THE UNIVERSITY OF SYDNEY

# Architecture, Design and Planning **Handbook 2018**



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# Contents

# Welcome

## A message from the Dean

Welcome to the Sydney School of Architecture, Design and Planning.

You are joining Australia's first university, and the first School of Architecture. We are one of the nation's – and the world's – leading institutions. As well as undertaking a particular course of study or candidature, you are joining a community – a collegiate body – that is a central part of the 'Sydney experience' and a source of great pride for students, alumni and staff. It is through this that you obtain a true university experience as opposed to just studying a particular course.

I believe that the quality of collegial life at Sydney and in the school is matched by very few other institutions.

The School is a community of students, researchers, technical and support staff, practitioners and lecturers who are here because they are passionate about the human habitat and exploring the creative and analytical methods to improve it, to make life better for people. While your initial experience here may be in the studios, lectures and the school's social life, I hope that you will progressively engage with our underlying culture, commitments and enthusiasm. We want you to come to believe in the value of our disciplines as much as we do.

This handbook sets out the diversity of the school's disciplines and activities. Some of you will join us as undergraduates in the architecture or design computing programs, and then go on to our specialist professional postgraduate courses. Others will join the school at the postgraduate level having taken a first degree here or at other universities.

Our professional Master of Architecture qualification is open to qualified graduates not only from our own undergraduate architecture program but also from similar programs across Australia and overseas. Our postgraduate coursework and research programs include Interaction Design and Electronic Arts, Heritage Conservation, Urban Design, Urban and Regional Planning and Policy, Urbanism, Architectural Science (with streams in Audio and Acoustics, High Performance Building, Facilities Management, Illumination Design and Sustainable Design).

Whichever program you are in you may take the opportunity to explore related fields of study with electives or streams from other programs.

The school's range of disciplines provides the breadth and depth to contextualise your work within the extraordinary complexity of contemporary environments, and the processes that create, analyse and manage them.

The disciplines are supported by laboratories which are arguably the best in Australia, and well equipped studios, all of which creates an environment of excellent creative, technical and scientific innovation within which you will undertake your work.

Over the past 100 years, the school has developed a reputation for innovative thinking in research, teaching and practice across its disciplines.

It started Australia's first university architecture program in 1919, and the first studies in town planning in 1949 were followed by the world's first Chair of Architectural Science in 1953, and in 1963 by the award of Australia's first PhD in architecture.

The Design Lab, formerly the Key Centre of Design Computing and Cognition, has an enviable international research reputation, and the Heritage Conservation program has made an important contribution to Australia's cultural identity. The new Indoor Environmental Quality Lab (IEQ) is a world leader in climatic comfort.

In acknowledgement of our achievements, the school was ranked as No. 1 in Australia in the QS World rankings for Architecture and Built Environment, and in the top 15 in the world.

It is important to mention the high standards required to become a part of this school – this community. Selection into the architecture UG program is largely from the top 5 per cent of NSW's school matriculants. The capability of our students, who continually strive for and achieve academic and professional excellence, is part of what makes this school an exciting learning environment.

Whether it's life in the school's studios, its labs or the myriad facilities in and around the University and the city of Sydney, there can be few better places in which to have a full and enriching university experience.

The School seeks to inspire you with a lifelong interest in your chosen field that will sustain you throughout your studies and career. Enjoy your time here and above all use it well to make the most of the wonderful opportunities that studying at The Sydney School of Architecture, Design and Planning provides, and work towards, as W.C. Wentworth - a founder of the University - put it in 1845, 'becoming great and useful in the destiny of your country' – whether that country is Australia or your home country.

**Professor John Redmond**
*Dean*

# Bachelor of Architecture and Environments

## Overview

This course prepares students for the diversity of professional roles that graduates of architectural bachelor's degrees are likely to enter, and provides the skills required of the next generation of architects and built environment professionals.

You will learn the practice of architecture and its different contexts through an education that addresses the role of the architect with the full range of professional and business capabilities necessary to achieve successful development of property and infrastructure in a globalised and development-centred economy.

This degree maintains a core architectural design education and extends this to include urban design, planning and policy and architectural science – energy, light, construction and acoustics, services, heritage and the IT systems which underlay contemporary design and modelling. The understanding of this wider framework, and the full range of methodologies used to analyse and synthesise it, will add breadth to your immediate professional capabilities as well as preparing you for specialist career pathways offered by the school's full range of postgraduate course. These include direct entry to:

- Master of Urban and Regional Planning
- Master of Urban Design
- Master of Architectural Science (with specialisations in Acoustics, High Performance Buildings, Illumination Design and Sustainable Design)
- Master of Interaction Design and Electronic Arts and
- Master of Architecture

### Bachelor in Architecture and Environment enrolment guide

In order to qualify for the Bachelor of Design of Architecture and Environments, students must fulfil the requirements specified by the resolutions of Senate and the School.

All students should familiarise themselves with the course resolutions as stated later in this handbook and monitor their own progress in reference to them.

The following points summarise the resolutions but do not replace them.

### Summary of requirements

In order to qualify for the award of the pass degree, candidates need to:

- successfully complete 144 credit points. 120 of these are made up of core units of study listed in Table D
- successfully complete at least 24 credit points of elective units of study, including a minimum of 12 credit points of senior elective units of study listed in Table D.

Students may, with the permission of the unit coordinator concerned, enrol in elective units of study from the school's tables of graduate units, provided they have completed at least 96 credit points with a weighted average mark (WAM) of at least 70.

### Master of Architecture prerequisite unit of study

Students wishing to proceed to the Master of Architecture must complete BDES3025 Architectural Professional Practice. There are other conditions for entry to the Master of Architecture. Prospective students should refer to the information for that degree.

### Honours

In order to qualify for admission to the honours degree candidates must satisfy the requirements for the pass degree with a weighted average mark (WAM) of at least 70. The one-year honours degree is only offered in full-time mode, requiring successful completion of 48 credit points, culminating in a research thesis. Refer to the honours section of this handbook for further information.

## Bachelor of Architecture and Environments enrolment planner

**Bachelor of Design in of Architecture and Environments**

| Year 1 | | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| DECO1006 | Design Process and Methods | 6 |
| BDES1011 | Architectural History and Theory 1 | 6 |
| BDES1012 | Architectural Communications 1 | 6 |
| AWSS1001 | Architectural Sketching and Drawing | 6 |
| ***Semester 2*** | | |
| BADP1001 | Empirical Thinking | 6 |
| BDES1023 | Architectural Technologies 1 | 6 |
| DAAE1001 | Living Cities | 6 |
| BAEN1001 | Design in Architecture | 6 |

| Year 2 | | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| BAEN2001 | Design Integration Lab: Materials | 6 |
| BADP2002 | City Form and Development | 6 |
| BADP2003 | Light and Sound | 6 |
| | Elective* | 6 |
| ***Semester 2*** | | |
| BDES2013 | Architectural Technologies 2 | 6 |
| BADP2001 | Algorithmic Architecture | 6 |
| BAEN2002 | Design Intergration Lab: Energy | 6 |
| | Elective* | 6 |

| Year 3 | Offered from 2017 | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| BAEN3001 | Design Integration Lab:Urban | 6 |
| BADP3001 | Designing for Environment Quality | 6 |
| BDES3023 | Architectural Technologies 3 | 6 |
| | Elective* | 6 |
| ***Semester 2*** | | |
| BADP3002 | Property and the Built Environment | 6 |
| BAEN3002 | Design Integration Lab: Capstone | 12 |
| BDES3025 | Architectural Professional Practice# | 6 |
| | | |

# indicates recommended elective
* indicates free elective

# Bachelor of Architecture and Environments

## Bachelor of Architecture and Environments

## Bachelor of Architecture and Environments (Honours)

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the University school, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

### Course Resolutions

#### 1 Course codes

| Code | Course and stream title |
|---|---|
| CH024 | Bachelor of Architecture and Environments |
| CH044 | Bachelor of Architecture and Environments (Honours) |

#### 2 Attendance pattern

The attendance pattern for these courses is full time only.

#### 3 Admission to candidature

Admission to this course is on the basis of a secondary school leaving qualification such as the NSW Higher School Certificate (including national and international equivalents), tertiary study or an approved preparation program. English language requirements must be met where these are not demonstrated by sufficient qualifications taught in English. Special admission pathways are open for mature aged applicants who do not possess a school leaving qualification, educationally disadvantaged applicants and for Aboriginal and Torres Strait Islander people. Applicants are ranked by merit and offers for available places are issued according to the ranking. Details of admission requirements are found in the Coursework Rule and the Coursework Policy.

#### 4 Requirements for award

(1) The units of study that may be taken for this award are set out in Table D.

(2) To qualify for the award of the pass degree, a candidate must successfully complete 144 credit points, comprising:

(a) 120 credit points of core unit of study

(b) 24 credit points of elective units of study, including a minimum of 12 credit points of senior elective units of study as listed in Table D.

#### 5 Requirements for the Honours degree

(1) Honours is available to meritorious candidates who complete an additional year of full time study, after the completion of the pass degree.

(2) Admission, requirements and award of Honours are according to the Coursework Policy 2014 and the resolutions of the University of Sydney School of Architecture, Design and Planning.

#### 6 Award of the degree

(1) The Bachelor of Architecture and Environments is awarded in the grades of either Pass or Honours. The honours degree is awarded in classes ranging from First Class to Second Class according to the requirements of the Coursework Policy 2014 and the Resolutions of the University of Sydney School of Architecture, Design and Planning.

(2) Candidates for the award of the Honours degree who do not meet the requirements, and who have not already graduated, will be awarded the pass degree. Students who fail or discontinue the honours program may not re-enrol in it, except with the approval of the Head of School and Dean.

#### 7 Credit for previous study

Credit transfer is subject to the provisions of the Coursework Policy 2014 and the Resolutions of the University of Sydney School of Architecture, Design and Planning. All candidates for the Bachelor of Architecture and Environments, not withstanding any credit transfer, must complete all year three core requirements.

#### 8 Transitional provisions

These resolutions apply to students who commenced their candidature after 1 January, 2018.

# Bachelor of Architecture and Environments

## Table D: Units of study in the Bachelor of Architecture and Environments

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Bachelor of Architecture and Environments - Core units of study** | | | |
| Candidates are required to complete all of the following core units: | | | |
| **DECO1006**<br>**Design Process and Methods** | 6 | **N** IDEA9106 or DECO2016 | Semester 1 |
| **BDES1011**<br>**Architectural History/Theory 1** | 6 | **A** HSC Mathematics and HSC English Standard<br>**N** DESA1102 | Semester 1 |
| **BDES1012**<br>**Architectural Communications 1** | 6 | **A** HSC Mathematics and HSC English Standard or equivalent<br>**N** DESA1001 | Semester 1 |
| **AWSS1001**<br>**Architectural Sketching and Drawing** | 6 | **N** DESA1601 or DESA1602<br>*Students may incur costs for materials in some Art Workshops units.* | Semester 1 |
| **BADP1001**<br>**Empirical Thinking** | 6 | **C** BDES1023 and DAAE1001 | Semester 2 |
| **BAEN1001**<br>**Design in Architecture** | 6 | | Semester 2 |
| **BDES1023**<br>**Architectural Technologies 1** | 6 | **N** DESA1102 | Semester 2 |
| **DAAE1001**<br>**Living Cities** | 6 | **A** DECO1006 and DECO1012 and BDES1011 and AWSS1001 | Semester 2 |
| **BADP2001**<br>**Algorithmic Architecture** | 6 | **A** Basic skills in 3D modelling<br>**C** DECO2013 | Semester 2 |
| **BADP2002**<br>**City Form and Development** | 6 | **P** DAAE1001 or (DAAE2002 and ENGG1850) | Semester 1 |
| **BADP2003**<br>**Light and Sound** | 6 | **C** BAEN2001 and BADP2002 | Semester 1 |
| **BAEN2001**<br>**Design Integration Lab: Materials** | 6 | **C** BADP2002 and BADP2003 | Semester 1 |
| **BAEN2002**<br>**Design Integration Lab: Energy** | 6 | **C** BADP2001 and BDES2013 | Semester 2 |
| **BDES2013**<br>**Architectural Technologies 2** | 6 | **P** BDES1023<br>**N** DESA2111 | Semester 1<br>Semester 2 |
| **BDES3023**<br>**Architectural Technologies 3** | 6 | **P** BDES2013 or DESA2111<br>**N** DAAP3002 | Semester 1 |
| **BADP3001**<br>**Designing for Environmental Quality** | 6 | **C** BAEN3001 | Semester 1 |
| **BADP3002**<br>**Property and the Built Environment** | 6 | **P** BAEN3001 or (DAAE1001 and DESA3011) or (DAAE2002 and DESP1001)<br>**C** BAEN3002 or ENGG3854 | Semester 2 |
| **BAEN3001**<br>**Design Integration Lab: Urban** | 6 | **P** DAAE1001 and BADP2002<br>**C** BDES3023 and BADP3001 | Semester 1 |
| **Capstone Unit** | | | |
| **BAEN3002**<br>**Design Integration Lab: Capstone** | 12 | **P** BAEN2001 and BAEN2002 and BAEN3001<br>**C** BADP3002 | Semester 2 |
| Architectural Science elective units of study | | | |
| **DAAE2008**<br>**Innovative Building Structures** | 6 | **P** BDES1023<br>**N** DESA2206 | Semester 2 |
| **DAAE3001**<br>**Sustainable Architectural Practice** | 6 | **P** BDES1023 or (DAAE1001 and DESA3011) or (DAAE2002 and DESP1001)<br>*Note: Department permission required for enrolment* | Semester 1 |
| **DESA1004**<br>**Designing with Surfaces and Light** | 6 | **N** DESA2612<br>*Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.* | Semester 2<br>Summer Main<br>Winter Main |
| **DAAE2005**<br>**Designing with Colour** | 6 | *Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.* | Semester 1<br>Semester 2<br>Summer Main<br>Winter Main |
| Junior Design Computing elective units of study | | | |
| **DECO1012**<br>**Design Programming** | 6 | | Semester 1 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| Senior Design Computing elective units of study | | | |
| **DECO2015**<br>**Design for Innovation** | 6 | | Semester 2 |
| **DECO2101**<br>**Visual Communication** | 6 | **N** DECO1015 or DECO1100 or DAAE2009<br>*Note: Department permission required for enrolment* | Intensive June<br>Semester 1 |
| **DECO2102**<br>**Web Design and Technologies** | 6 | **N** DECO1016 | Semester 2 |
| **DECO2103**<br>**Architectural Modelling and Prototyping** | 6 | **A** Basic understanding of design principles and design processes and how to apply them in practical design projects<br>**P** DESA1555 and completion of at least 36 credit points<br>*Note: Department permission required for enrolment* | Semester 1 |
| **DECO3006**<br>**Animation and Motion Design** | 6 | **N** DECO1017 | Semester 2 |
| **DECO3101**<br>**Innovation Design Studio** | 6 | | Semester 1<br>Semester 2<br>Winter Main |
| **DAAE2011**<br>**Intro to Visual Communication Design** | 6 | **N** DAAE2009 or DECO1015 or DECO2101 | Semester 1<br>Summer Main<br>Winter Main |
| Architecture elective units of study | | | |
| **DAAE2001**<br>**Australian Architecture** | 6 | **N** DESA2305 | Semester 2 |
| **DESA3003**<br>**Architectural Detailing** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **DESA3004**<br>**Architecture and Diagrams** | 6 | **P** 48 Credit points<br>*Note: Department permission required for enrolment* | Semester 1 |
| **DESA3005**<br>**Architectural Drawing Through History** | 6 | **P** 48 credit points<br>*Note: Department permission required for enrolment* | Semester 1 |
| **DESA3007**<br>**Prefab Architecture** | 6 | **P** 48 credit points<br>*Note: Department permission required for enrolment* | Intensive February |
| **DESA3008**<br>**Architectural Models: Theory and Practice** | 6 | *Note: Department permission required for enrolment* | Semester 2 |
| **DESA3009**<br>**Advanced Fabrication** | 6 | **P** 96 credit points<br>*Note: Department permission required for enrolment* | Semester 2 |
| **DESA3010**<br>**Code to Production** | 6 | **P** 48 credit points<br>*Note: Department permission required for enrolment* | Intensive July |
| **DESA3012**<br>**Counter-Practices in Architecture**<br>*This unit of study is not available in 2018* | 6 | **N** ARCH9094<br>*Note: Department permission required for enrolment* | Semester 2 |
| **DESA3014**<br>**Finding Country** | 6 | *Note: Department permission required for enrolment* | Intensive January |
| **DESA3015**<br>**Broken Hill and Far West NSW Projects** | 6 | *Note: Department permission required for enrolment* | Intensive July |
| Urban elective units of study | | | |
| **BADP3003**<br>**City Design and Urban Ecology** | 6 | | Semester 2 |
| **GEOS2123**<br>**The Geography of Cities and Regions** | 6 | **P** 6 credit points of first year Geosciences units.<br>**N** GEOS2923 | Semester 1 |
| **GEOS3520**<br>**Urban Citizenship and Sustainability** | 6 | **P** 24 credit points of Intermediate units of study, including 6 credit points from the following (GEOS2112 or GEOS2912 or GEOS2123 or GEOS2923 or GEOS2115 or GEOS2915 or GEOS2121 or GEOS2921 or SOILS2002 or LWSC2002)<br>**N** GEOS3920 | Semester 1 |
| Master of Architecture - Prerequisite unit of study | | | |
| **BDES3025**<br>**Architectural Professional Practice** | 6 | **P** BDES3023 or BDES3026 | Semester 2 |

# Bachelor of Architecture and Environments

## Table D: Units of study in the Bachelor of Architecture and Environments

## Bachelor of Architecture and Environments - Core units of study

Candidates are required to complete all of the following core units:

**DECO1006**
**Design Process and Methods**

**Credit points:** 6 **Teacher/Coordinator:** Dr Karla Straker **Session:** Semester 1 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Prohibitions:** IDEA9106 or DECO2016 **Assessment:** Design Assignments (70%); Presentation (10%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides an overview of a human-centred approach to the design of interactive technologies and environments. It introduces students to design thinking and how it can be productively applied to different design situations. The unit covers theoretical concepts, methods and tools used in human-centred design, including user research, ideation, prototyping and user evaluation. It provides students with the principles, processes and tools that are used in commercial design projects. Students learn to build empathy with users, identify and reframe the problem space, develop design concepts and persuasively communicate design proposals with an emphasis on the user experience through visual storytelling.

**BDES1011**
**Architectural History/Theory 1**

**Credit points:** 6 **Teacher/Coordinator:** Prof Michael Tawa **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DESA1102 **Assumed knowledge:** HSC Mathematics and HSC English Standard **Assessment:** Seminar Leadership and General Participation (40%), Research Reports (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural History/Theory 1 introduces students to the discourse of architectural history and theory. It includes a concise chronological survey of key periods of architectural history from antiquity to the mid-nineteenth century, providing an overview of the scope of the field and establishing initial points of reference. It also includes closer investigation of the ways in which particular architectural themes and ideas traverse across history, coming to the fore in certain periods and receding in others. Students will interrogate these themes in small groups through intense study of a single significant building, which they will research, document and illustrate in a written report, and re-construct in a suite of finely crafted scale models. They will be introduced to fundamental principles and skills of scholarly research in the discipline, including locating and evaluating sources, and constructing arguments.

**BDES1012**
**Architectural Communications 1**

**Credit points:** 6 **Teacher/Coordinator:** Dr Rizal Muslimin **Session:** Semester 1 **Classes:** 1hr/wk; lecture and studio 3hrs/wk **Prohibitions:** DESA1001 **Assumed knowledge:** HSC Mathematics and HSC English Standard or equivalent **Assessment:** Assignments (70%), Portfolio (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural Communications 1 introduces students to fundamental modes of communication that are used to comprehend, conceive, explore, articulate and document architecture. It covers the domains of sketching, technical drawing, model making (physical and digital), verbal and written communication, diagramming and photography. The unit both familiarises students with necessary technical skills and encourages their creative deployment through practical experimentation. It explores the roles that analogue and digital communication techniques play in contemporary architectural design and thinking. Throughout the semester, students are asked to develop and explore an architectural idea through representation in various media, and switching media from iteration to iteration.

**AWSS1001**
**Architectural Sketching and Drawing**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1 **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA1601 or DESA1602 **Assessment:** Portfolio of works (60%); process journal (40%) **Practical field work:** Studio practice **Mode of delivery:** Normal (lecture/lab/tutorial) day
*Note: Students may incur costs for materials in some Art Workshops units.*

This unit aims to provide the student with the knowledge, skills and aptitude required to use a range of fundamental architectural sketching and drawing skills based on observation of the physical world, in particular the built world. Students will be encouraged to develop a commitment to the practice of drawing as a fundamental design skill through 13 studio classes coupled with independent study. The workshop places an emphasis on keen observation, experimental use of materials and engagement with historical frameworks used in design practice in design and architecture. Exposure in studio to the sensitivities offered by different drawing materials and techniques will give students the competency to more confidently use drawing as a communication device. Skills in perspective drawing are introduced and drawing is used to document the visible world and define structure and detail. On successful completion of this unit of study students will have demonstrated familiarity with a range of drawing media and techniques, including charcoal, graphite, pen, brush and ink, and an introduction to colour. Students will understand the importance of maintaining a sketchbook as a site to record all their visual and conceptual research, and in which to draw on a daily basis as a means to develop ideas and technical proficiency.

**BADP1001**
**Empirical Thinking**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Wendy Davis **Session:** Semester 2 **Classes:** Lecture 1 hr/wk; lab 2 hrs/wk **Corequisites:** BDES1023 and DAAE1001 **Assessment:** Assignment 1 (20%); Assignment 2 (30%); Exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces approaches to thinking and working in the built environment that are based on measurement, analysis and modelling. Students develop a range of quantitative skills, from the ability to measure several important aspects of buildings to the ability to use mathematics to communicate insight into the relationships between the characteristics of building and the perceptions and experiences of occupants. This unit explores subjective and objective data, measurement uncertainty and bias, analysis techniques for different kinds of data, visual representations of data, and mathematical modelling. Topics that enable students to understand empirical research, including experimental design, research methods, and ethics, are also discussed. During lab sessions, students apply the concepts introduced in the lectures to real architectural spaces.

**BAEN1001**
**Design in Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Dr Francois Blanciak **Session:** Semester 2 **Classes:** 1hr/wk; studio and tutorial 3hrs/wk **Assessment:** Weekly exercises (30%); design project (30%); portfolio (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will give the student an understanding of the design for a small scale building in an urban context. It teaches the foundations for an interdisciplinary design process between the fields of architecture, architectural science, and urban planning. Architectural aspects including typology, scale, proportion, structure, program and materiality are investigated. Students learn the complexities of architectural design, from concepts, ideas and design models to applied aspects including programmatic, structural, material requirements, limitations of a particular site, or city conditions. The unit equips students with conceptual tools and design skills from analogue modelling and graphic representation to digital drafting, rendering and fabrication, and verbal and written communication. On the successful completion of this unit of study, students will have demonstrated: an understanding of the architectural design process; an understanding for a small scale architecture project; and an ability to express concepts and designs creatively, clearly and cohesively across a range of representation media.

**BDES1023**
**Architectural Technologies 1**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DESA1102 **Assessment:** Assignments (60%), Exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural Technologies 1 introduces students to the roles that environmental considerations, structures and construction play in architecture. The fundamental concepts underpinning each of these key areas are presented and students demonstrate their developing knowledge of them via project-based assignments. These progressively complex tasks initiate students to the knowledge required to successfully analyse and synthesise construction and technical systems in basic buildings.

**DAAE1001**
**Living Cities**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dallas Rogers **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk (Weeks 1-6), 1 hr/wk (Weeks 7-13); tutorial 1 hr/wk (Weeks 1-6), 2 hrs/wk (Weeks 7-13) **Assumed knowledge:** DECO1006 and DECO1012 and BDES1011 and AWSS1001 **Assessment:** Assessment 1 (30%); Assessment 2 (30%); Assessment 3 (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study reviews the challenges involved in planning the contemporary urban environment. It covers a range of perspectives, including urban planning, urban design and heritage. Students will examine the evolution of towns and cities from the first settlements to the modern metropolis, and explore the cultural, economic, political and digital drivers that shape the urban environment. It asks, 'why did cities evolve?', 'what purpose do cities serve?', 'who is the city for?', and 'how are decisions made about cities?' The contemporary urban environment is explored as a dynamic and continually evolving 'living city' that is co-created by architects, planners, urban designers and other public and private stakeholders. On the successful completion of this unit of study, students will have demonstrated an understanding of the importance of planning in shaping our towns and cities through time. They will have a basic knowledge of the key ideas that are needed for formulating planning and urban design proposals.

*Textbooks*

Course material, announcements and assessment submission will be available at https://elearning.sydney.edu.au/
Angel, S. (2012). The Planet of Cities, Lincoln Institute of Land Policy
Lynch, K. (1960). Image of the City. Cambridge Massachusetts, MIT Press
The City Reader, (2011), 5th Edition (The Routledge Urban Reader Series) Paperback by Richard T. LeGates (Editor) and Frederic Stout (Editor)
Kostov, S. (1991). The City Shaped. Bulfinch Press, Thames and Hudson
Readings listed as chapter excerpts and articles will be available electronically through the library.

**BADP2001**
**Algorithmic Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Dr Rizal Muslimin **Session:** Semester 2 **Classes:** Lecture 1 hr/wk, tutorials 3 hrs/wk **Corequisites:** DECO2013 **Assumed knowledge:** Basic skills in 3D modelling **Assessment:** Assessment 1 (35%), Assessment 2 (50%), Exam (15%) - (all individual) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces a set of principles and skills in algorithmic architecture. Through a series of parametric design exercises, modelling is construed as an explicit formulation of architectural design problem and opportunities. This includes defining design logic and parameter as well as converting data into meaningful information for design analysis and synthesis. The parametric modelÂ¿s performance will be contested by how well it delivers the design intentions and ventures new design opportunities. Students will be exposed to various computational design methods to develop their understanding of the basic principles in architectural computing.

**BADP2002**
**City Form and Development**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 1 **Classes:** Lectures 2 hrs/wk, tutorials 1 hr/wk **Prerequisites:** DAAE1001 or (DAAE2002 and ENGG1850) **Assessment:** Assessment 1 (individual) (30%), Assessment 2 (40%), Assessment 3 (group) (20%), participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on the content of Living Cities and introduces students to the modern formal domains of planning, urban design and heritage conservation. The focus will be on two main areas of debate, namely, city form and structure, and secondly, the planning and development processes on which the formal planned city is made. The unit will establish the context in which the role of planners, architects and urban designers in the process of building the 'incremental' city is understood, from the site to precinct, neighbourhood and city wide levels. Elements of city form and structure are analysed, as well as mobility, transport, land use, infrastructure and current policy responses at a metropolitan and local level in meeting urban growth needs. The unit will also overview the development process including the framework in which architects, planners and property developers must work. Using a contemporary planning framework, the nature of development assessment, strategic planning and the community's role within this framework are explored. Criticisms and reform agendas around frameworks will be examined. Informal urbanism is also introduced in this unit to address development that occurs outside the domain of formal western regulated planning and design systems.

**BADP2003**
**Light and Sound**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 1 **Classes:** Lectures 2 hrs/wk, tutorials 1 hr/wk **Corequisites:** BAEN2001 and BADP2002 **Assessment:** Written report group work (25%), written report individual work (35%), written report individual work (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study develops a working understanding of light and sound from physical and sensory perspectives, and of the ways that buildings and building elements affect these. These are examined in terms of their sources, transmission, digital representation, and sensation. Theories that allow students to develop practical designs and predictions are introduced. Theoretical learning is reinforced by computational data processing and analysis. Standards, regulations and recommendations concerning light and sound in the built environment are introduced. Consideration is given to their roles in human communication, and how architectural environments can contribute to these.

**BAEN2001**
**Design Integration Lab: Materials**

**Credit points:** 6 **Teacher/Coordinator:** Dr Matthew Mindrup **Session:** Semester 1 **Classes:** Lecture 1 hr/wk, studio 2 hrs/wk, 1x1-hr tutorial alternate weeks, 1x1-hr workshop alternate weeks **Corequisites:** BADP2002 and BADP2003 **Assessment:** quizzes (10%); design review part I (15%); design review part 2 (35%); design portfolio 500wd essay (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to the role of materials as a proponent of architectural form. The objective of this unit is to equip students with an ability to think critically about the transformation, evaluation and creative application of different materials in terms of environmental, structural and aesthetic performance. In-class lectures and assignments provide students with an opportunity to explore fundamental concepts about material propensity, material performance and material scale as a conceptual and practical basis for architectural design. To this end, students will also be introduced to regional and international precedents from antiquity to the present that demonstrate the application of innovative and sustainable practices with the use and reuse of materials in the built environment. To facilitate the dialog between material and form in architecture, students will engage in a progressively complex semester-long design project. Upon successful completion of this unit students will be provided with the necessary skills for thinking with materials as a determinant of architectural form.

**BAEN2002**
**Design Integration Lab: Energy**

**Credit points:** 6 **Teacher/Coordinator:** Dr Christhina Candido **Session:** Semester 2 **Classes:** 1 hr lecture/week, 2 hrs studio/week, 1 hr computer lab (until week 7) **Corequisites:** BADP2001 and BDES2013 **Assessment:** Assignment 1 (25%), Assignment (25%) and Assignment 3 (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This studio will focus on the ways that buildings respond effectively to people's environmental needs, while minimising net energy use in buildings. Students will learn how to integrate and design the thermal, luminous and acoustic environment of a building. Particular emphasis will be placed on the basics of heat, thermal performance and natural ventilation strategies. In learning how to assess environmental performance, students will be equipped with the required knowledge to design convenient, quick and robust solutions that improve the experience of the building. An introduction to sustainable building practices, including net-zero and green building, will provide a basis for further investigation of the critical needs faced by occupants of the built environment. Particular emphasis will be placed on experiments and case studies in the Sydney area, with questions raised about the Australian context more broadly. The main learning outcomes include an understanding of fundamental principles of integrated strategies and solutions, principles of passive low-energy design techniques (including heat, sound, light and wind), the ability to critically and synthetically analyse environmental design issues, and the ways to efficaciously implement and communicate technical information during the design process.

**BDES2013**
**Architectural Technologies 2**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1, Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prerequisites:** BDES1023 **Prohibitions:** DESA2111 **Assessment:** Assignments (60%), Exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural Technologies 2 explores the roles that environmental considerations, structure and construction play in moderately complex small-scale buildings. Emphasis is placed on developing in students an active awareness of the impact that technical and constructional decisions have on architectural design. Through project-based learning, students develop an active awareness of the important role that appropriate technical and constructional decisions play in terms of fulfilling conceptual ambitions in tangible works of architecture. Students develop and demonstrate their developing appreciation of these issues via case study analysis, a group project, individual technical drawings and a final examination.

**BDES3023**
**Architectural Technologies 3**

**Credit points:** 6 **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prerequisites:** BDES2013 or DESA2111 **Prohibitions:** DAAP3002 **Assessment:** Assignments (60%), Exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural Technologies 3 develops in students an advanced understanding of moderately complex building systems. It addresses the technical design of buildings in their entirety and in their details, through the three interrelated perspectives of environment, structures and construction. As in Architectural Technologies 1 and 2, primary emphasis is placed on developing an understanding that appropriate formal architectural solutions can be the outcome of technological considerations and that, reciprocally, technical solutions can not only support but inform conceptual ambitions. A major project-based assignment, a case study analysis, individual technical drawings and a final examination are used as the vehicles for students to demonstrate the knowledge that they have gained in analyzing and synthesizing the various considerations that are to be addressed in the design of a building system that appropriately responds to, and integrates, the three key technical considerations of environment, structures and construction.

**BADP3001**
**Designing for Environmental Quality**

**Credit points:** 6 **Teacher/Coordinator:** Dr Christhina Candido **Session:** Semester 1 **Classes:** lecture 1 hr/week and studio 2 hrs/week **Corequisites:** BAEN3001 **Assessment:** Assignment 1 (30%), Assignment 2 (25%) and Assignment 3 (45%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will focus on Indoor Environmental Quality and how it may affect people's experience and perception of their surrounding built environment. Students will be exposed to key IEQ dimensions, including thermal, visual and acoustic comfort and indoor air quality. Particular emphasis will be given on Post-Occupancy Evaluation (POE) tools, studies and research findings. The evolution of contemporary workspace design and its impact on building occupants' satisfaction, productivity and health will also be explored. Students will also learn how IEQ has been incorporated by certification and rating schemes. Upon completion of this unit, students will have the ability to critically and synthetically analyse IEQ-related issues, and how to efficaciously implement and communicate the technical information during the design process and/or performance assessments.

**BADP3002**
**Property and the Built Environment**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 2 **Classes:** lecture 2hrs/week; tutorial 1hr/week **Prerequisites:** BAEN3001 or (DAAE1001 and DESA3011) or (DAAE2002 and DESP1001) **Corequisites:** BAEN3002 or ENGG3854 **Assessment:** Assessment 1 (25%), Assessment 2 (25%) and Assessment 3 (50%). One or more of these assessments may be group tasks. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides an introduction to the Property Development (PD) process with the aim of imparting an understanding of the professional's role, delivered through a review of the stages involved in PD, an overview of the different sectors, project types and stakeholders. The unit will introduce the broad objectives of financial feasibility preparation and give insights to the feasibility aspects that accompany design criteria, to determine which projects are developed. It will present an overview of risk factors, which may be encountered in the process, including risk assessment/management, the risk matrix and possible counter measures. The unit introduces basic construction types, preparation of costings from industry publications, an overview of the construction industry, project stakeholders and the hierarchy of a construction project. On completion it is envisaged students will be able to identify major stakeholders, prepare initial construction costings and project feasibility reports outlining risks with mitigation measures. Students will have developed an understanding of PD, its effects on cities, its role in the economy, the processes and stakeholders involved. Students will also have gained an insight into construction, initial project cost planning, risk management and feasibility for a property development project.

**BAEN3001**
**Design Integration Lab: Urban**

**Credit points:** 6 **Teacher/Coordinator:** Dr Tooran Alizadeh **Session:** Semester 1 **Classes:** lectures 1hr/week; studio 3hrs/week **Prerequisites:** DAAE1001 and BADP2002 **Corequisites:** BDES3023 and BADP3001

**Assessment:** Urban Analysis Portfolio (50%); Urban Design Portfolio (50%). Assessments will include both group and individual work. Group work is peer-reviewed. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Design Integration Lab: Urban Environments builds on the content of Living Cities and City Form and Development. It introduces students to the concept of 'place' and the planning and design interventions that impact public places. The unit will focus on one particular location chosen for its complexity in terms of the range of contemporary issues within an urban context. Developing urban analysis and design skills and enhancing strategic planning knowledge, students will investigate a location and seek to design a public space, including different built forms and elements, based on their own strategic plan. There is a strong element of fieldwork embedded in the urban analysis section of the unit. The outputs will be developed while working on individual and group tasks. Students will be challenged as if in a work environment of professionals looking to resolve urban issues.

# Capstone Unit

**BAEN3002**
**Design Integration Lab: Capstone**

**Credit points:** 12 **Teacher/Coordinator:** Dr Dagmar Reinhardt **Session:** Semester 2 **Classes:** lectures 1hr/week; tutorials 2hrs/week; studio 3hrs/week **Prerequisites:** BAEN2001 and BAEN2002 and BAEN3001 **Corequisites:** BADP3002 **Assessment:** interim presentation (30%), final presentation (20%) and design portfolio (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

As the culminating design studio for the degree, the capstone project combines knowledge, criteria and methods of the disciplines of Architecture, Urban Planning, and Architectural Science. Students are presented with the opportunity to express and represent their own positioning through the analysis for and design of a sufficiently complex building, city structure, or town centre. The studio consolidates the students' abilities in identifying and solving problems and critical aspects for architecture and the built environment using a range of advanced modelling, simulation and optimization techniques and methods. The aim for students is to produce integrated and compelling pre-professional architectural design projects prompted by the critical reflection of city, policy, site, heritage, scale, program, thermal comfort, material, construction, structure, light, and acoustics). With completion of this unit, students demonstrate their understanding of a spectrum of architectural practice and the built environment, including architectural design, history and theory; urban design, planning and policy; and architectural science aspects such as energy, light, construction and acoustics, services, and heritage. By specialising in a select suite of these aspects, students prepare for career-pathways as offered by the faculty's full range of postgraduate courses.

## Architectural Science elective units of study

**DAAE2008**
**Innovative Building Structures**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk; tutorial 1 hr/wk **Prerequisites:** BDES1023 **Prohibitions:** DESA2206 **Assessment:** Group Report (40%); Physical Test (20%);Individual Report (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of this unit is to engage students in detailed studies of innovative building structures, covering the three aspects of innovation in architectural and structural design (modeling, materials and technology). The main topics covered are: architectural form and structural function; interpretation of basic (arch, beam, column, space and spatial portal) and advanced (truss, vault, dome, shell) structural principles with an intuitive graphical method (Load Path Method - LPM). Examples of significant case studies will be shown and interpreted (works by A. Gaudi, B. Fuller, F. Otto, N. Grimshaw, S. Calatrava, N. Foster, R. Piano and others); biomimetics; bioinspired structures as a way to increase structural efficiency. Innovative structural materials: the use of glass as structural material, innovative reinforcements for composite structures, smart and nanostructured materials; kinetic architecture: structural movement as the 4th architectural dimension. A case study assignment will be used to assess student's competence in investigating and presenting case studies and being able to identify and evaluate issues and factors contributing to innovative structural solutions.

**DAAE3001**
**Sustainable Architectural Practice**

**Credit points:** 6 **Teacher/Coordinator:** Dr Daniel Ryan **Session:** Semester 1 **Classes:** lecture 2 hrs/wk, tutorial/lab 2 hrs/wk for weeks 1 to 12 **Prerequisites:** BDES1023 or (DAAE1001 and DESA3011) or (DAAE2002 and DESP1001) **Assessment:** Case Studies (30%), Design Exercise (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

The unit of study begins by exploring the concept of ecologically sustainable design as it applies to architectural practice and defines those key attributes of buildings which make them sustainable. It discusses the implication of applying sustainable design principles upon contemporary architectural practice. This unit will cover the fundamentals of passive solar design, the environmental impact of building materials, water sensitive design and the environmental certification of buildings. Through the use of case studies and project work students will learn about how to design environmentally sustainable buildings by understanding contemporary trends in sustainable architectural practice, methods to critically evaluate environmental claims about buildings and will develop a personal position on applying sustainable design principles to architecture. This unit is an Architecture Elective in the Bachelor of Design in Architecture and elective in other courses.

**DESA1004**
**Designing with Surfaces and Light**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2, Summer Main, Winter Main **Classes:** Online. Expected total workload is approximately 35 hours online, plus independent study and preparation. Lecture materials are available on the eLearning site. They consist of PDF files and Powerpoint slides. No lecture recordings are available. **Prohibitions:** DESA2612 **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Online

*Note: Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.*

Objects only become visible when light reflects off of them. This unit explores the ways in which light interacts with surfaces, objects, and the human visual system. Architectural design decisions regarding the lighting, as well as exterior and interior surfaces of a building, alter the perceptual experience of users and should be done thoughtfully.

This unit introduces students to the way humans perceive and experience the built environment. It covers some of the fundamental properties of light, mechanisms of human perception, and the ways that light interacts with surfaces. The application of these topics to design decisions is also discussed. Students demonstrate their understanding of the presented material and apply their knowledge to critically analyze their own environments.

**DAAE2005**
**Designing with Colour**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 1, Semester 2, Summer Main, Winter Main **Classes:** Online. Expected total workload is approximately 35 hours online, plus independent study and preparation. Lecture materials are available on the eLearning site. They consist of PDF files and Powerpoint slides. No lecture recordings are available. **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Online

*Note: Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.*

All design decisions involve decisions about colour within the fields of architecture, applied design and art. This unit presents knowledge about colour theory as well as research-based information about colour and associated topics that can be used in design. Information and

knowledge about colour can vary in quality and reliability, which is demonstrated. Students apply their skills and knowledge about colour theory and colour design in the assignments of this unit. This unit covers the processes of colour vision and other aspects of visual perception. It also explores colour application from the Pre-history period, as well as selected colour theories of the Renaissance period through to the 21st Century. Common colour-related constructs and the application of these in art, architecture and design are discussed. In completing the assessment tasks, students must demonstrate understanding of the knowledge presented in learning modules of the unit and critically analyse and apply knowledge related to colour design and application.

## Junior Design Computing elective units of study

**DECO1012**
**Design Programming**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1 **Classes:** seminar and tutorial 3hrs/wk **Assessment:** Programming Assignments (80%); Tutorial Activities (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides an introduction to the development of software in design and the creative industries. It teaches an understanding of the fundamentals of computational thinking as well as skills in the design and implementation of software for creative expression and prototyping. It introduces students to tools for building interactive design applications through programming assignments; knowledge of programming concepts; and knowledge of the Javascript programming language. Key concepts covered in this unit include: variables, functions, control flows, and algorithmic thinking. Students learn how to design through the development of code, allowing them to incorporate programming into their own design projects as well as to collaborate effectively with software developers.

## Senior Design Computing elective units of study

**DECO2015**
**Design for Innovation**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 2 **Classes:** Lectures 1 hr/week; tutorials 2 hrs/week **Assessment:** Analysis report (35%); Project work (55%); Quizzes (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces students to design strategies and techniques for developing alternative points of view and exploring multiple solutions iteratively. Through the analysis of real-world case studies students will develop an understanding for how to use design-thinking methods to tackle complex problems. The unit will discuss how design can be used as a method and as a way of thinking to drive innovation for products, services and processes. In the tutorial component, students will apply design strategies and techniques, such as lateral thinking, experiential prototyping and speculative design, through small group exercises. Students will develop a deep understanding of these strategies and techniques through the various assessment items, which capture theory, analytical reflection and the practical application of methods.

**DECO2101**
**Visual Communication**

**Credit points:** 6 **Teacher/Coordinator:** Mr Nathaniel Fay **Session:** Intensive June, Semester 1 **Classes:** Lecture 1 hr/wk (Week 1 only); tutorial 2 hrs/wk; online modules 1 hr/wk **Prohibitions:** DECO1015 or DECO1100 or DAAE2009 **Assessment:** Visual Design Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study introduces students to the principles of visual design, including graphic design, colour theory and typography. Students will develop an understanding of how to successfully combine visual elements to effectively communicate an idea or concept, to describe a product, and to represent visual user interface elements in an interactive product. Using digital image manipulation tools, such as Adobe Photoshop, Illustrator and InDesign, students will learn how to develop design concepts and how to turn concepts into visual communication materials in the form of digital images.

**DECO2102**
**Web Design and Technologies**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 2 **Classes:** Lecture 1 hr/wk (Week 1 only); tutorial 2 hrs/wk; online modules 1 hr/wk **Prohibitions:** DECO1016 **Assessment:** Web Design Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to web design and modern web technologies for the purpose of designing and prototyping web-based user interface solutions. Students will learn about design principles and patterns for the web and apply them in practical exercises that involve designing and creating interactive web applications. The unit will introduce web-based markup languages and frameworks for various media and platforms, such as desktop computers and mobile devices, with a focus on interaction design. Students will develop an understanding of web technologies and their role in user experience and interaction design, including the use of web technologies for prototyping user interfaces. Prototyping techniques covered in this unit include: scripting and markup languages for enabling dynamic content and interactive designs, such as HTML, CSS, and JavaScript.

**DECO2103**
**Architectural Modelling and Prototyping**

**Credit points:** 6 **Teacher/Coordinator:** Dr Rizal Muslimin **Session:** Semester 1 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Prerequisites:** DESA1555 and completion of at least 36 credit points **Assumed knowledge:** Basic understanding of design principles and design processes and how to apply them in practical design projects **Assessment:** Assessment 1 (25%), Assessment 2 (35%), Assessment 3 (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit teaches students basic understanding of digital modelling and architectural prototyping. Students will develop skills in creating and using 3D modelling software for various design tasks. The unit further introduces students to rapid prototyping fabrication techniques, such as 3D printing and laser cutting with the aim to understand how to prepare a digital model for physical fabrication. Students will learn how physical objects are represented in 3D digital models by modelling various 3D geometric entities. Key concepts covered in this unit include: joinery, composite material and solid modelling.

**DECO3006**
**Animation and Motion Design**

**Credit points:** 6 **Teacher/Coordinator:** Mr Nathaniel Fay **Session:** Semester 2 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Prohibitions:** DECO1017 **Assessment:** Animation Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to the fundamental principles of animation and its role in interaction design. Students will develop an understanding of the process involved in developing character, text and motion graphics based animation, the integration between 2D artwork and 3D composition, and techniques and tools for audio recording and production to support animation. Assessments in this unit focus on the application of animation in user interface design as well as for the production of short animated films. Students will acquire basic animation skills, develop the skills to create an animated sequence, and learn the critical vocabulary to describe animation. Basic knowledge will be related to foundational technical skills in industry standard software for animation.

**DECO3101**
**Innovation Design Studio**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 1, Semester 2, Winter Main **Classes:** Lecture 1 hr/week; tutorial 2 hrs/week **Assessment:** Project work (90%); Participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides a format for deep engagement with design and innovation methods. Students will develop responses to a real-world design problem that requires the application of students'

existing disciplinary skills combined with knowledge in an interdisciplinary context. Projects are student-led, allowing students to identify projects that are linked to their interests and discipline-specific career paths. Through interactive group work, facilitated by experienced design mentors, students will learn how to negotiate interdisciplinary requirements and boundaries. All projects developed in this unit of study are expected to address some element of innovation in an existing product, service or process. Students will be able to apply methods acquired in other units of study, and will learn about new methods through weekly project work and reviews.

**DAAE2011**
**Intro to Visual Communication Design**

**Credit points:** 6 **Teacher/Coordinator:** Mr Nathaniel Fay **Session:** Semester 1, Summer Main, Winter Main **Classes:** Online: expected total workload is approximately 35 hours online, plus independent study and preparation. **Prohibitions:** DAAE2009 or DECO1015 or DECO2101 **Assessment:** Visual Design Assignments (85%), Quiz (15%) **Mode of delivery:** Online

This unit of study introduces students to the principles and practices of visual communication design for non-designers. Visual communication is an essential skill in todayÂ¿s complex world, for effectively communicating ideas, information, perspectives and proposals to diverse audiences in a variety of contexts. Students will learn about the theories of visual perception and psychology underlying visual design principles, and strategies for the composition of visual elements to produce effective and compelling visual presentations. On the successful completion of this unit of study, students will have demonstrated knowledge and skills in the understanding and application of visual design to produce and evaluate effective visual communication materials for a range of audiences.

## Architecture elective units of study

**DAAE2001**
**Australian Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Prof Andrew Leach **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DESA2305 **Assessment:** One process development presentation and one 3,000-word essay (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce students to the history of Australian architecture in its various contexts. Lectures and seminars will cover key architects, projects and building types and their relation to Australian history. Students will become familiar with a range of architectural styles and movements and their characteristics. They will undertake individual self-directed research and learn how to record and present the results of this research. Students will also acquire an appreciation of the factors that shape architectural design and thought in Australia and how these relate to wider social and cultural circumstances. Tutorials will introduce students to key books, essays and journals concerned with Australian architecture. On successful completion of this unit, students will be able to: demonstrate a familiarity with a range of Australian architects, buildings and types; research, record and present a specific project in Sydney; connect specific works to other works of a similar style, period or cultural context. This will be assessed in the submitted essay.

