, Lawyers and Justice LAWS 3002, 132
LAWS 1002 Contracts, 131
LAWS 1003 Criminal Law, 131
LAWS 1006 Legal Institutions, 131
LAWS 1008 Legal Research, 132
LAWS 1010 Torts, 131
LAWS 3000 Federal Constitutional Law, 132
LAWS 3002 Law, Lawyers and Justice, 132
LAWS 6041 Environmental Dispute Resolution, 196
LAWS 6043 Environmental Impact Assessment, 197
LAWS 6044 Environmental Law and Policy, 196
LAWS 6061 International Environmental Law, 197
LAWS 6082 Pollution Law, 197
LAWS 6165 Biodiversity Law, 197
LAWS 6173 Trade and Environment, 197
LAWS 6191 Water Law, 197
LAWS 6252 Legal Reasoning & the Common Law System, 196
LAWS 6257 Public Policy, 197
Learning and Motivation PSYC 3209, 166
Learning, Neuroscience and Perception PSYC 2111, 165
Lebesgue Int and Fourier Analysis (Adv) MATH 3909, 144
Legal Institutions LAWS 1006, 131
Legal Reasoning and the Common Law System LAWS 6252, 196
Legal Research LAWS 1008,132
Library, 271
Life Science Entrepreneurship MOBT 5104, 221
Life Science Statistics MATH 1015, 137
Life Sciences Algebra MATH 1012, 137
Life Sciences Calculus MATH 1011, 137
Linear Algebra (Advanced) MATH 2902, 138
Linear Algebra (Advanced) MATH 2902, 141
Linear Algebra MATH 1002, 137
Linear Models (Advanced) STAT 3902, 146
Living Systems (Advanced) BIOL 2002, 103
Living Systems BIOL 1002, 102
Living Systems Molecular (Advanced) BIOL 1904, 103
LNGS 1005 Structure of English, 132
Logic MATH 3005, 143
M
Management Information Systems INFS 6001, 204
Marine Biology (Advanced) BIOL 3913, 107
Marine Biology BIOL 3013,107
Marine Biotechnology NTMP 3002, 136
Marine Ecology MARS 3102, 134
Marine Geophysical Data Analysis MARS 3005, 134
Marine Science Field School MARS 2003, 133
Marine Techniques MARS 2004, 133
Markov Processes (Advanced) STAT 3905, 146
MARS 2001 Introductory Marine Science A, 132
MARS 2002 Introductory Marine Science B, 132
MARS 2003 Marine Science Field School, 133
MARS 2004 Marine Techniques, 133
MARS 3003 Coastal Depositional Environments, 133
MARS 3004 Coastal Morphodynamics, 133
MARS 3005 Marine Geophysical Data Analysis, 134
MARS 3006 Dynamics of Ocean Basins and Margins, 134
MARS 3008 Energy Science, Engineering & Economics, 134
MARS 3102 Marine Ecology, 134
MARS 3103 GIS Simulation Modelling, 134
MARS 3104 Coastal Zone Management, 135
MARS 3105 Coastal Oceanography & Sediment Dynamics, 135
MARS 3106 Physical Marine Habitat, 135
MARS 5001 Coastal Processes and Systems, 215
MARS 5002 Coastal Zone Management, 216
MARS 5003 Beach Management, 216
MARS 5004 Coastal Management Field School, 216
MARS 5005 Coastal Management Project, 216
Materials Microscopy & Microanalysis MCAN 5103, 219
MATH 1001 Differential Calculus, 137
MATH 1002 Linear Algebra, 137
MATH 1003 Integral Calculus and Modelling, 137
MATH 1004 Discrete Mathematics, 138
MATH 1005 Statistics, 138
MATH 1011 Life Sciences Calculus, 137
MATH 1012 Life Sciences Algebra, 137
MATH 1013 Differential and Difference Equations, 137
MATH 1015 Life Science Statistics, 137
MATH 1901 Differential Calculus (Advanced), 138
MATH 1902 Linear Algebra (Advanced), 138
MATH 1903 Integral Calculus and Modelling Advanced, 138
MATH 1904 Discrete Mathematics (Advanced), 138
MATH 1905 Statistics (Advanced), 138
MATH 1906 Mathematics (Special Studies Program) A, 139
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVI5805</td>
<td>The Urban Environment and Planning</td>
<td>217</td>
</tr>
<tr>
<td>MICR2003</td>
<td>Theoretical Microbiology A</td>