**DESA3003**
**Architectural Detailing**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1 **Classes:** Tutorial 3 hrs/week, minimum 4 site visits/semester **Assessment:** Initial site report (30%), Draft final findings (10%), Final site details (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

The process of detailing in the office and during construction is a fundamental part of architectural practice. Experience of the process can provide and invaluable learning experience for students of architecture. However, many students have no available path to builders or architects and access to operative building sites is generally limited by OH and S concerns. The studio-based elective will allow a small group of students access to current building projects to explore the role of detail in design and building and in guiding not only a small component of a building's construction but its fundamental overall character. This elective will link students to a particular architect, builder and domestic scaled project to study and document a series of details in the context of the whole building and provide access to the site under supervision to study construction methods and detailing in context.

**DESA3004**
**Architecture and Diagrams**

**Credit points:** 6 **Teacher/Coordinator:** Dr Francois Blanciak **Session:** Semester 1 **Classes:** 1-hr lectures/Weeks 1, 2 and 3, 3-hr tutorials/week, 1-hr seminars/week **Prerequisites:** 48 Credit points **Assessment:** Diagramming (50%), Seminar presentation (35%), Active participation (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Architecture and Diagrams is an elective that aims to provide students with an overview of various techniques of production and theories that relate to architectural diagrams. Its objectives are: to learn how to analyse buildings from a diagrammatic point of view; to acquire a basic knowledge of the history and theory of diagrams in architecture; and to develop basic skills to generate urban and architectural diagrams directly related to the students' respective design work in other units of study.

**DESA3005**
**Architectural Drawing Through History**

**Credit points:** 6 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1 **Classes:** 1 hr lecture/week, 3 hrs studio/week **Prerequisites:** 48 credit points **Assessment:** Seminar presentation (30%), Studio project (50%), Illustration report (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

In Architectural Drawing Through History, students critically investigate and then imaginatively deploy in a studio project an unconventional historical drawing technique of their choosing. Close studies of the widely differing range of drawings that were produced to achieve the architecture of Ancient Egypt, Classical Greece and Rome, the Middle Ages, Renaissance and Baroque, can illuminate aesthetic sensibilities that are often profoundly difference to our own, and can provide insights into the worldviews of the cultures that produced them. Drawings are a vital mediator between that which can be imagined and that which can be built, and the elective contributes to architectural historian Robin Evans' claim that it would be possible to ' write a history of western architecture that would have little to do with either style or signification, concentrating instead on the manner of working. Students conduct textual and graphic analyses of case study drawings and buildings, but engage equally in practical experimentation in an effort to unfold and re-animate the potential of forgotten or marginalised drawing methods to inform current architectural practice.

**DESA3007**
**Prefab Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Mathew Aitchison **Session:** Intensive February **Classes:** 5 intensive days **Prerequisites:** 48 credit points **Assessment:** Case study report (50%), Presentation report (50%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit will introduce students to the benefits and limitations of prefabricated architecture through case study analysis and design exercises. Architects have long used prefabricated housing to explore industrialised building solutions, often with disappointing results. Yet, recent developments show the conditions for a more industrialised approach to housing Â¿ especially its promise of low-cost, more socially inclusive, and well-designed housing Â¿ have rarely been better. AustraliaÂ¿s housing affordability crisis, changing design needs, sustainability concerns, and the rise of digital and automated fabrication technologies, have conspired to challenge a housing industry deeply resistant to change. Using design research tools, students will assess case study projects before developing their own prefab building 'offering'. Through a series of workshops running

parallel to 'live' research projects within the Innovation in Applied Design Lab, students will have contact with professionals and researchers active in the industry. Learning outcomes will include the ability to analyze complex case studies using graphic, physical, and textual media for the case study report. Design, communication and presentation skills will be examined in the form of a PowerPoint presentation 'Pitch' and report.

**DESA3008**
**Architectural Models: Theory and Practice**

**Credit points:** 6 **Teacher/Coordinator:** Dr Matthew Mindrup **Session:** Semester 2 **Classes:** 2hr lectures/week, 1hr tutorials/week **Assessment:** (40%) Portfolio, (60%) Graphic and written presentation on research **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study asks students to consider 'what is a physical model in architecture?' and 'what are the different materials, methods and uses of physical models in the design and presentation of architecture?' Participants in this unit will critically investigate and creatively apply a non-conventional modeling technique of their choice in the conception, study or presentation of architecture. These inquiries are supplemented by lectures and in-class discussion, which seek to uncover a historical and contemporary use of physical models as a tool for architects, including their mention in architectural treatises and in the formation of Modernism. In recent years, the development and use of parametric driven architectural models has received significant attention. Naturally, the unit will also explore the interface between the physical and virtual model to understand how architectural modeling programs belong to a historical tradition and are playing a role in not only representing conditions of building in the world but also in the development of new architectural ideas.

**DESA3009**
**Advanced Fabrication**

**Credit points:** 6 **Teacher/Coordinator:** Dr Simon Weir **Session:** Semester 2 **Classes:** 3 hr/week Lecture/lab/tutorial **Prerequisites:** 96 credit points **Assessment:** Assignments (2x50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This design elective bridges the domains of design theory and advanced fabrication practices. In this unit students will make complex and polished objects using the fabrication tools in the DMaF lab, that demonstrate and/or embody design ideas intrinsic to their formulation. The unit is divided into two halves: additive fabrication and subtractive fabrication. Each half will be accompanied by lectures on the technical knowledge related to these fabrication processes, and lectures on the theoretical premises and associations generated by the internal logic, and expressive languages of each fabrication type. Tutorials will also be divided between technical developing machine control, and design tutorials in which students will develop control of the design trajectory and expressive languages.

**DESA3010**
**Code to Production**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dagmar Reinhardt **Session:** Intensive July **Classes:** 1hr lectures/week, 2hr tutorials/week, 2hr workshops/week **Prerequisites:** 48 credit points **Assessment:** Small exercises (50%), Documentation (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Code to Production is an elective that explores the potential of an iterative design process from parametric variations; to analysis and simulation; to digital prototyping and manufacturing. The course has a two-fold agenda: to examine the performance of complex geometries available through computational design processes, and to translate the optimised design by digital manufacturing into construction and prototype (CNC/robotic fabrication). Based upon the development of a series of controlled variations derived through parametric and scripting methods, the elective aims to further expand an understanding of structural and acoustic performance of these geometries. It reviews an open system of design research in which design process, structural analysis and acoustic analysis are deployed to improve the acoustic and structural performance of complex spatial geometries, and derive fabrication knowledge for architectural practice. The unit of study extends students' knowledge of advanced computational design, interdisciplinary processes and fabrication methodologies by application of commercial and specialist 3D-modelling, scripting, analysis and manufacturing packages (including various software such as McNeel Rhino and Grasshopper, Karamba, RhinoNest and KUKA/prc).

**DESA3012**
**Counter-Practices in Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Lee Stickells **Session:** Semester 2 **Classes:** tutorials 1hr/week; seminars 2hrs/week **Prohibitions:** ARCH9094 **Assessment:** illustrated research essay (50%), critical summaries (20%) and seminar presentation (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Focused on the 1960s and 1970s, this unit will explore an alternative genealogy of the postmodern turn in architecture. It will introduce students to experimental practices and polemics that emerged when architects and figures from the counterculture responded to the identification of global environmental emergency, urban instabilities; revolutions in communication technologies and expanded forms of environmental control; growing militarism and globalising forces; and burgeoning claims to self-determination and environmental justice.

**DESA3014**
**Finding Country**

**Credit points:** 6 **Teacher/Coordinator:** Prof Michael Tawa **Session:** Intensive January **Classes:** 4 day intensive and studio **Assessment:** proposition (20%), mapping process (20%) and finding country (60%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit of study involves an intensive 4-day workshop focusing on 'finding country': that, is recuperating the erased or imperceptible layers of Aboriginal and Torres Strait Islander histories within the urban fabric of Sydney. The workshop also aims to make propositions for urban interventions within the city fabric that would re-establish the value and importance of those histories to the cultural and experiential futures of the city.

**DESA3015**
**Broken Hill and Far West NSW Projects**

**Credit points:** 6 **Teacher/Coordinator:** Prof Michael Tawa **Session:** Intensive July **Classes:** 4 day intensive and fieldwork **Assessment:** project proposal (20%), reflective journal (20%), critique (20%), presentation (10%) and major project report (30%) **Mode of delivery:** Field experience

*Note: Department permission required for enrolment.*

This unit of study introduces students to a community engaged learning and teaching setting, working on collaborative, multidisciplinary action research project that crosses over business and architecture. The

design project will exercise and extend design skills and knowledge required to produce a plausible conceptual solution to a large-scale regional city condition that addresses educational, sociocultural,

business, heritage, architectural, landscape and technological issues, with an emphasis on indigenous community needs. Architecture students will work with their Innovative and Enterprise counterparts from the Business School to develop viable architectural and business solutions that integrate multiple criteria (contextual, sustainable, urban design, structural, material, constructional, representational) into a design within rigorous conceptual and theoretical framework. The project will offer students opportunities to engage with the professionals and the broader community.

## Urban elective units of study

**BADP3003**
**City Design and Urban Ecology**

**Credit points:** 6 **Teacher/Coordinator:** Dr Andrew Merchant **Session:** Semester 2 **Classes:** lecture 2 hrs/week, tutorial 1 hr/week and 1x8-hr field

workshop **Assessment:** critical thinking assessment task (35%), case study in sustainable urban development (35%) and sustainable materials report (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Global change and population growth present significant challenges to the resilience of urban landscapes. Planning and design of urban development is the most powerful tool to meet these challenges. This unit of study provides students with an understanding of the principles and practices of sustainable urban development and the legacy of design at multiple spatial and temporal scales. Students will develop a toolbox for embedding ecological and physical principles in urban design to maximize the functionality of green spaces for a range of purposes. This unit will provide an understanding of the interacting physical processes between urbanization and the local environment as well as issues in global sustainability such as certification of materials and utility of urban land use types. At the completion of this unit, students will be able to articulate the principles of sustainable design within the context of social, political and economic constraints at a range of spatial/temporal scales. Students will develop conscientious approaches to improve the sustainability and resilience of domestic and international urban landscapes.

**GEOS2123**
**The Geography of Cities and Regions**

**Credit points:** 6 **Teacher/Coordinator:** Prof Bill Pritchard, A/Prof Kurt Iveson **Session:** Semester 1 **Classes:** One hour tutorial per week **Prerequisites:** 6 credit points of first year Geosciences units. **Prohibitions:** GEOS2923 **Assessment:** Written reports (20%), exam (40%), field report (20%), GIS project (20%) **Practical field work:** Two hours on average, including fieldtrips within Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

How can we understand the ways that cities and regions change over time, and how these processes shape people's lives? This Unit of Study provides conceptual and practical material for exploring these questions. A program of lectures and tutorials in complemented by close study of Sydney, using GIS (census and satellite imagery) and a series of walking tours to different parts of the city. Assessment is tailored to projects in which students are required to integrate conceptual ideas about cities and regions with GIS mapping and field observations.

**GEOS3520**
**Urban Citizenship and Sustainability**

**Credit points:** 6 **Teacher/Coordinator:** A/Prof Kurt Iveson **Session:** Semester 1 **Classes:** 2 hour lecture and 1 hour tutorial per week, six 2 hours practical sessions. **Prerequisites:** 24 credit points of Intermediate units of study, including 6 credit points from the following (GEOS2112 or GEOS2912 or GEOS2123 or GEOS2923 or GEOS2115 or GEOS2915 or GEOS2121 or GEOS2921 or SOILS2002 or LWSC2002) **Prohibitions:** GEOS3920 **Assessment:** One 2hr exam, one 2000w essay, one 2000w group-based prac report (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Cities are now the predominant home for humanity. More than half of the world's population reside in cities. The contemporary growth of cities, however, is attached to profound political questions about what it means to be urban, and what 'being urban' means for the planet. This Unit of Study provides grounding to these crucial questions. In the first half of the semester, lectures address the question: are cities sustainable? Why or why not? And for whom? This focus addresses utopian visions for cities, urban history, ecological footprint analysis, bioregionalism, transport options, urban form and urban policy, with reference to sustainable futures and the role of custodianship. During the second half of the semester, lectures address the question: what does it mean to be a 'citizen', and what has this got to do with cities and different approaches to urban sustainability? This includes consideration of historical and contemporary configurations of citizenship. Case studies illustrate ways in which new forms of citizenship are produced through struggles over rights to the city and the urban environment. Through the semester a practicals program enables students to develop urban-based research projects.

## Master of Architecture - Prerequisite unit of study

**BDES3025**
**Architectural Professional Practice**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prerequisites:** BDES3023 or BDES3026 **Assessment:** Reports (20%), Assignment (80%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural Professional Practice introduces students in the final semester of their undergraduate degree to the professional practice of architecture, focusing on design development within regulatory and practice management frameworks. Students are introduced to the fundamental principles of key regulatory requirements and critically deploy their understandings by investigating local practice case studies. They further develop a capacity to apply their knowledge in a particular context through an architectural design project that they take to Development Application level using current best practice.

# Honours in the Bachelor of Architecture and Environments

## Admission

To qualify for enrolment in the one-year, full-time honours program a student must have qualified for the award of the Bachelor of Design in Architecture pass degree, or an equivalent degree from another university, with a weighted average mark of at least 70.

Before making their application a prospective honours student must develop a dissertation topic and receive confirmation from an appropriate member of full-time or fractional academic or research staff that they are willing to supervise them. It is also possible to have an associate supervisor where a student's research topic extends beyond the immediate expertise of their primary supervisor.

### The Honours year

Honours must be undertaken full time over two consecutive semesters. It comprises four units of study (ARCH4003 and ARCH4004 in the first semester and ARCH4005 and ARCH4006 in the second).

There are no formal classes. Honours students are expected to make arrangements for weekly contact with their supervisor on an individual basis to chart their work, receive advice, review and monitor progress.

### Submission date and form of dissertation

A student undertaking a dissertation shall:

- lodge two copies of their dissertation with their supervisor by the end of the first week of the formal examination period in the final semester of enrolment. The dissertation should be between 15,000 and 25,000 words in length. A lesser word length is expected and acceptable for a dissertation that has a significant non-text-based exploration (for example, dissertations that include a significant design or art component, or empirical or experimental research component). In these cases the word length will be determined and agreed with the candidate's supervisor(s) and the Principal Examiner.
- state in the dissertation, generally in the preface and specifically in the notes, the sources on which the research was based, the extent to which the student has made use of the work of others and the portion of the dissertation which is claimed to be original; and
- not lodge as the student's own work any work previously submitted for a degree of the University of Sydney or any other university, but may incorporate such work in the dissertation provided that the student indicates the work so incorporated.

A student may lodge the dissertation for examination bound in either a temporary or permanent form according to the following conditions:

- temporary binding must be able to withstand ordinary handling and postage. The preferred form of binding is the 'perfect binding' system; and
- the cover of a temporarily bound dissertation must have a label showing the student's name, name of the degree, title of the dissertation and year of submission.

A student must lodge the final dissertation in a permanent form according to the following conditions:

- permanent binding must meet the requirements given in the University Calendar under the resolutions governing the degree of Doctor of Philosophy; and
- following examination and emendation if necessary, at least one copy (the library copy) of the dissertation must be bound in a permanent form;
- if amendments are required, all copies of the dissertation which are to remain available within the University must be amended.

### Non-completion

Students who do not complete the honours year will be awarded the pass degree. Those who terminate their study prior to the end of the second semester of study will be awarded a grade of 'DNF' or 'Discontinue without failure'.

Students who fail or discontinue the honours program may not re-enrol in it, except with the approval of the Dean.

### Determination of honours

A candidate's performance shall be assessed by a Principal Examiner and two other examiners. The Principal Examiner shall normally be the Degree Program Director unless otherwise nominated by the Dean. After consultation with the supervisor, the Principal Examiner shall appoint two examiners to examine the dissertation.

The Principal Examiner is appointed to oversee the examination process within the policies of the University for the assessment and examination of coursework.

The role of the Principal Examiner is to:

- make available to each honours student the criteria and assessment instrument for the examination of the honours dissertation;
- appoint two examiners for each dissertation;
- ensure that all examiners have been appropriately briefed on the assessment criteria. Where practicable, new examiners will be provided with examples of dissertations, which have been assessed within various bands to help calibrate the assessment; and
- review the examiners' reports and conduct a parity check. Parity is defined by the principle of equal marks for equivalent work.

The examiners shall report to the Principal Examiner.

The Dean shall, on the recommendation of the Principal Examiner, award the degree of Bachelor of Design in Architecture with honours whenever the following sections are satisfied:

- the examiners have recommended the degree be awarded without reservation or subject to emendations to all copies of the dissertation which are to remain available in the University; or
- the Principal Examiner unanimously accepts the recommendation of the supervisor that the degree be awarded subject to emendations despite reservations expressed by any examiner; and
- the overall performance is 70 or greater.

The Dean, on the recommendation of the Principal Examiner, will determine the class of honours, if any, on the overall performance of the candidate in the Bachelor of Design in Architecture using a mark derived from weighting the mark for the honours dissertation at 70 percent and the weighted average mark of the pass degree at 30 percent.

The honours dissertation itself receives a mark, which is recorded on the transcript next to ARCH4006. The other units will be converted to 'R' for 'Satisfied requirements' upon successful completion of the dissertation.

The honours degree of Bachelor of Design in Architecture shall be awarded to eligible students, with the following grades:

- Honours Class I (with a mark of at least 80), or
- Honours Class II, Division 1 (with a mark of at least 75), or
- Honours Class II, Division 2 (with a mark of at least 70).

The University Medal may be awarded as described in the frequently asked questions section.

A candidate for the honours program who does not meet the requirements for award of honours shall be awarded the Bachelor of Design in Architecture pass degree.

The Dean may also recommend that an unsuccessful candidate be permitted to prepare for re-examination if of sufficient merit and the supervisor has so recommended.

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Bachelor of Architecture and Environments Honours units of study** | | | |
| Candidates are required to complete all units of study listed in this table. Candidates enrol in A and B in their first semester and C and D in their second semester. | | | |
| **ARCH4003 Dissertation and Research Methods A** | 12 | *Bachelor of Design in Architecture (Honours) students only.* | Semester 1 Semester 2 |
| **ARCH4004 Dissertation and Research Methods B** | 12 | **C** ARCH4003 | Semester 1 Semester 2 |
| **ARCH4005 Dissertation and Research Methods C** | 12 | **C** ARCH4004 | Semester 1 Semester 2 |
| **ARCH4006 Dissertation and Research Methods D** | 12 | **C** ARCH4005 | Semester 1 Semester 2 |

# Bachelor of Architecture and Environments Honours units of study

Candidates are required to complete all units of study listed in this table. Candidates enrol in A and B in their first semester and C and D in their second semester.

**ARCH4003**
**Dissertation and Research Methods A**

**Credit points:** 12 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1, Semester 2 **Classes:** Individual supervision **Assessment:** Dissertation of 15,000 to 25,000 words **Mode of delivery:** Supervision

*Note: Bachelor of Design in Architecture (Honours) students only.*

Students must complete and submit an Honours application form that includes a description of their proposed research topic and identification of a prospective academic supervisor. The appended BDesArch (Honours) requires full-time study over two semesters. Students undertake ARCH4003 and ARCH4004 simultaneously and then ARCH4005 and ARCH4006. The Dean may approve a part time enrolment over four semesters in special circumstances. The units of study are not assessed separately. Rather, a single dissertation serves as the formal examination.The dissertation is to be submitted by the end of the first week of the formal examination period in the semester in which ARCH4006 Dissertation and Research Methods D is undertaken.

**ARCH4004**
**Dissertation and Research Methods B**

**Credit points:** 12 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1, Semester 2 **Classes:** Individual supervision **Corequisites:** ARCH4003 **Assessment:** Dissertation of 15,000 to 25,000 words **Mode of delivery:** Supervision

Students must complete and submit an Honours application form that includes a description of their proposed research topic and identification of a prospective academic supervisor. The appended BDesArch (Honours) requires full-time study over two semesters. Students undertake ARCH4003 and ARCH4004 simultaneously and then ARCH4005 and ARCH4006. The Dean may approve a part time enrolment over four semesters in special circumstances. The units of study are not assessed separately. Rather, a single dissertation serves as the formal examination. The dissertation is to be submitted by the end of the first week of the formal examination period in the semester in which ARCH4006 Dissertation and Research Methods D is undertaken.

**ARCH4005**
**Dissertation and Research Methods C**

**Credit points:** 12 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1, Semester 2 **Classes:** Individual supervision **Corequisites:** ARCH4004 **Assessment:** Dissertation of 15,000 to 25,000 words **Mode of delivery:** Supervision

Students must complete and submit an Honours application form that includes a description of their proposed research topic and identification of a prospective academic supervisor. The appended BDesArch (Honours) requires full-time study over two semesters. Students undertake ARCH4003 and ARCH4004 simultaneously and then ARCH4005 and ARCH4006. The Dean may approve a part time enrolment over four semesters in special circumstances. The units of study are not assessed separately. Rather, a single dissertation serves as the formal examination. The dissertation is to be submitted by the end of the first week of the formal examination period in the semester in which ARCH4006 Dissertation and Research Methods D is undertaken.

**ARCH4006**
**Dissertation and Research Methods D**

**Credit points:** 12 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1, Semester 2 **Classes:** Individual supervision **Corequisites:** ARCH4005 **Assessment:** Dissertation of 15,000 to 25,000 words **Mode of delivery:** Supervision

Students must complete and submit an Honours application form that includes a description of their proposed research topic and identification of a prospective academic supervisor. The appended BDesArch (Honours) requires full-time study over two semesters. Students undertake ARCH4003 and ARCH4004 simultaneously and then ARCH4005 and ARCH4006. The Dean may approve a part time enrolment over four semesters in special circumstances. The units of study are not assessed separately. Rather, a single dissertation serves as the formal examination. The dissertation is to be submitted by the end of the first week of the formal examination period in the semester in which ARCH4006 Dissertation and Research Methods D is undertaken.

# Overseas exchange

## Exchange in the Bachelor of Architecture and Environments

The school encourages international exchange for qualified students who have completed at least 1.5 years of study, and it is recommended to be taken in either semester 4 or semester 5 of the degree. All students will complete the final semester of third year at the University of Sydney. Exchange will not be considered for honours.

Exchanges are for one semester only. Students can apply through the Study Abroad and Exchange Office. Each student's program will be approved in consultation with the Degree Program Director.

Exchange students are required to enrol in a full-time load at the University of Sydney whilst on exchange, and will incur the tuition costs associated with that load. No tuition costs will be incurred with the partner university.

Specially designated units of study will be recorded on the students' transcript. A result of 'SR' for 'Satisfied Requirements' will be recorded by the University against each successfully completed unit of study. The transcript of the exchange University will be the official detailed record of exactly what was completed during the exchange. Exchange results will not count against a student's weighted average mark.

For more information please contact the Study Abroad and Exchange Office.

## Exchange units of study

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Bachelor of Architecture and Environments exchange units** | | | |
| **Year 2 core units of study** | | | |
| **BAEN2611**<br>**Core 2A Exchange - DIL Energy** | 6 | *Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **BAEN2612**<br>**Core 2B Exchange - Algorithmic Architecture** | 6 | *Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **BDES2613**<br>**Architecture Exchange Technologies 2** | 6 | | Semester 1<br>Semester 2 |
| **Year 2 elective units of study** | | | |
| **BDES2615**<br>**Architecture Exchange Elective 2A** | 6 | | Semester 1 |
| **BDES2616**<br>**Architecture Exchange Elective 2B** | 6 | | Semester 2 |
| **BDES2617**<br>**Architecture Exchange Elective 2C** | 6 | | Semester 1<br>Semester 2 |
| **Year 3 core units of study** | | | |
| **BAEN3601**<br>**Core 3A Exchange - DIL Urban** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **BAEN3602**<br>**Core 3B Exchange - Environmental Quality** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **Year 3 elective units of study** | | | |
| **BDES3603**<br>**Core 3C Exchange - Technologies 3** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **BDES3615**<br>**Architecture Exchange Elective 3A** | 6 | | Semester 1 |

# Bachelor of Design in Architecture

## Overview

The Bachelor of Design in Architecture is a three-year, full-time degree that focuses on the design of the built environment. It comprises mandatory core units of study augmented by electives taken either within the school or elsewhere in the University.

Completion of the Bachelor of Design in Architecture with a credit average permits entry into the Master of Architecture, on the provision that the student has completed Architectural Professional Practice as one of their electives.

## Bachelor of Design in Architecture enrolment guide

To qualify for the Bachelor of Design in Architecture degree, students must fulfil the requirements specified by the resolutions of Senate and the school. All students should familiarise themselves with the course resolutions as stated later in this handbook and monitor their own progress in reference to them. The following points summarise the resolutions but do not replace them.

### Summary of requirements

To qualify for the award of the pass degree, candidates need to:

- maintain a full-time enrolment. 24 credit points per semester is a normal full-time load, 18 is the minimum and 30 is the maximum
- successfully complete 144 credit points. 102 of these are made up of core units of study as described in Table A
- successfully complete at least 12 credit points from the school electives as described in Table A.
- not complete more than 30 credit points from units of study offered by other faculties and
- successfully complete the remaining elective units of study from those listed in Table A

Students may, with the permission of the unit coordinator concerned, enrol in elective units of study from the school's tables of graduate units, provided they have completed at least 96 credit points with a weighted average mark (WAM) of at least 70.

### Progression in the Bachelor of Design in Architecture

Students must pass ALL core units of study to complete the Bachelor of Design in Architecture degree. To manage this, the school has created a series of thresholds through which students must pass before progressing to the next stage.

#### *Architecture Studio*

The Architecture Studio units of study are central to the Bachelor of Design in Architecture and the teaching of them is structured in such a way that the knowledge and skills gained in one semester build on those from previous semesters. It is necessary to pass Architecture Studio 1A before proceeding to Architecture Studio 1B and Architecture Studio 2A before you proceed to Architecture Studio2B and so on. A fail result in any Studio unit of study will prevent progression to the following one, causing a 12-month delay in a student's studies.

#### *Architectural History and Theory, Technologies and Art Workshops*

Architectural History and Theory, Technologies and Art Workshop units of study are also core to the degree. There are a number of units of study in each of these subject areas that must be taken in sequence. For example it is necessary to complete Architectural Technologies 1 before undertaking Architectural Technologies 2. If a student fails a unit of study in a particular subject area they must attempt it again in a subsequent year, but will be permitted to advance to the next year of the degree in subject areas for which they have passed all prerequisites.

### Master of Architecture prerequisite unit of study

Students wishing to proceed to the Master of Architecture must complete BDES3025 Architectural Professional Practice, as stated above. There are other conditions for entry to the Master of Architecture. Prospective students should refer to the information for that degree.

### Honours

To qualify for admission to the honours degree candidates must satisfy the requirements for the pass degree with a weighted average mark (WAM) of at least 70. The one year honours degree is only offered in full-time mode, requiring successful completion of 48 credit points, culminating in a research thesis. Refer to the honours section of this handbook for further information.

## Bachelor of Design in Architecture enrolment planner

**Bachelor of Design in Architecture**

| Year 1 | | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| BDES1011 | Architectural History/Theory 1 | 6 |
| BDES1026 | Architecture Studio 1A | 12 |
| | Elective* | 6 |
| ***Semester 2*** | | |
| BDES1023 | Architectural Technologies 1 | 6 |
| BDES1027 | Architecture Studio 1B | 12 |
| | Elective* | 6 |

| Year 2 | | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| BDES2013 | Architectural Technologies 2 | 6 |
| BDES2026 | Architecture Studio 2A | 12 |
| | Elective* | 6 |
| ***Semester 2*** | | |
| BDES2024 | Art Processes | 6 |
| BDES2027 | Architecture Studio 2B | 12 |
| | Elective* | 6 |

| Year 3 | | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| BDES3011 | Architectural History/Theory 3 | 6 |
| BDES3026 | Architecture Studio 3A | 12 |
| | Elective* | 6 |
| ***Semester 2*** | | |
| BDES3025 | Architectural Professional Practice# | 6 |
| BDES3037 | Architecture Studio 3B | 12 |
| | Elective* | 6 |

# indicates recommended elective
* indicates free elective

# Bachelor of Design in Architecture

## Bachelor of Design in Architecture

## Bachelor of Design in Architecture (Honours)

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the School, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

## Course Resolutions

### 1 Course codes

| Code | Course title |
|---|---|
| BUDARCHI-01 | Bachelor of Design in Architecture |
| BHDARCHH-01 | Bachelor of Design in Architecture (Honours) |

### 2 Attendance pattern

The attendance pattern for these courses is full time only.

### 3 Admission to candidature

Admission to this course is on the basis of a secondary school leaving qualification such as the NSW Higher School Certificate (including national and international equivalents), tertiary study or an approved preparation program. English language requirements must be met where these are not demonstrated by sufficient qualifications taught in English. Special admission pathways are open for mature aged applicants who do not possess a school leaving qualification, educationally disadvantaged applicants and for Aboriginal and Torres Strait Islander people. Applicants are ranked by merit and offers for available places are issued according to the ranking. Details of admission policies are found in the Coursework Rule.

### 4 Requirements for award

(1) The units of study that may be taken for this award are set out in Table A.

(2) To qualify for the award of the pass degree, a candidate must successfully complete 144 credit points, comprising:

(a) 102 credit points of core units of study and

(b) a minimum of 42 credit points of elective units of study, including a minimum of 12 credit points of senior elective units of study as listed in Table A.

(3) Candidates for the Bachelor of Design in Architecture proceeding to the Master of Architecture are required to complete the designated prerequisite unit(s) of study listed in Table A.

### 5 Requirements for the Honours degree

(1) Honours is available to meritorious candidates who complete an additional year of full time study, after the completion of the pass degree.

(2) Admission, requirements and award of Honours are according to the resolutions of the University of Sydney School of Architecture, Design and Planning.

### 6 Award of the degree

(1) The Bachelor of Design in Architecture is awarded in the grades of either Pass or Honours. The honours degree is awarded in classes ranging from First Class to Second Class according to the rules specified in the Resolutions of the University of Sydney School of Architecture, Design and Planning.

(2) Candidates for the award of the Honours degree who do not meet the requirements, and who have not already graduated, will be awarded the pass degree. Students who fail or discontinue the honours program may not re-enrol in it, except with the approval of the Head of School and Dean.

### 7 Credit for previous study

Credit transfer is subject to the provisions of the Coursework Rule and the Resolutions of the University of Sydney School of Architecture, Design and Planning. Candidates for the Bachelor of Design in Architecture who enrolled prior to 2015, not withstanding any credit transfer, must complete BDES3010, BDES3011, BDES3012, BDES3020, BDES3023 and not less than 6 additional senior credit points of units of study from Table A. Candidates for the Bachelor of Design in Architecture who enrolled in 2015 and onwards, not withstanding any credit transfer, must complete BDESXXXX (Architecture Studio 3A), BDES3011, BDESXXXX (Architecture Studio 3B) and not less than 6 additional senior credit points of units of study from Table A.

| Proposed New Units of Study | Current Units of Study to be Considered for Deletion in the Future but maintained for transitional arrangements |
|---|---|
| BDESXXXX Architecture Studio 1A | BDES1010: Architecture Studio 101<br>BDES1024: Art Workshop 1 |
| BDESXXXX Architecture Studio 1B | BDES1020: Architecture Studio 102<br>BDES1012: Architectural Communications 1 |
| BDESXXXX Architecture Studio 2A | BDES1020: Architecture Studio 102<br>BDES1012: Architectural Communications 1 |
| BDESXXXX Architecture Studio 2B | BDES2020: Architecture Studio 202<br>BDES2021: Architectural History/Theory 2 |
| BDESXXXX Architecture Studio 3A | BDES3010: Architecture Studio 301<br>BDES3023: Architectural Technologies 3 |

| Proposed New Units of Study | Current Units of Study to be Considered for Deletion in the Future but maintained for transitional arrangements |
|---|---|
| BDESXXXX Architecture Studio 3B | BDES3010: Architecture Studio 301<br>BDES3012: Architectural Communications 3 |

## 8 Transitional provisions

(1) These resolutions apply to students who commenced their candidature after 1 January, 2015 and students who commenced their candidature prior to 1 January, 2015 who elect to proceed under these resolutions.

(2) Candidates who commenced prior to 1 January, 2015 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that the requirements are completed by 1 January, 2020. The School may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

# Bachelor of Design in Architecture

## Table A: Units of study in the Bachelor of Design in Architecture

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Bachelor of Design in Architecture - Core units of study**<br>Candidates are required to complete all of the following core units: | | | |
| **Junior units of study** | | | |
| **BDES1011**<br>**Architectural History/Theory 1** | 6 | **A** HSC Mathematics and HSC English Standard<br>**N** DESA1102 | Semester 1 |
| **BDES1023**<br>**Architectural Technologies 1** | 6 | **N** DESA1102 | Semester 2 |
| **BDES1026**<br>**Architecture Studio 1A** | 12 | **C** BDES1011<br>**N** DESA1001 or BDES1010 or BDES1024 | Semester 1 |
| **BDES1027**<br>**Architecture Studio 1B** | 12 | **P** BDES1026 or BDES1010 or DESA1001<br>**C** BDES1023<br>**N** BDES1020 or DESA1002 or BDES1012 | Semester 2 |
| **Senior units of study** | | | |
| **BDES2013**<br>**Architectural Technologies 2** | 6 | **P** BDES1023<br>**N** DESA2111 | Semester 1<br>Semester 2 |
| **BDES2024**<br>**Art Processes** | 6 | **P** BDES1026 or BDES1024 | Semester 2 |
| **BDES2026**<br>**Architecture Studio 2A** | 12 | **P** BDES1027 or BDES1020 or DESA1002<br>**C** BDES2013<br>**N** BDES2010 or DESA2001 or BDES2012 | Semester 1 |
| **BDES2027**<br>**Architecture Studio 2B** | 12 | **P** BDES2026 and BDES1011 or BDES2010 or DESA2001<br>**C** (BDES2024 or CIVL2410)<br>**N** BDES2020 or DESA2002 or BDES2021 | Semester 2 |
| **BDES3011**<br>**Architectural History/Theory 3** | 6 | **P** BDES2027 or BDES2021 or DESA2111<br>**N** DAAP3001 | Semester 1 |
| **BDES3026**<br>**Architecture Studio 3A** | 12 | **P** (BDES2027 or BDES2020) and BDES2013<br>**C** (BDES3011 or MATH2061)<br>**N** BDES3010 or DESA3001 or BDES3023 | Semester 1 |
| **BDES3027**<br>**Architecture Studio 3B** | 12 | **P** BDES3026 or BDES3010 or DESA3001<br>**N** BDES3020 or DESA3002 or BDES3012 | Semester 2 |
| **Bachelor of Design in Architecture (Honours)/Master of Architecture honours core units**<br>Honours units in this degree will be offered from 2019 | | | |
| **Recommended electives**<br>Students are strongly advised to undertake the following elective units of study: | | | |
| **AWSS1001**<br>**Architectural Sketching and Drawing** | 6 | **N** DESA1601 or DESA1602<br>*Students may incur costs for materials in some Art Workshops units.* | Semester 1 |
| **Master of Architecture - Prerequisite unit of study**<br>Candidates wishing to proceed to the Master of Architecture are required to complete the following prerequisite unit. This unit may count towards the senior School electives. | | | |
| **BDES3025**<br>**Architectural Professional Practice** | 6 | **P** BDES3023 or BDES3026 | Semester 2 |
| **School electives**<br>Candidates are required to complete a minimum of 42 credit points of elective units of study, including a minimum of 12 credit points of senior elective units of study from those listed below. Candidates who have passed 96 credit points with a Credit average may request permission to enrol in graduate units from Table G, the table of graduate units of study, or Table M, the Master of Architecture, in this handbook. | | | |
| **Senior Art in Architecture elective units of study** | | | |
| **AWSS2002**<br>**Site Specific Art and Architecture** | 6 | *Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **AWSS2010**<br>**Arch + Design Material Processes (Ceramics)** | 6 | **N** DESA2634<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **AWSS2015**<br>**Generative Drawing** | 6 | *Note: Department permission required for enrolment* | Semester 2<br>Summer Main |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **AWSS2020**<br>**Object Design (Material and Light)** | 6 | **C** DESA1555<br>**N** DESA2643<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **AWSS2023**<br>**Architectural Photography** | 6 | **N** DESA2629<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2<br>Summer Main |
| **AWSS2026**<br>**2D Print Processes in Design** | 6 | **N** DESA2638<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2<br>Summer Main |
| **AWSS2027**<br>**Arch + Design Material Processes (Casting)** | 6 | **N** DESA2636<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DESA3013**<br>**Expanded Colour: From Theory to Application** | 6 | | Semester 1<br>Semester 2<br>Summer Main |
| Senior Architecture elective units of study | | | |
| **DAAE2001**<br>**Australian Architecture** | 6 | **N** DESA2305 | Semester 2 |
| **DAAE2002**<br>**Architecture, Place and Society**<br>*This unit of study is not available in 2018* | 6 | **N** DESA2211 | Semester 1 |
| **DESA3003**<br>**Architectural Detailing** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **DESA3004**<br>**Architecture and Diagrams** | 6 | **P** 48 Credit points<br>*Note: Department permission required for enrolment* | Semester 1 |
| **DESA3005**<br>**Architectural Drawing Through History** | 6 | **P** 48 credit points<br>*Note: Department permission required for enrolment* | Semester 1 |
| **DESA3007**<br>**Prefab Architecture** | 6 | **P** 48 credit points<br>*Note: Department permission required for enrolment* | Intensive February |
| **DESA3008**<br>**Architectural Models: Theory and Practice** | 6 | *Note: Department permission required for enrolment* | Semester 2 |
| **DESA3009**<br>**Advanced Fabrication** | 6 | **P** 96 credit points<br>*Note: Department permission required for enrolment* | Semester 2 |
| **DESA3010**<br>**Code to Production** | 6 | **P** 48 credit points<br>*Note: Department permission required for enrolment* | Intensive July |
| **DESA3011**<br>**Introduction to Building Construction** | 6 | *Note: Department permission required for enrolment* | Semester 2 |
| **DESA3012**<br>**Counter-Practices in Architecture**<br>*This unit of study is not available in 2018* | 6 | **N** ARCH9094<br>*Note: Department permission required for enrolment* | Semester 2 |
| **DESA3014**<br>**Finding Country** | 6 | *Note: Department permission required for enrolment* | Intensive January |
| **DESA3015**<br>**Broken Hill and Far West NSW Projects** | 6 | *Note: Department permission required for enrolment* | Intensive July |
| **DESA3441**<br>**Elective Travelling Studio 1** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Intensive February<br>Intensive July<br>Intensive June<br>Intensive November<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DESA3442**<br>**Elective Travelling Studio 2** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Intensive February<br>Intensive July<br>Intensive June<br>Intensive November<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DESA3443**<br>**Design Architecture Independent Study C** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DESA3444**<br>**Design Architecture Independent Study D** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **DESA3551**<br>**Design Architecture General Elective A** | 6 | *Departmental Permission will be required to enrol in this unit.* | Intensive February<br>Intensive July<br>Intensive June<br>Intensive November<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DESA3552**<br>**Elective Intensive Design Studio 1** | 6 | **P** 48 credit points.<br>*Note: Department permission required for enrolment* | Intensive February<br>Intensive January<br>Intensive June<br>Intensive November<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DESA3553**<br>**Elective Intensive Design Studio 2** | 6 | **P** 48 credit points.<br>*Note: Department permission required for enrolment* | Intensive June<br>Intensive November<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DESA3554**<br>**Intensive Design Studio 3** | 6 | **P** 48 credit points.<br>*Note: Department permission required for enrolment* | Intensive January<br>Intensive June<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **MARC6204**<br>**Graduate Exhibition** | 6 | *Note: Department permission required for enrolment* | Semester 2 |
| Junior Architectural Science elective units of study | | | |
| **DESA1004**<br>**Designing with Surfaces and Light** | 6 | **N** DESA2612<br>*Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.* | Semester 2<br>Summer Main<br>Winter Main |
| Senior Architectural Science elective units of study | | | |
| **DAAE2005**<br>**Designing with Colour** | 6 | *Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.* | Semester 1<br>Semester 2<br>Summer Main<br>Winter Main |
| **DAAE2008**<br>**Innovative Building Structures** | 6 | **P** BDES1023<br>**N** DESA2206 | Semester 2 |
| **DAAE3001**<br>**Sustainable Architectural Practice** | 6 | **P** BDES1023 or (DAAE1001 and DESA3011) or (DAAE2002 and DESP1001)<br>*Note: Department permission required for enrolment* | Semester 1 |
| Junior Design Computing elective units of study | | | |
| **DECO1012**<br>**Design Programming** | 6 | | Semester 1 |
| Senior Design Computing elective units of study | | | |
| **DAAE2011**<br>**Intro to Visual Communication Design** | 6 | **N** DAAE2009 or DECO1015 or DECO2101 | Semester 1<br>Summer Main<br>Winter Main |
| **DECO2010**<br>**Designing Social Media** | 6 | | Intensive June<br>Semester 1 |
| **DECO2015**<br>**Design for Innovation** | 6 | | Semester 2 |
| **DECO2101**<br>**Visual Communication** | 6 | **N** DECO1015 or DECO1100 or DAAE2009<br>*Note: Department permission required for enrolment* | Intensive June<br>Semester 1 |
| **DECO2102**<br>**Web Design and Technologies** | 6 | **N** DECO1016 | Semester 2 |
| **DECO2103**<br>**Architectural Modelling and Prototyping** | 6 | **A** Basic understanding of design principles and design processes and how to apply them in practical design projects<br>**P** DESA1555 and completion of at least 36 credit points<br>*Note: Department permission required for enrolment* | Semester 1 |
| **DECO2015**<br>**Design for Innovation** | 6 | | Semester 2 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **DECO2016**<br>**Design Thinking** | 6 | **N** DECO1006<br>*Not available to students in the Bachelor of Design Computing and the Bachelor of Architecture and Environments* | Semester 2 |
| **DECO3101**<br>**Innovation Design Studio** | 6 | | Semester 1<br>Semester 2<br>Winter Main |
| **DECO3006**<br>**Animation and Motion Design** | 6 | **N** DECO1017 | Semester 2 |
| Junior Planning elective units of study | | | |
| **DAAE1001**<br>**Living Cities** | 6 | **A** DECO1006 and DECO1012 and BDES1011 and AWSS1001 | Semester 2 |
| Senior Planning elective units of study | | | |
| **BADP2002**<br>**City Form and Development** | 6 | **P** DAAE1001 or (DAAE2002 and ENGG1850) | Semester 1 |

# Bachelor of Design in Architecture

## Table A: Units of study in the Bachelor of Design in Architecture

### Bachelor of Design in Architecture - Core units of study

Candidates are required to complete all of the following core units:

### Junior units of study

**BDES1011**
**Architectural History/Theory 1**

**Credit points:** 6 **Teacher/Coordinator:** Prof Michael Tawa **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DESA1102 **Assumed knowledge:** HSC Mathematics and HSC English Standard **Assessment:** Seminar Leadership and General Participation (40%), Research Reports (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural History/Theory 1 introduces students to the discourse of architectural history and theory. It includes a concise chronological survey of key periods of architectural history from antiquity to the mid-nineteenth century, providing an overview of the scope of the field and establishing initial points of reference. It also includes closer investigation of the ways in which particular architectural themes and ideas traverse across history, coming to the fore in certain periods and receding in others. Students will interrogate these themes in small groups through intense study of a single significant building, which they will research, document and illustrate in a written report, and re-construct in a suite of finely crafted scale models. They will be introduced to fundamental principles and skills of scholarly research in the discipline, including locating and evaluating sources, and constructing arguments.

**BDES1023**
**Architectural Technologies 1**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DESA1102 **Assessment:** Assignments (60%), Exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural Technologies 1 introduces students to the roles that environmental considerations, structures and construction play in architecture. The fundamental concepts underpinning each of these key areas are presented and students demonstrate their developing knowledge of them via project-based assignments. These progressively complex tasks initiate students to the knowledge required to successfully analyse and synthesise construction and technical systems in basic buildings.

**BDES1026**
**Architecture Studio 1A**

**Credit points:** 12 **Teacher/Coordinator:** Mr Chris Fox **Session:** Semester 1 **Classes:** Lectures; Lab and Studio contact plus self-directed preparation and assignments. Minimum student commitment of 18 hours per week. **Corequisites:** BDES1011 **Prohibitions:** DESA1001 or BDES1010 or BDES1024 **Assessment:** Assessment 1 + 2 (40%); Assessment 3 (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This course aims at providing students with the conceptual and technical skills required to creatively explore dynamic transactions between art and architecture. Throughout the semester, students will extend their ability to work with complex ideas while drawing on interdisciplinary practices related to the body, structure, form and site.

This course provides a space for architecture students to establish parameters and territories for exploration beyond the concerns of conventional architectural projects. From generative form making to performative action, the crossover between art and architecture has always been present within architectural design. This unit looks at developing conceptual and practical disciplines through experimentation with materials. Essential design sensitivities and skills will be developed through different modes of working including lectures, tutorials, presentations and writing as well as the physical engagement with new materials and building processes.

**BDES1027**
**Architecture Studio 1B**

**Credit points:** 12 **Teacher/Coordinator:** Dr Simon Weir **Session:** Semester 2 **Prerequisites:** BDES1026 or BDES1010 or DESA1001 **Corequisites:** BDES1023 **Prohibitions:** BDES1020 or DESA1002 or BDES1012 **Assessment:** Phase 1 Assessment: Online Studio Tasks and Peer Critiques (20%); Final Design Presentation (30%). Phase 2 Assessment: Interim Design Presentation (10%); Final Design Presentation (10%); Design Book (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This studio capitalises on the skills and processes gained in the first semester studio to engage with increasingly complex programmatic and contextual issues within the built environment.Fundamental modes of representation in a variety of media will be deployed as a means to comprehend and articulate architecture from multiple integrated perspectives.Designing a small building will be the final project yet based on a series of introductory exercises that will engage with concepts of iteration in a range of scales and media.Students will continue to learn new software and other related techniques while also developing their familiarity with the technical skills necessary to realise a final design presentation including various media.The design projects will explore the necessity of experimentation as a means to communicate fundamental ideas about space, structure and form.

### Senior units of study

**BDES2013**
**Architectural Technologies 2**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1, Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prerequisites:** BDES1023 **Prohibitions:** DESA2111 **Assessment:** Assignments (60%), Exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural Technologies 2 explores the roles that environmental considerations, structure and construction play in moderately complex small-scale buildings. Emphasis is placed on developing in students an active awareness of the impact that technical and constructional decisions have on architectural design. Through project-based learning, students develop an active awareness of the important role that appropriate technical and constructional decisions play in terms of fulfilling conceptual ambitions in tangible works of architecture. Students develop and demonstrate their developing appreciation of these issues via case study analysis, a group project, individual technical drawings and a final examination.

**BDES2024**
**Art Processes**

**Credit points:** 6 **Teacher/Coordinator:** Mr Chris Fox **Session:** Semester 2 **Classes:** Lecture and studio contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prerequisites:** BDES1026 or BDES1024 **Assessment:** Assessment 1 + 2 (50%); Assessment 3 (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Drawing upon skills and knowledge learnt in Architecture Studio 1A, students will extend their ability to work with complex ideas while drawing on interdisciplinary practices. A diverse range of studios will host the production and critical discussions of the work in conjunction with a series of lectures and independent research to be attained outside the workshops. By treating art as a field of open-ended experimentation, with direct consequences for architecture, this course encourages architecture students to undertake a self-directed and research-based approach that widens their own practice through working across the multiple streams of information specific to contemporary art.

**BDES2026**
**Architecture Studio 2A**

**Credit points:** 12 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1 **Classes:** Lectures; Lab and Studio contact plus self-directed preparation and assignments. Minimum student commitment of 18 hours per week. **Prerequisites:** BDES1027 or BDES1020 or DESA1002 **Corequisites:** BDES2013 **Prohibitions:** BDES2010 or DESA2001 or BDES2012 **Assessment:** Assignment 1: Design Analysis (20%); Assignment 2: Mapping and Design Studies (20%); Assignment 3: Design Project and Portfolio (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architecture Studio 2A requires the design of a small-scale building or space in an urban context. An architectural study of the house is coupled with an intensive process that prioritises communication techniques for articulating a design from a schematic stage through its development to final presentation drawings and models.

Exploration of multiple design communication techniques is promoted, including digital drawing, modelling and making, combined with support for engagement with multiple tools and machinery in the DMaF workshops. The design process fostered throughout the semester explores the creative tension between intuition and prescription, building skills via techniques and strategies that are also intended to assist in eliciting unexpected solutions.

Through this process, students are expected to become increasingly familiar with the complexities of architectural design and gain skill in incorporating a widening range of considerations into their projects. Examples of these aspects extend from the interpretation of programmatic requirements with respect to the opportunities and limits of site conditions to material articulation and the spatial and geometric implications of strategic decisions. They will be required to precisely and imaginatively negotiate the internal logic of a design approach and an urban strategy, searching for an overall coherence.

**BDES2027**
**Architecture Studio 2B**

**Credit points:** 12 **Teacher/Coordinator:** Dr Matthew Mindrup **Session:** Semester 2 **Classes:** Lectures, Tutorial and Studio contact plus self-directed preparation and assignments. Minimum student commitment 18 hours per week. **Prerequisites:** BDES2026 and BDES1011 or BDES2010 or DESA2001 **Corequisites:** (BDES2024 or CIVL2410) **Prohibitions:** BDES2020 or DESA2002 or BDES2021 **Assessment:** Assessment 1: Phase 1 Studio Presentation + Essay Abstract (30%); Assessment 2: Phase 2 Studio Presentation (30%); Portfolio + Illustrated Essay (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architecture Studio 2B demands of students a critical engagement with modern architecture and its histories. It couples the methods of humanities research, including locating and appraising sources, and constructing arguments, with the creative processes of architectural design. Students become increasingly aware of the role of the architect as an active agent in history and negotiate some of the attendant ethical, political, technical and aesthetic challenges and opportunities. In parallel with a weekly lecture series on key modern protagonists, movements and their historical consequences, students develop an illustrated essay on a topic of their own choosing, and they design a medium-scale building in a historically charged urban context. The studio project is conducted as a `conversationÂ¿ between contemporary programmatic concerns and architectural sensibilities, and the claims of the historically situated architecture that the students are required to reinvigorate.

**BDES3011**
**Architectural History/Theory 3**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Chris L. Smith **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prerequisites:** BDES2027 or BDES2021 or DESA2111 **Prohibitions:** DAAP3001 **Assessment:** Concept exploration (20%), Essay (80%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The objective of the Architectural Theory unit is to equip students with a critical understanding of key Western architectural theories and philosophy from the Enlightenment to the present. Emphasis is placed on the specific historical situations and cultural and philosophical contexts in which those theories arose, and ultimately how they were represented within the domain of architectural embodiment. It is organized to clearly identify particular trains of thought. Students will become generally conversant in the principles of central theories, and will understand their terms and references. Through readings, lectures, and tutorial sessions, students will acquire the literacy required to perceive and articulate contemporary theoretical standpoints, and will refine their research and writing skills through independent research into a particular aspect of recent architectural theory and philosophy related to their concurrent studio design project. Close attention will be paid to the exchange between practice and theory and the relevance of the discussed theories to the formation of current circumstances, and to the place of architecture within contemporary culture as a whole.

**BDES3026**
**Architecture Studio 3A**

**Credit points:** 12 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1 **Classes:** Lectures; Studio contact plus self-directed preparation and assignments. Minimum student commitment of 18 hours per week. **Prerequisites:** (BDES2027 or BDES2020) and BDES2013 **Corequisites:** (BDES3011 or MATH2061) **Prohibitions:** BDES3010 or DESA3001 or BDES3023 **Assessment:** Assessment 1 Interim Presentation + Report (20%); Assessment 2 Final Presentation (30%); Assessment 3 Portfolio + Final Report (30%); Assessment 4 Final Exam (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architecture Studio 3A is oriented towards the technical dimensions of architecture, whilst remaining attentive to the deeper cultural and historical context in which such technical knowledge, particularly in regards to structures and sustainability, has arisen and is currently situated. It imparts knowledge and skills that will stimulate compelling architectural projects that are conceptually rigorous, structurally innovating and technically adept. Structural knowledge is developed through a suite of lectures and accompanying practical exercises, and is assessed through technical reports and a final examination. Students simultaneously develop an architectural project in response to a brief in which structural concerns necessarily come to the fore, such as for a habitable bridge. They are required to integrate multiple criteria, including thematic, conceptual, programmatic and technical concerns into a persuasive architectural proposition.

**BDES3027**
**Architecture Studio 3B**

**Credit points:** 12 **Teacher/Coordinator:** Ms Catherine Lassen **Session:** Semester 2 **Classes:** Lectures; Lab; Studio contact plus self-directed preparation and assignments - minimum student commitment of 18 hours per week. **Prerequisites:** BDES3026 or BDES3010 or DESA3001 **Prohibitions:** BDES3020 or DESA3002 or BDES3012 **Assessment:** Assessment 1: Phase 1 Design Presentation (20%); Assessment 2: Phase 2 and Communications Submission (20%); Assessment 3: Design Project and Portfolio (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

As the culminating design studio for the degree, students are presented with the opportunity to develop an architectural position within their projects. Architecture Studio 3B continues themes from Architecture Studio 3A, extending design understanding with respect to programmatic ambition and situating a symbolic public building proposal within a specific urban site.

Particular attention is paid to the conventions of architectural representation as 'Communications' to doubly generate as well as conceptually clarify design opportunities.

Computational modes of modelling are a particular focus. Structural, technical and material thinking is encouraged in coherent relation to studentsÂ¿ strategic design intent and through studied historical and cultural awareness. The studio consolidates students' abilities in communicating and translating architecture using advanced modes of graphic visualisation through 3D modelling software and associated fabrication potentials. Hybrid techniques for moving between computational and actual realms are promoted in parallel with clarifying attitudes toward contemporary built and un-built environments.

Depth of design development is promoted via a dual emphasis: early analysis of exemplary architectural thinking coupled with intensive speculative and projective exploration. Students aim to produce conceptually challenging, integrated and compelling pre-professional architectural design projects confronting a variety of spatial contexts.

## Bachelor of Design in Architecture (Honours)/Master of Architecture honours core units

Honours units in this degree will be offered from 2019

## Recommended electives

Students are strongly advised to undertake the following elective units of study:

**AWSS1001**
**Architectural Sketching and Drawing**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1 **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA1601 or DESA1602 **Assessment:** Portfolio of works (60%); process journal (40%) **Practical field work:** Studio practice **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Students may incur costs for materials in some Art Workshops units.*

This unit aims to provide the student with the knowledge, skills and aptitude required to use a range of fundamental architectural sketching and drawing skills based on observation of the physical world, in particular the built world. Students will be encouraged to develop a commitment to the practice of drawing as a fundamental design skill through 13 studio classes coupled with independent study. The workshop places an emphasis on keen observation, experimental use of materials and engagement with historical frameworks used in design practice in design and architecture. Exposure in studio to the sensitivities offered by different drawing materials and techniques will give students the competency to more confidently use drawing as a communication device. Skills in perspective drawing are introduced and drawing is used to document the visible world and define structure and detail. On successful completion of this unit of study students will have demonstrated familiarity with a range of drawing media and techniques, including charcoal, graphite, pen, brush and ink, and an introduction to colour. Students will understand the importance of maintaining a sketchbook as a site to record all their visual and conceptual research, and in which to draw on a daily basis as a means to develop ideas and technical proficiency.

## Master of Architecture - Prerequisite unit of study

Candidates wishing to proceed to the Master of Architecture are required to complete the following prerequisite unit. This unit may count towards the senior School electives.

**BDES3025**
**Architectural Professional Practice**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prerequisites:** BDES3023 or BDES3026 **Assessment:** Reports (20%), Assignment (80%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural Professional Practice introduces students in the final semester of their undergraduate degree to the professional practice of architecture, focusing on design development within regulatory and practice management frameworks. Students are introduced to the fundamental principles of key regulatory requirements and critically deploy their understandings by investigating local practice case studies. They further develop a capacity to apply their knowledge in a particular context through an architectural design project that they take to Development Application level using current best practice.

## School electives

Candidates are required to complete a minimum of 42 credit points of elective units of study, including a minimum of 12 credit points of senior elective units of study from those listed below. Candidates who have passed 96 credit points with a Credit average may request permission to enrol in graduate units from Table G, the table of graduate units of study, or Table M, the Master of Architecture, in this handbook.

## Senior Art in Architecture elective units of study

**AWSS2002**
**Site Specific Art and Architecture**

**Credit points:** 6 **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Assessment:** Practical work (60%); research, written component and presentations (40%) **Practical field work:** Studio practice **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This practical unit aims to give students a critical understanding of site-specific intervention, through the development of sculptural objects, material investigation and research into relevant visual art forms and architecture. Students gain experience in ways of selecting and analysing sites for the development of site-specific installation. The structured methodologies will allow students to develop material competency exploring techniques in specific combinations of materials. Students will also develop ways of analysing and evaluating site-specific works through directed group discussions engaging in an ongoing discourse regarding site-specificity, installation and the complex relationships between historical and contemporary practices and architecture.

**AWSS2010**
**Arch + Design Material Processes (Ceramics)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA2634 **Assessment:** Studio projects (70%); Process Journal and associated assignments (30%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This studio-based unit explores ceramic media and processes. Students will investigate different fabrication techniques such as slip-casting, ceramic rapid prototyping and analogue modelling. There will be an emphasis on ceramics as a modelling medium in design and architecture. Students will use the digital modelling and fabrication lab within the school to investigate possibilities for ceramic production. This exploration will be in relation to historic and contemporary architectural frameworks. Set projects will enable students to explore expression and design in an architectural form and materiality context. Students will be expected to produce a research process journal and report on how a particular practitioner/s or movement has informed or influenced their project/s.

**AWSS2015**
**Generative Drawing**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 2, Summer Main **Classes:** Workshop 3 hrs/wk **Assessment:** Portfolio (60%); Process Journal (40%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit explores a variety of drawing skills with an emphasis on materials and techniques as tools for generative and process-based work related to drawing as a fundamental medium and method in design. Drawing is approached as a system for critical analysis, research and design speculation. The focus is on the formal aspects of composition and perspective while the material nature of drawing

is explored as a balance between chance and control. Students use a wide variety of mark-making methods to render line, tonal value and texture. Students are provided with the opportunity to combine observational skills with experimental techniques in order to encourage a personal vision and a commitment to the practice of drawing in design. Each technique and approach will be presented against a background of Architecture and Art history and theory.

**AWSS2020**
**Object Design (Material and Light)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Corequisites:** DESA1555 **Prohibitions:** DESA2643 **Assessment:** Portfolio of works and presentation (60%); process journal and associated assignments (40%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

In this unit students produce light objects exploring diverse materials and fabrication techniques in the DMaF workshops. Emphasis is placed on developing and inter-relating manufacturing and artisan skills with research, analysis and design development. The course aims to develop a critical awareness of the nature of objects that surround us, exploring cultural, contextual and symbolic aspects of object design as well as functional and aesthetic qualities working with light. Sustainability and social issues relating to their manufacture, use and disposal are also discussed; the unit aims to increase appreciation of the materiality of objects focusing on timber as an example paying attention to associated environmental and ethical issues, and emerging alternative materials. Through a series of exercises, experiments and production of their major project, students develop knowledge of construction techniques and skills in using wood/plastics tools and machinery and in so doing, build an awareness of industrial and craft practices and how they impact on the design process and outcome. Students will be expected to produce a research process journal and report on how a particular designer/s or movement has informed or influenced their final project/s.

**AWSS2023**
**Architectural Photography**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2, Summer Main **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA2629 **Assessment:** Process Journal and associated assignments (40%); final project and presentation (60%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This practical unit assumes students have little or no understanding of photo image making. It aims to give students an understanding of how photography functions as a contemporary visual medium, including its connection to modernism and architecture. Students will gain knowledge of the principles and practise of camera operations, the production of high quality black and white prints in small studio style classes. This module covers the use of a 35mm DSLR camera, image composition, use of lighting, image capture and correction, and printing. Practical work includes completion of set class projects, gallery visits, class discussions and the production of a portfolio. *Students should have access to a 35mm DSLR camera.

**AWSS2026**
**2D Print Processes in Design**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2, Summer Main **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA2638 **Assessment:** Research Journal (30%); portfolio of Studio Works (70%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This studio-based unit introduces a variety of traditional and experimental techniques that will enable students to design and print a series of 2D works both within and around the context of design and Architecture. It will provide students with the knowledge and skills to design and print on a variety of substrates including paper, wood, and perspex through a range of techniques and creative exercises that can be developed into an edition or a series of experimental printed works. Students will also explore the historical roots of print and print as an element in design and architecture. Techniques covered include: digital photography and vector illustration, typography, hand and laser-cut paper stencils, ink mixing, registration and print set-up for multi-coloured prints. Through studio practice, set exercises, illustrated talks, gallery visits and library research, students will develop an understanding of their creative process and ability to interpret ideas through the medium of printing and with particular focus on design and architecture applications.

**AWSS2027**
**Arch + Design Material Processes (Casting)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA2636 **Assessment:** Studio Projects and associated tasks (70%); Research Process Journal (30%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This studio-based unit focuses on critical engagement with materiality and form. The course introduces fundamental knowledge and technical skills for students to produce a series of 3D objects through high-definition casting and complimentary construction techniques. Students will work with a broad range of traditional and experimental materials including wax, silicone, metal, sand and plaster. Emphasis is placed on developing students' material and spatial awareness of three-dimensional forms in context and investigating their conceptual meanings and applications. Students will be required to design, plan and produce a series of sculptural works, utilizing mediums and techniques explored throughout the semester. Additionally, students will critically contextualise and discuss their projects against historical precedents and contemporary practices that inform their creative inquiries.

**DESA3013**
**Expanded Colour: From Theory to Application**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2, Summer Main **Classes:** Tutorial 1 hr/wk; studio 2 hrs/wk **Assessment:** Studio projects (65%); Process Journal and associated assignments (35%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit allows students to develop and extend research into colour and the designed environment. It locates some of the main figures that have investigated and championed the use of colour historically and in contemporary contexts - including artists and theorists Josef Albers, Johannes Itten, David Batchelor, Ann Veronica Janssens, Carlos Cruz-Diez, James Turrell and Olafur Eliasson, scientist Albert Henry Munsell, architects Le Corbusier and Sauerbrauch Hutton. Research will take students across the connections made between colour and light, music, and the phenomenology of space. Using a range of materials and techniques tied to sculpture, video, photography, assemblage and installation, students will experiment and explore propositions for architecture in response to conceptual frameworks and historical and contemporary precedents. Through this unit students have the opportunity to develop observational, critical and tactical skills related to the meaning and potential uses of colour in architecture.

## Senior Architecture elective units of study

**DAAE2001**
**Australian Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Prof Andrew Leach **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DESA2305 **Assessment:** One process development presentation and one 3,000-word essay (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce students to the history of Australian architecture in its various contexts. Lectures and seminars will cover key architects, projects and building types and their relation to Australian history. Students will become familiar with a range of architectural styles and

movements and their characteristics. They will undertake individual self-directed research and learn how to record and present the results of this research. Students will also acquire an appreciation of the factors that shape architectural design and thought in Australia and how these relate to wider social and cultural circumstances. Tutorials will introduce students to key books, essays and journals concerned with Australian architecture. On successful completion of this unit, students will be able to: demonstrate a familiarity with a range of Australian architects, buildings and types; research, record and present a specific project in Sydney; connect specific works to other works of a similar style, period or cultural context. This will be assessed in the submitted essay.

**DAAE2002**
**Architecture, Place and Society**

**Credit points:** 6 **Teacher/Coordinator:** Dr Akin Sevinc **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DESA2211 **Assessment:** Graphic and Written Pressentation on Research (40%); Final Research Essay (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit aims to investigate the relationship between architecture, place and society and to explore the meaning of cultural and social sustainability in architectural design. The unit assumes that designers will increasingly work in places where cultures are unfamiliar at home or in a global context, and that an ability to understand, and interpret, diverse cultures, and the way design occurs in diverse locations, is an important area of knowledge for designers. A key aspect of social sustainability is the practice of social responsibility, and the unit explores how this may occur, including involving people in the design process. On completion of this unit students will be able to demonstrate: an ability to better understand the connections between architecture place and society, and the social, cultural, political and economic factors affecting sustainable environments; skills and knowledge in participatory processes necessary for effective communication about environmental design issues; increased critical awareness about social responsibility in relation to the practice of architecture and the design of the built environment, and an ability to exercise this awareness. This unit will provide architecture students with knowledge of the relationship between culture and architecture, as well as practical knowledge of the social aspects of design practice. It is intended that students from other disciplines will develop a critical awareness of the built environment as a form of cultural production, and the possibilities for their participation in its production.

**DESA3003**
**Architectural Detailing**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1 **Classes:** Tutorial 3 hrs/week, minimum 4 site visits/semester **Assessment:** Initial site report (30%), Draft final findings (10%), Final site details (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

The process of detailing in the office and during construction is a fundamental part of architectural practice. Experience of the process can provide and invaluable learning experience for students of architecture. However, many students have no available path to builders or architects and access to operative building sites is generally limited by OH and S concerns. The studio-based elective will allow a small group of students access to current building projects to explore the role of detail in design and building and in guiding not only a small component of a building's construction but its fundamental overall character. This elective will link students to a particular architect, builder and domestic scaled project to study and document a series of details in the context of the whole building and provide access to the site under supervision to study construction methods and detailing in context.

**DESA3004**
**Architecture and Diagrams**

**Credit points:** 6 **Teacher/Coordinator:** Dr Francois Blanciak **Session:** Semester 1 **Classes:** 1-hr lectures/Weeks 1, 2 and 3, 3-hr tutorials/week, 1-hr seminars/week **Prerequisites:** 48 Credit points **Assessment:** Diagramming (50%), Seminar presentation (35%), Active participation (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Architecture and Diagrams is an elective that aims to provide students with an overview of various techniques of production and theories that relate to architectural diagrams. Its objectives are: to learn how to analyse buildings from a diagrammatic point of view; to acquire a basic knowledge of the history and theory of diagrams in architecture; and to develop basic skills to generate urban and architectural diagrams directly related to the students' respective design work in other units of study.

**DESA3005**
**Architectural Drawing Through History**

**Credit points:** 6 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1 **Classes:** 1 hr lecture/week, 3 hrs studio/week **Prerequisites:** 48 credit points **Assessment:** Seminar presentation (30%), Studio project (50%), Illustration report (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

In Architectural Drawing Through History, students critically investigate and then imaginatively deploy in a studio project an unconventional historical drawing technique of their choosing. Close studies of the widely differing range of drawings that were produced to achieve the architecture of Ancient Egypt, Classical Greece and Rome, the Middle Ages, Renaissance and Baroque, can illuminate aesthetic sensibilities that are often profoundly difference to our own, and can provide insights into the worldviews of the cultures that produced them. Drawings are a vital mediator between that which can be imagined and that which can be built, and the elective contributes to architectural historian Robin Evans' claim that it would be possible to ' write a history of western architecture that would have little to do with either style or signification, concentrating instead on the manner of working. Students conduct textual and graphic analyses of case study drawings and buildings, but engage equally in practical experimentation in an effort to unfold and re-animate the potential of forgotten or marginalised drawing methods to inform current architectural practice.

**DESA3007**
**Prefab Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Mathew Aitchison **Session:** Intensive February **Classes:** 5 intensive days **Prerequisites:** 48 credit points **Assessment:** Case study report (50%), Presentation report (50%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit will introduce students to the benefits and limitations of prefabricated architecture through case study analysis and design exercises. Architects have long used prefabricated housing to explore industrialised building solutions, often with disappointing results. Yet, recent developments show the conditions for a more industrialised approach to housing Â¿ especially its promise of low-cost, more socially inclusive, and well-designed housing Â¿ have rarely been better. AustraliaÂ¿s housing affordability crisis, changing design needs, sustainability concerns, and the rise of digital and automated fabrication technologies, have conspired to challenge a housing industry deeply resistant to change. Using design research tools, students will assess case study projects before developing their own prefab building 'offering'. Through a series of workshops running parallel to 'live' research projects within the Innovation in Applied Design Lab, students will have contact with professionals and researchers active in the industry. Learning outcomes will include the ability to analyze complex case studies using graphic, physical, and textual media for the case study report. Design, communication and presentation skills will be examined in the form of a PowerPoint presentation 'Pitch' and report.

**DESA3008**
**Architectural Models: Theory and Practice**

**Credit points:** 6 **Teacher/Coordinator:** Dr Matthew Mindrup **Session:** Semester 2 **Classes:** 2hr lectures/week, 1hr tutorials/week **Assessment:** (40%) Portfolio, (60%) Graphic and written presentation on research **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study asks students to consider 'what is a physical model in architecture?' and 'what are the different materials, methods and uses of physical models in the design and presentation of architecture?' Participants in this unit will critically investigate and creatively apply a non-conventional modeling technique of their choice in the conception, study or presentation of architecture. These inquiries are supplemented by lectures and in-class discussion, which seek to uncover a historical and contemporary use of physical models as a tool for architects, including their mention in architectural treatises and in the formation of Modernism. In recent years, the development and use of parametric driven architectural models has received significant attention. Naturally, the unit will also explore the interface between the physical and virtual model to understand how architectural modeling programs belong to a historical tradition and are playing a role in not only representing conditions of building in the world but also in the development of new architectural ideas.

**DESA3009**
**Advanced Fabrication**

**Credit points:** 6 **Teacher/Coordinator:** Dr Simon Weir **Session:** Semester 2 **Classes:** 3 hr/week Lecture/lab/tutorial **Prerequisites:** 96 credit points **Assessment:** Assignments (2x50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This design elective bridges the domains of design theory and advanced fabrication practices. In this unit students will make complex and polished objects using the fabrication tools in the DMaF lab, that demonstrate and/or embody design ideas intrinsic to their formulation. The unit is divided into two halves: additive fabrication and subtractive fabrication. Each half will be accompanied by lectures on the technical knowledge related to these fabrication processes, and lectures on the theoretical premises and associations generated by the internal logic, and expressive languages of each fabrication type. Tutorials will also be divided between technical developing machine control, and design tutorials in which students will develop control of the design trajectory and expressive languages.

**DESA3010**
**Code to Production**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dagmar Reinhardt **Session:** Intensive July **Classes:** 1hr lectures/week, 2hr tutorials/week, 2hr workshops/week **Prerequisites:** 48 credit points **Assessment:** Small exercises (50%), Documentation (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Code to Production is an elective that explores the potential of an iterative design process from parametric variations; to analysis and simulation; to digital prototyping and manufacturing. The course has a two-fold agenda: to examine the performance of complex geometries available through computational design processes, and to translate the optimised design by digital manufacturing into construction and prototype (CNC/robotic fabrication). Based upon the development of a series of controlled variations derived through parametric and scripting methods, the elective aims to further expand an understanding of structural and acoustic performance of these geometries. It reviews an open system of design research in which design process, structural analysis and acoustic analysis are deployed to improve the acoustic and structural performance of complex spatial geometries, and derive fabrication knowledge for architectural practice. The unit of study extends students' knowledge of advanced computational design, interdisciplinary processes and fabrication methodologies by application of commercial and specialist 3D-modelling, scripting, analysis and manufacturing packages (including various software such as McNeel Rhino and Grasshopper, Karamba, RhinoNest and KUKA/prc).

**DESA3011**
**Introduction to Building Construction**

**Credit points:** 6 **Teacher/Coordinator:** Mr Damien Madell **Session:** Semester 2 **Classes:** 3 hr lecture/tutorial/week **Assessment:** Two assignments (40%) and (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit provides a comprehensive overview of standard domestic scaled construction in Australia. It begins by introducing a number of recurrent themes in construction including the idea of building culture, the various modes of delivery and variety of classifications of buildings and building elements, rational construction and construction detailing from first principles. There follows a review of construction techniques of well-documented and/or accessible exemplars. Finally, the unit will review current issues related to key attributes of buildings which make them sustainable, particularly with regard to material selection, appropriate detailing and energy and resources conservation.

**DESA3012**
**Counter-Practices in Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Lee Stickells **Session:** Semester 2 **Classes:** tutorials 1hr/week; seminars 2hrs/week **Prohibitions:** ARCH9094 **Assessment:** illustrated research essay (50%), critical summaries (20%) and seminar presentation (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Focused on the 1960s and 1970s, this unit will explore an alternative genealogy of the postmodern turn in architecture. It will introduce students to experimental practices and polemics that emerged when architects and figures from the counterculture responded to the identification of global environmental emergency, urban instabilities; revolutions in communication technologies and expanded forms of environmental control; growing militarism and globalising forces; and burgeoning claims to self-determination and environmental justice.

**DESA3014**
**Finding Country**

**Credit points:** 6 **Teacher/Coordinator:** Prof Michael Tawa **Session:** Intensive January **Classes:** 4 day intensive and studio **Assessment:** proposition (20%), mapping process (20%) and finding country (60%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit of study involves an intensive 4-day workshop focusing on 'finding country': that, is recuperating the erased or imperceptible layers of Aboriginal and Torres Strait Islander histories within the urban fabric of Sydney. The workshop also aims to make propositions for urban interventions within the city fabric that would re-establish the value and importance of those histories to the cultural and experiential futures of the city.

**DESA3015**
**Broken Hill and Far West NSW Projects**

**Credit points:** 6 **Teacher/Coordinator:** Prof Michael Tawa **Session:** Intensive July **Classes:** 4 day intensive and fieldwork **Assessment:** project proposal (20%), reflective journal (20%), critique (20%), presentation (10%) and major project report (30%) **Mode of delivery:** Field experience

*Note: Department permission required for enrolment.*

This unit of study introduces students to a community engaged learning and teaching setting, working on collaborative, multidisciplinary action research project that crosses over business and architecture. The

design project will exercise and extend design skills and knowledge required to produce a plausible conceptual solution to a large-scale regional city condition that addresses educational, sociocultural,

business, heritage, architectural, landscape and technological issues, with an emphasis on indigenous community needs. Architecture students will work with their Innovative and Enterprise counterparts from the Business School to develop viable architectural and business solutions that integrate multiple criteria (contextual, sustainable, urban design, structural, material, constructional, representational) into a design within rigorous conceptual and theoretical framework. The

project will offer students opportunities to engage with the professionals and the broader community.

**DESA3441**
**Elective Travelling Studio 1**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive February, Intensive July, Intensive June, Intensive November, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Classes:** Weekly meetings by arrangement. **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Architecture topic; to develop skills in independent study; and to develop advanced report writing skills. This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Architecture. The student will meet with the supervisor weekly to discuss progress. The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DESA3442**
**Elective Travelling Studio 2**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive February, Intensive July, Intensive June, Intensive November, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Classes:** Weekly meetings by arrangement. **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Architecture topic; to develop skills in independent study; and to develop advanced report writing skills.

This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Architecture. The student will meet with the supervisor weekly to discuss progress.

The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DESA3443**
**Design Architecture Independent Study C**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1, Semester 2 **Classes:** Weekly meetings by arrangement. **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Architecture topic; to develop skills in independent study; and to develop advanced report writing skills.

This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Architecture. The student will meet with the supervisor weekly to discuss progress.

The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DESA3444**
**Design Architecture Independent Study D**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1, Semester 2 **Classes:** Weekly meetings by arrangement. **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Architecture topic; to develop skills in independent study; and to develop advanced report writing skills.

This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Architecture. The student will meet with the supervisor weekly to discuss progress.

The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DESA3551**
**Design Architecture General Elective A**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive February, Intensive July, Intensive June, Intensive November, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Supervision

*Note: Departmental Permission will be required to enrol in this unit.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

This unit of study is available to a minimum of 10 students to engage in a topic related to Design Architecture that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Undergraduate).

Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

**DESA3552**
**Elective Intensive Design Studio 1**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive February, Intensive January, Intensive June, Intensive November, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Prerequisites:** 48 credit points. **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

This unit of study is available to a minimum of 10 students to engage in a topic related to Design Architecture that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Undergraduate).

Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

**DESA3553**
**Elective Intensive Design Studio 2**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive June, Intensive November, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Prerequisites:** 48 credit points. **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.This unit of study is available to a minimum of 10 students to engage in a topic related to Design Architecture that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Education). Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

**DESA3554**
**Intensive Design Studio 3**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive January, Intensive June, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Prerequisites:** 48 credit points. **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment. This unit of study is available to a minimum of 10 students to engage in a topic related to Design Architecture that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Education). Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

**MARC6204**
**Graduate Exhibition**

**Credit points:** 6 **Teacher/Coordinator:** Dr Sandra Loschke **Session:** Semester 2 **Classes:** 3-hour design intensives twice weekly in Weeks 1-3 and 3-hour pre-production meetings and production intensives in Weeks 9-14 **Assessment:** Preliminary research, exhibition design and performance assessment (individual work) (40%); Exhibition and Yearbook (group work) (60%). **Practical field work:** 3-hour intensive fabrication workshops in Weeks 10-14 and as required to produce the exhibition. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study enables students to engage in a collaborative project to research, design and produce a high-profile public exhibition and accompanying yearbook of graduating work from the BDesArch and MArch programs. The project will exercise and extend design skills and knowledge required to produce a plausible concept for the exhibition and yearbook and to implement the necessary logistical, technical and practical means to realise it. The project integrates multiple activities which exercise different skill sets including research and precedent studies of exhibition, curation and potential venues; developing a critical, plausible and achievable concept for the event; budgeting and financial management; exhibition design; graphic design; construction and installation of the exhibition; production of the yearbook; consultation with stakeholders and implementation. Students will extend their research, design and implementation skills through a real project with a concrete outcome to real-time deadlines and resource limitations.

## Junior Architectural Science elective units of study

**DESA1004**
**Designing with Surfaces and Light**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2, Summer Main, Winter Main **Classes:** Online. Expected total workload is approximately 35 hours online, plus independent study and preparation. Lecture materials are available on the eLearning site. They consist of PDF files and Powerpoint slides. No lecture recordings are available. **Prohibitions:** DESA2612 **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Online

*Note: Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.*

Objects only become visible when light reflects off of them. This unit explores the ways in which light interacts with surfaces, objects, and the human visual system. Architectural design decisions regarding the lighting, as well as exterior and interior surfaces of a building, alter the perceptual experience of users and should be done thoughtfully.

This unit introduces students to the way humans perceive and experience the built environment. It covers some of the fundamental properties of light, mechanisms of human perception, and the ways that light interacts with surfaces. The application of these topics to design decisions is also discussed. Students demonstrate their understanding of the presented material and apply their knowledge to critically analyze their own environments.

## Senior Architectural Science elective units of study

**DAAE2005**
**Designing with Colour**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 1, Semester 2, Summer Main, Winter Main **Classes:** Online. Expected total workload is approximately 35 hours online, plus independent study and preparation. Lecture materials are available on the eLearning site. They consist of PDF files and Powerpoint slides. No lecture recordings are available. **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Online

*Note: Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.*

All design decisions involve decisions about colour within the fields of architecture, applied design and art. This unit presents knowledge about colour theory as well as research-based information about colour and associated topics that can be used in design. Information and knowledge about colour can vary in quality and reliability, which is demonstrated. Students apply their skills and knowledge about colour theory and colour design in the assignments of this unit. This unit covers the processes of colour vision and other aspects of visual perception. It also explores colour application from the Pre-history period, as well as selected colour theories of the Renaissance period through to the 21st Century. Common colour-related constructs and the application of these in art, architecture and design are discussed. In completing the assessment tasks, students must demonstrate understanding of the knowledge presented in learning modules of the unit and critically analyse and apply knowledge related to colour design and application.

**DAAE2008**
**Innovative Building Structures**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk; tutorial 1 hr/wk **Prerequisites:** BDES1023 **Prohibitions:** DESA2206 **Assessment:** Group Report (40%); Physical Test (20%);Individual Report (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of this unit is to engage students in detailed studies of innovative building structures, covering the three aspects of innovation in architectural and structural design (modeling, materials and technology). The main topics covered are: architectural form and structural function; interpretation of basic (arch, beam, column, space and spatial portal) and advanced (truss, vault, dome, shell) structural principles with an intuitive graphical method (Load Path Method - LPM). Examples of significant case studies will be shown and interpreted (works by A. Gaudi, B. Fuller, F. Otto, N. Grimshaw, S. Calatrava, N. Foster, R. Piano and others); biomimetics; bioinspired structures as a way to increase structural efficiency. Innovative structural materials: the use of glass as structural material, innovative reinforcements for composite structures, smart and nanostructured materials; kinetic architecture: structural movement as the 4th architectural dimension. A case study assignment will be used to assess student's competence in investigating and presenting case studies and being able to identify and evaluate issues and factors contributing to innovative structural solutions.

**DAAE3001**
**Sustainable Architectural Practice**

**Credit points:** 6 **Teacher/Coordinator:** Dr Daniel Ryan **Session:** Semester 1 **Classes:** lecture 2 hrs/wk, tutorial/lab 2 hrs/wk for weeks 1 to 12 **Prerequisites:** BDES1023 or (DAAE1001 and DESA3011) or (DAAE2002 and DESP1001) **Assessment:** Case Studies (30%), Design Exercise (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

The unit of study begins by exploring the concept of ecologically sustainable design as it applies to architectural practice and defines those key attributes of buildings which make them sustainable. It discusses the implication of applying sustainable design principles upon contemporary architectural practice. This unit will cover the fundamentals of passive solar design, the environmental impact of

building materials, water sensitive design and the environmental certification of buildings. Through the use of case studies and project work students will learn about how to design environmentally sustainable buildings by understanding contemporary trends in sustainable architectural practice, methods to critically evaluate environmental claims about buildings and will develop a personal position on applying sustainable design principles to architecture. This unit is an Architecture Elective in the Bachelor of Design in Architecture and elective in other courses.

## Junior Design Computing elective units of study

**DECO1012**
**Design Programming**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1 **Classes:** seminar and tutorial 3hrs/wk **Assessment:** Programming Assignments (80%); Tutorial Activities (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides an introduction to the development of software in design and the creative industries. It teaches an understanding of the fundamentals of computational thinking as well as skills in the design and implementation of software for creative expression and prototyping. It introduces students to tools for building interactive design applications through programming assignments; knowledge of programming concepts; and knowledge of the Javascript programming language. Key concepts covered in this unit include: variables, functions, control flows, and algorithmic thinking. Students learn how to design through the development of code, allowing them to incorporate programming into their own design projects as well as to collaborate effectively with software developers.

## Senior Design Computing elective units of study

**DAAE2011**
**Intro to Visual Communication Design**

**Credit points:** 6 **Teacher/Coordinator:** Mr Nathaniel Fay **Session:** Semester 1, Summer Main, Winter Main **Classes:** Online: expected total workload is approximately 35 hours online, plus independent study and preparation. **Prohibitions:** DAAE2009 or DECO1015 or DECO2101 **Assessment:** Visual Design Assignments (85%), Quiz (15%) **Mode of delivery:** Online

This unit of study introduces students to the principles and practices of visual communication design for non-designers. Visual communication is an essential skill in todayÂ¿s complex world, for effectively communicating ideas, information, perspectives and proposals to diverse audiences in a variety of contexts. Students will learn about the theories of visual perception and psychology underlying visual design principles, and strategies for the composition of visual elements to produce effective and compelling visual presentations. On the successful completion of this unit of study, students will have demonstrated knowledge and skills in the understanding and application of visual design to produce and evaluate effective visual communication materials for a range of audiences.

**DECO2010**
**Designing Social Media**

**Credit points:** 6 **Teacher/Coordinator:** Ms Madeleine Borthwick **Session:** Intensive June, Semester 1 **Classes:** Lecture 1 hr/wk; tutorial 2 hrs/wk **Assessment:** Social Media Project (75%); Tutorial Activities (10%); Quizzes (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides students with an understanding of principles and technologies relevant to the design of social media, that is, media supporting social interaction. The unit covers the history and theory of social networks, techniques and methods for analysing social media networks, design principles and patterns for the creation of social media applications, and the development and delivery of social media strategy. Students will gain proficiency designing social media platforms and usage scenarios that solve a range of design challenges. Students will participate in, critically review and prototype social media platforms and content to demonstrate their understanding of the subject matter.

**DECO2015**
**Design for Innovation**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 2 **Classes:** Lectures 1 hr/week; tutorials 2 hrs/week **Assessment:** Analysis report (35%); Project work (55%); Quizzes (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces students to design strategies and techniques for developing alternative points of view and exploring multiple solutions iteratively. Through the analysis of real-world case studies students will develop an understanding for how to use design-thinking methods to tackle complex problems. The unit will discuss how design can be used as a method and as a way of thinking to drive innovation for products, services and processes. In the tutorial component, students will apply design strategies and techniques, such as lateral thinking, experiential prototyping and speculative design, through small group exercises. Students will develop a deep understanding of these strategies and techniques through the various assessment items, which capture theory, analytical reflection and the practical application of methods.

**DECO2101**
**Visual Communication**

**Credit points:** 6 **Teacher/Coordinator:** Mr Nathaniel Fay **Session:** Intensive June, Semester 1 **Classes:** Lecture 1 hr/wk (Week 1 only); tutorial 2 hrs/wk; online modules 1 hr/wk **Prohibitions:** DECO1015 or DECO1100 or DAAE2009 **Assessment:** Visual Design Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study introduces students to the principles of visual design, including graphic design, colour theory and typography. Students will develop an understanding of how to successfully combine visual elements to effectively communicate an idea or concept, to describe a product, and to represent visual user interface elements in an interactive product. Using digital image manipulation tools, such as Adobe Photoshop, Illustrator and InDesign, students will learn how to develop design concepts and how to turn concepts into visual communication materials in the form of digital images.

**DECO2102**
**Web Design and Technologies**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 2 **Classes:** Lecture 1 hr/wk (Week 1 only); tutorial 2 hrs/wk; online modules 1 hr/wk **Prohibitions:** DECO1016 **Assessment:** Web Design Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to web design and modern web technologies for the purpose of designing and prototyping web-based user interface solutions. Students will learn about design principles and patterns for the web and apply them in practical exercises that involve designing and creating interactive web applications. The unit will introduce web-based markup languages and frameworks for various media and platforms, such as desktop computers and mobile devices, with a focus on interaction design. Students will develop an understanding of web technologies and their role in user experience and interaction design, including the use of web technologies for prototyping user interfaces. Prototyping techniques covered in this unit include: scripting and markup languages for enabling dynamic content and interactive designs, such as HTML, CSS, and JavaScript.

**DECO2103**
**Architectural Modelling and Prototyping**

**Credit points:** 6 **Teacher/Coordinator:** Dr Rizal Muslimin **Session:** Semester 1 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Prerequisites:** DESA1555 and completion of at least 36 credit points **Assumed knowledge:** Basic understanding of design principles and design processes and how to apply them in practical design projects **Assessment:** Assessment 1 (25%), Assessment 2 (35%), Assessment 3 (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit teaches students basic understanding of digital modelling and architectural prototyping. Students will develop skills in creating and using 3D modelling software for various design tasks. The unit

further introduces students to rapid prototyping fabrication techniques, such as 3D printing and laser cutting with the aim to understand how to prepare a digital model for physical fabrication. Students will learn how physical objects are represented in 3D digital models by modelling various 3D geometric entities. Key concepts covered in this unit include: joinery, composite material and solid modelling.

**DECO2015**
**Design for Innovation**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 2 **Classes:** Lectures 1 hr/week; tutorials 2 hrs/week **Assessment:** Analysis report (35%); Project work (55%); Quizzes (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces students to design strategies and techniques for developing alternative points of view and exploring multiple solutions iteratively. Through the analysis of real-world case studies students will develop an understanding for how to use design-thinking methods to tackle complex problems. The unit will discuss how design can be used as a method and as a way of thinking to drive innovation for products, services and processes. In the tutorial component, students will apply design strategies and techniques, such as lateral thinking, experiential prototyping and speculative design, through small group exercises. Students will develop a deep understanding of these strategies and techniques through the various assessment items, which capture theory, analytical reflection and the practical application of methods.

**DECO2016**
**Design Thinking**

**Credit points:** 6 **Teacher/Coordinator:** Dr Karla Straker **Session:** Semester 2 **Classes:** Lectures 1 hr/week; tutorials 2 hrs/week **Prohibitions:** DECO1006 **Assessment:** Design assessments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Not available to students in the Bachelor of Design Computing and the Bachelor of Architecture and Environments*

This unit of study provides an introduction to design methods and their application in a human-centred design process. The unit structure follows the stages of a typical design process, which are: define, understand, ideate, prototype, evaluate and reflect. A series of lectures and tutorial sessions are dedicated to each of these stages, allowing students to gain a deep understanding of and experience with design thinking methods. Students will learn how to balance convergent and divergent thinking at various stages throughout the design process, and how to use these methods to respond to a design brief requiring both analysis and synthesis. Students will learn to build empathy with users, identify and reframe the problem space, develop value-driven design concepts and persuasively communicate design proposals with an emphasis on the user experience through visual storytelling.

**DECO3101**
**Innovation Design Studio**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 1, Semester 2, Winter Main **Classes:** Lecture 1 hr/week; tutorial 2 hrs/week **Assessment:** Project work (90%); Participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides a format for deep engagement with design and innovation methods. Students will develop responses to a real-world design problem that requires the application of students' existing disciplinary skills combined with knowledge in an interdisciplinary context. Projects are student-led, allowing students to identify projects that are linked to their interests and discipline-specific career paths. Through interactive group work, facilitated by experienced design mentors, students will learn how to negotiate interdisciplinary requirements and boundaries. All projects developed in this unit of study are expected to address some element of innovation in an existing product, service or process. Students will be able to apply methods acquired in other units of study, and will learn about new methods through weekly project work and reviews.

**DECO3006**
**Animation and Motion Design**

**Credit points:** 6 **Teacher/Coordinator:** Mr Nathaniel Fay **Session:** Semester 2 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Prohibitions:** DECO1017 **Assessment:** Animation Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to the fundamental principles of animation and its role in interaction design. Students will develop an understanding of the process involved in developing character, text and motion graphics based animation, the integration between 2D artwork and 3D composition, and techniques and tools for audio recording and production to support animation. Assessments in this unit focus on the application of animation in user interface design as well as for the production of short animated films. Students will acquire basic animation skills, develop the skills to create an animated sequence, and learn the critical vocabulary to describe animation. Basic knowledge will be related to foundational technical skills in industry standard software for animation.

## Junior Planning elective units of study

**DAAE1001**
**Living Cities**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dallas Rogers **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk (Weeks 1-6), 1 hr/wk (Weeks 7-13); tutorial 1 hr/wk (Weeks 1-6), 2 hrs/wk (Weeks 7-13) **Assumed knowledge:** DECO1006 and DECO1012 and BDES1011 and AWSS1001 **Assessment:** Assessment 1 (30%); Assessment 2 (30%); Assessment 3 (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study reviews the challenges involved in planning the contemporary urban environment. It covers a range of perspectives, including urban planning, urban design and heritage. Students will examine the evolution of towns and cities from the first settlements to the modern metropolis, and explore the cultural, economic, political and digital drivers that shape the urban environment. It asks, 'why did cities evolve?', 'what purpose do cities serve?', 'who is the city for?', and 'how are decisions made about cities?' The contemporary urban environment is explored as a dynamic and continually evolving 'living city' that is co-created by architects, planners, urban designers and other public and private stakeholders. On the successful completion of this unit of study, students will have demonstrated an understanding of the importance of planning in shaping our towns and cities through time. They will have a basic knowledge of the key ideas that are needed for formulating planning and urban design proposals.

*Textbooks*

Course material, announcements and assessment submission will be available at https://elearning.sydney.edu.au/
Angel, S. (2012). The Planet of Cities, Lincoln Institute of Land Policy
Lynch, K. (1960). Image of the City. Cambridge Massachusetts, MIT Press
The City Reader, (2011), 5th Edition (The Routledge Urban Reader Series) Paperback by Richard T. LeGates (Editor) and Frederic Stout (Editor)
Kostov, S. (1991). The City Shaped. Bulfinch Press, Thames and Hudson
Readings listed as chapter excerpts and articles will be available electronically through the library.

## Senior Planning elective units of study

**BADP2002**
**City Form and Development**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 1 **Classes:** Lectures 2 hrs/wk, tutorials 1 hr/wk **Prerequisites:** DAAE1001 or (DAAE2002 and ENGG1850) **Assessment:** Assessment 1 (individual) (30%), Assessment 2 (40%), Assessment 3 (group) (20%), participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on the content of Living Cities and introduces students to the modern formal domains of planning, urban design and heritage conservation. The focus will be on two main areas of debate, namely, city form and structure, and secondly, the planning and development processes on which the formal planned city is made. The unit will establish the context in which the role of planners, architects and urban designers in the process of building the 'incremental' city is understood, from the site to precinct, neighbourhood and city wide levels. Elements of city form and structure are analysed, as well as

mobility, transport, land use, infrastructure and current policy responses at a metropolitan and local level in meeting urban growth needs. The unit will also overview the development process including the framework in which architects, planners and property developers must work. Using a contemporary planning framework, the nature of development assessment, strategic planning and the community's role within this framework are explored. Criticisms and reform agendas around frameworks will be examined. Informal urbanism is also introduced in this unit to address development that occurs outside the domain of formal western regulated planning and design systems.

# Honours in the Bachelor of Design in Architecture

## Admission

To qualify for enrolment in the one-year, full-time honours program a student must have qualified for the award of the Bachelor of Design in Architecture pass degree, or an equivalent degree from another university, with a weighted average mark of at least 70.

Before making their application a prospective honours student must develop a dissertation topic and receive confirmation from an appropriate member of full-time or fractional academic or research staff that they are willing to supervise them. It is also possible to have an associate supervisor where a student's research topic extends beyond the immediate expertise of their primary supervisor.