<td>151</td>
</tr>
<tr>
<td>MICR2004</td>
<td>Theoretical Microbiology B</td>
<td>151</td>
</tr>
<tr>
<td>PSYC4721</td>
<td>Theories &amp; Techniques of Coaching Psych</td>
<td>224</td>
</tr>
<tr>
<td>STAT3903</td>
<td>Time Series Analysis (Advanced)</td>
<td>146</td>
</tr>
<tr>
<td>STAT3003</td>
<td>Time Series Analysis</td>
<td>146</td>
</tr>
<tr>
<td>MICR2003</td>
<td>Theoretical Microbiology A</td>
<td>151</td>
</tr>
<tr>
<td>PHYS3905</td>
<td>Topics in Modern Physics A (Advanced)</td>
<td>161</td>
</tr>
<tr>
<td>PHYS3005</td>
<td>Topics in Modern Physics A</td>
<td>160</td>
</tr>
<tr>
<td>PHYS3906</td>
<td>Topics in Modern Physics B (Advanced)</td>
<td>161</td>
</tr>
<tr>
<td>PHYS3006</td>
<td>Topics in Modern Physics B</td>
<td>160</td>
</tr>
<tr>
<td>ANAT3005</td>
<td>Topographical Anatomy</td>
<td>99</td>
</tr>
<tr>
<td>MATH3001</td>
<td>Topology</td>
<td>142</td>
</tr>
<tr>
<td>LAWS1010</td>
<td>Torts</td>
<td>131</td>
</tr>
<tr>
<td>LAWS6173</td>
<td>Trade and Environment</td>
<td>197</td>
</tr>
<tr>
<td>GEOG2202</td>
<td>University Health Service</td>
<td>272</td>
</tr>
<tr>
<td>GEOG4202</td>
<td>University of Sydney Union</td>
<td>273</td>
</tr>
<tr>
<td>SOFT3102</td>
<td>User Interface Design and Programming</td>
<td>130</td>
</tr>
<tr>
<td>SOFT3802</td>
<td>User Interface Design Programming (Adv)</td>
<td>130</td>
</tr>
<tr>
<td>MATH2901</td>
<td>Vector Calculus and Complex Var (Adv)</td>
<td>141</td>
</tr>
<tr>
<td>MATH2001</td>
<td>Vector Calculus and Complex Variables</td>
<td>139</td>
</tr>
<tr>
<td>WILD5004</td>
<td>Vertebrate Pest Management</td>
<td>227</td>
</tr>
<tr>
<td>BIOL2102</td>
<td>Vertebrates and their Origins Theory</td>
<td>104</td>
</tr>
<tr>
<td>BIOL2902</td>
<td>Vertebrates and their Origins (Advanced)</td>
<td>104</td>
</tr>
<tr>
<td>BIOL2002</td>
<td>Vertebrates and their Origins</td>
<td>104</td>
</tr>
<tr>
<td>MECO3001</td>
<td>Video Production</td>
<td>147</td>
</tr>
<tr>
<td>ANAT3007</td>
<td>Visceral Anatomy</td>
<td>99</td>
</tr>
<tr>
<td>COMP5414</td>
<td>Visual Information Processing</td>
<td>203</td>
</tr>
<tr>
<td>NEUR5108</td>
<td>Visual Neuroscience</td>
<td>222</td>
</tr>
<tr>
<td>LAWS6191</td>
<td>Water Law</td>
<td>197</td>
</tr>
<tr>
<td>ENV5901</td>
<td>Weathering Processes and Applications</td>
<td>217</td>
</tr>
<tr>
<td>HPSC2001</td>
<td>What Is This Thing Called Science?</td>
<td>123</td>
</tr>
<tr>
<td>WILD5001</td>
<td>WILD 5001 Australian Wildlife Introduction</td>
<td>226</td>
</tr>
<tr>
<td>WILD5002</td>
<td>WILD 5002 Australian Wildlife Field Studies</td>
<td>226</td>
</tr>
<tr>
<td>WILD5003</td>
<td>WILD 5003 Wildlife Health</td>
<td>227</td>
</tr>
<tr>
<td>WILD5004</td>
<td>WILD 5004 Vertebrate Pest Management</td>
<td>227</td>
</tr>
<tr>
<td>WILD5005</td>
<td>WILD 5005 In Situ Wildlife Management</td>
<td>227</td>
</tr>
<tr>
<td>WILD5006</td>
<td>WILD 5006 Ex Situ Wildlife Management</td>
<td>227</td>
</tr>
<tr>
<td>WILD5007</td>
<td>WILD 5007 Sustainable Wildlife Use and Stewardship</td>
<td>227</td>
</tr>
<tr>
<td>WILD5008</td>
<td>WILD 5008 Community Relations and Education</td>
<td>227</td>
</tr>
<tr>
<td>WILD5009</td>
<td>WILD 5009 Research Project</td>
<td>226</td>
</tr>
<tr>
<td>WILD5003</td>
<td>Wildlife Health</td>
<td>227</td>
</tr>
<tr>
<td>WILD5002</td>
<td>Women's Sports Association</td>
<td>273</td>
</tr>
<tr>
<td>MECO2002</td>
<td>Writing for Print Media</td>
<td>147</td>
</tr>
</tbody>
</table>