### The Honours year

Honours must be undertaken full time over two consecutive semesters. It comprises four units of study (ARCH4003 and ARCH4004 in the first semester and ARCH4005 and ARCH4006 in the second).

There are no formal classes. Honours students are expected to make arrangements for weekly contact with their supervisor on an individual basis to chart their work, receive advice, review and monitor progress.

### Submission date and form of dissertation

A student undertaking a dissertation shall:

- lodge two copies of their dissertation with their supervisor by the end of the first week of the formal examination period in the final semester of enrolment. The dissertation should be between 15,000 and 25,000 words in length. A lesser word length is expected and acceptable for a dissertation that has a significant non-text-based exploration (for example, dissertations that include a significant design or art component, or empirical or experimental research component). In these cases the word length will be determined and agreed with the candidate's supervisor(s) and the Principal Examiner.
- state in the dissertation, generally in the preface and specifically in the notes, the sources on which the research was based, the extent to which the student has made use of the work of others and the portion of the dissertation which is claimed to be original; and
- not lodge as the student's own work any work previously submitted for a degree of the University of Sydney or any other university, but may incorporate such work in the dissertation provided that the student indicates the work so incorporated.

A student may lodge the dissertation for examination bound in either a temporary or permanent form according to the following conditions:

- temporary binding must be able to withstand ordinary handling and postage. The preferred form of binding is the 'perfect binding' system; and
- the cover of a temporarily bound dissertation must have a label showing the student's name, name of the degree, title of the dissertation and year of submission.

A student must lodge the final dissertation in a permanent form according to the following conditions:

- permanent binding must meet the requirements given in the University Calendar under the resolutions governing the degree of Doctor of Philosophy; and
- following examination and emendation if necessary, at least one copy (the library copy) of the dissertation must be bound in a permanent form;
- if amendments are required, all copies of the dissertation which are to remain available within the University must be amended.

### Non-completion

Students who do not complete the honours year will be awarded the pass degree. Those who terminate their study prior to the end of the second semester of study will be awarded a grade of 'DNF' or 'Discontinue without failure'.

Students who fail or discontinue the honours program may not re-enrol in it, except with the approval of the Dean.

### Determination of honours

A candidate's performance shall be assessed by a Principal Examiner and two other examiners. The Principal Examiner shall normally be the Degree Program Director unless otherwise nominated by the Dean. After consultation with the supervisor, the Principal Examiner shall appoint two examiners to examine the dissertation.

The Principal Examiner is appointed to oversee the examination process within the policies of the University for the assessment and examination of coursework.

The role of the Principal Examiner is to:

- make available to each honours student the criteria and assessment instrument for the examination of the honours dissertation;
- appoint two examiners for each dissertation;
- ensure that all examiners have been appropriately briefed on the assessment criteria. Where practicable, new examiners will be provided with examples of dissertations, which have been assessed within various bands to help calibrate the assessment; and
- review the examiners' reports and conduct a parity check. Parity is defined by the principle of equal marks for equivalent work.

The examiners shall report to the Principal Examiner.

The Dean shall, on the recommendation of the Principal Examiner, award the degree of Bachelor of Design in Architecture with honours whenever the following sections are satisfied:

- the examiners have recommended the degree be awarded without reservation or subject to emendations to all copies of the dissertation which are to remain available in the University; or
- the Principal Examiner unanimously accepts the recommendation of the supervisor that the degree be awarded subject to emendations despite reservations expressed by any examiner; and
- the overall performance is 70 or greater.

The Dean, on the recommendation of the Principal Examiner, will determine the class of honours, if any, on the overall performance of the candidate in the Bachelor of Design in Architecture using a mark derived from weighting the mark for the honours dissertation at 70 percent and the weighted average mark of the pass degree at 30 percent.

The honours dissertation itself receives a mark, which is recorded on the transcript next to ARCH4006. The other units will be converted to 'R' for 'Satisfied requirements' upon successful completion of the dissertation.

The honours degree of Bachelor of Design in Architecture shall be awarded to eligible students, with the following grades:

- Honours Class I (with a mark of at least 80), or
- Honours Class II, Division 1 (with a mark of at least 75), or
- Honours Class II, Division 2 (with a mark of at least 70).

The University Medal may be awarded as described in the frequently asked questions section.

A candidate for the honours program who does not meet the requirements for award of honours shall be awarded the Bachelor of Design in Architecture pass degree.

The Dean may also recommend that an unsuccessful candidate be permitted to prepare for re-examination if of sufficient merit and the supervisor has so recommended.

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Bachelor of Design in Architecture Honours units of study** | | | |
| Candidates are required to complete all units of study listed in this table. Candidates enrol in A and B in their first semester and C and D in their second semester. | | | |
| **ARCH4003 Dissertation and Research Methods A** | 12 | *Bachelor of Design in Architecture (Honours) students only.* | Semester 1 Semester 2 |
| **ARCH4004 Dissertation and Research Methods B** | 12 | **C** ARCH4003 | Semester 1 Semester 2 |
| **ARCH4005 Dissertation and Research Methods C** | 12 | **C** ARCH4004 | Semester 1 Semester 2 |
| **ARCH4006 Dissertation and Research Methods D** | 12 | **C** ARCH4005 | Semester 1 Semester 2 |

# Bachelor of Design in Architecture Honours units of study

Candidates are required to complete all units of study listed in this table. Candidates enrol in A and B in their first semester and C and D in their second semester.

**ARCH4003**
**Dissertation and Research Methods A**

**Credit points:** 12 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1, Semester 2 **Classes:** Individual supervision **Assessment:** Dissertation of 15,000 to 25,000 words **Mode of delivery:** Supervision

*Note: Bachelor of Design in Architecture (Honours) students only.*

Students must complete and submit an Honours application form that includes a description of their proposed research topic and identification of a prospective academic supervisor. The appended BDesArch (Honours) requires full-time study over two semesters. Students undertake ARCH4003 and ARCH4004 simultaneously and then ARCH4005 and ARCH4006. The Dean may approve a part time enrolment over four semesters in special circumstances. The units of study are not assessed separately. Rather, a single dissertation serves as the formal examination.The dissertation is to be submitted by the end of the first week of the formal examination period in the semester in which ARCH4006 Dissertation and Research Methods D is undertaken.

**ARCH4004**
**Dissertation and Research Methods B**

**Credit points:** 12 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1, Semester 2 **Classes:** Individual supervision **Corequisites:** ARCH4003 **Assessment:** Dissertation of 15,000 to 25,000 words **Mode of delivery:** Supervision

Students must complete and submit an Honours application form that includes a description of their proposed research topic and identification of a prospective academic supervisor. The appended BDesArch (Honours) requires full-time study over two semesters. Students undertake ARCH4003 and ARCH4004 simultaneously and then ARCH4005 and ARCH4006. The Dean may approve a part time enrolment over four semesters in special circumstances. The units of study are not assessed separately. Rather, a single dissertation serves as the formal examination. The dissertation is to be submitted by the end of the first week of the formal examination period in the semester in which ARCH4006 Dissertation and Research Methods D is undertaken.

**ARCH4005**
**Dissertation and Research Methods C**

**Credit points:** 12 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1, Semester 2 **Classes:** Individual supervision **Corequisites:** ARCH4004 **Assessment:** Dissertation of 15,000 to 25,000 words **Mode of delivery:** Supervision

Students must complete and submit an Honours application form that includes a description of their proposed research topic and identification of a prospective academic supervisor. The appended BDesArch (Honours) requires full-time study over two semesters. Students undertake ARCH4003 and ARCH4004 simultaneously and then ARCH4005 and ARCH4006. The Dean may approve a part time enrolment over four semesters in special circumstances. The units of study are not assessed separately. Rather, a single dissertation serves as the formal examination. The dissertation is to be submitted by the end of the first week of the formal examination period in the semester in which ARCH4006 Dissertation and Research Methods D is undertaken.

**ARCH4006**
**Dissertation and Research Methods D**

**Credit points:** 12 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1, Semester 2 **Classes:** Individual supervision **Corequisites:** ARCH4005 **Assessment:** Dissertation of 15,000 to 25,000 words **Mode of delivery:** Supervision

Students must complete and submit an Honours application form that includes a description of their proposed research topic and identification of a prospective academic supervisor. The appended BDesArch (Honours) requires full-time study over two semesters. Students undertake ARCH4003 and ARCH4004 simultaneously and then ARCH4005 and ARCH4006. The Dean may approve a part time enrolment over four semesters in special circumstances. The units of study are not assessed separately. Rather, a single dissertation serves as the formal examination. The dissertation is to be submitted by the end of the first week of the formal examination period in the semester in which ARCH4006 Dissertation and Research Methods D is undertaken.

# Overseas exchange

## Exchange in the Bachelor of Design in Architecture

The school encourages international exchange for qualified students who have completed at least one full year of study, and it is available in semester 4, or semester 5 of the degree. All students must complete the final semester of third year at the University of Sydney. Exchange will not be considered for honours.

Exchanges are for one semester only. Students can apply through the Study Abroad and Exchange Office. Each student's program must be approved in consultation with the Degree Program Director.

Exchange students are required to enrol in a full-time load at the University of Sydney whilst on exchange, and will incur the tuition costs associated with that load. No tuition costs will be incurred with the partner university.

Specially designated units of study will be recorded on the students' transcript. A result of 'SR' for 'Satisfied Requirements' will be recorded by the University against each successfully completed unit of study. The transcript of the exchange University will be the official detailed record of exactly what was completed during the exchange. Exchange results will not count against a student's weighted average mark.

For more information please contact the Study Abroad and Exchange Office.

## Exchange units of study

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Bachelor of Design in Architecture exchange units** | | | |
| **Year 2 core units of study** | | | |
| **BDES2622**<br>**Architecture Exchange Studio 2A** | 12 | | Semester 1 |
| **BDES2613**<br>**Architecture Exchange Technologies 2** | 6 | | Semester 1<br>Semester 2 |
| **BDES2623**<br>**Architecture Exchange Art 2** | 6 | | Semester 2 |
| **BDES2624**<br>**Architecture Exchange Studio 2B** | 12 | | Semester 2 |
| **BDES2621**<br>**Architecture Exchange History/Theory 2** | 6 | | Semester 2 |
| **Year 2 elective units of study** | | | |
| **BDES2615**<br>**Architecture Exchange Elective 2A** | 6 | | Semester 1 |
| **BDES2616**<br>**Architecture Exchange Elective 2B** | 6 | | Semester 2 |
| **BDES2617**<br>**Architecture Exchange Elective 2C** | 6 | | Semester 1<br>Semester 2 |
| **Year 3 core units of study** | | | |
| **BDES3616**<br>**Architecture Exchange Studio 3A** | 12 | | Semester 1 |
| **BDES3611**<br>**Architecture Exchange History/Theory 3** | 6 | | Semester 1 |
| **Year 3 elective units of study** | | | |
| **BDES3615**<br>**Architecture Exchange Elective 3A** | 6 | | Semester 1 |

# Bachelor of Design in Architecture (Honours) / Master of Architecture

## Overview

The Bachelor of Design in Architecture (Honours) / Master of Architecture is a five year double degree. The limited intake degree that is focused on developing leadership capability within architecture is for high-achieving students wishing to study architecture with a view to entering the international architectural profession.

## Bachelor of Design in Architecture (Honours) and Master of Architecture enrolment guide

To qualify for graduation from the Bachelor of Design in Architecture (Honours) / Master of Architecture degree, students must fulfil the requirements specified by the resolutions of Senate and the School. All students should familiarise themselves with the course resolutions as stated later in this handbook and monitor their own progress in reference to them. The following points summarise the resolutions but do not replace them.

### Summary of requirements

To qualify for the award of the pass degree, candidates must:

- maintain a full-time enrolment. 24 credit points per semester is a normal full-time load, 18 is the minimum and 30 is the maximum
- successfully complete 240 credit points. 114 of these are made up of core units of study as described in Table N.
- successfully complete at least 12 credit points from the school electives as described in Table N.
- successfully complete 6 credit points if the Master of Architecture pre-requisite unit of study, Architectural Professional Practice (BDES3025).
- successfully complete 18 credit points of honours preparatory units
- successfully complete the 12 credit point Architecture Dissertation from Table N.
- successfully complete 78 credit points of core units of study from Master of Architecture Table N.

Students may, with the permission of the unit coordinator concerned, enrol in elective units of study from the school's tables of graduate units, provided they have completed at least 96 credit points with a weighted average mark (WAM) of at least 70.

### Requirements for progression to the fourth year Honours component

Students are required to achieve a weighted average mark of at least 70 across all units of study in the Bachelor of Design in Architecture; a dissertation topic developed by the student; and confirmation from an appropriate member of full-time or fractional academic or research staff that they are willing to supervise their dissertation.

### Requirements for progression to the Master of of Architecture

a credit average across all units in the Bachelor of Design in Architecture; and completion of the Master of Architecture prerequisite unit of study, Architecture Professional Practice (BDES3025).

## Bachelor of Design in Architecture (Honours) and Master of Architecture enrolment planner

**Bachelor of Design in Architecture (Honours)/ Master of Architecture**

| Year 1 | | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| BDES1026 | Architecture Studio 1A | 12 |
| BDES1011 | Architectural History/Theory 1 | 6 |
| | Elective* | 6 |
| ***Semester 2*** | | |
| BDES1027 | Architecture Studio 1B | 12 |
| BDES1023 | Architectural Technologies 1 | 6 |
| BDES1028 | Honours Intensive Studio 1 | 6 |

| Year 2 | | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| BDES2026 | Architecture Studio 2A | 12 |
| BDES2013 | Architectural Technologies 2 | 6 |
| | Elective* | 6 |
| ***Semester 2*** | | |
| BDES2027 | Architecture Studio 2B | 12 |
| BDES2024 | Art Processes | 6 |
| BDES2028 | Honours Intensive Studio 2 | 6 |

| Year 3 | | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| BDES3011 | Architectural History/Theory 3 | 6 |
| BDES3026 | Architecture Studio 3A | 12 |
| ARCH4XXX | Critical Thinking in Architecture | 6 |
| ***Semester 2*** | | |
| BDES3025 | Architectural Professional Practice | 6 |
| BDES3037 | Architecture Studio 3B | 12 |
| ARCH4XXX | Architecture Research Area: 1. Design 2. History and Theory 3. Technologies | 6 |

| Year 4 | | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| MARC4101 | Advanced Technologies 1 | 6 |

| Year 4 | | Credit points |
|---|---|---|
| MARC4003 | Digital Architecture Research Studio | 12 |
| ARCH4XXX | Research Methods in Architecture | 6 |
| ***Semester 2*** | | |
| MARC4001 | Urban Architecture Research Studio | 12 |
| ARCH4XXX | Architecture Dissertation | 12 |

| Year 5 | | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| MARC4002 | Sustainable Architecture Research Studio | 12 |
| MARC4201 | Modern Architectural History | 6 |
| MARC5101 | Advanced Technologies 2 | 6 |
| ***Semester 2*** | | |
| MARC5001 | Graduation Studio | 12 |
| MARC4102 | Modern Architectural Theory | 6 |
| MARC5102 | Contract Documentation | 6 |

* indicates free elective

# Bachelor of Design in Architecture (Honours) / Master of Architecure

## Bachelor of Design in Architecture (Honours) and Master of Architecture

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the University school, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

### Course Resolutions

#### 1 Course Codes

| Code | Course title |
|---|---|
| | Bachelor of Design in Architecture (Honours) and Master of Architecture |

#### 2 Attendance pattern

The attendance pattern for this course is full time only.

#### 3 Master's type

The master's degree in these resolutions is a professional master's course, as defined by the Coursework Rule and the Coursework Policy 2015.

#### 4 Admission to candidature

Admission to this course is on the basis of a secondary school leaving qualification such as the NSW Higher School Certificate (including national and international equivalents), tertiary study or an approved preparation program. English language requirements must be met where these are not demonstrated by sufficient qualifications taught in English. Special admission pathways are open for mature aged applicants who do not possess a school leaving qualification, educationally disadvantaged applicants and for Aboriginal and Torres Strait Islander people. Applicants are ranked by merit and offers for available places are issued according to the ranking. Details of admission requirements are found in the Coursework Rule and the Coursework Policy.

#### 5 Requirements for award

(1) The units of study that may be taken for the Bachelor of Design in Architecture (Honours) are set out in Table N.
(2) The units of study that may be taken for the Master of Architecture are set out in Table N.
(3) To qualify for the award of Bachelor of Design in Architecture (Honours) and Master of Architecture, a candidate must complete a total of 240 credit points, comprising:
(a) 114 credit points of core units of study from Bachelor of Design in Architecture (Honours) and Master of Architecture Table N.
(b) 12 credit points of elective units of study from Bachelor of Design in Architecture (Honours) and Master of Architecture Table N.
(c) 6 credit points of the Master of Architecture pre-requisite unit of study, BDES3025 Architectural Professional Practice
(d) 18 credit points of honours preparatory units
(e) 12 credit point Architecture Dissertation from Table N
(f) 78 credit points of core units of study from the Master of Architecture Table N.

#### 6 Progression rules

(1) Progression to the fourth year Honours component requires:
(a) a weighted average mark of at least 70 across all units of study in the Bachelor of Design in Architecture
(b) a dissertation topic developed by the student
(c) confirmation from an appropriate member of full-time or fractional academic or research staff that they are willing to supervise the student.
(2) Progression to the Master of Architecture requires:
(a) a credit average across all units in the Bachelor of Design in Architecture
(b) completion of the Master of Architecture prerequisite unit of study, BDES3025 Architecture Professional Practice
(3) In exceptional circumstances, a candidate that doesn't meet these requirements may be allowed to progress to the next stage with approval of the Head of School and Dean of the University of Sydney School of Architecture, Design and Planning.

#### 7 Cross-institutional study

Cross-institutional study is not available in this course.

#### 8 International exchange

The University school permits candidates in this course to participate in international exchange programs in second year, or semester 1 of fourth year. For more information on international exchanges, refer to the Study Abroad and Exchange Office.

#### 9 Course transfer

A candidate may abandon the combined program and elect to complete either the Bachelor of Design in Architecture,the Bachelor of Design in Architecture (Honours), or the Bachelor of Design in Architecture and the Master of Architecture, in accordance with the resolutions governing those degrees.

#### 10 Credit for previous study

Credit transfer is subject to the provisions of the Coursework Policy 2014 and the Resolutions of the Sydney School of Architecture, Design and Planning.

# Bachelor of Design in Architecture (Honours) / Master of Architecture

## Table N: Units of study in the Bachelor of Design in Architecture (Honours) / Master of Architecure

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Bachelor of Design in Architecture (Honours) / Master of Architecture Core units of study** | | | |
| Candidates are required to complete all of the following core units: | | | |
| **Junior units of study** | | | |
| **BDES1011**<br>**Architectural History/Theory 1** | 6 | **A** HSC Mathematics and HSC English Standard<br>**N** DESA1102 | Semester 1 |
| **BDES1026**<br>**Architecture Studio 1A** | 12 | **C** BDES1011<br>**N** DESA1001 or BDES1010 or BDES1024 | Semester 1 |
| **BDES1028**<br>**Honours Intensive Studio 1** | 6 | | Intensive July |
| **BDES1027**<br>**Architecture Studio 1B** | 12 | **P** BDES1026 or BDES1010 or DESA1001<br>**C** BDES1023<br>**N** BDES1020 or DESA1002 or BDES1012 | Semester 2 |
| **BDES1023**<br>**Architectural Technologies 1** | 6 | **N** DESA1102 | Semester 2 |
| **Senior units of study** | | | |
| **BDES2026**<br>**Architecture Studio 2A** | 12 | **P** BDES1027 or BDES1020 or DESA1002<br>**C** BDES2013<br>**N** BDES2010 or DESA2001 or BDES2012 | Semester 1 |
| **BDES2013**<br>**Architectural Technologies 2** | 6 | **P** BDES1023<br>**N** DESA2111 | Semester 1<br>Semester 2 |
| **BDES2028**<br>**Honours Intensive Studio 2** | 6 | | Intensive July |
| **BDES2027**<br>**Architecture Studio 2B** | 12 | **P** BDES2026 and BDES1011 or BDES2010 or DESA2001<br>**C** (BDES2024 or CIVL2410)<br>**N** BDES2020 or DESA2002 or BDES2021 | Semester 2 |
| **BDES2024**<br>**Art Processes** | 6 | **P** BDES1026 or BDES1024 | Semester 2 |
| **BDES3025**<br>**Architectural Professional Practice** | 6 | **P** BDES3023 or BDES3026 | Semester 2 |
| **BDES3026**<br>**Architecture Studio 3A** | 12 | **P** (BDES2027 or BDES2020) and BDES2013<br>**C** (BDES3011 or MATH2061)<br>**N** BDES3010 or DESA3001 or BDES3023 | Semester 1 |
| **BDES3011**<br>**Architectural History/Theory 3** | 6 | **P** BDES2027 or BDES2021 or DESA2111<br>**N** DAAP3001 | Semester 1 |
| **BDES3027**<br>**Architecture Studio 3B** | 12 | **P** BDES3026 or BDES3010 or DESA3001<br>**N** BDES3020 or DESA3002 or BDES3012 | Semester 2 |
| **Bachelor of Design in Architecture (Honours)/Master of Architecture -honours core unit** | | | |
| Honours units in this degree will be offered in 2019 | | | |
| **Recommended electives** | | | |
| Students are strongly advised to undertake the following elective units of study: | | | |
| **AWSS1001**<br>**Architectural Sketching and Drawing** | 6 | **N** DESA1601 or DESA1602<br>*Students may incur costs for materials in some Art Workshops units.* | Semester 1 |
| **Table N: Units of study in the Master of Architecture** | | | |
| Candidates are required to complete the following core units of study | | | |
| **Master of Architecture Core units of study** | | | |
| Candidates are required to complete the following core units of study: | | | |
| **MARC4001**<br>**Urban Architecture Research Studio** | 12 | *This studio cannot be taken in the same semester as MARC4002 or MARC4003. Students may incur materials costs in this unit.* | Semester 1<br>Semester 2 |
| **MARC4002**<br>**Sustainable Architecture Research Studio** | 12 | *Note: Department permission required for enrolment*<br>*This studio cannot be taken in the same semester with MARC4001 or MARC4003. Students may incur materials costs in this unit.* | Semester 1<br>Semester 2 |
| **MARC4003**<br>**Digital Architecture Research Studio** | 12 | *This studio cannot be taken in the same semester with MARC4001 or MARC4002. Students may incur materials costs in this unit.* | Semester 1<br>Semester 2 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **MARC5001**<br>**Graduation Studio** | 12 | **P** MARC4001 and MARC4002 and MARC4003<br>**N** ARCH5201 or MARF5201<br>*Students may incur materials costs in this unit.* | Semester 1<br>Semester 2 |
| **MARC4101**<br>**Advanced Technologies 1** | 6 | **C** MARC4001 or MARC4002 or MARC4003<br>**N** ARCH4202 | Semester 1 |
| **MARC5101**<br>**Advanced Technologies 2** | 6 | **N** ARCH4203 | Semester 2 |
| **MARC4102**<br>**Modern Architectural Theory** | 6 | **N** ARCH6104 or ARCH9048 or ARCH9049 | Semester 2 |
| **MARC4201**<br>**Modern Architectural History** | 6 | **N** ARCH4102 | Semester 1 |
| **MARC5102**<br>**Contract Documentation** | 6 | **N** ARCH4103 | Semester 2 |
| School electives | | | |
| Candidates are required to complete 12 credit points of elective units of study. | | | |
| Senior Art in Architecture elective units of study | | | |
| **AWSS2002**<br>**Site Specific Art and Architecture** | 6 | *Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **AWSS2010**<br>**Arch + Design Material Processes (Ceramics)** | 6 | **N** DESA2634<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **AWSS2015**<br>**Generative Drawing** | 6 | *Note: Department permission required for enrolment* | Semester 2<br>Summer Main |
| **AWSS2020**<br>**Object Design (Material and Light)** | 6 | **C** DESA1555<br>**N** DESA2643<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **AWSS2023**<br>**Architectural Photography** | 6 | **N** DESA2629<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2<br>Summer Main |
| **AWSS2026**<br>**2D Print Processes in Design** | 6 | **N** DESA2638<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2<br>Summer Main |
| **AWSS2027**<br>**Arch + Design Material Processes (Casting)** | 6 | **N** DESA2636<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DESA3013**<br>**Expanded Colour: From Theory to Application** | 6 | | Semester 1<br>Semester 2<br>Summer Main |
| Senior Architecture elective units of study | | | |
| **DAAE2001**<br>**Australian Architecture** | 6 | **N** DESA2305 | Semester 2 |
| **DAAE2002**<br>**Architecture, Place and Society**<br>*This unit of study is not available in 2018* | 6 | **N** DESA2211 | Semester 1 |
| **DESA3003**<br>**Architectural Detailing** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **DESA3004**<br>**Architecture and Diagrams** | 6 | **P** 48 Credit points<br>*Note: Department permission required for enrolment* | Semester 1 |
| **DESA3005**<br>**Architectural Drawing Through History** | 6 | **P** 48 credit points<br>*Note: Department permission required for enrolment* | Semester 1 |
| **DESA3007**<br>**Prefab Architecture** | 6 | **P** 48 credit points<br>*Note: Department permission required for enrolment* | Intensive February |
| **DESA3008**<br>**Architectural Models: Theory and Practice** | 6 | *Note: Department permission required for enrolment* | Semester 2 |
| **DESA3009**<br>**Advanced Fabrication** | 6 | **P** 96 credit points<br>*Note: Department permission required for enrolment* | Semester 2 |
| **DESA3010**<br>**Code to Production** | 6 | **P** 48 credit points<br>*Note: Department permission required for enrolment* | Intensive July |
| **DESA3011**<br>**Introduction to Building Construction** | 6 | *Note: Department permission required for enrolment* | Semester 2 |
| **DESA3012**<br>**Counter-Practices in Architecture**<br>*This unit of study is not available in 2018* | 6 | **N** ARCH9094<br>*Note: Department permission required for enrolment* | Semester 2 |
| **DESA3014**<br>**Finding Country** | 6 | *Note: Department permission required for enrolment* | Intensive January |
| **DESA3015**<br>**Broken Hill and Far West NSW Projects** | 6 | *Note: Department permission required for enrolment* | Intensive July |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **DESA3441**<br>**Elective Travelling Studio 1** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Intensive February<br>Intensive July<br>Intensive June<br>Intensive November<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DESA3442**<br>**Elective Travelling Studio 2** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Intensive February<br>Intensive July<br>Intensive June<br>Intensive November<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DESA3443**<br>**Design Architecture Independent Study C** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DESA3444**<br>**Design Architecture Independent Study D** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DESA3551**<br>**Design Architecture General Elective A** | 6 | *Departmental Permission will be required to enrol in this unit.* | Intensive February<br>Intensive July<br>Intensive June<br>Intensive November<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DESA3552**<br>**Elective Intensive Design Studio 1** | 6 | **P** 48 credit points.<br>*Note: Department permission required for enrolment* | Intensive February<br>Intensive January<br>Intensive June<br>Intensive November<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DESA3553**<br>**Elective Intensive Design Studio 2** | 6 | **P** 48 credit points.<br>*Note: Department permission required for enrolment* | Intensive June<br>Intensive November<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DESA3554**<br>**Intensive Design Studio 3** | 6 | **P** 48 credit points.<br>*Note: Department permission required for enrolment* | Intensive January<br>Intensive June<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **MARC6204**<br>**Graduate Exhibition** | 6 | *Note: Department permission required for enrolment* | Semester 2 |
| Junior Architectural Science elective units of study | | | |
| **DESA1004**<br>**Designing with Surfaces and Light** | 6 | **N** DESA2612<br>*Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.* | Semester 2<br>Summer Main<br>Winter Main |
| Senior Architectural Science elective units of study | | | |
| **DAAE2005**<br>**Designing with Colour** | 6 | *Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.* | Semester 1<br>Semester 2<br>Summer Main<br>Winter Main |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **DAAE2008**<br>**Innovative Building Structures** | 6 | **P** BDES1023<br>**N** DESA2206 | Semester 2 |
| **DAAE3001**<br>**Sustainable Architectural Practice** | 6 | **P** BDES1023 or (DAAE1001 and DESA3011) or (DAAE2002 and DESP1001)<br>*Note: Department permission required for enrolment* | Semester 1 |
| Junior Design Computing elective units of study | | | |
| **DECO1012**<br>**Design Programming** | 6 | | Semester 1 |
| Senior Design Computing elective units of study | | | |
| **DAAE2011**<br>**Intro to Visual Communication Design** | 6 | **N** DAAE2009 or DECO1015 or DECO2101 | Semester 1<br>Summer Main<br>Winter Main |
| **DECO2010**<br>**Designing Social Media** | 6 | | Intensive June<br>Semester 1 |
| **DECO2015**<br>**Design for Innovation** | 6 | | Semester 2 |
| **DECO2101**<br>**Visual Communication** | 6 | **N** DECO1015 or DECO1100 or DAAE2009<br>*Note: Department permission required for enrolment* | Intensive June<br>Semester 1 |
| **DECO2102**<br>**Web Design and Technologies** | 6 | **N** DECO1016 | Semester 2 |
| **DECO2103**<br>**Architectural Modelling and Prototyping** | 6 | **A** Basic understanding of design principles and design processes and how to apply them in practical design projects<br>**P** DESA1555 and completion of at least 36 credit points<br>*Note: Department permission required for enrolment* | Semester 1 |
| **DECO2016**<br>**Design Thinking** | 6 | **N** DECO1006<br>*Not available to students in the Bachelor of Design Computing and the Bachelor of Architecture and Environments* | Semester 2 |
| **DECO3101**<br>**Innovation Design Studio** | 6 | | Semester 1<br>Semester 2<br>Winter Main |
| **DECO3006**<br>**Animation and Motion Design** | 6 | **N** DECO1017 | Semester 2 |
| Junior Planning elective units of study | | | |
| **DAAE1001**<br>**Living Cities** | 6 | **A** DECO1006 and DECO1012 and BDES1011 and AWSS1001 | Semester 2 |
| Senior Planning elective units of study | | | |
| **BADP2002**<br>**City Form and Development** | 6 | **P** DAAE1001 or (DAAE2002 and ENGG1850) | Semester 1 |

# Bachelor of Design in Architecture / Master of Architecture

## Table N: Units of study in the Bachelor of Design in Architecture (Honours) / Master of Architecture

### Bachelor of Design in Architecture (Honours) / Master of Architecture Core units of study

Candidates are required to complete all of the following core units:

### Junior units of study

**BDES1011**
**Architectural History/Theory 1**

**Credit points:** 6 **Teacher/Coordinator:** Prof Michael Tawa **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DESA1102 **Assumed knowledge:** HSC Mathematics and HSC English Standard **Assessment:** Seminar Leadership and General Participation (40%), Research Reports (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural History/Theory 1 introduces students to the discourse of architectural history and theory. It includes a concise chronological survey of key periods of architectural history from antiquity to the mid-nineteenth century, providing an overview of the scope of the field and establishing initial points of reference. It also includes closer investigation of the ways in which particular architectural themes and ideas traverse across history, coming to the fore in certain periods and receding in others. Students will interrogate these themes in small groups through intense study of a single significant building, which they will research, document and illustrate in a written report, and re-construct in a suite of finely crafted scale models. They will be introduced to fundamental principles and skills of scholarly research in the discipline, including locating and evaluating sources, and constructing arguments.

**BDES1026**
**Architecture Studio 1A**

**Credit points:** 12 **Teacher/Coordinator:** Mr Chris Fox **Session:** Semester 1 **Classes:** Lectures; Lab and Studio contact plus self-directed preparation and assignments. Minimum student commitment of 18 hours per week. **Corequisites:** BDES1011 **Prohibitions:** DESA1001 or BDES1010 or BDES1024 **Assessment:** Assessment 1 + 2 (40%); Assessment 3 (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This course aims at providing students with the conceptual and technical skills required to creatively explore dynamic transactions between art and architecture. Throughout the semester, students will extend their ability to work with complex ideas while drawing on interdisciplinary practices related to the body, structure, form and site. This course provides a space for architecture students to establish parameters and territories for exploration beyond the concerns of conventional architectural projects. From generative form making to performative action, the crossover between art and architecture has always been present within architectural design. This unit looks at developing conceptual and practical disciplines through experimentation with materials. Essential design sensitivities and skills will be developed through different modes of working including lectures, tutorials, presentations and writing as well as the physical engagement with new materials and building processes.

**BDES1028**
**Honours Intensive Studio 1**

**Credit points:** 6 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Intensive July **Classes:** 5 hrs lecture, 35 hrs studio **Assessment:** architectural design proposal (50%) and portfolio (50%) **Mode of delivery:** Block mode

In Honours Intensive Studio 1 students produce an architectural design project in response to a studio brief set by a leading visiting academic or practicing architect that critically engages with issues of contemporary concern to the city of Sydney. The specific architectural brief and its theoretical underpinnings vary from year to year. Students develop their project in a studio setting alongside their peers over the course of one week, impelled by a suite of lectures and seminars that address key themes of the project. They informally present their work in progress for critical feedback at various times during the week, and at its conclusion they communicate their final architectural proposition to a design jury via a set of drawings and models supported by a verbal presentation. The work conducted during the intensive studio is finally assembled in a portfolio, which is due at a later date. The portfolio is a well-designed, carefully composed and clearly articulated summary document evidencing a critical and creative engagement with the studio.

**BDES1027**
**Architecture Studio 1B**

**Credit points:** 12 **Teacher/Coordinator:** Dr Simon Weir **Session:** Semester 2 **Prerequisites:** BDES1026 or BDES1010 or DESA1001 **Corequisites:** BDES1023 **Prohibitions:** BDES1020 or DESA1002 or BDES1012 **Assessment:** Phase 1 Assessment: Online Studio Tasks and Peer Critiques (20%); Final Design Presentation (30%). Phase 2 Assessment: Interim Design Presentation (10%); Final Design Presentation (10%); Design Book (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This studio capitalises on the skills and processes gained in the first semester studio to engage with increasingly complex programmatic and contextual issues within the built environment.Fundamental modes of representation in a variety of media will be deployed as a means to comprehend and articulate architecture from multiple integrated perspectives.Designing a small building will be the final project yet based on a series of introductory exercises that will engage with concepts of iteration in a range of scales and media.Students will continue to learn new software and other related techniques while also developing their familiarity with the technical skills necessary to realise a final design presentation including various media.The design projects will explore the necessity of experimentation as a means to communicate fundamental ideas about space, structure and form.

**BDES1023**
**Architectural Technologies 1**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DESA1102 **Assessment:** Assignments (60%), Exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural Technologies 1 introduces students to the roles that environmental considerations, structures and construction play in architecture. The fundamental concepts underpinning each of these key areas are presented and students demonstrate their developing knowledge of them via project-based assignments. These progressively complex tasks initiate students to the knowledge required to successfully analyse and synthesise construction and technical systems in basic buildings.

## Senior units of study

**BDES2026**
**Architecture Studio 2A**

**Credit points:** 12 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1 **Classes:** Lectures; Lab and Studio contact plus self-directed preparation and assignments. Minimum student commitment of 18 hours per week. **Prerequisites:** BDES1027 or BDES1020 or DESA1002 **Corequisites:** BDES2013 **Prohibitions:** BDES2010 or DESA2001 or BDES2012 **Assessment:** Assignment 1: Design Analysis (20%); Assignment 2: Mapping and Design Studies (20%); Assignment 3: Design Project and Portfolio (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architecture Studio 2A requires the design of a small-scale building or space in an urban context. An architectural study of the house is coupled with an intensive process that prioritises communication techniques for articulating a design from a schematic stage through its development to final presentation drawings and models.

Exploration of multiple design communication techniques is promoted, including digital drawing, modelling and making, combined with support for engagement with multiple tools and machinery in the DMaF workshops. The design process fostered throughout the semester explores the creative tension between intuition and prescription, building skills via techniques and strategies that are also intended to assist in eliciting unexpected solutions.

Through this process, students are expected to become increasingly familiar with the complexities of architectural design and gain skill in incorporating a widening range of considerations into their projects. Examples of these aspects extend from the interpretation of programmatic requirements with respect to the opportunities and limits of site conditions to material articulation and the spatial and geometric implications of strategic decisions. They will be required to precisely and imaginatively negotiate the internal logic of a design approach and an urban strategy, searching for an overall coherence.

**BDES2013**
**Architectural Technologies 2**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1, Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prerequisites:** BDES1023 **Prohibitions:** DESA2111 **Assessment:** Assignments (60%), Exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural Technologies 2 explores the roles that environmental considerations, structure and construction play in moderately complex small-scale buildings. Emphasis is placed on developing in students an active awareness of the impact that technical and constructional decisions have on architectural design. Through project-based learning, students develop an active awareness of the important role that appropriate technical and constructional decisions play in terms of fulfilling conceptual ambitions in tangible works of architecture. Students develop and demonstrate their developing appreciation of these issues via case study analysis, a group project, individual technical drawings and a final examination.

**BDES2028**
**Honours Intensive Studio 2**

**Credit points:** 6 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Intensive July **Classes:** 5 hrs lecture, 35 hrs studio **Assessment:** urban mapping and research (25%), preliminary architectural design proposal (25%), final design proposal and portfolio (50%) **Mode of delivery:** Block mode

Honours Intensive Studio 2 is a travelling architectural design studio. Students produce an architectural design project in response to a brief that requires them to consider the particular cultural, environmental, architectural and urban conditions and possibilities of the chosen city. The specific architectural brief and its theoretical underpinnings vary from year to year. Students immerse themselves in the life of the city and conduct a range of analytical and interpretive mapping exercises and site studies, supported by building visits and talks by local architects, in order to establish terms of reference for their own architectural project. They present schematic work for critical feedback at various stages of the week away from Sydney, and upon return they communicate their final architectural project to a design jury via a set of drawings and models supported by a verbal presentation. The work conducted during the studio is finally assembled in a portfolio, which is due at a later date. The portfolio documents the various studies made in the host city in addition to interim stages of design and the final architectural proposition.

**BDES2027**
**Architecture Studio 2B**

**Credit points:** 12 **Teacher/Coordinator:** Dr Matthew Mindrup **Session:** Semester 2 **Classes:** Lectures, Tutorial and Studio contact plus self-directed preparation and assignments. Minimum student commitment 18 hours per week. **Prerequisites:** BDES2026 and BDES1011 or BDES2010 or DESA2001 **Corequisites:** (BDES2024 or CIVL2410) **Prohibitions:** BDES2020 or DESA2002 or BDES2021 **Assessment:** Assessment 1: Phase 1 Studio Presentation + Essay Abstract (30%); Assessment 2: Phase 2 Studio Presentation (30%); Portfolio + Illustrated Essay (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architecture Studio 2B demands of students a critical engagement with modern architecture and its histories. It couples the methods of humanities research, including locating and appraising sources, and constructing arguments, with the creative processes of architectural design. Students become increasingly aware of the role of the architect as an active agent in history and negotiate some of the attendant ethical, political, technical and aesthetic challenges and opportunities. In parallel with a weekly lecture series on key modern protagonists, movements and their historical consequences, students develop an illustrated essay on a topic of their own choosing, and they design a medium-scale building in a historically charged urban context. The studio project is conducted as a `conversationÂ¿ between contemporary programmatic concerns and architectural sensibilities, and the claims of the historically situated architecture that the students are required to reinvigorate.

**BDES2024**
**Art Processes**

**Credit points:** 6 **Teacher/Coordinator:** Mr Chris Fox **Session:** Semester 2 **Classes:** Lecture and studio contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prerequisites:** BDES1026 or BDES1024 **Assessment:** Assessment 1 + 2 (50%); Assessment 3 (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Drawing upon skills and knowledge learnt in Architecture Studio 1A, students will extend their ability to work with complex ideas while drawing on interdisciplinary practices. A diverse range of studios will host the production and critical discussions of the work in conjunction with a series of lectures and independent research to be attained outside the workshops. By treating art as a field of open-ended experimentation, with direct consequences for architecture, this course encourages architecture students to undertake a self-directed and research-based approach that widens their own practice through working across the multiple streams of information specific to contemporary art.

**BDES3025**
**Architectural Professional Practice**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prerequisites:** BDES3023 or BDES3026 **Assessment:** Reports (20%), Assignment (80%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architectural Professional Practice introduces students in the final semester of their undergraduate degree to the professional practice of architecture, focusing on design development within regulatory and practice management frameworks. Students are introduced to the fundamental principles of key regulatory requirements and critically deploy their understandings by investigating local practice case studies. They further develop a capacity to apply their knowledge in a particular context through an architectural design project that they take to Development Application level using current best practice.

**BDES3026**
**Architecture Studio 3A**

**Credit points:** 12 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1 **Classes:** Lectures; Studio contact plus self-directed preparation and assignments. Minimum student commitment of 18 hours per week. **Prerequisites:** (BDES2027 or BDES2020) and BDES2013 **Corequisites:** (BDES3011 or MATH2061) **Prohibitions:** BDES3010 or DESA3001 or BDES3023 **Assessment:** Assessment 1 Interim Presentation + Report (20%); Assessment 2 Final Presentation (30%); Assessment 3 Portfolio + Final Report (30%); Assessment 4 Final Exam (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Architecture Studio 3A is oriented towards the technical dimensions of architecture, whilst remaining attentive to the deeper cultural and historical context in which such technical knowledge, particularly in regards to structures and sustainability, has arisen and is currently situated. It imparts knowledge and skills that will stimulate compelling architectural projects that are conceptually rigorous, structurally innovating and technically adept. Structural knowledge is developed through a suite of lectures and accompanying practical exercises, and is assessed through technical reports and a final examination. Students simultaneously develop an architectural project in response to a brief in which structural concerns necessarily come to the fore, such as for a habitable bridge. They are required to integrate multiple criteria, including thematic, conceptual, programmatic and technical concerns into a persuasive architectural proposition.

**BDES3011**
**Architectural History/Theory 3**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Chris L. Smith **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prerequisites:** BDES2027 or BDES2021 or DESA2111 **Prohibitions:** DAAP3001 **Assessment:** Concept exploration (20%), Essay (80%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The objective of the Architectural Theory unit is to equip students with a critical understanding of key Western architectural theories and philosophy from the Enlightenment to the present. Emphasis is placed on the specific historical situations and cultural and philosophical contexts in which those theories arose, and ultimately how they were represented within the domain of architectural embodiment. It is organized to clearly identify particular trains of thought. Students will become generally conversant in the principles of central theories, and will understand their terms and references. Through readings, lectures, and tutorial sessions, students will acquire the literacy required to perceive and articulate contemporary theoretical standpoints, and will refine their research and writing skills through independent research into a particular aspect of recent architectural theory and philosophy related to their concurrent studio design project. Close attention will be paid to the exchange between practice and theory and the relevance of the discussed theories to the formation of current circumstances, and to the place of architecture within contemporary culture as a whole.

**BDES3027**
**Architecture Studio 3B**

**Credit points:** 12 **Teacher/Coordinator:** Ms Catherine Lassen **Session:** Semester 2 **Classes:** Lectures; Lab; Studio contact plus self-directed preparation and assignments - minimum student commitment of 18 hours per week. **Prerequisites:** BDES3026 or BDES3010 or DESA3001 **Prohibitions:** BDES3020 or DESA3002 or BDES3012 **Assessment:** Assessment 1: Phase 1 Design Presentation (20%); Assessment 2: Phase 2 and Communications Submission (20%); Assessment 3: Design Project and Portfolio (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

As the culminating design studio for the degree, students are presented with the opportunity to develop an architectural position within their projects. Architecture Studio 3B continues themes from Architecture Studio 3A, extending design understanding with respect to programmatic ambition and situating a symbolic public building proposal within a specific urban site.

Particular attention is paid to the conventions of architectural representation as 'Communications' to doubly generate as well as conceptually clarify design opportunities.

Computational modes of modelling are a particular focus. Structural, technical and material thinking is encouraged in coherent relation to studentsÂ¿ strategic design intent and through studied historical and cultural awareness. The studio consolidates students' abilities in communicating and translating architecture using advanced modes of graphic visualisation through 3D modelling software and associated fabrication potentials. Hybrid techniques for moving between computational and actual realms are promoted in parallel with clarifying attitudes toward contemporary built and un-built environments.

Depth of design development is promoted via a dual emphasis: early analysis of exemplary architectural thinking coupled with intensive speculative and projective exploration. Students aim to produce conceptually challenging, integrated and compelling pre-professional architectural design projects confronting a variety of spatial contexts.

## Bachelor of Design in Architecture (Honours)/Master of Architecture -honours core unit

Honours units in this degree will be offered in 2019

## Recommended electives

Students are strongly advised to undertake the following elective units of study:

**AWSS1001**
**Architectural Sketching and Drawing**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1 **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA1601 or DESA1602 **Assessment:** Portfolio of works (60%); process journal (40%) **Practical field work:** Studio practice **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Students may incur costs for materials in some Art Workshops units.*

This unit aims to provide the student with the knowledge, skills and aptitude required to use a range of fundamental architectural sketching and drawing skills based on observation of the physical world, in particular the built world. Students will be encouraged to develop a commitment to the practice of drawing as a fundamental design skill through 13 studio classes coupled with independent study. The workshop places an emphasis on keen observation, experimental use of materials and engagement with historical frameworks used in design practice in design and architecture. Exposure in studio to the sensitivities offered by different drawing materials and techniques will give students the competency to more confidently use drawing as a communication device. Skills in perspective drawing are introduced and drawing is used to document the visible world and define structure and detail. On successful completion of this unit of study students will have demonstrated familiarity with a range of drawing media and techniques, including charcoal, graphite, pen, brush and ink, and an introduction to colour. Students will understand the importance of maintaining a sketchbook as a site to record all their visual and conceptual research, and in which to draw on a daily basis as a means to develop ideas and technical proficiency.

## Table N: Units of study in the Master of Architecture

Candidates are required to complete the following core units of study

## Master of Architecture Core units of study

Candidates are required to complete the following core units of study:

**MARC4001**
**Urban Architecture Research Studio**

**Credit points:** 12 **Teacher/Coordinator:** Dr Francois Blanciak **Session:** Semester 1, Semester 2 **Classes:** Lecture and studio contact (technical consultants and demonstrations as required), plus self-directed preparation and assignments, for a minimum student commitment averaging 18 hours per week. **Assessment:** Preliminary research, design development, interim reviews (40%); Final project and portfolio review (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This studio cannot be taken in the same semester as MARC4002 or MARC4003. Students may incur materials costs in this unit.*

The studio examines the role and agency of architecture in the urban context - interrogating the internal and external parameters that act on the design process at incremental urban scales and intensities and engaging with the societal, financial, legislative and managerial frameworks that shape urban development. The studio will prompt students to develop critical positions in regard to urban issues and to research, extend and explore those positions through the architectural design process.

MARC4001 Urban Architecture Research Studio, MARC4002 Sustainable Architecture Research Studio and MARC4003 Digital Architecture Research Studio are all available in both Semesters 1 and 2. Students may enrol or pre-enrol freely, but some will be asked to swap to create equal groups. After three semesters each student will have done each of the studios. The studios examine the relationships between architecture and urbanism; architecture and sustainability; and architecture and digital design. Each is based around one or more design projects which address a specialised area of study, supported by lectures and seminars which introduce the relevant theory, knowledge and design precedents. Studios require the investigation of key technical issues and systems, and their innovative integration in the design, with the preparation of appropriate documentation. On the successful completion of these units, students will have demonstrated: an ability to formulate, interpret and communicate appropriate concepts derived from the study of brief and site; an ability to extend those starting points into a working design proposal; an ability to develop the design proposal in response to critique, and produce a building design which demonstrably embodies understanding of the principles associated with the specialised study area; an ability to communicate the design ideas effectively through appropriate graphic and three-dimensional means using architectural conventions; and an ability to cohesively design and execute a comprehensive presentation of the project. These units are core to the Master of Architecture.

**MARC4002**
**Sustainable Architecture Research Studio**

**Credit points:** 12 **Teacher/Coordinator:** Semester 1 Mr Michael Muir, Semester 2 Mr Daniel Ryan **Session:** Semester 1, Semester 2 **Classes:** Lecture and studio contact (technical consultants and demonstrations as required), plus self-directed preparation and assignments, for a minimum total student commitment averaging 18 hours per week. **Assessment:** Preliminary research, design development, interim reviews (40%); Final project and portfolio review (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment. Note: This studio cannot be taken in the same semester with MARC4001 or MARC4003. Students may incur materials costs in this unit.*

MARC4002 Studio B Sustainable Architecture will focus on the theories, technologies and techniques that promote the creation of a sustainable built environment. The studio projects will directly explore the interdependent issues of environmental, social and economic sustainability. The studio will prompt students to develop critical positions in regard to sustainability and to research, extend and explore those positions through the architectural design process.

MARC4001 Urban Architecture Research Studio, MARC4002 Sustainable Architecture Research Studio and MARC4003 Digital Architecture Research Studio are all available in both Semesters 1 and 2. Students may enrol or pre-enrol freely, but some will be asked to swap to create equal groups. After three semesters each student will have done each of the studios. The studios examine the relationships between architecture and urbanism; architecture and sustainability; and architecture and digital design. Each is based around one or more design projects which address a specialised area of study, supported by lectures and seminars which introduce the relevant theory, knowledge and design precedents. Studios require the investigation of key technical issues and systems, and their innovative integration in the design, with the preparation of appropriate documentation. On the successful completion of these units, students will have demonstrated: an ability to formulate, interpret and communicate appropriate concepts derived from the study of brief and site; an ability to extend those starting points into a working design proposal; an ability to develop the design proposal in response to critique, and produce a building design which demonstrably embodies understanding of the principles associated with the specialised study area; an ability to communicate the design ideas effectively through appropriate graphic and three-dimensional means using architectural conventions; and an ability to cohesively design and execute a comprehensive presentation of the project. These units are core to the Master of Architecture.

**MARC4003**
**Digital Architecture Research Studio**

**Credit points:** 12 **Teacher/Coordinator:** Semester 1 Dr Rizal Muslimin, Semester 2 Dr Dagmar Reinhardt **Session:** Semester 1, Semester 2 **Classes:** Lecture and studio contact (technical consultants and demonstrations as required), plus self-directed preparation and assignments, for a minimum total student commitment averaging 18 hours per week. **Assessment:** Preliminary research, design development, interim reviews (40%); Final project and portfolio review (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This studio cannot be taken in the same semester with MARC4001 or MARC4002. Students may incur materials costs in this unit.*

MARC4003 Studio C Digital Architecture explores theories, media and techniques that involve digital mediation to create engaging architectural designs that stimulate all human senses in their relationship with the built environment. The studio addresses various issues related to design theories, digital media, digital design techniques, rule-based design processes, computational concepts and other factors influencing the development of architectural production using digital tools. The studio will prompt students to develop critical reflections and positions on design conventions and to research, extend and explore those positions through the architectural design process.

MARC4001 Urban Architecture Research Studio, MARC4002 Sustainable Architecture Research Studio and MARC4003 Digital Architecture Research Studio are all available in both Semesters 1 and 2. Students may enrol or pre-enrol freely, but some will be asked to swap to create equal groups. After three semesters each student will have done each of the studios. The studios examine the relationships between architecture and urbanism; architecture and sustainability; and architecture and digital design. Each is based around one or more design projects which address a specialised area of study, supported by lectures and seminars which introduce the relevant theory, knowledge and design precedents. Studios require the investigation of key technical issues and systems, and their innovative integration in the design, with the preparation of appropriate documentation. On the successful completion of these units, students will have demonstrated: an ability to formulate, interpret and communicate appropriate concepts derived from the study of brief and site; an ability to extend those starting points into a working design proposal; an ability to develop the design proposal in response to critique, and produce a building design which demonstrably embodies understanding of the principles associated with the specialised study area; an ability to communicate the design ideas effectively through appropriate graphic and three-dimensional means using architectural conventions; and an ability to cohesively design and execute a comprehensive presentation of the project. These units are core to the Master of Architecture.

**MARC5001**
**Graduation Studio**

**Credit points:** 12 **Teacher/Coordinator:** Semester 1 Dr Sandra Loschke; Semester 2 Dr Ross Anderson **Session:** Semester 1, Semester 2 **Classes:** Lecture and studio contact (technical consultants and demonstrations as required), plus self-directed preparation and assignments, for a minimum total student commitment averaging 24 hours per week. **Prerequisites:** MARC4001 and MARC4002 and MARC4003 **Prohibitions:** ARCH5201 or MARF5201 **Assessment:** Preliminary Research and Design Development (30%); Final Design Project (40%); Portfolio (30%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Students may incur materials costs in this unit.*

Graduation Studio is the culminating architectural design studio of the Master of Architecture degree. It affords students the opportunity to assert an individual position in respect to current architectural research, discourse and practice by elaborating a intellectual framework and

line of inquiry in response to a studio brief selected from a suite of options. Students set their individual research agenda within the broad conceptual and programmatic framework established by the unit of study coordinator and their individual project tutor, and they are expected to produce rigorously investigated, well-resolved and technically adept architectural projects that make a solid contribution to knowledge in their field.

**MARC4101**
**Advanced Technologies 1**

**Credit points:** 6 **Teacher/Coordinator:** Dr Stephen Neille **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Corequisites:** MARC4001 or MARC4002 or MARC4003 **Prohibitions:** ARCH4202 **Assessment:** Weekly detailing exercises (60%), design development drawing (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit introduces students to concepts, issues and techniques relating to the design of some advanced structural, construction and services systems, and the integration of these systems within the design decision making process. This unit has a modular structure and aims to give students the tools to initiate and develop their design intentions in relation to structural, construction and services technologies. The knowledge will move from an understanding of the nature and impact of materiality on the architectural design process through to the implementation of this knowledge in the practice of a professional architect through design, consultation and building processes. The unit aims to examine the foundation and structural systems of large scale public buildings, the construction of the elements of the external fabric and the impact on the design process of the anthropomorphic, environmental and engineering requirements of the internal spaces. The unit stresses the primacy of detailing, skills in the development of individual design processes, and the understanding of design principles of construction materials in relation to structural and environmental concerns. It also aims to develop an understanding of the impact of the BCA and relevant Australian Standards on the building interior and exterior. Knowledge required for the selection of strategies, systems, and integration of the systems for a variety of design situations, is assessed through case study assignments and an examination. This unit is core to the Master of Architecture. Contact hours: 6 hours per week (lecture and tutorial); student effort expected for an average student to achieve a pass level result: class preparation: 3 hours per week; assessment preparation: 30 hours per semester.

**MARC5101**
**Advanced Technologies 2**

**Credit points:** 6 **Teacher/Coordinator:** Dr Stephen Neille **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk, tutorial 1 hr/wk **Prohibitions:** ARCH4203 **Assessment:** Assignment 1 (50%), Assignment 2 (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit explores architecture and the integration of structural, construction, environmental and services systems within the design decision making process. It aims to give students the ability to understand how structural, constructional technologies and systems are conceptualised, developed and integrated within a range of architectural design approaches. The unit aims to provide a basis for the development of technical and design skills required within ongoing design studio projects and for reference as a professional architect. This unit reviews a series of seminal architectural approaches and explores the technological approaches associated with realising such buildings, including case study buildings recognised by the architectural professional, it explores the nature of both the building fabric and, the environmental and management systems which enable the building to function optimally in a complex and dynamic urban environment. Students are expected to develop the ability to research structural, environmental and construction systems that satisfy aesthetic and philosophical intentions and to evaluate them based on clearly articulated decision criteria. Knowledge required for the selection of strategies, systems, and the integration of the systems, within a variety of design situations, is assessed through assignments and presentations, including the digital and physical modelling of selected case studies.

**MARC4102**
**Modern Architectural Theory**

**Credit points:** 6 **Teacher/Coordinator:** Prof Andrew Leach **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** ARCH6104 or ARCH9048 or ARCH9049 **Assessment:** Assignment 1 (30%); Essay (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The objective of the Modern Architectural Theory unit is to equip students with a critical understanding of key Western architectural theories from the Enlightenment to the present. Emphasis is placed on those theories which have contemporary traction. Emphasis is also placed on the specific historical situations and cultural and philosophical contexts in which those theories arose, and ultimately how they were represented within the domain of architecture. It is organized predominantly as a conceptual survey which clearly identifies particular trains of thought in their continuity and transformation. Students will become generally conversant in the principles of central theories, and will understand their terms and references. Through readings, lectures, and tutorial sessions, students will acquire the literacy required to perceive and articulate contemporary theoretical standpoints, and will refine their research and writing skills through independent research into a particular aspect of recent architectural theory and history related to their concurrent studio design project. Close attention will be paid to the exchange between practice and theory and the relevance of the discussed theories to the formation of current circumstances, and to the place of architecture within contemporary culture as a whole.

**MARC4201**
**Modern Architectural History**

**Credit points:** 6 **Teacher/Coordinator:** Dr Jennifer Ferng **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** ARCH4102 **Assessment:** Illustrated Research Essay (60%), Short response essay (30%), and visual diagram (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit presents foundational knowledge concerning modern architecture in global context. It commences briefly with fundamental principles of the European Enlightenment as a means of discussing modern architecture's relationship to a number of external disciplinary fields including archaeology, biology, economics, history, landscape studies, and philosophy. Vital Enlightenment inquiries not only set the stage for historical debates about architecture but have also influenced contemporary questions about what constitutes architectural practice. Attitudes towards classical antiquity, art collections in museums, craft and industrialization, and building materials exemplified how architects have actively participated in creating intellectual discourse. Some principal qualities of modernism evident within the arts and sciences heralded historical contingencies, self-conscious agency, and the rise of technical developments. Architecture's enduring involvement with the modern sciences, in particular, has been conditioned by the shifting tensions existing between many polarizing pairings: empiricism and subjectivity, art and techne, representations and their models.

Instead of employing a chronological structure, course readings are grouped into core areas of exposition. We will survey a range of topics on autonomy, class, construction, drawing, gender, nationalism, ornament, primitivism, science, technocracy, urbanism, and utopia to understand how the complexities of these issues have created frameworks for architectural historiography, theory, and design in a variety of cultural contexts. The Enlightenment influence over these issues engendered lasting modes of resistance against these canonical formations, which remain highly evident in colonial and post-colonial dialogues as well as post-industrial interventions. The intersection of architecture with external disciplines set the agenda for a global modernity spanning from the eighteenth century into the present moment.

**MARC5102**
**Contract Documentation**

**Credit points:** 6 **Teacher/Coordinator:** Dr Peter Armstrong **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** ARCH4103 **Assessment:** 4 assignments (40%); contract documentation set (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit aims to provide knowledge of basic contract law and building contracts; as well as information about, and skills in, the production of working drawings, specifications and opinions of probable construction costs, as commonly prepared by an architect. On the successful completion of this unit of study, students will have demonstrated: a competent ability in the production of working drawings, specifications and cost control for the building designed during the semester studio; an ability to communicate this documentation to clients, statutory authorities, consultants, tenderers, contractors and sub-contractors etc. such that they are able to understand what is required to be built; an understanding of the significance of contract documents in contracts, the relationship between contract documents and relevant law, and the provision of a context for understanding the full examination of commonly used building contracts in the Management in Architecture unit of study; an ability in the making of working drawings and specifications, the coordination of these documents into contact documents; an understanding of the role of consultants with specific reference to cost control, and the management of the process. This unit is core to the Master of Architecture. Contact hours: 3 hours per week. Class preparation and assessment preparation: 39 hours per semester.

## School electives

Candidates are required to complete 12 credit points of elective units of study.

## Senior Art in Architecture elective units of study

**AWSS2002**
**Site Specific Art and Architecture**

**Credit points:** 6 **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Assessment:** Practical work (60%); research, written component and presentations (40%) **Practical field work:** Studio practice **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This practical unit aims to give students a critical understanding of site-specific intervention, through the development of sculptural objects, material investigation and research into relevant visual art forms and architecture. Students gain experience in ways of selecting and analysing sites for the development of site-specific installation. The structured methodologies will allow students to develop material competency exploring techniques in specific combinations of materials. Students will also develop ways of analysing and evaluating site-specific works through directed group discussions engaging in an ongoing discourse regarding site-specificity, installation and the complex relationships between historical and contemporary practices and architecture.

**AWSS2010**
**Arch + Design Material Processes (Ceramics)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA2634 **Assessment:** Studio projects (70%); Process Journal and associated assignments (30%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This studio-based unit explores ceramic media and processes. Students will investigate different fabrication techniques such as slip-casting, ceramic rapid prototyping and analogue modelling. There will be an emphasis on ceramics as a modelling medium in design and architecture. Students will use the digital modelling and fabrication lab within the school to investigate possibilities for ceramic production. This exploration will be in relation to historic and contemporary architectural frameworks. Set projects will enable students to explore expression and design in an architectural form and materiality context. Students will be expected to produce a research process journal and report on how a particular practitioner/s or movement has informed or influenced their project/s.

**AWSS2015**
**Generative Drawing**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 2, Summer Main **Classes:** Workshop 3 hrs/wk **Assessment:** Portfolio (60%); Process Journal (40%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit explores a variety of drawing skills with an emphasis on materials and techniques as tools for generative and process-based work related to drawing as a fundamental medium and method in design. Drawing is approached as a system for critical analysis, research and design speculation. The focus is on the formal aspects of composition and perspective while the material nature of drawing is explored as a balance between chance and control. Students use a wide variety of mark-making methods to render line, tonal value and texture. Students are provided with the opportunity to combine observational skills with experimental techniques in order to encourage a personal vision and a commitment to the practice of drawing in design. Each technique and approach will be presented against a background of Architecture and Art history and theory.

**AWSS2020**
**Object Design (Material and Light)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Corequisites:** DESA1555 **Prohibitions:** DESA2643 **Assessment:** Portfolio of works and presentation (60%); process journal and associated assignments (40%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

In this unit students produce light objects exploring diverse materials and fabrication techniques in the DMaF workshops. Emphasis is placed on developing and inter-relating manufacturing and artisan skills with research, analysis and design development. The course aims to develop a critical awareness of the nature of objects that surround us, exploring cultural, contextual and symbolic aspects of object design as well as functional and aesthetic qualities working with light. Sustainability and social issues relating to their manufacture, use and disposal are also discussed; the unit aims to increase appreciation of the materiality of objects focusing on timber as an example paying attention to associated environmental and ethical issues, and emerging alternative materials. Through a series of exercises, experiments and production of their major project, students develop knowledge of construction techniques and skills in using wood/plastics tools and machinery and in so doing, build an awareness of industrial and craft practices and how they impact on the design process and outcome. Students will be expected to produce a research process journal and report on how a particular designer/s or movement has informed or influenced their final project/s.

**AWSS2023**
**Architectural Photography**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2, Summer Main **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA2629 **Assessment:** Process Journal and associated assignments (40%); final project and presentation (60%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This practical unit assumes students have little or no understanding of photo image making. It aims to give students an understanding of how photography functions as a contemporary visual medium, including its connection to modernism and architecture. Students will gain knowledge of the principles and practise of camera operations,

the production of high quality black and white prints in small studio style classes. This module covers the use of a 35mm DSLR camera, image composition, use of lighting, image capture and correction, and printing. Practical work includes completion of set class projects, gallery visits, class discussions and the production of a portfolio. *Students should have access to a 35mm DSLR camera.

**AWSS2026**
**2D Print Processes in Design**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2, Summer Main **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA2638 **Assessment:** Research Journal (30%); portfolio of Studio Works (70%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This studio-based unit introduces a variety of traditional and experimental techniques that will enable students to design and print a series of 2D works both within and around the context of design and Architecture. It will provide students with the knowledge and skills to design and print on a variety of substrates including paper, wood, and perspex through a range of techniques and creative exercises that can be developed into an edition or a series of experimental printed works. Students will also explore the historical roots of print and print as an element in design and architecture. Techniques covered include: digital photography and vector illustration, typography, hand and laser-cut paper stencils, ink mixing, registration and print set-up for multi-coloured prints. Through studio practice, set exercises, illustrated talks, gallery visits and library research, students will develop an understanding of their creative process and ability to interpret ideas through the medium of printing and with particular focus on design and architecture applications.

**AWSS2027**
**Arch + Design Material Processes (Casting)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA2636 **Assessment:** Studio Projects and associated tasks (70%); Research Process Journal (30%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This studio-based unit focuses on critical engagement with materiality and form. The course introduces fundamental knowledge and technical skills for students to produce a series of 3D objects through high-definition casting and complimentary construction techniques. Students will work with a broad range of traditional and experimental materials including wax, silicone, metal, sand and plaster. Emphasis is placed on developing students' material and spatial awareness of three-dimensional forms in context and investigating their conceptual meanings and applications. Students will be required to design, plan and produce a series of sculptural works, utilizing mediums and techniques explored throughout the semester. Additionally, students will critically contextualise and discuss their projects against historical precedents and contemporary practices that inform their creative inquiries.

**DESA3013**
**Expanded Colour: From Theory to Application**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2, Summer Main **Classes:** Tutorial 1 hr/wk; studio 2 hrs/wk **Assessment:** Studio projects (65%); Process Journal and associated assignments (35%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit allows students to develop and extend research into colour and the designed environment. It locates some of the main figures that have investigated and championed the use of colour historically and in contemporary contexts - including artists and theorists Josef Albers, Johannes Itten, David Batchelor, Ann Veronica Janssens, Carlos Cruz-Diez, James Turrell and Olafur Eliasson, scientist Albert Henry Munsell, architects Le Corbusier and Sauerbrauch Hutton. Research will take students across the connections made between colour and light, music, and the phenomenology of space. Using a range of materials and techniques tied to sculpture, video, photography, assemblage and installation, students will experiment and explore propositions for architecture in response to conceptual frameworks and historical and contemporary precedents. Through this unit students have the opportunity to develop observational, critical and tactical skills related to the meaning and potential uses of colour in architecture.

## Senior Architecture elective units of study

**DAAE2001**
**Australian Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Prof Andrew Leach **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DESA2305 **Assessment:** One process development presentation and one 3,000-word essay (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce students to the history of Australian architecture in its various contexts. Lectures and seminars will cover key architects, projects and building types and their relation to Australian history. Students will become familiar with a range of architectural styles and movements and their characteristics. They will undertake individual self-directed research and learn how to record and present the results of this research. Students will also acquire an appreciation of the factors that shape architectural design and thought in Australia and how these relate to wider social and cultural circumstances. Tutorials will introduce students to key books, essays and journals concerned with Australian architecture. On successful completion of this unit, students will be able to: demonstrate a familiarity with a range of Australian architects, buildings and types; research, record and present a specific project in Sydney; connect specific works to other works of a similar style, period or cultural context. This will be assessed in the submitted essay.

**DAAE2002**
**Architecture, Place and Society**

**Credit points:** 6 **Teacher/Coordinator:** Dr Akin Sevinc **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DESA2211 **Assessment:** Graphic and Written Pressentation on Research (40%); Final Research Essay (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit aims to investigate the relationship between architecture, place and society and to explore the meaning of cultural and social sustainability in architectural design. The unit assumes that designers will increasingly work in places where cultures are unfamiliar at home or in a global context, and that an ability to understand, and interpret, diverse cultures, and the way design occurs in diverse locations, is an important area of knowledge for designers. A key aspect of social sustainability is the practice of social responsibility, and the unit explores how this may occur, including involving people in the design process. On completion of this unit students will be able to demonstrate: an ability to better understand the connections between architecture place and society, and the social, cultural, political and economic factors affecting sustainable environments; skills and knowledge in participatory processes necessary for effective communication about environmental design issues; increased critical awareness about social responsibility in relation to the practice of architecture and the design of the built environment, and an ability to exercise this awareness. This unit will provide architecture students with knowledge of the relationship between culture and architecture, as well as practical knowledge of the social aspects of design practice. It is intended that students from other disciplines will develop a critical awareness of the built environment as a form of cultural production, and the possibilities for their participation in its production.

**DESA3003**
**Architectural Detailing**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1 **Classes:** Tutorial 3 hrs/week, minimum 4 site visits/semester **Assessment:**

Initial site report (30%), Draft final findings (10%), Final site details (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

The process of detailing in the office and during construction is a fundamental part of architectural practice. Experience of the process can provide and invaluable learning experience for students of architecture. However, many students have no available path to builders or architects and access to operative building sites is generally limited by OH and S concerns. The studio-based elective will allow a small group of students access to current building projects to explore the role of detail in design and building and in guiding not only a small component of a building's construction but its fundamental overall character. This elective will link students to a particular architect, builder and domestic scaled project to study and document a series of details in the context of the whole building and provide access to the site under supervision to study construction methods and detailing in context.

**DESA3004**
**Architecture and Diagrams**

**Credit points:** 6 **Teacher/Coordinator:** Dr Francois Blanciak **Session:** Semester 1 **Classes:** 1-hr lectures/Weeks 1, 2 and 3, 3-hr tutorials/week, 1-hr seminars/week **Prerequisites:** 48 Credit points **Assessment:** Diagramming (50%), Seminar presentation (35%), Active participation (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Architecture and Diagrams is an elective that aims to provide students with an overview of various techniques of production and theories that relate to architectural diagrams. Its objectives are: to learn how to analyse buildings from a diagrammatic point of view; to acquire a basic knowledge of the history and theory of diagrams in architecture; and to develop basic skills to generate urban and architectural diagrams directly related to the students' respective design work in other units of study.

**DESA3005**
**Architectural Drawing Through History**

**Credit points:** 6 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1 **Classes:** 1 hr lecture/week, 3 hrs studio/week **Prerequisites:** 48 credit points **Assessment:** Seminar presentation (30%), Studio project (50%), Illustration report (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

In Architectural Drawing Through History, students critically investigate and then imaginatively deploy in a studio project an unconventional historical drawing technique of their choosing. Close studies of the widely differing range of drawings that were produced to achieve the architecture of Ancient Egypt, Classical Greece and Rome, the Middle Ages, Renaissance and Baroque, can illuminate aesthetic sensibilities that are often profoundly difference to our own, and can provide insights into the worldviews of the cultures that produced them. Drawings are a vital mediator between that which can be imagined and that which can be built, and the elective contributes to architectural historian Robin Evans' claim that it would be possible to ' write a history of western architecture that would have little to do with either style or signification, concentrating instead on the manner of working. Students conduct textual and graphic analyses of case study drawings and buildings, but engage equally in practical experimentation in an effort to unfold and re-animate the potential of forgotten or marginalised drawing methods to inform current architectural practice.

**DESA3007**
**Prefab Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Mathew Aitchison **Session:** Intensive February **Classes:** 5 intensive days **Prerequisites:** 48 credit points **Assessment:** Case study report (50%), Presentation report (50%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit will introduce students to the benefits and limitations of prefabricated architecture through case study analysis and design exercises. Architects have long used prefabricated housing to explore industrialised building solutions, often with disappointing results. Yet, recent developments show the conditions for a more industrialised approach to housing Â¿ especially its promise of low-cost, more socially inclusive, and well-designed housing Â¿ have rarely been better. AustraliaÂ¿s housing affordability crisis, changing design needs, sustainability concerns, and the rise of digital and automated fabrication technologies, have conspired to challenge a housing industry deeply resistant to change. Using design research tools, students will assess case study projects before developing their own prefab building 'offering'. Through a series of workshops running parallel to 'live' research projects within the Innovation in Applied Design Lab, students will have contact with professionals and researchers active in the industry. Learning outcomes will include the ability to analyze complex case studies using graphic, physical, and textual media for the case study report. Design, communication and presentation skills will be examined in the form of a PowerPoint presentation 'Pitch' and report.

**DESA3008**
**Architectural Models: Theory and Practice**

**Credit points:** 6 **Teacher/Coordinator:** Dr Matthew Mindrup **Session:** Semester 2 **Classes:** 2hr lectures/week, 1hr tutorials/week **Assessment:** (40%) Portfolio, (60%) Graphic and written presentation on research **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study asks students to consider 'what is a physical model in architecture?' and 'what are the different materials, methods and uses of physical models in the design and presentation of architecture?' Participants in this unit will critically investigate and creatively apply a non-conventional modeling technique of their choice in the conception, study or presentation of architecture. These inquiries are supplemented by lectures and in-class discussion, which seek to uncover a historical and contemporary use of physical models as a tool for architects, including their mention in architectural treatises and in the formation of Modernism. In recent years, the development and use of parametric driven architectural models has received significant attention. Naturally, the unit will also explore the interface between the physical and virtual model to understand how architectural modeling programs belong to a historical tradition and are playing a role in not only representing conditions of building in the world but also in the development of new architectural ideas.

**DESA3009**
**Advanced Fabrication**

**Credit points:** 6 **Teacher/Coordinator:** Dr Simon Weir **Session:** Semester 2 **Classes:** 3 hr/week Lecture/lab/tutorial **Prerequisites:** 96 credit points **Assessment:** Assignments (2x50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This design elective bridges the domains of design theory and advanced fabrication practices. In this unit students will make complex and polished objects using the fabrication tools in the DMaF lab, that demonstrate and/or embody design ideas intrinsic to their formulation. The unit is divided into two halves: additive fabrication and subtractive fabrication. Each half will be accompanied by lectures on the technical knowledge related to these fabrication processes, and lectures on the theoretical premises and associations generated by the internal logic, and expressive languages of each fabrication type. Tutorials will also be divided between technical developing machine control, and design tutorials in which students will develop control of the design trajectory and expressive languages.

**DESA3010**
**Code to Production**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dagmar Reinhardt **Session:** Intensive July **Classes:** 1hr lectures/week, 2hr tutorials/week, 2hr workshops/week **Prerequisites:** 48 credit points **Assessment:** Small exercises (50%), Documentation (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Code to Production is an elective that explores the potential of an iterative design process from parametric variations; to analysis and

simulation; to digital prototyping and manufacturing. The course has a two-fold agenda: to examine the performance of complex geometries available through computational design processes, and to translate the optimised design by digital manufacturing into construction and prototype (CNC/robotic fabrication). Based upon the development of a series of controlled variations derived through parametric and scripting methods, the elective aims to further expand an understanding of structural and acoustic performance of these geometries. It reviews an open system of design research in which design process, structural analysis and acoustic analysis are deployed to improve the acoustic and structural performance of complex spatial geometries, and derive fabrication knowledge for architectural practice. The unit of study extends students' knowledge of advanced computational design, interdisciplinary processes and fabrication methodologies by application of commercial and specialist 3D-modelling, scripting, analysis and manufacturing packages (including various software such as McNeel Rhino and Grasshopper, Karamba, RhinoNest and KUKA/prc).

**DESA3011**
**Introduction to Building Construction**

**Credit points:** 6 **Teacher/Coordinator:** Mr Damien Madell **Session:** Semester 2 **Classes:** 3 hr lecture/tutorial/week **Assessment:** Two assignments (40%) and (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit provides a comprehensive overview of standard domestic scaled construction in Australia. It begins by introducing a number of recurrent themes in construction including the idea of building culture, the various modes of delivery and variety of classifications of buildings and building elements, rational construction and construction detailing from first principles. There follows a review of construction techniques of well-documented and/or accessible exemplars. Finally, the unit will review current issues related to key attributes of buildings which make them sustainable, particularly with regard to material selection, appropriate detailing and energy and resources conservation.

**DESA3012**
**Counter-Practices in Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Lee Stickells **Session:** Semester 2 **Classes:** tutorials 1hr/week; seminars 2hrs/week **Prohibitions:** ARCH9094 **Assessment:** illustrated research essay (50%), critical summaries (20%) and seminar presentation (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Focused on the 1960s and 1970s, this unit will explore an alternative genealogy of the postmodern turn in architecture. It will introduce students to experimental practices and polemics that emerged when architects and figures from the counterculture responded to the identification of global environmental emergency, urban instabilities; revolutions in communication technologies and expanded forms of environmental control; growing militarism and globalising forces; and burgeoning claims to self-determination and environmental justice.

**DESA3014**
**Finding Country**

**Credit points:** 6 **Teacher/Coordinator:** Prof Michael Tawa **Session:** Intensive January **Classes:** 4 day intensive and studio **Assessment:** proposition (20%), mapping process (20%) and finding country (60%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit of study involves an intensive 4-day workshop focusing on 'finding country': that, is recuperating the erased or imperceptible layers of Aboriginal and Torres Strait Islander histories within the urban fabric of Sydney. The workshop also aims to make propositions for urban interventions within the city fabric that would re-establish the value and importance of those histories to the cultural and experiential futures of the city.

**DESA3015**
**Broken Hill and Far West NSW Projects**

**Credit points:** 6 **Teacher/Coordinator:** Prof Michael Tawa **Session:** Intensive July **Classes:** 4 day intensive and fieldwork **Assessment:** project proposal (20%), reflective journal (20%), critique (20%), presentation (10%) and major project report (30%) **Mode of delivery:** Field experience

*Note: Department permission required for enrolment.*

This unit of study introduces students to a community engaged learning and teaching setting, working on collaborative, multidisciplinary action research project that crosses over business and architecture. The

design project will exercise and extend design skills and knowledge required to produce a plausible conceptual solution to a large-scale regional city condition that addresses educational, sociocultural,

business, heritage, architectural, landscape and technological issues, with an emphasis on indigenous community needs. Architecture students will work with their Innovative and Enterprise counterparts from the Business School to develop viable architectural and business solutions that integrate multiple criteria (contextual, sustainable, urban design, structural, material, constructional, representational) into a design within rigorous conceptual and theoretical framework. The project will offer students opportunities to engage with the professionals and the broader community.

**DESA3441**
**Elective Travelling Studio 1**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive February, Intensive July, Intensive June, Intensive November, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Classes:** Weekly meetings by arrangement. **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Architecture topic; to develop skills in independent study; and to develop advanced report writing skills. This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Architecture. The student will meet with the supervisor weekly to discuss progress. The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DESA3442**
**Elective Travelling Studio 2**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive February, Intensive July, Intensive June, Intensive November, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Classes:** Weekly meetings by arrangement. **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Architecture topic; to develop skills in independent study; and to develop advanced report writing skills.

This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Architecture. The student will meet with the supervisor weekly to discuss progress.

The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DESA3443**
**Design Architecture Independent Study C**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1, Semester 2 **Classes:** Weekly meetings by arrangement. **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Architecture topic; to develop skills in independent study; and to develop advanced report writing skills.

This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Architecture. The student will meet with the supervisor weekly to discuss progress.

The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DESA3444**
**Design Architecture Independent Study D**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1, Semester 2 **Classes:** Weekly meetings by arrangement. **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Architecture topic; to develop skills in independent study; and to develop advanced report writing skills.

This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Architecture. The student will meet with the supervisor weekly to discuss progress.

The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DESA3551**
**Design Architecture General Elective A**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive February, Intensive July, Intensive June, Intensive November, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Supervision

*Note: Departmental Permission will be required to enrol in this unit.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

This unit of study is available to a minimum of 10 students to engage in a topic related to Design Architecture that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Undergraduate).

Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

**DESA3552**
**Elective Intensive Design Studio 1**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive February, Intensive January, Intensive June, Intensive November, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Prerequisites:** 48 credit points. **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

This unit of study is available to a minimum of 10 students to engage in a topic related to Design Architecture that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Undergraduate).

Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

**DESA3553**
**Elective Intensive Design Studio 2**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive June, Intensive November, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Prerequisites:** 48 credit points. **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.This unit of study is available to a minimum of 10 students to engage in a topic related to Design Architecture that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Education). Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

**DESA3554**
**Intensive Design Studio 3**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Intensive January, Intensive June, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Prerequisites:** 48 credit points. **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment. This unit of study is available to a minimum of 10 students to engage in a topic related to Design Architecture that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Education). Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

**MARC6204**
**Graduate Exhibition**

**Credit points:** 6 **Teacher/Coordinator:** Dr Sandra Loschke **Session:** Semester 2 **Classes:** 3-hour design intensives twice weekly in Weeks 1-3 and 3-hour pre-production meetings and production intensives in Weeks 9-14 **Assessment:** Preliminary research, exhibition design and performance assessment (individual work) (40%); Exhibition and Yearbook (group work) (60%). **Practical field work:** 3-hour intensive fabrication workshops in Weeks 10-14 and as required to produce the exhibition. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study enables students to engage in a collaborative project to research, design and produce a high-profile public exhibition and accompanying yearbook of graduating work from the BDesArch and MArch programs. The project will exercise and extend design skills and knowledge required to produce a plausible concept for the exhibition and yearbook and to implement the necessary logistical, technical and practical means to realise it. The project integrates multiple activities which exercise different skill sets including research and precedent studies of exhibition, curation and potential venues; developing a critical, plausible and achievable concept for the event; budgeting and financial management; exhibition design; graphic design; construction and installation of the exhibition; production of the yearbook; consultation with stakeholders and implementation. Students will extend their research, design and implementation skills through a real project with a concrete outcome to real-time deadlines and resource limitations.

## Junior Architectural Science elective units of study

**DESA1004**
**Designing with Surfaces and Light**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2, Summer Main, Winter Main **Classes:** Online. Expected total workload is approximately 35 hours online, plus independent study and preparation. Lecture materials are available on the eLearning site. They consist of PDF files and Powerpoint slides. No lecture recordings are available. **Prohibitions:** DESA2612

**Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Online

*Note: Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.*

Objects only become visible when light reflects off of them. This unit explores the ways in which light interacts with surfaces, objects, and the human visual system. Architectural design decisions regarding the lighting, as well as exterior and interior surfaces of a building, alter the perceptual experience of users and should be done thoughtfully.

This unit introduces students to the way humans perceive and experience the built environment. It covers some of the fundamental properties of light, mechanisms of human perception, and the ways that light interacts with surfaces. The application of these topics to design decisions is also discussed. Students demonstrate their understanding of the presented material and apply their knowledge to critically analyze their own environments.

## Senior Architectural Science elective units of study

**DAAE2005**
**Designing with Colour**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 1, Semester 2, Summer Main, Winter Main **Classes:** Online. Expected total workload is approximately 35 hours online, plus independent study and preparation. Lecture materials are available on the eLearning site. They consist of PDF files and Powerpoint slides. No lecture recordings are available. **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Online

*Note: Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.*

All design decisions involve decisions about colour within the fields of architecture, applied design and art. This unit presents knowledge about colour theory as well as research-based information about colour and associated topics that can be used in design. Information and knowledge about colour can vary in quality and reliability, which is demonstrated. Students apply their skills and knowledge about colour theory and colour design in the assignments of this unit. This unit covers the processes of colour vision and other aspects of visual perception. It also explores colour application from the Pre-history period, as well as selected colour theories of the Renaissance period through to the 21st Century. Common colour-related constructs and the application of these in art, architecture and design are discussed. In completing the assessment tasks, students must demonstrate understanding of the knowledge presented in learning modules of the unit and critically analyse and apply knowledge related to colour design and application.

**DAAE2008**
**Innovative Building Structures**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk; tutorial 1 hr/wk **Prerequisites:** BDES1023 **Prohibitions:** DESA2206 **Assessment:** Group Report (40%); Physical Test (20%);Individual Report (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of this unit is to engage students in detailed studies of innovative building structures, covering the three aspects of innovation in architectural and structural design (modeling, materials and technology). The main topics covered are: architectural form and structural function; interpretation of basic (arch, beam, column, space and spatial portal) and advanced (truss, vault, dome, shell) structural principles with an intuitive graphical method (Load Path Method - LPM). Examples of significant case studies will be shown and interpreted (works by A. Gaudi, B. Fuller, F. Otto, N. Grimshaw, S. Calatrava, N. Foster, R. Piano and others); biomimetics; bioinspired structures as a way to increase structural efficiency. Innovative structural materials: the use of glass as structural material, innovative reinforcements for composite structures, smart and nanostructured materials; kinetic architecture: structural movement as the 4th architectural dimension. A case study assignment will be used to assess student's competence in investigating and presenting case studies and being able to identify and evaluate issues and factors contributing to innovative structural solutions.

**DAAE3001**
**Sustainable Architectural Practice**

**Credit points:** 6 **Teacher/Coordinator:** Dr Daniel Ryan **Session:** Semester 1 **Classes:** lecture 2 hrs/wk, tutorial/lab 2 hrs/wk for weeks 1 to 12 **Prerequisites:** BDES1023 or (DAAE1001 and DESA3011) or (DAAE2002 and DESP1001) **Assessment:** Case Studies (30%), Design Exercise (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

The unit of study begins by exploring the concept of ecologically sustainable design as it applies to architectural practice and defines those key attributes of buildings which make them sustainable. It discusses the implication of applying sustainable design principles upon contemporary architectural practice. This unit will cover the fundamentals of passive solar design, the environmental impact of building materials, water sensitive design and the environmental certification of buildings. Through the use of case studies and project work students will learn about how to design environmentally sustainable buildings by understanding contemporary trends in sustainable architectural practice, methods to critically evaluate environmental claims about buildings and will develop a personal position on applying sustainable design principles to architecture. This unit is an Architecture Elective in the Bachelor of Design in Architecture and elective in other courses.

## Junior Design Computing elective units of study

**DECO1012**
**Design Programming**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1 **Classes:** seminar and tutorial 3hrs/wk **Assessment:** Programming Assignments (80%); Tutorial Activities (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides an introduction to the development of software in design and the creative industries. It teaches an understanding of the fundamentals of computational thinking as well as skills in the design and implementation of software for creative expression and prototyping. It introduces students to tools for building interactive design applications through programming assignments; knowledge of programming concepts; and knowledge of the Javascript programming language. Key concepts covered in this unit include: variables, functions, control flows, and algorithmic thinking. Students learn how to design through the development of code, allowing them to incorporate programming into their own design projects as well as to collaborate effectively with software developers.

## Senior Design Computing elective units of study

**DAAE2011**
**Intro to Visual Communication Design**

**Credit points:** 6 **Teacher/Coordinator:** Mr Nathaniel Fay **Session:** Semester 1, Summer Main, Winter Main **Classes:** Online: expected total workload is approximately 35 hours online, plus independent study and preparation. **Prohibitions:** DAAE2009 or DECO1015 or DECO2101 **Assessment:** Visual Design Assignments (85%), Quiz (15%) **Mode of delivery:** Online

This unit of study introduces students to the principles and practices of visual communication design for non-designers. Visual communication is an essential skill in todayÂ¿s complex world, for effectively communicating ideas, information, perspectives and proposals to diverse audiences in a variety of contexts. Students will learn about the theories of visual perception and psychology underlying visual design principles, and strategies for the composition of visual elements to produce effective and compelling visual presentations. On the successful completion of this unit of study, students will have demonstrated knowledge and skills in the understanding and application of visual design to produce and evaluate effective visual communication materials for a range of audiences.

**DECO2010**
**Designing Social Media**

**Credit points:** 6 **Teacher/Coordinator:** Ms Madeleine Borthwick **Session:** Intensive June, Semester 1 **Classes:** Lecture 1 hr/wk; tutorial 2 hrs/wk **Assessment:** Social Media Project (75%); Tutorial Activities (10%); Quizzes (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides students with an understanding of principles and technologies relevant to the design of social media, that is, media supporting social interaction. The unit covers the history and theory of social networks, techniques and methods for analysing social media networks, design principles and patterns for the creation of social media applications, and the development and delivery of social media strategy. Students will gain proficiency designing social media platforms and usage scenarios that solve a range of design challenges. Students will participate in, critically review and prototype social media platforms and content to demonstrate their understanding of the subject matter.

**DECO2015**
**Design for Innovation**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 2 **Classes:** Lectures 1 hr/week; tutorials 2 hrs/week **Assessment:** Analysis report (35%); Project work (55%); Quizzes (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces students to design strategies and techniques for developing alternative points of view and exploring multiple solutions iteratively. Through the analysis of real-world case studies students will develop an understanding for how to use design-thinking methods to tackle complex problems. The unit will discuss how design can be used as a method and as a way of thinking to drive innovation for products, services and processes. In the tutorial component, students will apply design strategies and techniques, such as lateral thinking, experiential prototyping and speculative design, through small group exercises. Students will develop a deep understanding of these strategies and techniques through the various assessment items, which capture theory, analytical reflection and the practical application of methods.

**DECO2101**
**Visual Communication**

**Credit points:** 6 **Teacher/Coordinator:** Mr Nathaniel Fay **Session:** Intensive June, Semester 1 **Classes:** Lecture 1 hr/wk (Week 1 only); tutorial 2 hrs/wk; online modules 1 hr/wk **Prohibitions:** DECO1015 or DECO1100 or DAAE2009 **Assessment:** Visual Design Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study introduces students to the principles of visual design, including graphic design, colour theory and typography. Students will develop an understanding of how to successfully combine visual elements to effectively communicate an idea or concept, to describe a product, and to represent visual user interface elements in an interactive product. Using digital image manipulation tools, such as Adobe Photoshop, Illustrator and InDesign, students will learn how to develop design concepts and how to turn concepts into visual communication materials in the form of digital images.

**DECO2102**
**Web Design and Technologies**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 2 **Classes:** Lecture 1 hr/wk (Week 1 only); tutorial 2 hrs/wk; online modules 1 hr/wk **Prohibitions:** DECO1016 **Assessment:** Web Design Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to web design and modern web technologies for the purpose of designing and prototyping web-based user interface solutions. Students will learn about design principles and patterns for the web and apply them in practical exercises that involve designing and creating interactive web applications. The unit will introduce web-based markup languages and frameworks for various media and platforms, such as desktop computers and mobile devices, with a focus on interaction design. Students will develop an understanding of web technologies and their role in user experience and interaction design, including the use of web technologies for prototyping user interfaces. Prototyping techniques covered in this unit include: scripting and markup languages for enabling dynamic content and interactive designs, such as HTML, CSS, and JavaScript.

**DECO2103**
**Architectural Modelling and Prototyping**

**Credit points:** 6 **Teacher/Coordinator:** Dr Rizal Muslimin **Session:** Semester 1 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Prerequisites:** DESA1555 and completion of at least 36 credit points **Assumed knowledge:** Basic understanding of design principles and design processes and how to apply them in practical design projects **Assessment:** Assessment 1 (25%), Assessment 2 (35%), Assessment 3 (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit teaches students basic understanding of digital modelling and architectural prototyping. Students will develop skills in creating and using 3D modelling software for various design tasks. The unit further introduces students to rapid prototyping fabrication techniques, such as 3D printing and laser cutting with the aim to understand how to prepare a digital model for physical fabrication. Students will learn how physical objects are represented in 3D digital models by modelling various 3D geometric entities. Key concepts covered in this unit include: joinery, composite material and solid modelling.

**DECO2016**
**Design Thinking**

**Credit points:** 6 **Teacher/Coordinator:** Dr Karla Straker **Session:** Semester 2 **Classes:** Lectures 1 hr/week; tutorials 2 hrs/week **Prohibitions:** DECO1006 **Assessment:** Design assessments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Not available to students in the Bachelor of Design Computing and the Bachelor of Architecture and Environments*

This unit of study provides an introduction to design methods and their application in a human-centred design process. The unit structure follows the stages of a typical design process, which are: define, understand, ideate, prototype, evaluate and reflect. A series of lectures and tutorial sessions are dedicated to each of these stages, allowing students to gain a deep understanding of and experience with design thinking methods. Students will learn how to balance convergent and divergent thinking at various stages throughout the design process, and how to use these methods to respond to a design brief requiring both analysis and synthesis. Students will learn to build empathy with users, identify and reframe the problem space, develop value-driven design concepts and persuasively communicate design proposals with an emphasis on the user experience through visual storytelling.

**DECO3101**
**Innovation Design Studio**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 1, Semester 2, Winter Main **Classes:** Lecture 1 hr/week; tutorial 2 hrs/week **Assessment:** Project work (90%); Participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides a format for deep engagement with design and innovation methods. Students will develop responses to a real-world design problem that requires the application of students' existing disciplinary skills combined with knowledge in an interdisciplinary context. Projects are student-led, allowing students to identify projects that are linked to their interests and discipline-specific career paths. Through interactive group work, facilitated by experienced design mentors, students will learn how to negotiate interdisciplinary requirements and boundaries. All projects developed in this unit of study are expected to address some element of innovation in an existing product, service or process. Students will be able to apply methods acquired in other units of study, and will learn about new methods through weekly project work and reviews.

**DECO3006**
**Animation and Motion Design**

**Credit points:** 6 **Teacher/Coordinator:** Mr Nathaniel Fay **Session:** Semester 2 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Prohibitions:** DECO1017

**Assessment:** Animation Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to the fundamental principles of animation and its role in interaction design. Students will develop an understanding of the process involved in developing character, text and motion graphics based animation, the integration between 2D artwork and 3D composition, and techniques and tools for audio recording and production to support animation. Assessments in this unit focus on the application of animation in user interface design as well as for the production of short animated films. Students will acquire basic animation skills, develop the skills to create an animated sequence, and learn the critical vocabulary to describe animation. Basic knowledge will be related to foundational technical skills in industry standard software for animation.

## Junior Planning elective units of study

**DAAE1001**
**Living Cities**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dallas Rogers **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk (Weeks 1-6), 1 hr/wk (Weeks 7-13); tutorial 1 hr/wk (Weeks 1-6), 2 hrs/wk (Weeks 7-13) **Assumed knowledge:** DECO1006 and DECO1012 and BDES1011 and AWSS1001 **Assessment:** Assessment 1 (30%); Assessment 2 (30%); Assessment 3 (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study reviews the challenges involved in planning the contemporary urban environment. It covers a range of perspectives, including urban planning, urban design and heritage. Students will examine the evolution of towns and cities from the first settlements to the modern metropolis, and explore the cultural, economic, political and digital drivers that shape the urban environment. It asks, 'why did cities evolve?', 'what purpose do cities serve?', 'who is the city for?', and 'how are decisions made about cities?' The contemporary urban environment is explored as a dynamic and continually evolving 'living city' that is co-created by architects, planners, urban designers and other public and private stakeholders. On the successful completion of this unit of study, students will have demonstrated an understanding of the importance of planning in shaping our towns and cities through time. They will have a basic knowledge of the key ideas that are needed for formulating planning and urban design proposals.

*Textbooks*

Course material, announcements and assessment submission will be available at https://elearning.sydney.edu.au/
Angel, S. (2012). The Planet of Cities, Lincoln Institute of Land Policy
Lynch, K. (1960). Image of the City. Cambridge Massachusetts, MIT Press
The City Reader, (2011), 5th Edition (The Routledge Urban Reader Series) Paperback by Richard T. LeGates (Editor) and Frederic Stout (Editor)
Kostov, S. (1991). The City Shaped. Bulfinch Press, Thames and Hudson
Readings listed as chapter excerpts and articles will be available electronically through the library.

## Senior Planning elective units of study

**BADP2002**
**City Form and Development**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 1 **Classes:** Lectures 2 hrs/wk, tutorials 1 hr/wk **Prerequisites:** DAAE1001 or (DAAE2002 and ENGG1850) **Assessment:** Assessment 1 (individual) (30%), Assessment 2 (40%), Assessment 3 (group) (20%), participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on the content of Living Cities and introduces students to the modern formal domains of planning, urban design and heritage conservation. The focus will be on two main areas of debate, namely, city form and structure, and secondly, the planning and development processes on which the formal planned city is made. The unit will establish the context in which the role of planners, architects and urban designers in the process of building the 'incremental' city is understood, from the site to precinct, neighbourhood and city wide levels. Elements of city form and structure are analysed, as well as mobility, transport, land use, infrastructure and current policy responses at a metropolitan and local level in meeting urban growth needs. The unit will also overview the development process including the framework in which architects, planners and property developers must work. Using a contemporary planning framework, the nature of development assessment, strategic planning and the community's role within this framework are explored. Criticisms and reform agendas around frameworks will be examined. Informal urbanism is also introduced in this unit to address development that occurs outside the domain of formal western regulated planning and design systems.

# Overseas exchange

## Exchange in the Bachelor of Design in Architecture (Honours)/ Master of Architecture

The school may approve international exchange for qualified students who have completed at least one full year of study. All students must complete the final semester of third year at the University of Sydney. Exchange will not be considered for honours.

Exchanges may be for one semester only. Students must apply through the Study Abroad and Exchange Office. Each student's program must be approved in consultation with the Degree Program Director.

Exchange students are required to enrol in a full-time load at the University of Sydney whilst on exchange, and will incur the tuition costs associated with that load. No tuition costs will be incurred with the partner university.

Specially designated units of study will be recorded on the students' transcript. A result of 'SR' for 'Satisfied Requirements' will be recorded by the University against each successfully completed unit of study. The transcript of the exchange University will be the official detailed record of exactly what was completed during the exchange. Exchange results will not count against a student's weighted average mark.

For more information please contact the Study Abroad and Exchange Office.

## Exchange units of study

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Bachelor of Design in Architecture exchange units** | | | |
| **Year 2 core units of study** | | | |
| **BDES2622**<br>**Architecture Exchange Studio 2A** | 12 | | Semester 1 |
| **BDES2613**<br>**Architecture Exchange Technologies 2** | 6 | | Semester 1<br>Semester 2 |
| **BDES2623**<br>**Architecture Exchange Art 2** | 6 | | Semester 2 |
| **BDES2624**<br>**Architecture Exchange Studio 2B** | 12 | | Semester 2 |
| **BDES2621**<br>**Architecture Exchange History/Theory 2** | 6 | | Semester 2 |
| **Year 2 elective units of study** | | | |
| **BDES2615**<br>**Architecture Exchange Elective 2A** | 6 | | Semester 1 |
| **BDES2616**<br>**Architecture Exchange Elective 2B** | 6 | | Semester 2 |
| **BDES2617**<br>**Architecture Exchange Elective 2C** | 6 | | Semester 1<br>Semester 2 |
| **Year 3 core units of study** | | | |
| **BDES3616**<br>**Architecture Exchange Studio 3A** | 12 | | Semester 1 |
| **BDES3611**<br>**Architecture Exchange History/Theory 3** | 6 | | Semester 1 |
| **Year 3 elective units of study** | | | |
| **BDES3615**<br>**Architecture Exchange Elective 3A** | 6 | | Semester 1 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Master of Architecture exchange units** | | | |
| **Core units of study** | | | |
| **MARC6601**<br>**Architecture Exchange Studio** | 12 | | Semester 1<br>Semester 2 |
| **MARC6602**<br>**Architecture History Exchange** | 6 | | Semester 1<br>Semester 2 |
| **MARC6603**<br>**Architecture Theory Exchange** | 6 | | Semester 1<br>Semester 2 |
| **MARC6604**<br>**Architecture Technology Exchange A** | 6 | | Semester 1<br>Semester 2 |
| **MARC6605**<br>**Architecture Technology Exchange B** | 6 | | Semester 1<br>Semester 2 |
| **MARC6606**<br>**Architecture Practice Exchange** | 6 | | Semester 1<br>Semester 2 |
| **Elective units of study** | | | |
| **MARC6607**<br>**Architecture Studio Workshop Exchange** | 6 | | Semester 1<br>Semester 2 |
| **MARC6608**<br>**Architecture Elective Exchange A** | 6 | | Semester 1<br>Semester 2 |
| **MARC6609**<br>**Architecture Elective Exchange B** | 6 | | Semester 1<br>Semester 2 |
| **MARC6610**<br>**Architecture Elective Exchange C** | 6 | | Semester 1<br>Semester 2 |

# Bachelor of Design Computing

## Overview

This program teaches you to recognise the value of your ideas, and how to ensure others will too. You will be trained in ideation — the ability to solve real world problems by conceptualising, empathising, and evaluating various design solutions. Your ideation will be matched with skills in implementation: how to use software and devices to make your ideas into reality.

Design Computing teaches a whatever-it-takes, human-centred approach to designing technology. It's the approach industry leaders like Apple and Google use to dream up new interactive products, services and experiences. This degree will make you a creative problem solver, preparing you to join these industry leading companies, or to start the next one.

Design Computing teaches you ways of thinking that have been proven effective for inventing elegant, commercially viable products and services. You will learn to manage a team of creators, working in a studio model that puts the focus firmly on your expression and your solutions. You will be empowered through a toolbox of skills in user experience, interaction design, graphic design, product design, and creative coding. Most importantly, you will be taught to recognise what tools are needed for specific social and commercial challenges and to use those skills to produce unique, innovative solutions.

The combined Bachelor of Design Computing/Bachelor of Advanced Studies degree lets students combine the depth of the Design Computing program with the breadth of education available across the University of Sydney. Advanced Studies double-degree students will use their elective units in the Design Computing program, plus a fourth year of study, to complete a second Major from anywhere on campus. The interdisciplinary nature of this unique double degree will prepare you for the rapidly changing nature of industry and the future of work in the digital economy.

The Bachelor of Design Computing can also be extended with a fourth year of Honours study. Honours is an opportunity for students to engage with the rigour and depth of the research world. It can serve as an entry point into higher degree research, and is increasingly being recognised by industry as a valuable indicator of the critical thinking skills prized by employers.

## Bachelor of Design Computing enrolment guide

The Bachelor of Design Computing is a three-year degree, or four years with honours. The Bachelor of Design Computing/Bachelor of Advanced Studies is a four year degree. The first year introduces the fundamentals of design thinking, creative coding, and digital media. These units form the basic knowledges needed for the unique studio-driven environment of the second and third years. The studios are where Design Computing students apply their skills to solve real-world problems and explore the possibilities enabled by emerging technologies. The accompanying electives allow students to develop additional knowledge both within design computing and beyond.

In order to qualify for the degree, candidates must complete the requirements as specified in the resolutions of Senate and school for this degree. All student should read the course resolutions and monitor their progress throughout the degree by reference to them. The following points summarise the resolutions but do not replace them.

### Summary of requirements

In order to qualify for the award of the pass degree, candidates need to:

- maintain a full-time enrolment (18 credit points or more per semester; a normal full-time load is 24 credit points per semester; the maximum allowed is 30 credit points per semester)
- successfully complete 144 credit points in total
- successfully complete 102 credit points from the core units of study listed in Table B
- complete successfully a maximum of 42 credit points from elective units of study from those listed in Table B, or with the permission of the unit coordinator concerned, units of study from the school's tables of graduate units, provided they have completed at least 96 credit points with a weighted average (WAM) of at least 70.

### Honours

To qualify for the honours degree, candidates must satisfy the requirements for the pass degree with a weighted average mark (WAM) of at least 70 and in addition successfully complete 48 credit points consisting of a research thesis. In their third year, students are encouraged to enrol in a preparatory unit of study as an elective, such as an Independent Study unit. Honours may only be undertaken on a full-time basis. For more information about honours see the section of this Handbook about undergraduate honours.

### Planning your degree

The program has been designed so that the core units should be taken in a certain order and the elective units fitted with them. The enrolment planner shows progression through the core units of study.

## Bachelor of Design Computing enrolment planner: Semester 1 commencement

| Year 1 | Unit of study | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| DECO1012 | Design Programming | 6 |
| DECO1006 | Design Process and Methods | 6 |
| DECO1014 | Digital Image Production | 6 |
| DECO1015 | Visual Communication | 6 |
| ***Semester 2*** | | |
| DESA1555 | Safety Induction and Competency Unit | 0 |
| DECO1008 | 3D Modelling and Fabrication | 6 |
| DECO1013 | Physical Computing | 6 |
| DECO1016 | Web Design and Technologies | 6 |
| DECO1017 | Principles of Animation | 6 |

| Year 1 | Unit of study | Credit points |
|---|---|---|
| | Total for Year | 48 |

| Year 2 | Unit of study | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| DECO2014 | User Experience Design Studio | 12 |
| | Elective | 6 |
| | Elective | 6 |
| ***Semester 2*** | | |
| DECO2200 | Interaction Design Studio | 12 |
| | Elective | 6 |
| | Elective | 6 |
| | Total for Year 2 | 48 |

| Year 3 | Unit of study | Credit points |
|---|---|---|
| ***Semester 1*** | | |
| DECO3100 | Information Visualisation Design Studio | 12 |
| | Elective | 6 |
| | Elective | 6 |
| ***Semester 2*** | | |
| DECO3200 | Interactive Product Design Studio | 12 |
| | Elective | 6 |
| | Elective | 6 |
| | Total for Year 3 | 48 |

Students enrolled in the Bachelor of Advanced Studies will continue into their fourth year, where they will complete their second Major, take advanced-level Design Computing units, and engage in interdisciplinary project-based units.

Students opting to pursue a Bachelor of Design Computing with Honours will continue into their fourth year to undertake a year-long research project.

# Bachelor of Design Computing enrolment planner: Semester 2 commencement

| Year 1 | Unit of study | Credit points |
|---|---|---|
| ***Semester 2*** | | |
| DESA1555 | Safety Induction and Competency Unit | 0 |
| DECO1008 | 3D Modelling and Fabrication | 6 |
| DECO1017 | Principles of Animation | 6 |
| | Elective | 6 |
| | Elective | 6 |
| ***Semester 1*** | | |
| DECO1006 | Design Processes and Methods | 6 |
| DECO1012 | Design Programming | 6 |
| DECO1014 | Digital Media Production | 6 |
| DECO1015 | Visual Communication | 6 |
| | Total for Year | 48 |

| Year 2 | Unit of study | Credit points |
|---|---|---|
| ***Semester 2*** | | |
| DECO1013 | Physical Computing | 6 |
| DECO1016 | Web Design and Technologies | 6 |
| DECO2200 | Interaction Design Studio | 12 |
| ***Semester 1*** | | |
| DECO2014 | User Experience Design Studio | 12 |
| | Elective | 6 |
| | Elective | 6 |
| | Total for Year 2 | 48 |

| Year 3 | Unit of study | Credit points |
|---|---|---|
| ***Semester 2*** | | |
| DECO3200 | Interaction Product Design Studio | 12 |
| | Elective | 6 |
| | Elective | 6 |
| ***Semester 1*** | | |
| DECO3100 | Information Visualisation Design Studio | 12 |
| | Elective | 6 |
| | Elective | 6 |
| | Total for Year 3 | 48 |

Students commencing their studies in Semester 2 have access to all the same options as those commencing in Semester 1.

# Bachelor of Design Computing

## Bachelor of Design Computing

## Bachelor of Design Computing/Bachelor of Advanced Studies

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the School, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

### Course resolutions

### 1 Course codes

| Code | Course title |
|---|---|
| BPDESCMP-02 | Bachelor of Design Computing |
| BPDCMAVS1000 | Bachelor of Design Computing / Bachelor of Advanced Studies |

### 2 Attendance pattern

The attendance pattern for this course is full time or part time according to candidate choice.

### 3 Streams

(1) The Bachelor of Design Computing is not available in individual streams.
(2) The Bachelor of Design Computing/Bachelor of Advanced Studies is available in the following streams:
(a) Dalyell.
(3) Completion of a stream is not a requirement of the Bachelor of Design Computing/Bachelor of Advanced Studies. The requirements for the completion of the Dalyell Stream is as specified in Table S of the Shared Pool for Undergraduate Degrees.

### 4 Cross-faculty management

(1) Candidates in Bachelor of Design Computing and the Bachelor of Design Computing/Bachelor of Advanced Studies will be under the supervision of the University of Sydney School of Architecture, Design and Planning throughout.
(2) Candidates in the Bachelor of Design Computing/ Bachelor of Advanced Studies (Honours) will be under the management of the University of Sydney School of Architecture, Design and Planning. Admission, requirements, award of the honours mark, and award of the grade of honours for an honours component undertaken by a candidate will be under the supervision of the school offering and supervising the embedded honours component. The school offering and supervising the embedded component will direct the University of Sydney School of Architecture, Design and Planning on all matters relating to admission, requirements, award of honours mark and award of honours grade.
(3) The Head of School and Dean of the University of Sydney School of Architecture, Design and Planning shall exercise authority in any matter concerned with the Bachelor of Design Computing/Bachelor of Advanced Studies and the Bachelor of Design Computing/Bachelor Advanced Studies with honours combined degrees not otherwise dealt with in these resolutions.

### 5 Admission to candidature

(1) Admission to this course is on the basis of a secondary school leaving qualification such as the NSW Higher School Certificate (including national and international equivalents), tertiary study or an approved preparation program. English language requirements must be met where these are not demonstrated by sufficient qualifications taught in English. Special admission pathways are open for mature aged applicants who do not possess a school leaving qualification, educationally disadvantaged applicants and for Aboriginal and Torres Strait Islander people. Applicants are ranked by merit and offers for available places are issued according to the ranking. Details of admission policies are found in the Coursework Rule and Coursework Policy.
(2) Admission to the Dalyell Stream requires achievement of a minimum tertiary admission rank (ATAR) set by the Board of Interdisciplinary Studies, or equivalent.

### 6 Requirements for award

(1) The units of study that may be taken for the Bachelor of Design Computing and the Bachelor of Design Computing/Bachelor of Advanced Studies are set out in Table A for the Bachelor of Design Computing and in the Table S of the Shared Pool for Undergraduate Degrees. The requirements for the Bachelor of Design Computing/Bachelor of Advanced Studies (Honours) are set out in Section 9 below.
(2) *Bachelor of Design Computing:*
To qualify for the award of the Bachelor of Design Computing, a candidate must complete 144 credit points, comprising:
(a) 96 credit points of core units of study as set out in Table A;
(3) *Bachelor of Design Computing/Bachelor of Advanced Studies:*
To qualify for the award of the Bachelor of Design Computing/Bachelor of Advanced Studies, a candidate must complete 192 credit points, comprising:
(a) 84 credit points of core units of study as set out in Table A according to one of the following patterns:
(i) 48 credit points at 1000 level, 24 credit points at 2000 level, and 12 credit points at 3000 level; or
(ii) 48 credit points at 1000 level, 12 credit points at 2000 level, and 24 credit points at 3000 level;
(b) a major (48 credit points) or program specified in Table S for the Bachelor of Advanced Studies;
(c) 12 credit points of units of study in the Open Learning Environment as listed in Table O of the Shared Pool for Undergraduate Degrees;
(d) a minimum of 24 credit points at 4000 level from Table A or Table S, including a research, community, industry or entrepreneurship project of 12 to 36 credit points; and
(e) where appropriate, elective units from Table A and Table S in the Shared Pool for Undergraduate Degrees.

### 7 Progression rules

(1) *Progression within a major, minor or program:*

Except with the permission of the relevant major coordinator, candidates must pass all 1000-level units of study within a major, program or minor, before proceeding to 2000-level units within that major, program or minor, or else undertake those 1000-level units concurrently with the 2000-level units. Except with the permission of the relevant major coordinator, candidates must pass all 2000-level units of study within a major, program or minor, before proceeding to 3000-level units, or else undertake those 2000-level units concurrently with the 3000-level units.

(2) *Progression within the Bachelor of Design Computing/Bachelor of Advanced Studies:*

Except with the permission of the Program Director, Bachelor of Design Computing/Bachelor of Advanced Studies candidates must complete 144 credit points, the degree core and any stream-specific core, and 12 credit points from the Open Learning Environment before progressing to 4000-level units, including (4000-level project units).

(3) *Progression within the Dalyell Stream:*

With the permission of the Dalyell coordinator, candidates in the Dalyell stream may attempt units at higher levels than the usual sequence through a program, major or minor.

(4) Candidates must achieve a Weighted Average Mark at a level determined by the Board of Interdisciplinary Studies in each year of study or over each 48 creditpoint block to continue in the Dalyell Stream. Candidates who do not maintain a Weighted Average Mark at the level determined by the Board of Interdisciplinary Studies may continue in any other major, minor, program or stream into which they were admitted, but will not remain in the Dalyell Stream.

## 8 Requirements for the Bachelor of Design Computing/Bachelor of Advanced Studies with honours

(1) An embedded honours component, involving a research project, is available to meritorious students who complete an alternative set of units of study in the final year of the Bachelor of Design Computing/Bachelor of Advanced Studies. Candidates undertaking an honours component within the University of Sydney School of Architecture, Design and Planning must complete the requirements for the honours component full-time over two consecutive semesters.

(2) If the School is satisfied that a student is unable to attempt honours component on a full time basis and if the Associate Dean so recommends, permission may be granted to undertake honours part-time over four consecutive semesters. For candidates undertaking an honours component with the University of Sydney School of Architecture, Design and Planning, admission, requirements and award of honours are according to these resolutions and the Resolutions of the University of Sydney School of Architecture, Design and Planning.

(3) For candidates undertaking an honours component in another faculty, admission, requirements and award of honours are according to these resolutions and the relevant resolutions of the faculty in which the component is undertaken.

(4) Admission to the embedded honours component is by permission of the relevant honours coordinator or Program Director after the completion of 144 credit points, including at least one major or program, any degree or stream-specific core. Admission requires an AAM of at least 70 in units of study completed to that point, and a major or study of equivalent depth in the area of the proposed honours component. Applicants for admission to an embedded honours component must also meet any requirements for honours set by the relevant department, school or faculty as set out in the relevant resolutions.

(5) To qualify for the award of the Bachelor of Design Computing/Bachelor of Advanced Studies with honours a candidate must complete the requirements for the pass degree but include 36 to 48 credit points of honours units at 4000 level or above, including an honours research project of 12 to 36 credit points, and 12 to 36 credit points of honours coursework, as required by the relevant department and published in the faculty handbook. Honours subject areas and units of study for honours within the University of Sydney School of Architecture, Design and Planning are listed in Table A.

(6) The grade of honours will be determined by an honours mark calculated from work in the embedded honours component. For honours with the University of Sydney School of Architecture, Design and Planning, the grade for honours is determined by using a mark derived from weighting the mark for honours dissertation at 70 percent and the annual average mark (AAM) of the pass degree at 30 percent. For honours in another faculty the honours mark is as specified in the relevant faculty resolutions.

## 9 Award of the Bachelor of Design Computing, Bachelor of Design Computing/Bachelor of Advanced Studies

(1) Candidates for the Bachelor of Design Computing/Bachelor of Advanced Studies combined degree who have completed requirements for the Bachelor of Design Computing, who do not meet requirements for the combined degree, will be awarded the Bachelor of Design Computing.

(2) Honours in the Bachelor of Design Computing/Bachelor of Advanced Studies is awarded in classes ranging from First Class to Third Class according to the following table and rules specified in the Resolutions of the University of Sydney School of Architecture, Design and Planning or relevant resolutions for the faculty in which the embedded honours component is undertaken.

| **A student who achieves an honours mark in the range …** | **will be awarded honours …** |
|---|---|
| 80 honours mark 100 | First Class |
| 75 honours mark < 80 | Second Class / Division 1 |
| 70 honours mark < 75 | Second Class / Division 2 |
| 65 honours mark < 70 | Third Class |

(3) Candidates for the award of the Bachelor of Design Computing/Bachelor of Advanced Studies (Honours) who do not meet the requirements for the honours degree, but who otherwise meet requirements for the Bachelor of Design Computing or the Bachelor of Design Computing/Bachelor of Advanced Studies will be awarded the bachelor degree(s) merited.

## 10 Cross-institutional study

Cross-institutional study is available in this course under conditions specified in the Resolutions of the University of Sydney School of Architecture, Design and Planning.

## 11 International exchange

The University of Sydney School of Architecture, Design and Planning. encourages candidates in this course to participate in international exchange programs as set out in the Resolutions of the University of Sydney School of Architecture, Design and Planning.

## 12 Course transfer

A candidate may transfer from the Bachelor of Design Computing and elect to complete the Bachelor of Design Computing/Bachelor of Advanced Studies in accordance with these resolutions and receive full credit for work completed in the Bachelor of Design Computing. A candidate may abandon the Bachelor of Design Computing/Bachelor of Advanced Studies combined degree and elect to complete the Bachelor of Design Computing in accordance with these resolutions. Completion of the Bachelor of Design Computing/Bachelor of Advanced Studies in the future will require a new application for admission to candidature for that course and completion in accordance with the resolutions governing that degree.

## 13 Credit for previous study

Credit transfer is subject to the provisions of the Coursework Policy and the Resolutions of the University of Sydney School of Architecture, Design and Planning or, in the case of a major or minor offered by another faculty, any relevant resolutions of that faculty.

## 14 Transitional provisions

(1) These resolutions apply to students who commenced their candidature after 1 January, 2018 not seeking credit for prior study and students who commenced their candidature prior to 1 January, 2018 who elect to proceed under these resolutions. Students who commenced their candidature prior to 1 January 2018 who elect to proceed under these resolutions should note that the University does not undertake to offer 4000-level units and projects in the Bachelor of Design Computing/Bachelor of Advanced Studies combined degree prior to 2020 and that it may not be possible to complete requirements for the combined degree before the end of Semester 2 of that year.

(2) Candidates who commence candidature after 1 January, 2018 who are seeking credit for prior study should note that the University does not undertake to offer 4000-level units and projects in the Bachelor of Design Computing/Bachelor of Advanced Studies combined degree prior to 2020 and that it may not be possible to complete requirements for the combined degree before the end of Semester 2 of that year. Where a student in the Bachelor of Design Computing proceeding under these resolutions applies for and is granted credit and wishes to complete the degree before 1 January, 2020, the student will be offered the opportunity to complete the Bachelor of Design Computing degree under the resolutions that applied at 1 January 2017.

(3) Candidates who commenced prior to 1 January 2018 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that the requirements are completed by 1 January 2027.

# Bachelor of Design Computing

| Unit of study | Credit points | A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition | Session |
|---|---|---|---|
| **Table B: Bachelor of Design Computing and Bachelor of Design Computing/Bachelor of Advanced Studies - core units of study** | | | |
| **Junior units of study** | | | |
| Candidates in the Bachelor of Design Computing and Bachelor of Design Computing/Bachelor of Advanced Studies are required to completed all DECO1000 level units. | | | |
| **DECO1012**<br>**Design Programming** | 6 | | Semester 1 |
| **DECO1006**<br>**Design Process and Methods** | 6 | **N** IDEA9106 or DECO2016 | Semester 1 |
| **DECO1008**<br>**3D Modelling and Fabrication** | 6 | **P** DESA1555 | Semester 2 |
| **DECO1013**<br>**Physical Computing** | 6 | **P** DECO1006 or DECO2016 | Semester 2 |
| **DECO1014**<br>**Digital Media Production** | 6 | **N** DECO1100 | Semester 1 |
| **DECO1015**<br>**Visual Communication** | 6 | **N** DECO1100 or DAAE2009 or DECO2101<br>*This unit is for students enrolled in the Bachelor of Design Computing only. Students from other programs should enrol in DECO2101.* | Semester 1 |
| **DECO1016**<br>**Web Design and Technologies** | 6 | **P** DECO1012<br>**N** DECO2102<br>*This unit is for students enrolled in the Bachelor of Design Computing only. Students enrolled in other programs should enrol in DECO2102.* | Semester 2 |
| **DECO1017**<br>**Principles of Animation** | 6 | **N** DECO3006<br>*This unit is for students enrolled in the Bachelor of Design Computing only. Students enrolled in other programs should enrol in DECO3006.* | Semester 2 |
| **Senior units of study** | | | |
| Candidates in the Bachelor of Design Computing/Bachelor of Advanced Studies are required to complete 36 credit points of senior DECO units. Candidates in the Bachelor of Design Computing are required to complete 48 credit poits of senior DECO units. | | | |
| **DECO2014**<br>**User Experience Design Studio** | 12 | **P** DECO1006 or DECO2016 | Semester 1 |
| **DECO2200**<br>**Interaction Design Studio** | 12 | **P** DECO1006 or DECO2016 | Semester 2 |
| **DECO3100**<br>**Information Visualisation Design Studio** | 12 | **P** DECO1006 and DECO1012 | Semester 1 |
| **DECO3200**<br>**Interactive Product Design Studio** | 12 | **P** DECO1006 and DECO1012 | Semester 2 |
| **Electives** | | | |
| Please refer to the 'Requirements for award' section for the number of elective credit points required in your degree. Students who have completed 96 credit points with a WAM of at least 70 may substitute, with the permission of the unit coordinator concerned, graduate units from within the University. | | | |
| **Design Computing electives** | | | |
| **Junior units of study** | | | |
| **DESN1000**<br>**Principles of Design** | 6 | | Semester 1 |
| **DESN1001**<br>**Design Theory and Culture** | 6 | | Semester 2 |
| **Senior units of study** | | | |
| **DECO2010**<br>**Designing Social Media** | 6 | | Intensive June<br>Semester 1 |
| **DECO2015**<br>**Design for Innovation** | 6 | | Semester 2 |
| **DECO3101**<br>**Innovation Design Studio** | 6 | | Semester 1<br>Semester 2<br>Winter Main |
| **DESN3000**<br>**Design Thinking for Health and Medicine** | 6 | | Semester 1 |
| **DESN3001**<br>**Health and Medicine Design Studio** | 6 | **P** DESN3000 | Semester 2 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **DECO3665**<br>**Graduation Show** | 6 | **P** 48 credit points<br>*Note: Department permission required for enrolment* | Semester 2 |
| **DECO3666**<br>**Graduate Internship** | 6 | **P** 48 credit points<br>*Note: Department permission required for enrolment* | Intensive February<br>Intensive July<br>Semester 1<br>Semester 2 |
| **DECO3441**<br>**Design Computing Independent Study A** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DECO3442**<br>**Design Computing Independent Study B** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DECO3443**<br>**Design Computing Independent Study C** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DECO3444**<br>**Design Computing Independent Study D** | 6 | **P** 48 credit points and WAM of at least 70.<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DECO3551**<br>**Design Computing General Elective A** | 6 | **P** 48 credit points of units of study<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DECO3552**<br>**Design Computing General Elective B** | 6 | **P** 48 credit points of units of study<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DECO3553**<br>**Design Computing General Elective C** | 6 | **P** 48 credit points of units of study<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **DECO3554**<br>**Design Computing General Elective D** | 6 | **P** 48 credit points of units of study<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| School electives | | | |
| Junior units of study | | | |
| **AWSS1001**<br>**Architectural Sketching and Drawing** | 6 | **N** DESA1601 or DESA1602<br>*Students may incur costs for materials in some Art Workshops units.* | Semester 1 |
| **DESA1004**<br>**Designing with Surfaces and Light** | 6 | **N** DESA2612<br>*Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.* | Semester 2<br>Summer Main<br>Winter Main |
| Senior units of study | | | |
| **AWSS2015**<br>**Generative Drawing** | 6 | *Note: Department permission required for enrolment* | Semester 2<br>Summer Main |
| **AWSS2020**<br>**Object Design (Material and Light)** | 6 | **C** DESA1555<br>**N** DESA2643<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **AWSS2023**<br>**Architectural Photography** | 6 | **N** DESA2629<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2<br>Summer Main |
| **AWSS2026**<br>**2D Print Processes in Design** | 6 | **N** DESA2638<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2<br>Summer Main |
| **AWSS2027**<br>**Arch + Design Material Processes (Casting)** | 6 | **N** DESA2636<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DESC9011**<br>**Audio Production** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| Other electives | | | |
| Junior units of study | | | |
| **ANTH1001**<br>**Cultural Difference: An Introduction** | 6 | **N** ANTH1003 | Intensive July<br>Semester 1<br>Summer Main<br>Winter Main |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **ARHT1001**<br>**Style and Substance: Introducing Art History** | 6 | | Semester 1 |
| **ARHT1002**<br>**Shock of the Now: Global Art since 1900** | 6 | | Semester 2 |
| **ENGL1011**<br>**Introduction to Film Studies** | 6 | | Semester 1<br>Summer Main |
| **GCST1601**<br>**Introduction to Cultural Studies** | 6 | | Semester 1<br>Summer Main |
| **LNGS1002**<br>**Language and Social Context** | 6 | | Semester 2 |
| **PHIL1013**<br>**Society, Knowledge and Self** | 6 | **N** PHIL1010 | Semester 2 |
| **PRFM1601**<br>**Making Theatre: Process and Collaboration** | 6 | | Semester 1 |
| **SCLG1001**<br>**Introduction to Sociology 1** | 6 | | Semester 1<br>Summer Main |
| **SCLG1002**<br>**Introduction to Sociology 2** | 6 | | Intensive July<br>Semester 2<br>Summer Main |
| **WRIT1000**<br>**Introduction to Academic Writing** | 6 | | Semester 1<br>Semester 2 |
| **INFS1000**<br>**Digital Business Innovation** | 6 | **A** INFO1000; INFO1003; INFO1903<br>**N** ISYS1003 or INFO1000 | Intensive January<br>Intensive July<br>Semester 1<br>Semester 2 |
| **MKTG1001**<br>**Marketing Principles** | 6 | | Semester 1<br>Semester 2 |
| **ELEC1103**<br>**Fundamentals of Elec and Electronic Eng** | 6 | **A** Basic knowledge of differentiation & integration, and HSC Physics | Semester 1 |
| **ELEC1601**<br>**Introduction to Computer Systems** | 6 | **A** HSC Mathematics extension 1 or 2 | Semester 2 |
| **INFO1110**<br>**Introduction to Programming** | 6 | | Intensive July<br>Semester 1<br>Semester 2 |
| **INFO1113**<br>**Object-Oriented Programming** | 6 | **P** INFO1110<br>**N** INFO1103 OR INFO1105 OR INFO1905 | Semester 1<br>Semester 2 |
| **DATA1002**<br>**Informatics: Data and Computation** | 6 | **N** INFO1903 | Semester 2 |
| **MTRX1702**<br>**Mechatronics 1** | 6 | **A** MTRX1701<br>**N** ELEC1101 or ELEC2602 or COSC1902 or COSC1002 | Semester 2 |
| **PSYC1001**<br>**Psychology 1001** | 6 | | Intensive June<br>Semester 1<br>Summer Main |
| **PSYC1002**<br>**Psychology 1002** | 6 | *This unit is also offered in the Sydney Summer School. For more information consult the web site: http://sydney.edu.au/summer/* | Semester 2<br>Summer Main |
| **MUSC1503**<br>**Fundamentals of Music 1** | 6 | **N** MUSC1000 or MUSC1001 or MUSC1002 or MUSC1003 or MUSC1004 or MUSC1005 or MUSC1501 or MUSC1502 or MUSC2699 or MCGY1008 | Semester 1<br>Semester 2 |
| **MUED1002**<br>**Creative Music Technology** | 3 | | Semester 1<br>Semester 2 |
| **MUSC1507**<br>**Sounds, Screens, Speakers: Music and Media** | 6 | **N** MUSC1000 or MUSC1001 or MUSC1502 | Semester 1 |
| Other electives | | | |
| Senior units of study | | | |
| **ARIN2610**<br>**Internet Transformations** | 6 | **P** 18 Junior credit points in any of Anthropology, Art History, Computer Science, Design Computing, English, Gender and Culture Studies, History, Information Systems, Information Technology, Linguistics, Media and Communication, Philosophy, Psychology or Sociology or 12 credit points at 1000 level in Digital Cultures<br>**N** ARIN2100 | Semester 2 |
| **ARIN2620**<br>**Cyberworlds** | 6 | **P** 18 junior credit points in any of Anthropology, Art History, Computer Science, Design Computing, English, Gender and Culture Studies, History, Information Systems, Information Technology, Linguistics, Media and Communication, Philosophy, Psychology or Sociology or 12 credit points at 1000 level in Digital Cultures<br>**N** ARIN2200 | Semester 1 |
| **ARIN2630**<br>**Digital Arts** | 6 | **P** 18 junior credit points in any of Anthropology, Art History, Computer Science, Design Computing, English, Gender and Culture Studies, History, Information Systems, Information Technology, Linguistics, Media and Communication, Philosophy, Psychology or Sociology or 12 credit points at 1000 level in Digital Cultures<br>**N** ARIN2300 | Semester 2 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **ARIN2640**<br>**Games and Play** | 6 | **P** 18 junior credit points in any of Anthropology or Art History or Computer Science or Design Computing or English or Gender and Cultural Studies or History or Information Systems or Information Technology or Linguistics or Media and Communication or Philosophy or Psychology or Sociology or 12 credit points at 1000 level in Digital Cultures<br>**N** ARIN3640 | Semester 1 |
| **COMP2123**<br>**Data Structures and Algorithms** | 6 | **P** INFO1110 OR INFO1113 OR DATA1002 OR INFO1103 OR INFO1903<br>**N** INFO1105 OR INFO1905 OR COMP2823 | Semester 1 |
| **DATA2001**<br>**Data Science: Big Data and Data Diversity** | 6 | **P** DATA1002 OR INFO1110 OR INFO1903 OR INFO1103 | Semester 1 |
| **ISYS2120**<br>**Data and Information Management** | 6 | **A** Programming skills<br>**P** INFO1113 OR INFO1103 OR INFO1105 OR INFO1905 OR INFO1003 OR INFO1903 OR DECO1012<br>**N** INFO2120 OR INFO2820 OR COMP5138 | Semester 2 |
| **SOFT2201**<br>**Software Construction and Design 1** | 6 | **P** INFO1113 OR INFO1103 OR INFO1105 OR INFO1905<br>**N** INFO3220 | Semester 2 |
| **SOFT2412**<br>**Agile Software Development Practices** | 6 | **P** INFO1113 OR INFO1103 OR INFO1105 OR INFO1905 | Semester 2 |
| **COMP3221**<br>**Distributed Systems** | 6 | **P** (INFO1105 OR INFO1905) OR ((INFO1103 OR INFO1113) AND (COMP2123 OR COMP2823))<br>**N** COMP2121 | Semester 1 |
| **DATA3404**<br>**Data Science Platforms** | 6 | **A** This unit of study assumes that students have previous knowledge of database structures and of SQL. The prerequisite material is covered in DATA2001 or ISYS2120. Familiarity with a programming language (e.g. Java or C) is also expected.<br>**P** DATA2001 OR ISYS2120 OR INFO2120 OR INFO2820<br>**N** INFO3504 OR INFO3404 | Semester 1 |
| **INFO3616**<br>**Principles of Security and Security Eng** | 6 | **A** INFO1110 AND INFO1112 AND INFO1113 AND MATH1064. Knowledge equivalent to the above units is assumed; this means good programming skills in Python or a C-related language, basic networking knowledge, skills from discrete mathematics. A technical orientation is expected.<br>**N** ELEC5616 | Semester 1 |
| **SOFT3202**<br>**Software Construction and Design 2** | 6 | **P** SOFT2201<br>**N** INFO3220 | Semester 1 |
| **SOFT3410**<br>**Concurrency for Software Development** | 6 | **P** (INFO1105 OR INFO1905) OR ((INFO1103 OR INFO1113) AND (COMP2123 OR COMP2823)) | Semester 2 |
| **ISYS3402**<br>**Decision Analytics and Support Systems** | 6 | **A** Database Management AND Systems Analysis and Modelling<br>**P** (ISYS2110 OR INFO2110) AND (ISYS2120 OR INFO2120) | Semester 2 |
| **ARIN3620**<br>**Researching Digital Cultures** | 6 | **P** 12 Senior credit points in Digital Cultures<br>**N** ARIN2000 | Semester 2 |
| **PHIL2642**<br>**Critical Thinking** | 6 | **P** 12 Junior credit points | Semester 2 |
| **PRFM2601**<br>**Being There: Theories of Performance** | 6 | **P** 18 Junior credit points from subject areas listed in Table A or 12 credit points at 1000 level in Theatre and Performance Studies<br>**N** PRFM2001 | Semester 1<br>Summer Main |
| **PRFM2602**<br>**Performance: Production and Interpretation** | 6 | **P** 18 Junior credit points from subject areas listed in Table A or 12 credit points at 1000 level in Theatre and Performance Studies<br>**N** PRFM2002 | Semester 2<br>Summer Main |
| **SCLG2606**<br>**Media in Contemporary Society**<br>*This unit of study is not available in 2018* | 6 | **P** 12 Junior credit points from Sociology<br>**N** SCLG2018 or SCLG2537 | Semester 1 |
| **INFS2010**<br>**People, Information and Knowledge** | 6 | **A** INFS1000 or INFO1000 or INFO1003 or INFO1903 | Semester 2 |
| **INFS2020**<br>**Business Process Modelling and Improvement** | 6 | **A** INFS1000 or INFO1000 or INFO1003 or INFO1903 | Semester 1 |
| **INFS2030**<br>**Digital Business Management** | 6 | **A** INFS1000 or INFO1000 or INFO1003 or INFO1903 | Semester 1 |
| **MKTG3110**<br>**Digital Marketing** | 6 | **P** MKTG1001 | Semester 1 |
| **MKTG3114**<br>**New Products Marketing** | 6 | **P** MKTG1001 | Semester 2 |
| **MKTG3121**<br>**Advertising: Creative Principles** | 6 | **P** MKTG1001 | Semester 1 |
| **COMP2017**<br>**Systems Programming** | 6 | **P** INFO1113 OR INFO1105 OR INFO1905 OR INFO1103<br>**C** COMP2123 OR COMP2823 OR INFO1105 OR INFO1905<br>**N** COMP2129 | Semester 1 |
| **COMP2022**<br>**Programming Languages, Logic and Models** | 6 | **A** MATH1004 OR MATH1904 OR MATH1064 OR MATH2069 OR MATH2969<br>**P** INFO1103 OR INFO1903 OR INFO1113<br>**N** COMP2922 | Semester 2 |
| **COMP2823**<br>**Data Structures and Algorithms (Adv)** | 6 | **A** Distinction-level result in at least one the listed 1000 level programming units<br>**P** Distinction level result in at least one of INFO1110 OR INFO1113 OR DATA1002 OR INFO1103 OR INFO1903<br>**N** INFO1105 OR INFO1905 OR COMP2123<br>*Note: Department permission required for enrolment* | Semester 1 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **COMP2922**<br>**Programming Languages, Logic and Models (Adv)** | 6 | **A** MATH1004 OR MATH1904 OR MATH1064 OR MATH2069 OR MATH2969<br>**P** Distinction level result in INFO1103 OR INFO1903 OR INFO1113<br>**N** COMP2022<br>*Note: Department permission required for enrolment* | Semester 2 |
| **COMP3027**<br>**Algorithm Design** | 6 | **A** MATH1004 OR MATH1904 OR MATH1064<br>**P** COMP2123 OR COMP2823 OR INFO1105 OR INFO1905<br>**N** COMP2007 OR COMP2907 OR COMP3927 | Semester 1 |
| **COMP3308**<br>**Introduction to Artificial Intelligence** | 6 | **A** Algorithms. Programming skills (e.g. Java, Python, C, C++, Matlab)<br>**N** COMP3608 | Semester 1 |
| **COMP3419**<br>**Graphics and Multimedia** | 6 | **A** Programming skills<br>**P** COMP2123 OR COMP2823 OR INFO1105 OR INFO1905 | Semester 2 |
| **COMP3520**<br>**Operating Systems Internals** | 6 | **P** (COMP2017 OR COMP2129) AND (COMP2123 OR COMP2823 OR INFO1105 OR INFO1905) | Semester 2 |
| **COMP3927**<br>**Algorithm Design (Adv)** | 6 | **A** MATH1004 OR MATH1904 OR MATH1064<br>**P** COMP2123 OR COMP2823 OR INFO1105 OR INFO1905<br>**N** COMP2007 OR COMP2907 OR COMP3027<br>*Note: Department permission required for enrolment* | Semester 1 |
| **ELEC2104**<br>**Electronic Devices and Circuits** | 6 | **A** Knowledge: ELEC1103. Ohm's Law and Kirchoff's Laws; action of Current and Voltage sources; network analysis and the superposition theorem; Thevenin and Norton equivalent circuits; inductors and capacitors, transient response of RL, RC and RLC circuits; the ability to use power supplies, oscilloscopes, function generators, meters, etc. | Semester 2 |
| **ELEC3506**<br>**Data Communications and the Internet** | 6 | **N** NETS2150 | Semester 2 |
| **ELEC3607**<br>**Embedded Systems** | 6 | **A** ELEC1601 AND ELEC2602. Logic operations, theorems and Boolean algebra, data representation, number operations (binary, hex, integers and floating point), combinational logic analysis and synthesis, sequential logic, registers, counters, bus systems, state machines, simple CAD tools for logic design, basic computer organisation, the CPU, peripheral devices, software organisation, machine language, assembly language, operating systems, data communications and computer networks.<br>**P** ELEC1601 AND ELEC2602 AND COMP2017 | Semester 1 |
| **ELEC3610**<br>**E-Business Analysis and Design** | 6 | **N** EBUS3003 | Semester 1 |
| **ISYS2110**<br>**Analysis and Design of Web Info Systems** | 6 | **P** INFO1113 OR INFO1103 OR INFO1105 OR INFO1905<br>**N** INFO2110 | Semester 1 |
| **INFO3315**<br>**Human-Computer Interaction** | 6 | | Semester 2 |
| **ISYS2160**<br>**Information Systems in the Internet Age** | 6 | **A** INFO1003 OR INFO1103 OR INFO1903 OR INFO1113<br>**N** ISYS2140 | Semester 2 |
| **PSYC2013**<br>**Cognitive and Social Psychology** | 6 | **P** PSYC1001 and PSYC1002 | Semester 2 |
| **CAEL2047**<br>**Animation**<br>*This unit of study is not available in 2018* | 6 | | Semester 1 |
| **CAEL2052**<br>**Introduction to Digital Publishing**<br>*This unit of study is not available in 2018* | 6 | | Semester 2 |
| **CAEL2070**<br>**Digital Compositing**<br>*This unit of study is not available in 2018* | 6 | | Semester 1 |
| **CATE2007**<br>**The Art of Memory** | 6 | **P** (THAP1201 and THAP1202) or (CATE1001 and CATE1002) or (12 senior credit points of Art History and Theory) | Semester 1 |
| **CMPN3635**<br>**Writing Music for the Moving Image** | 6 | **P** MUED1002 or MUSC2653 or MUED4002 | Semester 1 |
| **MUSC2653**<br>**Introduction to Digital Music Techniques** | 6 | **P** 18 Junior credit points<br>**N** MUSC2053<br>*An ability to read music at a basic level and an understanding of fundamental musical terminology is an advantage in this unit of study.* | Semester 1 |

# Bachelor of Design Computing Units of Study

## Table B: Bachelor of Design Computing and Bachelor of Design Computing/Bachelor of Advanced Studies - core units of study

### Junior units of study

Candidates in the Bachelor of Design Computing and Bachelor of Design Computing/Bachelor of Advanced Studies are required to completed all DECO1000 level units.

**DECO1012**
**Design Programming**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1 **Classes:** seminar and tutorial 3hrs/wk **Assessment:** Programming Assignments (80%); Tutorial Activities (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides an introduction to the development of software in design and the creative industries. It teaches an understanding of the fundamentals of computational thinking as well as skills in the design and implementation of software for creative expression and prototyping. It introduces students to tools for building interactive design applications through programming assignments; knowledge of programming concepts; and knowledge of the Javascript programming language. Key concepts covered in this unit include: variables, functions, control flows, and algorithmic thinking. Students learn how to design through the development of code, allowing them to incorporate programming into their own design projects as well as to collaborate effectively with software developers.

**DECO1006**
**Design Process and Methods**

**Credit points:** 6 **Teacher/Coordinator:** Dr Karla Straker **Session:** Semester 1 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Prohibitions:** IDEA9106 or DECO2016 **Assessment:** Design Assignments (70%); Presentation (10%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides an overview of a human-centred approach to the design of interactive technologies and environments. It introduces students to design thinking and how it can be productively applied to different design situations. The unit covers theoretical concepts, methods and tools used in human-centred design, including user research, ideation, prototyping and user evaluation. It provides students with the principles, processes and tools that are used in commercial design projects. Students learn to build empathy with users, identify and reframe the problem space, develop design concepts and persuasively communicate design proposals with an emphasis on the user experience through visual storytelling.

**DECO1008**
**3D Modelling and Fabrication**

**Credit points:** 6 **Teacher/Coordinator:** Ms Madeleine Borthwick **Session:** Semester 2 **Classes:** Lecture 1 hr/wk; tutorial 2 hrs/wk **Prerequisites:** DESA1555 **Assessment:** Design Concept and Visualisation (40%); Design Model (40%); Tutorial Activities (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit teaches students an understanding of the basic concepts of modelling and prototyping 3D artefacts. Students will develop skills in creating and using 3D models for real-world and virtual environments. The unit further introduces students to rapid prototyping fabrication techniques, such as 3D printing and laser cutting with the aim to understand how to prepare a digital representation of artefacts (such as digital products or packaging) for physical fabrication. Students will learn how physical artefacts are represented in 3D digital models by modelling various 3D geometric entities, and how to create photorealistic representations that accurately and efficiently describe intent, structure, and geometric and surface variations of 3D models. Key concepts covered in this unit include: boundary representations, solid and parametric modelling, texture mapping, light sources, camera locations and projections.

**DECO1013**
**Physical Computing**

**Credit points:** 6 **Teacher/Coordinator:** Mr Liam Bray **Session:** Semester 2 **Classes:** seminar and tutorial 3hrs/wk **Prerequisites:** DECO1006 or DECO2016 **Assessment:** Product Design Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to the principles of product design and their application in interaction design projects. This includes conceptualising computer-based implementations of product interfaces, and using hardware platforms, such as Arduinos or littleBits, for prototyping physical computing interfaces. It introduces the core concepts of physical prototyping, basic electronic concepts, hardware programming, as well as aesthetic issues in product design. The unit covers: prototyping techniques for physical user interfaces, methods of programming and assessing interactive products, knowledge of a range of product design techniques, especially in relation to interactive contexts, and awareness of issues of aesthetics in physical computing interfaces.

**DECO1014**
**Digital Media Production**

**Credit points:** 6 **Teacher/Coordinator:** Dr Caitilin de Berigny **Session:** Semester 1 **Classes:** seminar and tutorial 3hrs/wk **Prohibitions:** DECO1100 **Assessment:** Digital Media Project (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to the principles of digital media production for moving image. In studying this unit, students will develop an understanding of how to document design projects, concepts or processes through digital moving image and video production. Key concepts covered in this unit include: video editing techniques, transitions, titles, colour grading, content and flow management. Using digital media tools, such as Final Cut Pro X, students will learn how to source, develop, design, and create video content.

**DECO1015**
**Visual Communication**

**Credit points:** 6 **Teacher/Coordinator:** Mr Nathaniel Fay **Session:** Semester 1 **Classes:** Lecture 1 hr/wk (Week 1 only); tutorial 2 hrs/wk; online modules 1 hr/wk **Prohibitions:** DECO1100 or DAAE2009 or DECO2101 **Assessment:** Visual Design Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit is for students enrolled in the Bachelor of Design Computing only. Students from other programs should enrol in DECO2101.*

This unit of study introduces students to the principles of visual design, including graphic design, colour theory and typography. Students will develop an understanding of how to successfully combine visual elements to effectively communicate an idea or concept, to describe a product, and to represent visual user interface elements in an interactive product. Using digital image manipulation tools, such as Adobe Photoshop, Illustrator and InDesign, students will learn how to develop design concepts and how to turn concepts into visual communication materials in the form of digital images.

**DECO1016**
**Web Design and Technologies**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 2 **Classes:** Lecture 1 hr/wk (Week 1 only); tutorial 2 hrs/wk; online modules 1

hr/wk **Prerequisites:** DECO1012 **Prohibitions:** DECO2102 **Assessment:** Web Design Project (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit is for students enrolled in the Bachelor of Design Computing only. Students enrolled in other programs should enrol in DECO2102.*

This unit introduces students to web design and modern web technologies for the purpose of designing and prototyping web-based user interface solutions. Students will learn about design principles and patterns for the web and apply them in practical exercises that involve designing and creating interactive web applications. The unit will introduce web-based markup languages and frameworks for various media and platforms, such as desktop computers and mobile devices with a focus on interaction design. Students will develop an understanding of web technologies and their role in user experience and interaction design, including the use of web technologies for prototyping user interfaces. Prototyping techniques covered in this unit include scripting and markup languages for enabling dynamic content and interactive designs, such as HTML, CSS and JavaScript.

**DECO1017**
**Principles of Animation**

**Credit points:** 6 **Teacher/Coordinator:** Mr Nathaniel Fay **Session:** Semester 2 **Classes:** Lecture 1 hr/wk; tutorial 2 hrs/wk **Prohibitions:** DECO3006 **Assessment:** Animation Assignments (80%); Quizzes (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit is for students enrolled in the Bachelor of Design Computing only. Students enrolled in other programs should enrol in DECO3006.*

This unit introduces students to the fundamental principles of animation and its role in interaction design. Students will develop an understanding of the process involved in developing character, text and motion graphics based animation, the integration between 2D artwork and 3D composition, and techniques and tools for audio recording and production to support animation. Assessments in this unit focus on the application of animation in user interface design as well as for the production of short animated films. Students will acquire basic animation skills, develop the skills to create an animated sequence, and learn the critical vocabulary to describe animation. Basic knowledge will be related to foundational technical skills in industry standard software for animation.

## Senior units of study

Candidates in the Bachelor of Design Computing/Bachelor of Advanced Studies are required to complete 36 credit points of senior DECO units. Candidates in the Bachelor of Design Computing are required to complete 48 credit poits of senior DECO units.

**DECO2014**
**User Experience Design Studio**

**Credit points:** 12 **Teacher/Coordinator:** Ms Madeleine Borthwick **Session:** Semester 1 **Classes:** Lecture 1 hr/wk, studio 3 hrs/wk, tutorial 2 hrs/wk **Prerequisites:** DECO1006 or DECO2016 **Assessment:** Design Project(s) (90%); Participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to principles and methods relevant to the user experience design of digital products and services. Students will develop an understanding of the concept of 'user experience' and how it extends to other design practices, such as user interface design and interaction design. Students will learn about methods for designing the user experience in a range of different contexts, such as mobile devices, wearables, and interactive environments. The studio will give students an opportunity to apply the principles and methods of user experience design in the context of a design project. At the conclusion of the unit students will have a well-developed understanding of methods for gathering user requirements and translating requirements into design solutions that emphasise the user experience of the final product.

**DECO2200**
**Interaction Design Studio**

**Credit points:** 12 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 2 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk, studio 3 hrs/wk **Prerequisites:** DECO1006 or DECO2016 **Assessment:** Design Project(s) (90%); Participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces principles of interface and interaction design through design projects. Students will develop technical as well as methodological skills for designing and developing interactive products and services. Elements of interaction design including menus, screen design, animation, and graphics design will be addressed for various platforms, including online applications and mobile devices. The unit builds on the design methods introduced in DECO1006/DECO2016, such as user research, storyboarding, and prototyping. It allows students to develop an advanced understanding of these methods through applying them in a specific design context. Students will learn about methods for collecting user requirements, synthesising and visualising concepts, prototyping user interfaces, e.g. in the form of mobile apps, and evaluating prototypes.

**DECO3100**
**Information Visualisation Design Studio**

**Credit points:** 12 **Teacher/Coordinator:** Dr Somwrita Sarkar **Session:** Semester 1 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk, studio 3 hrs/wk **Prerequisites:** DECO1006 and DECO1012 **Assessment:** Design Project(s) (90%); Participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The field of information visualisation focuses on how data can be effectively represented and meaningfully communicated to people, in interactive and automated ways. The unit of study introduces the principles of information visualisation design, with special attention to aesthetic communication of data, data analytics, and user engagement. Key concepts covered in this unit include: abstract data visualisation; data acquisition; and parsing and processing of data. Using a combination of vector graphics software tools such as Adobe Illustrator and programming languages for processing data, students will develop information visualisations of real-world datasets that are both communicative and engaging. The unit will equip students with the skills to produce static as well as web-ready interactive data visualisations.

**DECO3200**
**Interactive Product Design Studio**

**Credit points:** 12 **Teacher/Coordinator:** Dr Caitilin de Berigny **Session:** Semester 2 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk, studio 3 hrs/wk **Prerequisites:** DECO1006 and DECO1012 **Assessment:** Design Project(s) (90%); Participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This studio offers a context for students to apply design, technical and creative methods to the production of high-quality group work, with a strong focus on the development of high-impact portfolios. The studio allows students to apply methods and principles of human-centred design in the context of new product development, and to engage with new technologies for interactive product design. Assignments will take the form of flexible group projects, allowing students to develop proficiency in design and prototyping skills to a wide array of design problems that they may encounter in various industries. The unit will provide students with the skills to investigate and integrate advanced technologies into the design of objects with embedded information content and interactivity.

## Electives

Please refer to the 'Requirements for award' section for the number of elective credit points required in your degree. Students who have completed 96 credit points with a WAM of at least 70 may substitute, with the permission of the unit coordinator concerned, graduate units from within the University.

## Design Computing electives

## Junior units of study

**DESN1000**
**Principles of Design**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 1 **Classes:** lecture 1 hr/week; workshop 2 hrs/week **Assessment:**

case study reports (60%), design exercise (30%) and quizzes (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study allows students to develop an understanding of the foundation of human factors upon which much successful design is based. Students learn about the basic physical and cognitive principles (ergonomics, heuristics, human-centredness) incorporated in successful designs across a wide variety of different sectors. Students are provided with the tools to evaluate existing designs according to widely accepted design principles. They learn to apply these principles in practice in order to improve the usability, clarity and overall quality of their own designs. Through a series of academically researched case studies they reflect upon how these principles are applied in existing designs. To further develop their understanding of the design principles, they then complete a small re-design exercise. The case studies are chosen to cover a range of different domains, including products, systems, organisations, and services.

**DESN1001**
**Design Theory and Culture**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Martin Tomitsch **Session:** Semester 2 **Classes:** lecture 1 hr/week; workshop 2 hrs/week **Assessment:** research report (30%), analysis report (30%), synthesis report (30%) nd quizzes (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study helps students develop a theoretically grounded understanding of what design is, and the full spectrum of different disciplines that this term entails (product, graphic, urban planning, graphic, fashion, interaction, etc.). Using academic sources, they will investigate dominant historical and contemporary models of the design process, and learn about the cognitive basis of design thinking and how this differs from key skills in other disciplines. Students will research major design movements and schools of thought that have influenced the design sector over the last century (e.g. Bauhaus, eco-design, ergonomics, mass consumerism and built-in obsolescence). The unit teaches students about current foci in design (such as service design and experience design) and provides an outlook of upcoming trends and futures. Students will be able to develop these skills through studying a design movement, analysing case studies of designs, and applying design movements to specific design tasks.

## Senior units of study

**DECO2010**
**Designing Social Media**

**Credit points:** 6 **Teacher/Coordinator:** Ms Madeleine Borthwick **Session:** Intensive June, Semester 1 **Classes:** Lecture 1 hr/wk; tutorial 2 hrs/wk **Assessment:** Social Media Project (75%); Tutorial Activities (10%); Quizzes (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides students with an understanding of principles and technologies relevant to the design of social media, that is, media supporting social interaction. The unit covers the history and theory of social networks, techniques and methods for analysing social media networks, design principles and patterns for the creation of social media applications, and the development and delivery of social media strategy. Students will gain proficiency designing social media platforms and usage scenarios that solve a range of design challenges. Students will participate in, critically review and prototype social media platforms and content to demonstrate their understanding of the subject matter.

**DECO2015**
**Design for Innovation**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 2 **Classes:** Lectures 1 hr/week; tutorials 2 hrs/week **Assessment:** Analysis report (35%); Project work (55%); Quizzes (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces students to design strategies and techniques for developing alternative points of view and exploring multiple solutions iteratively. Through the analysis of real-world case studies students will develop an understanding for how to use design-thinking methods to tackle complex problems. The unit will discuss how design can be used as a method and as a way of thinking to drive innovation for products, services and processes. In the tutorial component, students will apply design strategies and techniques, such as lateral thinking, experiential prototyping and speculative design, through small group exercises. Students will develop a deep understanding of these strategies and techniques through the various assessment items, which capture theory, analytical reflection and the practical application of methods.

**DECO3101**
**Innovation Design Studio**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 1, Semester 2, Winter Main **Classes:** Lecture 1 hr/week; tutorial 2 hrs/week **Assessment:** Project work (90%); Participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides a format for deep engagement with design and innovation methods. Students will develop responses to a real-world design problem that requires the application of students' existing disciplinary skills combined with knowledge in an interdisciplinary context. Projects are student-led, allowing students to identify projects that are linked to their interests and discipline-specific career paths. Through interactive group work, facilitated by experienced design mentors, students will learn how to negotiate interdisciplinary requirements and boundaries. All projects developed in this unit of study are expected to address some element of innovation in an existing product, service or process. Students will be able to apply methods acquired in other units of study, and will learn about new methods through weekly project work and reviews.

**DESN3000**
**Design Thinking for Health and Medicine**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 1 **Classes:** lecture 1 hr/week; seminar 2 hrs/week **Assessment:** case study report (30%), design exercise (30%) and health design project (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit is an introduction to human-centred design methods, specifically in the context of future challenges of the type you will face in careers health and medicine. You will learn design principles and practices through evaluating current health and medical devices, processes and systems. Through the analysis of real-world case studies, you will apply design thinking methods to address the complex health and medical issues facing society. The unit will also introduce you to how design-led strategies can support healthy behaviour or be used to improve medical technologies and processes. You will develop your skills by using design exercises to demonstrate the strategic and practical applications of such methods and approaches.

**DESN3001**
**Health and Medicine Design Studio**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Cara Wrigley **Session:** Semester 2 **Classes:** lecture 1 hr/week; studio 2 hrs/week **Prerequisites:** DESN3000 **Assessment:** project work (90%) and participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study focuses on the development of design solutions for the complex needs of a healthy society into the future. Through weekly teaching of design in the health and medical contexts, you will be exposed to various methods, techniques and approaches to achieve patient-centric solutions. You will apply your skills to address a health or medical challenge by creating a project based on translating a discovery into a device or process in the real world. The project will require you to work in multi-disciplinary teams to allow you to harness the relevant skill sets that are required to best navigate multifaceted challenges prevalent in health and medical sectors. All solutions designed and developed in this unit of study are expected to take the form of either a product, service, or system. You will learn how to identify problems, how to use ideation for developing patient-centric solutions and how to translate ideas into prototypes. Along this journey you will also navigate disciplinary boundaries and communicate with various stakeholders, including the health and medical professions.

This will allow you to assess and test your solutions on your target audience.

**DECO3665**
**Graduation Show**

**Credit points:** 6 **Teacher/Coordinator:** Dr Karla Straker **Session:** Semester 2 **Classes:** Studio 2 hrs/wk **Prerequisites:** 48 credit points **Assessment:** Project Work (40%); Reflective Report (30%); Participation (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study is tailored to self-motivate students with an emphasis on more peer assessment and open critique sessions than is conventional in Design Computing electives. This is purposefully intended to encourage graduating students to experience a collaborative project similar to a small design studio. Students will be expected to articulate and defend their designs in a conversational manner and to vote on solutions internally. Students will also practice organisational and project management skills impacted by real-world deadlines for print-schedules, sponsorship and funding, concurrent website deployment, online registrations and event management.

**DECO3666**
**Graduate Internship**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Intensive February, Intensive July, Semester 1, Semester 2 **Classes:** Fieldwork **Prerequisites:** 48 credit points **Assessment:** Log book signed by practice supervisor and report on the benefits of the internship (100); pass/fail only **Mode of delivery:** Professional practice

*Note: Department permission required for enrolment.*

The aims of the internship are to provide a direct link between the academic core of the course and disciplines and methods of practice; to enable candidates to experience aspects of practice and provide opportunity for them to work in areas of the field outside their specific expertise; to enable candidates to observe, analyse and comment on the interaction between theoretical and practical issues for their Program as it is practices, and to establish connections between practice and the development of relevant research programs. The internship is intended to provide the opportunity for students to work in various situations in their Program's area. A secondary intention is that students use the opportunities of placement to broaden their own experience beyond the limitations of their chosen discipline. Candidates must find a suitable professional placement. Permission to enrol is given after the proposed placement has been approved by the Program Director. The host organisation will nominate a supervisor for the student for the internship. The student must complete at least 120 hours of full or part-time experience, supervised by a practising designer. A log-book of each day's work, signed by the supervisor must be submitted on completion. A 2000-word report on the benefits of the internship must also be produced. At the end of the internship the student will: demonstrate that they have completed a program of work (through a log book); present a report; analyse their experiences and compare these to the theoretical content of the units they have completed, and suggest appropriate research directions so as to improve the complementarity of theory to practice.

**DECO3441**
**Design Computing Independent Study A**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1, Semester 2 **Classes:** Weekly meetings by arrangement **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Computing topic; to develop skills in independent study; and to develop advanced report writing skills.

This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Computing. The student will meet with the supervisor weekly to discuss progress.

The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DECO3442**
**Design Computing Independent Study B**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1, Semester 2 **Classes:** Weekly meetings by arrangement **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Computing topic; to develop skills in independent study; and to develop advanced report writing skills.

This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Computing. The student will meet with the supervisor weekly to discuss progress.

The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DECO3443**
**Design Computing Independent Study C**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1, Semester 2 **Classes:** Weekly meetings by arrangement **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Computing topic; to develop skills in independent study; and to develop advanced report writing skills.

This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Computing. The student will meet with the supervisor weekly to discuss progress.

The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DECO3444**
**Design Computing Independent Study D**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1, Semester 2 **Classes:** Weekly meetings by arrangement **Prerequisites:** 48 credit points and WAM of at least 70. **Assessment:** Report or equivalent (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit provides an opportunity to high achieving students to develop an interest in a specific Design Computing topic; to develop skills in independent study; and to develop advanced report writing skills.

This elective is undertaken with an agreement between the student and a supervisor on an agreed topic related to Design Computing. The student will meet with the supervisor weekly to discuss progress.

The outcome should be a reflective report on a selected topic demonstrating mastery of the topic.

**DECO3551**
**Design Computing General Elective A**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Prerequisites:** 48 credit points of units of study **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

This unit of study is available to a minimum of 10 students to engage in a topic related to Design Computing that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Undergraduate).

Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

**DECO3552**
**Design Computing General Elective B**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Prerequisites:** 48 credit points of units of study **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

This unit of study is available to a minimum of 10 students to engage in a topic related to Design Computing that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Undergraduate).

Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

**DECO3553**
**Design Computing General Elective C**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Prerequisites:** 48 credit points of units of study **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment. This unit of study is available to a minimum of 10 students to engage in a topic related to Design Computing that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Undergraduate). Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

**DECO3554**
**Design Computing General Elective D**

**Credit points:** 6 **Teacher/Coordinator:** Dr Kazjon Grace **Session:** Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Prerequisites:** 48 credit points of units of study **Assessment:** Assignments as determined by Unit Coordinator (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This elective allows a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment. This unit of study is available to a minimum of 10 students to engage in a topic related to Design Computing that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. The topic for this elective is proposed by a member of academic staff and approved by the Associate Dean (Undergraduate). Students will develop an understanding of a special topic through reports, projects, and tutorial exercises.

## School electives

## Junior units of study

**AWSS1001**
**Architectural Sketching and Drawing**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1 **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA1601 or DESA1602 **Assessment:** Portfolio of works (60%); process journal (40%) **Practical field work:** Studio practice **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Students may incur costs for materials in some Art Workshops units.*

This unit aims to provide the student with the knowledge, skills and aptitude required to use a range of fundamental architectural sketching and drawing skills based on observation of the physical world, in particular the built world. Students will be encouraged to develop a commitment to the practice of drawing as a fundamental design skill through 13 studio classes coupled with independent study. The workshop places an emphasis on keen observation, experimental use of materials and engagement with historical frameworks used in design practice in design and architecture. Exposure in studio to the sensitivities offered by different drawing materials and techniques will give students the competency to more confidently use drawing as a communication device. Skills in perspective drawing are introduced and drawing is used to document the visible world and define structure and detail. On successful completion of this unit of study students will have demonstrated familiarity with a range of drawing media and techniques, including charcoal, graphite, pen, brush and ink, and an introduction to colour. Students will understand the importance of maintaining a sketchbook as a site to record all their visual and conceptual research, and in which to draw on a daily basis as a means to develop ideas and technical proficiency.

**DESA1004**
**Designing with Surfaces and Light**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2, Summer Main, Winter Main **Classes:** Online. Expected total workload is approximately 35 hours online, plus independent study and preparation. Lecture materials are available on the eLearning site. They consist of PDF files and Powerpoint slides. No lecture recordings are available. **Prohibitions:** DESA2612 **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Online

*Note: Due to the high volume of interest in this course, all questions and enquiries will be answered in online discussion forums on eLearning, instead of in face-to-face consultation.No early results are available for this unit. No extensions will be granted because of failed internet access.*

Objects only become visible when light reflects off of them. This unit explores the ways in which light interacts with surfaces, objects, and the human visual system. Architectural design decisions regarding the lighting, as well as exterior and interior surfaces of a building, alter the perceptual experience of users and should be done thoughtfully.

This unit introduces students to the way humans perceive and experience the built environment. It covers some of the fundamental properties of light, mechanisms of human perception, and the ways that light interacts with surfaces. The application of these topics to design decisions is also discussed. Students demonstrate their understanding of the presented material and apply their knowledge to critically analyze their own environments.

## Senior units of study

**AWSS2015**
**Generative Drawing**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 2, Summer Main **Classes:** Workshop 3 hrs/wk **Assessment:** Portfolio (60%); Process Journal (40%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit explores a variety of drawing skills with an emphasis on materials and techniques as tools for generative and process-based work related to drawing as a fundamental medium and method in design. Drawing is approached as a system for critical analysis, research and design speculation. The focus is on the formal aspects of composition and perspective while the material nature of drawing is explored as a balance between chance and control. Students use a wide variety of mark-making methods to render line, tonal value and texture. Students are provided with the opportunity to combine observational skills with experimental techniques in order to encourage a personal vision and a commitment to the practice of drawing in

design. Each technique and approach will be presented against a background of Architecture and Art history and theory.

**AWSS2020**
**Object Design (Material and Light)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Corequisites:** DESA1555 **Prohibitions:** DESA2643 **Assessment:** Portfolio of works and presentation (60%); process journal and associated assignments (40%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

In this unit students produce light objects exploring diverse materials and fabrication techniques in the DMaF workshops. Emphasis is placed on developing and inter-relating manufacturing and artisan skills with research, analysis and design development. The course aims to develop a critical awareness of the nature of objects that surround us, exploring cultural, contextual and symbolic aspects of object design as well as functional and aesthetic qualities working with light. Sustainability and social issues relating to their manufacture, use and disposal are also discussed; the unit aims to increase appreciation of the materiality of objects focusing on timber as an example paying attention to associated environmental and ethical issues, and emerging alternative materials. Through a series of exercises, experiments and production of their major project, students develop knowledge of construction techniques and skills in using wood/plastics tools and machinery and in so doing, build an awareness of industrial and craft practices and how they impact on the design process and outcome. Students will be expected to produce a research process journal and report on how a particular designer/s or movement has informed or influenced their final project/s.

**AWSS2023**
**Architectural Photography**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2, Summer Main **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA2629 **Assessment:** Process Journal and associated assignments (40%); final project and presentation (60%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This practical unit assumes students have little or no understanding of photo image making. It aims to give students an understanding of how photography functions as a contemporary visual medium, including its connection to modernism and architecture. Students will gain knowledge of the principles and practise of camera operations, the production of high quality black and white prints in small studio style classes. This module covers the use of a 35mm DSLR camera, image composition, use of lighting, image capture and correction, and printing. Practical work includes completion of set class projects, gallery visits, class discussions and the production of a portfolio. *Students should have access to a 35mm DSLR camera.

**AWSS2026**
**2D Print Processes in Design**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2, Summer Main **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA2638 **Assessment:** Research Journal (30%); portfolio of Studio Works (70%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This studio-based unit introduces a variety of traditional and experimental techniques that will enable students to design and print a series of 2D works both within and around the context of design and Architecture. It will provide students with the knowledge and skills to design and print on a variety of substrates including paper, wood, and perspex through a range of techniques and creative exercises that can be developed into an edition or a series of experimental printed works. Students will also explore the historical roots of print and print as an element in design and architecture. Techniques covered include: digital photography and vector illustration, typography, hand and laser-cut paper stencils, ink mixing, registration and print set-up for multi-coloured prints. Through studio practice, set exercises, illustrated talks, gallery visits and library research, students will develop an understanding of their creative process and ability to interpret ideas through the medium of printing and with particular focus on design and architecture applications.

**AWSS2027**
**Arch + Design Material Processes (Casting)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Prohibitions:** DESA2636 **Assessment:** Studio Projects and associated tasks (70%); Research Process Journal (30%) **Practical field work:** Studio practice NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This studio-based unit focuses on critical engagement with materiality and form. The course introduces fundamental knowledge and technical skills for students to produce a series of 3D objects through high-definition casting and complimentary construction techniques. Students will work with a broad range of traditional and experimental materials including wax, silicone, metal, sand and plaster. Emphasis is placed on developing students' material and spatial awareness of three-dimensional forms in context and investigating their conceptual meanings and applications. Students will be required to design, plan and produce a series of sculptural works, utilizing mediums and techniques explored throughout the semester. Additionally, students will critically contextualise and discuss their projects against historical precedents and contemporary practices that inform their creative inquiries.

**DESC9011**
**Audio Production**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 1 **Classes:** Lecture 3 hrs/wk **Assessment:** Two assignments (1x40%, 1x50%); in-class quizzes and exercises (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit examines tools, techniques, processes and value systems involved in audio production. Proficiency in sound recording techniques, including field and studio recordings, is developed, including technical acoustic, audio and aesthetic considerations. Students extend their understanding and experience of production principles by which sound recordings are used for building up realistic and hyper-realistic auditory scenes. Perspectives on audio production come from aesthetics, practice, acoustics theory, audio technology and digital audio systems, but ultimately are founded in the discipline of listening. By bringing these perspectives together, this unit is designed for students with a wide range of production experience at a postgraduate level.

Students are expected to work individually and in groups to produce audio for accompanying screen media, as well as audio works that rely solely on audio to transmit a message. Students are expected to: participate in the workshops; complete class exercises/constructions; read additional materials to discuss in classes; submit a script, composition or otherwise detailed proposal for recording and postproduction with detailed rationale of production values; produce and present a completed audio project, including documentation, evidence of background research, a commentary on the production and production outcomes, track sheets, mixing notes.

## Other electives

## Junior units of study

**ANTH1001**
**Cultural Difference: An Introduction**

**Credit points:** 6 **Session:** Intensive July, Semester 1, Summer Main, Winter Main **Classes:** 2x1hr lectures/week, 1x1hr tutorial/week **Prohibitions:** ANTH1003 **Assessment:** 10x100wd weekly online exercises (20%), 1x1500wd essay (35%), 1x2hr exam (35%), participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Anthropology explores and explains cultural difference while affirming the unity of humankind. It provides accounts of cultural specificity that illuminate the world today. Lectures will address some examples of cultural difference from the present and the past. These examples will introduce modern Anthropology, the method of ethnography, and its related forms of social and cultural analysis.

**ARHT1001**
**Style and Substance: Introducing Art History**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 2x1hr lecture/week, 1x1hr tutorial/week **Assessment:** 2x1000wd object analysis (40%), 1x2500wd research project (50%), tutorial participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Taking a diverse, global view of art making from the Ancient to the Modern world, ARHT1001 will introduce students to key philosophical and methodological approaches in the field of Art History. As our experiences are increasingly mediated through a variety of visual platforms, this course will help students develop critical perspectives on visual communication. The development of professional skill sets will be a key focus. As such, the course serves as an essential introduction to Art History for those considering a career in the arts, education, or the museum and design sectors.

**ARHT1002**
**Shock of the Now: Global Art since 1900**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 2x1hr Lecture/week, 1x1hr tutorial/week **Assessment:** 1x1000wd Visual Test (30%), 1x2000wd research essay (40%), 1x1500wd Exhibition/Artwork Review Blog (20%), 1x Tutorial participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Art shapes our cities, streets, galleries, phones and minds. It is now made with every conceivable material, and sometimes none at all. It shocks, challenges, soothes, entertains, engrosses and overwhelms us. This unit charts the history of Modern and Contemporary Art across the world, as it is shaped by and shapes society, politics and environment. It shows current concerns in art , with materials, landscape, self-image, politics, and the body are grounded in a century of global experiment

**ENGL1011**
**Introduction to Film Studies**

**Credit points:** 6 **Session:** Semester 1, Summer Main **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Assessment:** 1x800wd exercise (20%), 1x800wd exercise (20%), 1x800wd exercise (20%), 1x2000wd Take-home exercise (30%), Tutorial participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

How do form and style structure our experience of film? This unit provides a critical introduction to elements of film making and viewing, moving through an exploration of formal components of film to consider film aesthetics in relation to the history of film scholarship. We will consider films in a variety of cultural and historical contexts, from early cinema to youtube, and introduce a series of "case studies" to explore historical, cultural and material contexts of film production and consumption.

**GCST1601**
**Introduction to Cultural Studies**

**Credit points:** 6 **Session:** Semester 1, Summer Main **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Assessment:** 1xonline reflective learning journal equivalent to 2000wds (40%), 1xgroup presentation (10%), 1x2000wd Essay (40%) and Tutorial participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Cultural studies explores everyday life, media and popular culture. It shows us how we can make sense of contemporary culture as producers, consumers, readers and viewers, in relation to our identities and communities. How do various cultural texts and practices convey different kinds of meaning and value? Drawing upon key approaches in the field, students will learn how to analyse cultural forms such as advertising, television, film and popular music.

**LNGS1002**
**Language and Social Context**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 2x1hr lectures/week, 1x1hr tutorial/week **Assessment:** 5x250wd short assignments (40%), 1x1hr 1000wd equivalent mid-term exam (20%), 1x2hr 2000wd equivalent Final exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces the study of the interrelationship between language and society. It is concerned with phenomena of language change and how that leads to varieties in a language. How are these varieties linked to social differences? What distinguishes male speech from female speech or what are the linguistic styles of different social classes or ethnic groups? What is slang, or jargon, and what distinguishes a casual conversation from an interview?

**PHIL1013**
**Society, Knowledge and Self**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 2x1hr lectures/week, 1x1hr tutorial/week **Prohibitions:** PHIL1010 **Assessment:** Tutorial participation (10%), 1x2000wd Essay (30%) and 1x2hr exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit is an introduction to central issues in political philosophy, theories of knowledge and philosophical conceptions of the self. The first part will consider the state, freedom and political obligation. The second part will examine some of the major theories of knowledge in the modern philosophical tradition. The final section will look at conceptions of the self as a knowing and acting subject.

**PRFM1601**
**Making Theatre: Process and Collaboration**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x1hr lecture/week, 1x2hr workshop/week **Assessment:** 1x1000wd short essay (25%), 1x1000wd workshop description and analysis (25%),1x group work documentation (1500wd per student)(25%), 1x1000wd account of rehearsal (25%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

A guided rehearsal of a play by Bertolt Brecht introduces you to key approaches to theatre and performance studies, including embodiment theory, ethnography, and dramaturgy. You will reflect upon and analyse performance-making processes, debating, testing and documenting decisions as you work. No theatre-making experience required.

**SCLG1001**
**Introduction to Sociology 1**

**Credit points:** 6 **Session:** Semester 1, Summer Main **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Assessment:** 1x1000wd library task (20%), 1x1500wd research essay (30%), 1x2hr exam (40%), participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

How does society shape the world we live in? What influences interactions between people in everyday life? Why is society structured the way it is, and is change possible? By delving into diverse topics such as discrimination and inequality to family life and friendship, this unit introduces the conceptual tools sociologists use to explain the world.

**SCLG1002**
**Introduction to Sociology 2**

**Credit points:** 6 **Session:** Intensive July, Semester 2, Summer Main **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Assessment:** 1x1000wd annotated bibliography (20%), 1x1750wd take-home exercise (35%), 1x1750wd research essay (35%), participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

In a rapidly changing world, how do we make sense of current social and political problems effectively? By exploring sociological concepts in creative ways, this unit gives students the tools to analyse, research and respond to real world issues such as globalisation, crime, social justice, community breakdown, and racial, sexual and indigenous inequality.

**WRIT1000**
**Introduction to Academic Writing**

**Credit points:** 6 **Session:** Semester 1, Semester 2 **Classes:** 1x1hr lecture/week, 1x2hr seminar/week **Assessment:** 1x900wd sentence task (20%), 1x900wd research task (20%), 1x900wd paragraph task (20%), 1x900wd review task (20%), 1x900wd revision/reflection task (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit teaches the fundamentals of academic writing. Frequent, short writing assignments are designed to help students engage with the writing process at the sentence and paragraph levels and and to make appropriate style, grammar, punctuation, and syntax choices. Students will learn how to research a topic, document sources in keeping with academic honesty principles, and edit and revise their own writing, as well as the writing of others. This UoS is appropriate for both native and non-native English speakers and offers a solid foundation for academic writing in any discipline.

**INFS1000**
**Digital Business Innovation**

**Credit points:** 6 **Session:** Intensive January, Intensive July, Semester 1, Semester 2 **Classes:** 1x 2hr lecture and 1x 1hr lab workshop per week **Prohibitions:** ISYS1003 or INFO1000 **Assumed knowledge:** INFO1000; INFO1003; INFO1903 **Assessment:** group work (10%), group project (25%), mid-semester test (25%), and final exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day, Block mode

The Digital Economy, with its focus on information as a key business resource, has changed the way Business Information Systems (BIS) are viewed in organisations. BIS are now seen as enablers of innovation in which people, supported by powerful technology, are considered to be the most important component. This is because problem-solving, innovation and critical thinking skills cannot be outsourced or easily acquired by competitors. This unit is designed to develop your understanding of how businesses operate. It shows how information systems support business operations and management through integration of people, business processes and systems. You will be provided with an introduction to state-of-the art business analysis techniques, frameworks and models to assist in understanding the nature and contribution of BIS in a range of business contexts. With its emphasis on business rather than IT, this unit does not require prior IT-related experience. In this unit you will learn about the increasingly important role of IT in business and acquire valuable business analysis and problem-solving skills.

**MKTG1001**
**Marketing Principles**

**Credit points:** 6 **Session:** Semester 1, Semester 2 **Classes:** 1x 2hr lecture and 1x 1hr tutorial per week **Assessment:** project (20%), presentation (15%), participation (7%), mid-semester exam (28%), final exam (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit examines the relationships among marketing organisations and final consumers in terms of production-distribution channels or value chains. It focuses on consumer responses to various marketing decisions (product mixes, price levels, distribution channels, promotions, etc.) made by private and public organisations to create, develop, defend, and sometimes eliminate, product markets. Emphasis is placed on identifying new ways of satisfying the needs and wants, and creating value for consumers. While this unit is heavily based on theory, practical application of the concepts to "real world" situations is also essential. Specific topics of study include: market segmentation strategies; market planning; product decisions; new product development; branding strategies; channels of distribution; promotion and advertising; pricing strategies; and customer database management.

**ELEC1103**
**Fundamentals of Elec and Electronic Eng**

**Credit points:** 6 **Session:** Semester 1 **Classes:** Lectures, Laboratories, Tutorials **Assumed knowledge:** Basic knowledge of differentiation & integration, and HSC Physics **Assessment:** Through semester assessment (40%) and Final Exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study aims to develop knowledge of the fundamental concepts and building blocks of electrical and electronics circuits. This is a foundation unit in circuit theory. Circuit theory is the electrical engineer's fundamental tool.

The concepts learnt in this unit will be made use of heavily in many units of study (in later years) in the areas of electronics, instrumentation, electrical machines, power systems, communication systems, and signal processing.

Topics: a) Basic electrical and electronic circuit concepts: Circuits, circuit elements, circuit laws, node and mesh analysis, circuit theorems, energy storage, capacitors and inductors, circuits with switches, transient response, sine waves and complex analysis, phasors, impedance, ac power. ; b) Project management, teamwork, ethics; c) Safety issues

**ELEC1601**
**Introduction to Computer Systems**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Laboratories, Tutorials **Assumed knowledge:** HSC Mathematics extension 1 or 2 **Assessment:** Through semester assessment (60%) and Final Exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces the fundamental digital concepts upon which the design and operation of modern digital computers are based. A prime aim of the unit is to develop a professional view of, and a capacity for inquiry into, the field of computing.

Topics covered include: data representation, basic computer organisation, the CPU, elementary gates and logic, machine language, assembly language and high level programming constructs.

**INFO1110**
**Introduction to Programming**

**Credit points:** 6 **Session:** Intensive July, Semester 1, Semester 2 **Classes:** lectures, laboratories, seminars **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit is an essential starting point for software developers, IT consultants, and computer scientists to build their understanding of principle computer operation. Students will obtain knowledge and skills with procedural programming. Crucial concepts include defining data types, control flow, iteration, functions, recursion, the model of addressable memory. Students will be able to reinterpret a general problem into a computer problem, and use their understanding of the computer model to develop source code. This unit trains students with software development process, including skills of testing and debugging. It is a prerequisite for more advanced programming languages, systems programming, computer security and high performance computing.

**INFO1113**
**Object-Oriented Programming**

**Credit points:** 6 **Session:** Semester 1, Semester 2 **Classes:** lectures, laboratories, seminars **Prerequisites:** INFO1110 **Prohibitions:** INFO1103 OR INFO1105 OR INFO1905 **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Object-oriented (OO) programming is a technique that arranges code into classes, each encapsulating in one place related data and the operations on that data. Inheritance is used to reuse code from a more general class, in specialised situations. Most modern programming languages provide OO features. Understanding and using these are an essential skill to software developers in industry. This unit provides the student with the concepts and individual programming skills in OO programming, starting from their previous mastery of procedural programming.

**DATA1002**
**Informatics: Data and Computation**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Laboratories, Project Work - own time **Prohibitions:** INFO1903 **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit covers computation and data handling, integrating sophisticated use of existing productivity software, e.g. spreadsheets, with the development of custom software using the general-purpose Python language. It will focus on skills directly applicable to data-driven decision-making. Students will see examples from many domains, and be able to write code to automate the common processes of data science, such as data ingestion, format conversion, cleaning, summarization, creation and application of a predictive model.

**MTRX1702**
**Mechatronics 1**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Tutorials **Prohibitions:** ELEC1101 or ELEC2602 or COSC1902 or COSC1002 **Assumed knowledge:** MTRX1701 **Assessment:** Through semester assessment (60%) and Final Exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study aims to provide a foundation for the study of systems and embedded programming for the degree in Mechatronic Engineering.

It is based around a systems engineering approach to requirements capture, software design, implementation, debugging and testing in the context of the C programming language. Problem definition and decomposition; the design process; designing for testing and defensive coding methods; modular code structure and abstract data types; best practice in programming. Programming in teams; documentation and version control.

The C language: Preprocessor, tokens, storage classes and types; arithmetic, relational and bit manipulation operators; constructs for control flow: if, switch, for, do and while; arrays; pointers and character strings; dynamic memory allocation; functions and parameter passing; derived storage classes: structures and unions; file I/O.

**PSYC1001**
**Psychology 1001**

**Credit points:** 6 **Session:** Intensive June, Semester 1, Summer Main **Classes:** Three 1 hour lectures and one 1 hour tutorial per week, plus 1 hour per week of additional web-based (self-paced) material related to the tutorial. **Assessment:** One 2.5hr exam, one 1000 word research report, multiple tutorial tests, experimental participation (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Psychology 1001 is a general introduction to the main topics and methods of psychology, and is the basis for advanced work as well as being of use to those not proceeding with the subject. Psychology 1001 covers the following areas: science and statistics in psychology; applied psychology; themes in the history of psychology; social psychology; personality theory; human development. This unit is also offered in the Sydney Summer School. For more information consult the web site: http://sydney.edu.au/summer_school/

*Textbooks*
Available on-line once semester commences

**PSYC1002**
**Psychology 1002**

**Credit points:** 6 **Session:** Semester 2, Summer Main **Classes:** Three 1 hour lectures and one 1 hour tutorial per week, plus 1 hour per week of additional web-based (self-paced) material related to the tutorial. **Assessment:** One 2.5hr exam, one 1000 word research report, multiple tutorial tests, experimental participation (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit is also offered in the Sydney Summer School. For more information consult the web site: http://sydney.edu.au/summer/*

Psychology 1002 is a further general introduction to the main topics and methods of psychology, and it is the basis for advanced work as well as being of use to those not proceeding with the subject. Psychology 1002 covers the following areas: neuroscience; human mental abilities; learning and motivation; visual perception; cognitive processes; abnormal psychology.

This unit is also offered in the Sydney Summer School. For more information consult the web site:

http://sydney.edu.au/summer_school/

*Textbooks*
Available on-line once semester commences

**MUSC1503**
**Fundamentals of Music 1**

**Credit points:** 6 **Teacher/Coordinator:** Dr Daniel Rojas **Session:** Semester 1, Semester 2 **Classes:** 1hr lecture and 2x 1hr tutorials (aural and written)/wk **Prohibitions:** MUSC1000 or MUSC1001 or MUSC1002 or MUSC1003 or MUSC1004 or MUSC1005 or MUSC1501 or MUSC1502 or MUSC2699 or MCGY1008 **Assessment:** Written and online music theory assessment (70%), aural assessment (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

An introduction to basic music literacy skills, including learning to read and write music, and an understanding of fundamental aspects of its structure and composition. The material covered in this unit of study concentrates upon the basics of music theory and listening to ensure that participants have a solid grounding for a firm understanding of music notation and organisation.

**MUED1002**
**Creative Music Technology**

**Credit points:** 3 **Teacher/Coordinator:** Dr Benjamin Carey **Session:** Semester 1, Semester 2 **Classes:** 1 hr lab/studio/wk **Assessment:** Creative Audio Assignment (70%), Formative Skills Assessment (20%), Participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this unit of study students will be introduced to a range of music technologies and gain a basic proficiency in sound recording, editing and mixing. Students will learn to work with audio in a digital audio workstation, how to make good quality recordings with portable recording devices, and make use of these skills in service of a creative outcome. The unit will include an overview of software for notation/sequencing, as well as basic sound synthesis concepts. In the final assessment students will explore the creative possibilities of music technology by realising a sound work using either instrumental and/or environmental sound recorded and edited by them.

**MUSC1507**
**Sounds, Screens, Speakers: Music and Media**

**Credit points:** 6 **Teacher/Coordinator:** A/Prof Charles Fairchild **Session:** Semester 1 **Classes:** 2hr lecture and 1 tut/wk **Prohibitions:** MUSC1000 or MUSC1001 or MUSC1502 **Assessment:** Article summary, 1000 words (25%); Critical analysis, 1000 words (25%); Tutorial test, 500 words (10%); Final Project, 2,000 words(30%), overall participation (10%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

Music has been dramatically shaped and reshaped by every major change in communications technology in the 20th century from vinyl discs to MP3s. In this unit of study we will analyse such issues as the ways in which the early recording industry transformed jazz, the blues and country music, how the presentation of music on radio and television changed the ways the music industry created new musical celebrities, and the challenges the music industry faces as digital technology transforms the creation, distribution and consumption of music.

## Other electives

## Senior units of study

**ARIN2610**
**Internet Transformations**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x1hr lecture/week, 1x2hr tutorial/week **Prerequisites:** 18 Junior credit points in any of Anthropology, Art History, Computer Science, Design Computing, English, Gender and Culture Studies, History, Information Systems, Information Technology, Linguistics, Media and Communication, Philosophy, Psychology or Sociology or 12 credit points at 1000 level in Digital Cultures **Prohibitions:** ARIN2100 **Assessment:** 1x1000wd tutorial exerices (25%), 1x1500wd short essay (35%), 1x2000wd critical analysis and map (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The Internet is an infrastructure that supports constant industrial and social change, while also becoming progressively integrated into the routines of everyday life. Internet Transformations critically examines the online technologies, platforms and industries at the heart of these changes. It introduces key skills in analysis, evaluation and critique of these objects, situated in a historical context. It also interrogates the implications of emerging internetworked phenomena such as the internet of things, augmented reality and algorithmic cultures.

**ARIN2620**
**Cyberworlds**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** 18 junior credit points in any of Anthropology, Art History, Computer Science, Design Computing, English, Gender and Culture Studies, History, Information Systems, Information Technology, Linguistics, Media and Communication, Philosophy, Psychology or Sociology or 12 credit points at 1000 level in Digital Cultures **Prohibitions:** ARIN2200 **Assessment:** 1x2000wd essay (40%), 1x1250wd take-home exercise 1 (25%),1x 1250wd take-home exercise 2 (25%), participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Are online encounters different from face-to-face encounters? What is the difference between the real and the virtual? How do online identities relate to offline identities? This unit of study introduces students to key perspectives, themes and debates in the expanding world of online interaction and cultural production including social media, art, games, virtual worlds, augmented reality and participatory culture. Is the term 'cyberworld' redundant in a world where online and offline experiences, cultural forms and identities have become increasingly enmeshed?

**ARIN2630**
**Digital Arts**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x1hr lecture/week, 1x2hr seminar/week **Prerequisites:** 18 junior credit points in any of Anthropology, Art History, Computer Science, Design Computing, English, Gender and Culture Studies, History, Information Systems, Information Technology, Linguistics, Media and Communication, Philosophy, Psychology or Sociology or 12 credit points at 1000 level in Digital Cultures **Prohibitions:** ARIN2300 **Assessment:** 1x2000wd essay (40%), 1x1000wd review (20%), 1x1500wd blog (30%), participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Digital Arts explores the ways digital and new media technologies are being used to transform cultural production, distribution and reception in the visual and performing arts, film and popular culture. Students will learn about the changing aesthetic, cultural and technical dimensions of new digital technologies and will develop the critical and analytical tools with which to discuss and evaluate digital art works and the ways that audiences interact with them.

**ARIN2640**
**Games and Play**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x1hr lecture/week, 1x2hr tutorial/week **Prerequisites:** 18 junior credit points in any of Anthropology or Art History or Computer Science or Design Computing or English or Gender and Cultural Studies or History or Information Systems or Information Technology or Linguistics or Media and Communication or Philosophy or Psychology or Sociology or 12 credit points at 1000 level in Digital Cultures **Prohibitions:** ARIN3640 **Assessment:** 1x1000wd tutorial activity (20%), 1x2000wd game analysis (40%), 1x1500wd game design project (30%), Tutorial participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Computer games have emerged as distinctive cultural forms, with their own aesthetics, design cultures, user communities and academic study. This unit of study uses historical and critical theories on games and play to explore how computer games work and to examine their complex interrelationships with culture. Drawing on readings from games studies, new media and design, students will analyse a range of different games and use hands-on exercises to develop their own game design concept.

**COMP2123**
**Data Structures and Algorithms**

**Credit points:** 6 **Session:** Semester 1 **Classes:** Lectures, Tutorials **Prerequisites:** INFO1110 OR INFO1113 OR DATA1002 OR INFO1103 OR INFO1903 **Prohibitions:** INFO1105 OR INFO1905 OR COMP2823 **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will teach some powerful ideas that are central to solving algorithmic problems in ways that are more efficient than naive approaches. In particular, students will learn how data collections can support efficient access, for example, how a dictionary or map can allow key-based lookup that does not slow down linearly as the collection grows in size. The data structures covered in this unit include lists, stacks, queues, priority queues, search trees, hash tables, and graphs. Students will also learn efficient techniques for classic tasks such as sorting a collection. The concept of asymptotic notation will be introduced, and used to describe the costs of various data access operations and algorithms.

**DATA2001**
**Data Science: Big Data and Data Diversity**

**Credit points:** 6 **Session:** Semester 1 **Classes:** Lectures, Laboratories, Project Work - own time **Prerequisites:** DATA1002 OR INFO1110 OR INFO1903 OR INFO1103 **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This course focuses on methods and techniques to efficiently explore and analyse large data collections. Where are hot spots of pedestrian accidents across a city? What are the most popular travel locations according to user postings on a travel website? The ability to combine and analyse data from various sources and from databases is essential for informed decision making in both research and industry.

Students will learn how to ingest, combine and summarise data from a variety of data models which are typically encountered in data science projects, such as relational, semi-structured, time series, geospatial, image, text. As well as reinforcing their programming skills through experience with relevant Python libraries, this course will also introduce students to the concept of declarative data processing with SQL, and to analyse data in relational databases. Students will be given data sets from, eg. , social media, transport, health and social sciences, and be taught basic explorative data analysis and mining techniques in the context of small use cases. The course will further give students an understanding of the challenges involved with analysing large data volumes, such as the idea to partition and distribute data and computation among multiple computers for processing of 'Big Data'.

**ISYS2120**
**Data and Information Management**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Tutorials, Laboratories, Project Work - own time **Prerequisites:** INFO1113 OR INFO1103 OR INFO1105 OR INFO1905 OR INFO1003 OR INFO1903 OR DECO1012 **Prohibitions:** INFO2120 OR INFO2820 OR COMP5138 **Assumed knowledge:** Programming skills **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The ubiquitous use of information technology leaves us facing a tsunami of data produced by users, IT systems and mobile devices. The proper management of data is hence essential for all applications and for effective decision making within organizations.

This unit of study will introduce the basic concepts of database designs at the conceptual, logical and physical levels. We will place particular emphasis on introducing integrity constraints and the concept of data normalization which prevents data from being corrupted or duplicated in different parts of the database. This in turn helps in the data remaining consistent during its lifetime. Once a database design is in place, the emphasis shifts towards querying the data in order to extract useful information. The unit will introduce the SQL database query languages, which is industry standard. Other topics covered will include the important concept of transaction management, application development with a backend database, and an overview of data warehousing and OLAP.

**SOFT2201**
**Software Construction and Design 1**

**Credit points:** 6 **Session:** Semester 2 **Classes:** lectures, laboratories **Prerequisites:** INFO1113 OR INFO1103 OR INFO1105 OR INFO1905 **Prohibitions:** INFO3220 **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces the foundations of software design and construction. It covers the topics of modelling software (UML, CRC, use cases), software design principles, object-oriented programming theory (inheritance, polymorphism, dynamic subtyping and generics), and simple design patterns. The unit aims to foster a strong technical understanding of the underlying software design and construction theory (delivered in the lecture) but also has a strong emphasis of the practice, where students apply the theory on practical examples.

**SOFT2412**
**Agile Software Development Practices**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Laboratories, Project Work - own time **Prerequisites:** INFO1113 OR INFO1103 OR INFO1105 OR INFO1905 **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds students skills to follow defined processes in software development, in particular, working in small teams in an agile approach. Content covers the underlying concepts and principles of software processes, their analysis, measurement and improvement. Students will practice with a variety of professional-strength tool support for the practices that ensure quality outcomes. The unit requires students to enter already skilled in individual programming; instead this unit focuses on the complexities in a team setting.

**COMP3221**
**Distributed Systems**

**Credit points:** 6 **Session:** Semester 1 **Classes:** Lectures, Laboratories, Project Work - own time **Prerequisites:** (INFO1105 OR INFO1905) OR ((INFO1103 OR INFO1113) AND (COMP2123 OR COMP2823)) **Prohibitions:** COMP2121 **Assessment:** through semester assessment (60%), final exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will provide broad introduction to the principles of distributed computing and distributed systems and their design; provide students the fundamental knowledge required to analyse, design distributed algorithms and implement various types of applications, like blockchains; explain the common algorithmic design principles and approaches used in the design of message passing at different scales (e.g., logical time, peer-to-peer overlay, gossip-based communication).

**DATA3404**
**Data Science Platforms**

**Credit points:** 6 **Session:** Semester 1 **Classes:** lectures, tutorials **Prerequisites:** DATA2001 OR ISYS2120 OR INFO2120 OR INFO2820 **Prohibitions:** INFO3504 OR INFO3404 **Assumed knowledge:** This unit of study assumes that students have previous knowledge of database structures and of SQL. The prerequisite material is covered in DATA2001 or ISYS2120. Familiarity with a programming language (e.g. Java or C) is also expected. **Assessment:** through semester assessment (40%), final exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides a comprehensive overview of the internal mechanisms data science platforms and of systems that manage large data collections. These skills are needed for successful performance tuning and to understand the scalability challenges faced by when processing Big Data. This unit builds upon the second' year DATA2001 - 'Data Science - Big Data and Data Diversity' and correspondingly assumes a sound understanding of SQL and data analysis tasks.

The first part of this subject focuses on mechanisms for large-scale data management. It provides a deep understanding of the internal components of a data management platform. Topics include: physical data organization and disk-based index structures, query processing and optimisation, and database tuning.

The second part focuses on the large-scale management of big data in a distributed architecture. Topics include: distributed and replicated databases, information retrieval, data stream processing, and web-scale data processing.

The unit will be of interest to students seeking an introduction to data management tuning, disk-based data structures and algorithms, and information retrieval. It will be valuable to those pursuing such careers as Software Engineers, Data Engineers, Database Administrators, and Big Data Platform specialists.

**INFO3616**
**Principles of Security and Security Eng**

**Credit points:** 6 **Session:** Semester 1 **Classes:** lectures, tutorials, research **Prohibitions:** ELEC5616 **Assumed knowledge:** INFO1110 AND INFO1112 AND INFO1113 AND MATH1064. Knowledge equivalent to the above units is assumed; this means good programming skills in Python or a C-related language, basic networking knowledge, skills from discrete mathematics. A technical orientation is expected. **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides an introduction to the many facets of security in the digital and networked world, the challenges that IT systems face, and the design principles that have been developed to build secure systems and counter attacks. The unit puts the focus squarely on providing a thorough understanding of security principles and engineering for security. At the same time, we stress a hands-on approach to teach the state-of-the-art incarnations of security principles and technology, and we practice programming for security. We pay particular attention to the fact that security is much more than just technology as we discuss the fields of usability in security, operational security, and cyber-physical systems. At the end of this unit, graduates are prepared for practical demands in their later careers and know how to tackle new, yet unforeseen challenges.

This unit also serves as the initial step for a specialisation in computer and communications security.

**SOFT3202**
**Software Construction and Design 2**

**Credit points:** 6 **Session:** Semester 1 **Classes:** lectures, laboratories **Prerequisites:** SOFT2201 **Prohibitions:** INFO3220 **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit is a sequel of Software Construction and Design I (SOFT2301). It introduces advanced concepts which build on the topics of SOFT2301. SOFT3302 covers topics including software validation and verification, the theory of testing, and advanced design patterns. The unit has a strong focus on the theoretical underpinning of software design. I the labs the theory is applied with contemporary tools with concrete examples.

**SOFT3410**
**Concurrency for Software Development**

**Credit points:** 6 **Session:** Semester 2 **Classes:** lectures, laboratories **Prerequisites:** (INFO1105 OR INFO1905) OR ((INFO1103 OR INFO1113) AND (COMP2123 OR COMP2823)) **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The manufacturing industry has experienced a radical shift in the way they design computers, with the integration of multiple processors on the same chip. This hardware shift now requires software developers to acquire the skills that will allow them to write efficient concurrent software. Software developers used to wait for manufacturers to increase the clock frequency of their processors to see increases in the performance of their programs, the challenge is now to exploit, in the same program, more and more processing resources rather than faster processing resources. In this unit, you will learn how to tackle the problems underlying this challenge, including developing and testing concurrent programs, synchronizing resources between concurrent threads, overcoming fairness issues and guaranteeing progress, and ensuring scalability in the level of concurrency.

**ISYS3402**
**Decision Analytics and Support Systems**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Laboratories, Project Work - own time **Prerequisites:** (ISYS2110 OR INFO2110) AND (ISYS2120 OR INFO2120) **Assumed knowledge:** Database Management AND Systems Analysis and Modelling **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

With the rapid increases in the volume and variety of data available, the problem of providing effective support to facilitate good decision making has become more challenging. This unit of study will provide a comprehensive understanding the diverse types of decision and the decision making processes. It will introduce decision modelling and the design and implementation of application systems to support decision making in organisational contexts. It will include a range of business intelligence and analytics solutions based on online analytical processing (OLAP) models and technologies. The unit will also cover a number of modelling approaches (optimization, predictive, descriptive) and their integration in the context of enabling improved, data-driven decision making.

**ARIN3620**
**Researching Digital Cultures**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x1hr lecture/week, 1x2hr tutorial/week **Prerequisites:** 12 Senior credit points in Digital Cultures **Prohibitions:** ARIN2000 **Assessment:** 1x2000wd Research blog (45%), 1x2500wd Research proposal (45%), Tutorial participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

How do people make and use new media technologies? To answer this question you need to know how to conduct research: a systematic investigation using carefully chosen and ethically sound methods. In this unit students prepare a research proposal to improve knowledge about the social implications of the latest developments in information technologies. They build their methodology by choosing a combination of methods: big data analysis; ethnography, interviews, surveys, online methods, discourse analysis, content analysis and/or case studies.

**PHIL2642**
**Critical Thinking**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** 12 Junior credit points **Assessment:** 1x1500wd Essay (30%), 1xin-class test (20%) and 1x2hr exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

An introduction to critical thinking and analysis of argument. By examining arguments drawn from diverse sources, including journalism, advertising, science, medicine, history, economics and politics, we will learn how to distinguish good from bad arguments, and how to construct rationally persuasive arguments of our own. Along the way we will grapple with scepticism, conspiracy theories and pseudoscience. The reasoning skills imparted by this unit make it invaluable not only for philosophy students but for every student at the University.

**PRFM2601**
**Being There: Theories of Performance**

**Credit points:** 6 **Session:** Semester 1, Summer Main **Classes:** 1x1hr lectures/week, 1x2hr tutorial/week **Prerequisites:** 18 Junior credit points from subject areas listed in Table A or 12 credit points at 1000 level in Theatre and Performance Studies **Prohibitions:** PRFM2001 **Assessment:** Short responses to set readings (1200wd total)(30%), 1x800wd research proposal (20%), 1x2500wd research essay (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

What if all the world really is a stage? In this unit, you will learn key theories and conceptual tools for analysing the broad spectrum of performance events that lie beyond what is conventionally associated with the term `theatreÂ¿. You will conduct original research, focusing on how performance (re)constitutes identity and (re)forms a culture.

**PRFM2602**
**Performance: Production and Interpretation**

**Credit points:** 6 **Session:** Semester 2, Summer Main **Classes:** 1x1hr lecture/week, 1x2hr tutorial/week **Prerequisites:** 18 Junior credit points from subject areas listed in Table A or 12 credit points at 1000 level in Theatre and Performance Studies **Prohibitions:** PRFM2002 **Assessment:** 1x600wd short response to performance (10%), 1x1200wd tutorial paper (30%), 1x500wd raw notes (10%), 1x2200wd performance analysis essay (50%) **Practical field work:** Students will undertake some workshop exercises in their tutorials and will attend professional theatre productions outside class times **Mode of delivery:** Normal (lecture/lab/tutorial) day

How do we make meaning from our experience of text, movement, spatial design, costuming, lighting, sound and other elements of theatrical performance? Through practical workshops and theatre excursions, you will learn some basic production techniques and develop a critical language for analysing live performance.

**SCLG2606**
**Media in Contemporary Society**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** 12 Junior credit points from Sociology **Prohibitions:** SCLG2018 or SCLG2537 **Assessment:** Tutorial participation and 1500wd oral equivalent (15%) and 500wds equivalent poster (35%) and 2500wd Take-home exercise (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will examine key issues and debates within current sociological writings on media in contemporary society. The tutorial discussions focus on media, including radio, film, television, video, print, news, current affairs programmes and advertising, all of which are considered in relation to media audiences. We will consider the research literature on the sociology of media in order to investigate methods of carrying out media research, particularly of media audience research. The aim is to encourage students to develop an informed understanding of media, including their own engagement with media in contemporary society, and to explore computer based technology as an educational tool for studying media in contemporary society.

**INFS2010**
**People, Information and Knowledge**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x 3hr seminar per week **Assumed knowledge:** INFS1000 or INFO1000 or INFO1003 or INFO1903 **Assessment:** Group project (25%), Group presentations (5%), mid-term exam (20%), and Final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

To compete effectively in today's knowledge economy businesses are required to systematically manage their information and knowledge resources. In this unit you will develop an understanding of the main issues businesses face when they develop and implement knowledge management initiatives. You will be introduced to the tools and systems that enable businesses to acquire, store, distribute, analyse, and leverage information and knowledge resources. By focusing on the theoretical and practical principles that link people, information, and organisations, this unit will help you understand the processes of generating, communicating, and using knowledge in businesses, and the way these can be integrated with business strategy and information technology. Assumed knowledge for this unit is INFS1000 or equivalent.

**INFS2020**
**Business Process Modelling and Improvement**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1 x 3 hr seminar per week **Assumed knowledge:** INFS1000 or INFO1000 or INFO1003 or INFO1903 **Assessment:** individual assignment (25%), group project (25%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides you with an in depth understanding of the role of business process management (BPM) and process architectures in a business environment. You will gain essential skills of the entire BPM lifecycle, from process identification to process monitoring, including process modelling, analysis, redesign and automation required to achieve high performing business processes in a service oriented business environment. In this unit, you will attain considerable hands-on skills with BPM tools, by documenting, analysing, and simulating current and improved processes. Assumed knowledge for this unit is INFS1000 or equivalent.

**INFS2030**
**Digital Business Management**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x 3hr seminar per week **Assumed knowledge:** INFS1000 or INFO1000 or INFO1003 or INFO1903 **Assessment:** individual project proposal (10%), group proejct report (35%), group project presentation (5%), mid-term exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will provide you with a detailed overview of the concepts and models used in doing business digitally via the Internet. These concepts and models will enable you to evaluate, synthesise and implement Internet-enabled business models. The unit will provide the critical link between the firm's performance and modern Internet technologies, such as e-Commerce platforms, Social Media and Social Networking. Emphasis will be put on the utilisation of Internet technologies to enable new forms of digital business, rather than on the technologies themselves. Assumed knowledge for this unit is INFS1000 or equivalent.

**MKTG3110**
**Digital Marketing**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x2-hr lecture and 1x50min tutorial per week - plus daily engagement is expected through technology. A number of the tutorials will be scheduled in the laboratories for hands-on sessions. **Prerequisites:** MKTG1001 **Assessment:** tutorial participation (10%), report (20%), presentation (10%), project (25%), final exam (35%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit explores how marketing campaigns are designed, conceptualised and executed digitally. Particular attention is given to techniques unique to digital technologies and the networked nature of social media platforms. Their applications to marketing strategy specifically to do with brand building, target audiences, public relations and communications are covered with an aim to equip students to understand the digital consumer journey.

**MKTG3114**
**New Products Marketing**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x 2hr lecture and 1x 1hr tutorial per week **Prerequisites:** MKTG1001 **Assessment:** tutorial participation (10%), mid-semester exam (20%), presentation (10%), project (30%), final exam (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

New products and services are crucial to successful growth and increased profits in many industries. The goal is to help students learn how to develop and market new products and services in both the private and public sectors. A product development assignment is carried out to reinforce the material covered and to provide realistic examples of how new products are designed, tested and launched.

**MKTG3121**
**Advertising: Creative Principles**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x 2hr lecture and 1x 1hr tutorial per week **Prerequisites:** MKTG1001 **Assessment:** tutorial participation (10%), fortnightly work-in progress reports (15%), midterm exam (28%), group project (30%), group presentation (15%), research component (2%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Most companies use advertising to introduce themselves, their products and services to existing and potential customers. Advertising is their public face and together with integrated marketing communications and public relations is one of the three pillars of commercial communication. This subject explores the creative material that is developed and produced to contact, inform, educate and influence consumer decisions. Advertising is the point where communication theory is put into practice. Understanding the creative principles and practices used by advertising personnel enables the marketer to commission, evaluate and produce creative material to professional industry standards. This subject addresses topics such as the importance of creativity; messaging issues, determining consumer insights; the creative potential and purpose of different media; developing creative concepts; determining the advertising idea; critiquing advertising; identifying key issues; producing the final creative material and taking it to the marketplace.

**COMP2017**
**Systems Programming**

**Credit points:** 6 **Session:** Semester 1 **Classes:** lectures, laboratories **Prerequisites:** INFO1113 OR INFO1105 OR INFO1905 OR INFO1103 **Corequisites:** COMP2123 OR COMP2823 OR INFO1105 OR INFO1905 **Prohibitions:** COMP2129 **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this unit of study, elementary methods for developing robust, efficient, and re-usable software will be covered. The unit is taught in C, in a Unix environment. Specific coding topics include memory management, the pragmatic aspects of implementing data structures such as lists and hash tables and managing concurrent threads. Debugging tools and techniques are discussed and common programming errors are considered along with defensive programming techniques to avoid such errors. Emphasis is placed on using common Unix tools to manage aspects of the software construction process, such as version control and regression testing. The subject is taught from a practical viewpoint and it includes a considerable amount of programming practice.

**COMP2022**
**Programming Languages, Logic and Models**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Tutorials **Prerequisites:** INFO1103 OR INFO1903 OR INFO1113 **Prohibitions:** COMP2922 **Assumed knowledge:** MATH1004 OR MATH1904 OR MATH1064 OR MATH2069 OR MATH2969 **Assessment:** Through semester assessment (50%) and Final Exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides an introduction to the foundations of computational models, and their connection to programming languages/tools. The unit covers various abstract models for computation including Lambda Calculus, and Logic calculi (e. g. concept of formal proofs in propositional, predicate, and temporal logic). For each abstract model, we introduce programming languages/tools that are built on the introduced abstract computational models. We will discuss functional languages including Scheme/Haskell, and Prolog/Datalog.

**COMP2823**
**Data Structures and Algorithms (Adv)**

**Credit points:** 6 **Session:** Semester 1 **Classes:** lectures, tutorials **Prerequisites:** Distinction level result in at least one of INFO1110 OR INFO1113 OR DATA1002 OR INFO1103 OR INFO1903 **Prohibitions:** INFO1105 OR INFO1905 OR COMP2123 **Assumed knowledge:** Distinction-level result in at least one the listed 1000 level programming units **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit will teach some powerful ideas that are central to solving algorithmic problems in ways that are more efficient than naive approaches. In particular, students will learn how data collections can support efficient access, for example, how a dictionary or map can allow key-based lookup that does not slow down linearly as the collection grows in size. The data structures covered in this unit include lists, stacks, queues, priority queues, search trees, hash tables, and graphs. Students will also learn efficient techniques for classic tasks such as sorting a collection. The concept of asymptotic notation will be introduced, and used to describe the costs of various data access operations and algorithms.

**COMP2922**
**Programming Languages, Logic and Models (Adv)**

**Credit points:** 6 **Session:** Semester 2 **Classes:** lectures, tutorials **Prerequisites:** Distinction level result in INFO1103 OR INFO1903 OR INFO1113 **Prohibitions:** COMP2022 **Assumed knowledge:** MATH1004 OR MATH1904 OR MATH1064 OR MATH2069 OR MATH2969 **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit provides an introduction to the foundations of computational models, and their connection to programming languages/tools. The unit covers various abstract models for computation including Lambda Calculus, and Logic calculi (e.g. concept of formal proofs in propositional, predicate, and temporal logic). For each abstract model, we introduce programming languages/tools that are built on the introduced abstract computational models. We will discuss functional languages including Scheme/Haskell, and Prolog/Datalog.

**COMP3027**
**Algorithm Design**

**Credit points:** 6 **Session:** Semester 1 **Classes:** lectures, tutorials **Prerequisites:** COMP2123 OR COMP2823 OR INFO1105 OR INFO1905 **Prohibitions:** COMP2007 OR COMP2907 OR COMP3927 **Assumed knowledge:** MATH1004 OR MATH1904 OR MATH1064 **Assessment:** through semester assessment (40%), final exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides an introduction to the design techniques that are used to find efficient algorithmic solutions for given problems. The techniques covered included greedy, divide-and-conquer, dynamic programming, and adjusting flows in networks. Students will extend

their skills in algorithm analysis. The unit also provides an introduction to the concepts of computational complexity and reductions between problems.

**COMP3308**
**Introduction to Artificial Intelligence**

**Credit points:** 6 **Session:** Semester 1 **Classes:** Tutorials, Lectures **Prohibitions:** COMP3608 **Assumed knowledge:** Algorithms. Programming skills (e.g. Java, Python, C, C++, Matlab) **Assessment:** Through semester assessment (45%) and Final Exam (55%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Artificial Intelligence (AI) is all about programming computers to perform tasks normally associated with intelligent behaviour. Classical AI programs have played games, proved theorems, discovered patterns in data, planned complex assembly sequences and so on. This unit of study will introduce representations, techniques and architectures used to build intelligent systems. It will explore selected topics such as heuristic search, game playing, machine learning, neural networks and probabilistic reasoning. Students who complete it will have an understanding of some of the fundamental methods and algorithms of AI, and an appreciation of how they can be applied to interesting problems. The unit will involve a practical component in which some simple problems are solved using AI techniques.

**COMP3419**
**Graphics and Multimedia**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Tutorials **Prerequisites:** COMP2123 OR COMP2823 OR INFO1105 OR INFO1905 **Assumed knowledge:** Programming skills **Assessment:** Through semester assessment (40%) and Final Exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides a broad introduction to the field of graphics and multimedia computing to meet the diverse requirements of application areas such as entertainment, industrial design, virtual reality, intelligent media management, social media and remote sensing. It covers both the underpinning theories and the practices of computing and manipulating digital media including graphics / image, audio, animation, and video. Emphasis is placed on principles and cutting-edge techniques for multimedia data processing, content analysis, media retouching, media coding and compression.

**COMP3520**
**Operating Systems Internals**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Tutorials **Prerequisites:** (COMP2017 OR COMP2129) AND (COMP2123 OR COMP2823 OR INFO1105 OR INFO1905) **Assessment:** Through semester assessment (40%) and Final Exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will provide a comprehensive discussion of relevant OS issues and principles and describe how those principles are put into practice in real operating systems. The contents include internal structure of OS; several ways each major aspect (process scheduling, inter-process communication, memory management, device management, file systems) can be implemented; the performance impact of design choices; case studies of common OS (Linux, MS Windows NT, etc.).

**COMP3927**
**Algorithm Design (Adv)**

**Credit points:** 6 **Session:** Semester 1 **Classes:** lectures, tutorials **Prerequisites:** COMP2123 OR COMP2823 OR INFO1105 OR INFO1905 **Prohibitions:** COMP2007 OR COMP2907 OR COMP3027 **Assumed knowledge:** MATH1004 OR MATH1904 OR MATH1064 **Assessment:** through semester assessment (40%), final exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit provides an introduction to the design techniques that are used to find efficient algorithmic solutions for given problems. The techniques covered included greedy, divide-and-conquer, dynamic programming, and adjusting flows in networks. Students will extend their skills in algorithm analysis. The unit also provides an introduction to the concepts of computational complexity and reductions between problems.

**ELEC2104**
**Electronic Devices and Circuits**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Tutorials, Laboratories **Assumed knowledge:** Knowledge: ELEC1103. Ohm's Law and Kirchoff's Laws; action of Current and Voltage sources; network analysis and the superposition theorem; Thevenin and Norton equivalent circuits; inductors and capacitors, transient response of RL, RC and RLC circuits; the ability to use power supplies, oscilloscopes, function generators, meters, etc. **Assessment:** Through semester assessment (40%) and Final Exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Modern Electronics has come to be known as microelectronics which refers to the Integrated Circuits (ICs) containing millions of discrete devices. This course introduces some of the basic electronic devices like diodes and different types of transistors. It also aims to introduce students the analysis and design techniques of circuits involving these discrete devices as well as the integrated circuits.

Completion of this course is essential to specialise in Electrical, Telecommunication or Computer Engineering stream.

**ELEC3506**
**Data Communications and the Internet**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Laboratories, Tutorials **Prohibitions:** NETS2150 **Assessment:** Through semester assessment (50%) and Final Exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Students undertaking this unit should be familiar with fundamental digital technologies and representations such as bit complement and internal word representation. Students should also have a basic understanding of the physical properties of communication channels, techniques and limitations. Furthermore, students should be able to apply fundamental mathematical skills.

The unit will cover the following specific material: Communication reference models (TCP/IP and OSI). Circuit switched and packet switched communication. Network node functions and building blocks. LAN, MAN, WAN, WLAN technologies. Protocols fundamental mechanisms. The TCP/IP core protocols (IP, ICMP, DHCP, ARP, TCP, UDP etc. ). Applications and protocols (ftP, Telnet, SMTP, HTTP etc. ), Network Management and Security.

**ELEC3607**
**Embedded Systems**

**Credit points:** 6 **Session:** Semester 1 **Classes:** Lectures, Laboratories **Prerequisites:** ELEC1601 AND ELEC2602 AND COMP2017 **Assumed knowledge:** ELEC1601 AND ELEC2602. Logic operations, theorems and Boolean algebra, data representation, number operations (binary, hex, integers and floating point), combinational logic analysis and synthesis, sequential logic, registers, counters, bus systems, state machines, simple CAD tools for logic design, basic computer organisation, the CPU, peripheral devices, software organisation, machine language, assembly language, operating systems, data communications and computer networks. **Assessment:** Through semester assessment (30%) and Final Exam (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Embedded systems have become pervasive in modern society. The aim of this unit of study is to teach students about embedded systems architecture, design methodology, interfacing and programming. Topics covered include peripheral devices, interrupts, direct memory access (DMA), assembly language, communications and data acquisition. A major design project is part of this course.

**ELEC3610**
**E-Business Analysis and Design**

**Credit points:** 6 **Session:** Semester 1 **Classes:** Project Work - in class, Project Work - own time, Presentation, Tutorials **Prohibitions:** EBUS3003 **Assessment:** Through semester assessment (70%) and Final Exam (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit examines the essential pre-production stages of designing successful internet websites and services. It focuses on the aspects of analysis, project specification, design, and prototype that lead up to the actual build of a website or application. Topics include, B2C,

B2B and B2E systems, business models, methodologies, modeling with use cases / UML and WebML, the Project Proposal and Project Specification Document, Information Architecture and User-Centred Design, legal issues, and standards-based web development. Students build a simple use-case based e-business website prototype with web standards. A final presentation of the analysis, design and prototype are presented in a role play environment where students try to win funding from a venture capitalist. An understanding of these pre-production fundamentals is critical for future IT and Software Engineering Consultants, Project Managers, Analysts and CTOs.

**ISYS2110**
**Analysis and Design of Web Info Systems**

**Credit points:** 6 **Session:** Semester 1 **Classes:** Lectures, tutorials **Prerequisites:** INFO1113 OR INFO1103 OR INFO1105 OR INFO1905 **Prohibitions:** INFO2110 **Assessment:** through semester assessment (40%), final exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This course discusses the processes, methods, techniques and tools that organisations use to determine how they should conduct their business, with a particular focus on how web-based technologies can most effectively contribute to the way business is organized. The course covers a systematic methodology for analysing a business problem or opportunity, determining what role, if any, web-based technologies can play in addressing the business need, articulating business requirements for the technology solution, specifying alternative approaches to acquiring the technology capabilities needed to address the business requirements, and specifying the requirements for the information systems solution in particular, in-house development, development from third-party providers, or purchased commercial-off-the-shelf (COTS) packages.

**INFO3315**
**Human-Computer Interaction**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Laboratories **Assessment:** Through semester assessment (50%) and Final Exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This is a first subject in HCI, Human Computer Interaction. It is designed for students who want to be involved in one of the many roles required to create future technology. There are three main parts: the human foundations from psyschology and physiology; HCI methods for design and evaluation of interfaces; leading edge directions for technologies.

This subject is highly multi-disciplinary. At the core, it is a mix of Computer Science Software Engineering combined with the design discipline, UX - User Experience. It draws on psychology, both for relevant theories and user study methods. The practical work is human-centred with project work that motivates the formal curriculum. This year the projects will be in area of health and wellness.

**ISYS2160**
**Information Systems in the Internet Age**

**Credit points:** 6 **Session:** Semester 2 **Classes:** lectures, tutorials **Prohibitions:** ISYS2140 **Assumed knowledge:** INFO1003 OR INFO1103 OR INFO1903 OR INFO1113 **Assessment:** through semester assessment (50%), final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will provide a comprehensive conceptual and practical introduction to information systems (IS) in the Internet era. Key topics covered include: system thinking and system theory, basic concepts of information systems, internet and e-commerce, e-payment and m-commerce, online marketing and social media, information systems for competitive advantage, functional and enterprise systems, business intelligence, information systems development and acquisition, information security, ethics, and privacy

**PSYC2013**
**Cognitive and Social Psychology**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Three 1 hour lectures and one 1 hour tutorial per week. **Prerequisites:** PSYC1001 and PSYC1002 **Assessment:** One 2 hour exam, major assignment (1500-2000 word essay/report), minor assignment (short written practical exercise and/or tutorial quiz) (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit expands the depth and range of topics introduced in the first year lectures on Cognitive Processes, Social Psychology and Developmental Psychology. The section on Cognitive Processes focuses on current theories of memory, attention, and reasoning and discusses the methods and issues involved in investigating these processes in both healthy individuals and people with cognitive dysfunctions. The second section on Social Psychology examines salient social constructs such as impression management, and prejudice, and explores how mental processes affect social judgment and behaviour. The final section on Developmental Psychology presents and evaluates evidence about the early influences on children's social and cognitive development.

**CAEL2047**
**Animation**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x3-hour studio class/week **Assessment:** project proposal (30%) and major self-directed project (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces you to the fundamental concepts and skills associated with 2D animation production. The unit provides both a conceptual and technical framework for you to explore the possibilities of animation in relation to your existing practice or as a completely new endeavour. Working in the digital domain, you will explore a range of approaches including frame-by-frame animation and stop motion animation. The technical component of this course provides you with the necessary skills to realise a self-directed project while encouraging exploration and experimentation. Class discussions, seminars and individual tutorials support screenings of historical and contemporary animated works to allow you to situate your own projects within a contemporary context.

**CAEL2052**
**Introduction to Digital Publishing**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x3-hour studio class/week **Assessment:** digital booklet (20%) and draft layout (20%) and digital magazine (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study explores the boundary between artwork, publication and portfolio. The unit acquaints you with the basics of InDesign, a software program that has become industry standard for designing digital and paper publications. Focusing on experimental magazines and other small scale artist's publications the unit explores the visual language of contemporary publishing from an artist's perspective. You learn about the complex interplay of text, image and sequence involved in producing multipage documents/artworks through the practical experience of creating your own InDesign publication.

**CAEL2070**
**Digital Compositing**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x3-hour studio class/week **Assessment:** project proposal (30%) and major self-directed project (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides you with a conceptual and technical introduction to the possibilities of digital video composition. The contemporary visual environment is largely defined by the fracturing of the singular filmic screen that is enabled by digital post-production techniques. In this unit you will develop a self-directed video art project that engages and explores this visual environment through the use of video compositing software. Screenings of historical and contemporary video and digital art works will inform the development of student projects and associated research. Class discussions, seminars and individual tutorials will allow you to critically situate your own projects within the context of contemporary practice.

**CATE2007**
**The Art of Memory**

**Credit points:** 6 **Teacher/Coordinator:** Ann Elias **Session:** Semester 1 **Classes:** 1x2-hour seminar/week **Prerequisites:** (THAP1201 and THAP1202) or (CATE1001 and CATE1002) or (12 senior credit points of Art History and Theory) **Assessment:** short visual analysis (20%) and small group presentation (10%) and major essay (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study examines the discourse of memory through the practice of contemporary art and theory. From this perspective, it considers the relationship between memory, the politics of identity, and history through a critical exploration of different forms of remembrance, such as: storytelling and autobiography; collective memory; forgetting and the erasure of time; and trauma and embodiment.

*Textbooks*

James McConkey, The Anatomy of Memory: An Anthology, New York: Oxford University Press, 1996.
Andreas Huyssen, Present Pasts: Urban Palimpsests and the Politics of Memory, California: Stanford University Press, 2003.
Michael Rossington and Anne Whitehead (eds.), Theories of Memory: A Reader, Crawley, W.A.: University of Western Australia Press, 2007.

**CMPN3635**

**Writing Music for the Moving Image**

**Credit points:** 6 **Teacher/Coordinator:** Dr Daniel Blinkhorn **Session:** Semester 1 **Classes:** 6 x 1 hour lectures for the first six weeks; 6 x 2 hour tutorials thereafter **Prerequisites:** MUED1002 or MUSC2653 or MUED4002 **Assessment:** Written paper (20%), Presentation (30%), Final Music (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides a practical introduction to composing music for the screen.

Topics for discussion will include, but not be limited to: the relationship between image and sound, music as a force in dramatic narrative, important scores in cinema history, sound design, music for documentary film and drama, music for games, and non-commercial applications of music for image. Importantly, the course will focus on the practical aspects of film scoring relevant to establishing professional practice; both at a business level and at a technical level. Students in this unit of study must be fluent in sequencing and/or recording and/or music notation software.

**MUSC2653**

**Introduction to Digital Music Techniques**

**Credit points:** 6 **Teacher/Coordinator:** Dr Damian Barbeler **Session:** Semester 1 **Classes:** 2 hr lecture/demonstration/wk **Prerequisites:** 18 Junior credit points **Prohibitions:** MUSC2053 **Assessment:** Sound recording and editing assignment (30%); creative assignments (60%); online assessments, attendance and participation (10%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: An ability to read music at a basic level and an understanding of fundamental musical terminology is an advantage in this unit of study.*

This unit is an introduction to the use of digital sound and music in creative and multimedia contexts. It is a practical course in which students are introduced to tools of sound creation and manipulation. Students will undertake creative projects as a means to learning. In addition, participants will be exposed to a number of approaches to electroacoustic music across the 20th and 21st centuries.

# Honours in the Bachelor of Design Computing

## Admission

Students planning to enrol in the honours program are encouraged to complete a preparatory unit of study as an elective, such as an Independent Study unit, in their third year.

To qualify to enrol in the honours program a student should have qualified for the award of the Bachelor of Design Computing pass degree or a similar qualification in a related field at an acceptable standard, or be a graduate of not more than four years standing. Students should have a weighted average mark (WAM) of at least 70 for the pass degree.

Before applying you should have an approved honours project topic and supervisor. The supervisor must be from the academic staff. We invite you to discuss your plans with a relevant staff member. Students who complete a preparatory unit of study as elective will probably resolve their topic and supervisor during this unit. If you are new to the University one of the Student Administration Centre staff will be able to put you in touch with someone to start the discussions. You can have an associate supervisor if you require shared supervision beyond the immediate expertise of your supervisor.

### The Honours year

The honours course is to be taken full time over two consecutive semesters. Enrolment is effected by taking 48 credit points, being DECO4001 and DECO4002 in the first semester and DECO4003 and DECO4004 in the second semester.

There will be no formal classes. You are expected to make arrangements for regular (weekly) contact with your supervisor on an individual basis to chart the work, receive advice, and review and monitor progress. At the conclusion of the year you are expected to submit a body of work, usually a dissertation, properly bound for addition to the school's honours and master's dissertation collection.

### Submission date and form of dissertation

All honours dissertations are to be lodged with the supervisor by the end of the first week of the formal examination period in the final semester of enrolment.

Where this date is later than the due date for honours results for postgraduate research scholarships (eg, APA), an indicative mark will be provided by the student's supervisor in consultation with the Principal Examiner to be based, in part, upon presentation of a draft of the dissertation to the supervisor and the Principal Examiner. If no draft is provided, no indicative mark shall be provided.

Dissertations for examination can be simply bound or held together. Examined and amended dissertations are to be permanently bound (cloth binding preferably) with the student's name and dissertation title written on the spine. The examination copy and the permanently bound copy must include a CD-ROM or DVD which includes all software and digital documentation of the research work as appropriate. These are held permanently in the school's honours and master's dissertation collection. As a guide to your own dissertation you may wish to look at this collection of works.

The dissertation should be 15,000 to 25,000 words in length. A practice-based honours dissertation has different submission requirements, described below.

### Types of dissertation

Students, in consultation with their supervisor or program coordinator, should complete one of the following types of dissertation:

***Design-based***

The aim of a design-based dissertation is to introduce a novel design work or component technology or technology-driven design process that is realised through the introduction, incorporation, enhancement or development of cutting-edge computing. The dissertation should report on the aims and objectives of the work, the rationale and process taken in its conception and development, and a detailed reflection or empirical evaluation of the design work. Sufficient digital documentation of the designed work should be provided with the dissertation.

***Model-based***

A model-based dissertation aims to create a computational model of a theory or phenomenon related to design or to model design computationally based on an analogy to another system. Phenomena that have been modelled computationally include creativity, motivation and emergence. Models of design based on analogies to other systems include evolution, co-evolution and systems biology. The computational model is implemented and validated or tested to ensure verisimilitude to the phenomenon being modelled.

***Empirical***

An empirical study aims to characterise or explain. In design studies, empirical research is often conducted on the cognitive behaviour of designers, the social dynamics of group-based design or participatory design, or a critical study of the design of specific objects. The student will utilise a variety of quantitative and qualitative research methods including survey, interview, experimentation, participatory action research and parametric or non-parametric modelling. Where the research will include human participants, students will need to follow the University ethics policies and guidelines for research involving humans. Due to the time frame for obtaining approval for such research, students are strongly encouraged to apply early in their honours research year or to conduct their research within the framework of an existing study led by their supervisor.

***Practice-based***

A practice-based honours dissertation needs to include creative practice as an integral component in relation to the issues and questions raised in this research, its outcomes and its research approach and methods. Creative outcomes need to be new or original artwork and can include the following areas:

- video
- composition
- performance
- digital photography
- electronic installation
- kinetic sculpture
- robotic art and software/hardware prototype (code art, devices, smart materials, wearable technology).

The creative outcome cannot stand alone as research, but will be assessed together with a dissertation that includes research questions, objectives and a review of relevant artwork/artists in the chosen research area, as well as a written, critical reflection articulating the research process.

The practice-based dissertation includes different submission requirements:

1. *Written component*: Dissertation of 6000 to 8000 words which is inclusive of a 1000 to 2000 word critical reflection articulating the research process.
2. *Digital documentation*: Practice-based component (exhibition, performance or site-specific installation) in the form of either (i) a video DVD (5 10 mins) or audio recording (5 10 mins) or (ii) 5 10 high resolution images (eg TIFF format) or 3 x 30 second CD quality samples.
3. *Public exhibition component*: The student is to organise a public exhibition (in the form of an exhibition, performance or site-specific installation) at least two weeks before the submission of the dissertation to the supervisor.

### Non-completion

Students who do not complete the honours year will be awarded the pass degree. Those who terminate their study prior to the end of the second semester of study will be awarded a grade of DNF or Discontinue without failure.

### Determination of honours

The honours dissertation itself receives a mark, which is recorded on the transcript next to DECO4004. The other units will be converted to R for Satisfied Requirements upon successful completion of the dissertation.

The grade of honours is determined by using a mark derived from weighting the mark for the honours dissertation at 70 percent and the weighted average mark (WAM) of the pass degree at 30 percent. While this number is not recorded on the transcript, the final class of honours awarded is.

The honours degree of Bachelor of Design Computing shall be awarded to eligible students, with the following grades:

- Honours Class I (with a mark of at least 80)
- Honours Class II, Division 1 (with a mark of at least 75)
- Honours Class II, Division 2 (with a mark of at least 70).

The University Medal may be awarded as described in the frequently asked questions section.

A student of the honours program who does not meet the requirements for award of honours shall be awarded the Bachelor of Design Computing pass degree.

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Bachelor of Design Computing Honours units of study** | | | |
| Candidates are required to complete all units of study listed in this table. Candidates enrol in A and B in their first semester and C and D in their second semester. | | | |
| **DECO4001 Design Computing Honours Research A** | 12 | *Note: Department permission required for enrolment* | Semester 1 Semester 2 |
| **DECO4002 Design Computing Honours Research B** | 12 | **C** DECO4001 | Semester 1 Semester 2 |
| **DECO4003 Design Computing Honours Research C** | 12 | **C** DECO4002 | Semester 1 Semester 2 |
| **DECO4004 Design Computing Honours Research D** | 12 | **C** DECO4003 | Semester 1 Semester 2 |

# Bachelor of Design Computing Honours units of study

Candidates are required to complete all units of study listed in this table. Candidates enrol in A and B in their first semester and C and D in their second semester.

**DECO4001**
**Design Computing Honours Research A**

**Credit points:** 12 **Teacher/Coordinator:** Dr Somwrita Sarkar **Session:** Semester 1, Semester 2 **Mode of delivery:** Normal (lecture/lab/tutorial) day
*Note: Department permission required for enrolment.*

Students must submit an Honours application form. Entry into Honours in the Bachelor of Design Computing requires you to have completed your pass degree with a weighted average mark of at least 70.

The Honours degree requires full-time study over two semesters (DECO4001 and DECO4002 and then DECO4003 and DECO4004). In special cases the Dean may approve a part-time enrolment over four semesters. The units are not assessed separately. A single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student.

The dissertation should be submitted by the end of the first week of the formal examination period in the semester in which DECO4004 Design Computing Honours Research D is taken.

**DECO4002**
**Design Computing Honours Research B**

**Credit points:** 12 **Teacher/Coordinator:** Dr Somwrita Sarkar **Session:** Semester 1, Semester 2 **Corequisites:** DECO4001 **Mode of delivery:** Normal (lecture/lab/tutorial) day

Students must submit an Honours application form. Entry into Honours in the Bachelor of Design Computing requires you to have completed your pass degree with a weighted average mark of at least 70.

The Honours degree requires full-time study over two semesters (DECO4001 and DECO4002 and then DECO4003 and DECO4004). In special cases the Dean may approve a part-time enrolment over four semesters. The units are not assessed separately. A single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student.

The dissertation should be submitted by the end of the first week of the formal examination period in the semester in which DECO4004 Design Computing Honours Research D is taken.

**DECO4003**
**Design Computing Honours Research C**

**Credit points:** 12 **Teacher/Coordinator:** Dr Somwrita Sarkar **Session:** Semester 1, Semester 2 **Corequisites:** DECO4002 **Mode of delivery:** Normal (lecture/lab/tutorial) day

Students must submit an Honours application form. Entry into Honours in the Bachelor of Design Computing requires you to have completed your pass degree with a weighted average mark of at least 70.

The Honours degree requires full-time study over two semesters (DECO4001 and DECO4002 and then DECO4003 and DECO4004). In special cases the Dean may approve a part-time enrolment over four semesters. The units are not assessed separately. A single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student.

The dissertation should be submitted by the end of the first week of the formal examination period in the semester in which DECO4004 Design Computing Honours Research D is taken.

**DECO4004**

**Design Computing Honours Research D**

**Credit points:** 12 **Teacher/Coordinator:** Dr Somwrita Sarkar **Session:** Semester 1, Semester 2 **Corequisites:** DECO4003 **Mode of delivery:** Normal (lecture/lab/tutorial) day

Students must submit an Honours application form. Entry into Honours in the Bachelor of Design Computing requires you to have completed your pass degree with a weighted average mark of at least 70.

The Honours degree requires full-time study over two semesters (DECO4001 and DECO4002 and then DECO4003 and DECO4004). In special cases the Dean may approve a part-time enrolment over four semesters. The units are not assessed separately. A single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student.

The dissertation should be submitted by the end of the first week of the formal examination period in the semester in which DECO4004 Design Computing Honours Research D is taken.

# Overseas exchange

## Exchange in the Bachelor of Design Computing

The school may approve international exchange for qualified students who have completed at least one full year of study. All students must complete the final semester of third year at the University of Sydney. Exchange will not be considered for honours.

Exchanges may be for one or two semesters. Students must apply through the Study Abroad and Exchange Office. Each student's program must be approved in consultation with the program director of the degree.

Exchange students are required to enrol in a full-time load at the University of Sydney in each semester of exchange, and will incur the tuition costs associated with that load. No tuition costs will be incurred with the partner university.

Exchange units should be taken as part of the degree, satisfying the requirements that would normally be covered at this university during the same period. Exchange should not be in addition to the degree requirements.

Specially designated units of study will be recorded on the transcript. A result of 'SR' for 'Satisfied Requirements' will be recorded by this university against each successfully completed unit. The transcript of the exchange university will be the official detailed record of exactly what was completed during the exchange. Exchange results will not count towards a student's weighted average mark (WAM).

For more information please contact the Study Abroad and Exchange Office.

### Exchange units of study

The exchange units for enrolment at the University of Sydney, to be approved with the program director, shall be selected from the following table:

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Bachelor of Design Computing exchange units** | | | |
| **Year 2 core units of study** | | | |
| **Senior units of study** | | | |
| **DECO2670**<br>**Exchange Design Computing Studio 2** | 12 | | Semester 1<br>Semester 2 |
| **DECO2660**<br>**Exchange Design Computing Core** | 6 | | Intensive July<br>Semester 1<br>Semester 2 |
| **Year 2 elective units of study** | | | |
| **Senior units of study** | | | |
| **DECO2664**<br>**Design Comp Exchange Elective 2A** | 6 | | Semester 1<br>Semester 2 |
| **DECO2665**<br>**Design Comp Exchange Elective 2B** | 6 | | Semester 1<br>Semester 2 |
| **DECO2666**<br>**Design Comp Exchange Elective 2C** | 6 | | Semester 1<br>Semester 2 |
| **DECO2667**<br>**Design Comp Exchange Elective 2D** | 6 | | Semester 1<br>Semester 2 |
| **DECO2668**<br>**Design Comp Exchange Elective 2E** | 6 | | Semester 1<br>Semester 2 |
| **DECO2669**<br>**Design Comp Exchange Elective 2F** | 6 | | Semester 1<br>Semester 2 |
| **Year 3 core units of study** | | | |
| **Senior units of study** | | | |
| **DECO3660**<br>**Exchange Design Computing Studio 3** | 12 | | Semester 1<br>Semester 2 |
| **Year 3 elective units of study** | | | |
| **Senior units of study** | | | |
| **DECO3662**<br>**Design Computing Exchange Elective 3A** | 6 | | Semester 1<br>Semester 2 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **DECO3663**<br>**Design Computing Exchange Elective 3B** | 6 | | Semester 1<br>Semester 2 |
| **DECO3664**<br>**Design Computing Exchange Elective 3C** | 6 | | Semester 1<br>Semester 2 |

# Postgraduate coursework

## Overview

This section details the graduate coursework degrees available within The Sydney School of Architecture, Design and Planning, with the exception of the Master of Architecture professional degree, which is discussed in a separate section.

## Courses

The following postgraduate coursework degrees are offered by The Sydney School of Architecture, Design and Planning at the graduate certificate, graduate diploma and master's level:

- Architectural Science
- Heritage Conservation
- Interaction Design and Electronic Arts
- Urban Design
- Urban and Regional Planning
- Urbanism.

## Streams

Some of the degrees require or allow streams to be completed. In order to complete a stream, a student must study a minimum set of prescribed core and optional units of study which build expertise in that area. The following degrees offer streams:

*Master of Architectural Science*

- Audio and Acoustics
- Building Services (Graduate Certificate only)
- Facilities Management (Graduate Certificate only)
- High Performance Buildings
- Illumination Design
- Sustainable Design
- combination of any two Architectural Science streams.

*Master of Interaction Design and Electronic Arts*

- Audio and Acoustics
  Illumination Design
  Also available without specialisation

*Master of Urban and Regional Planning*

- Heritage Conservation
- also available without specialisation

*Master of Urbanism*

- Heritage Conservation
- Urban Design
- Urban and Regionnal Planning

## Admission

Applicants for Urban Design must hold an undergraduate degree in architecture, landscape architecture, urban planning, town planning, urbanism, geography or a related field.
Applicants for other degrees are normally expected to hold a bachelor's degree from this or another university. Where this degree is not directly relevant to the chosen field, applicants may be asked to furnish evidence that they are suitably qualified for the course. Applicants without a bachelor's degree may be admitted to the graduate certificate on a probationary basis. If they achieve an average mark in excess of 70 they may apply for admission to the graduate diploma or master's level.

**Articulation from graduate certificate or diploma to master's**

Students are encouraged to enrol into the degree and stream that they intend to complete. If you wish to complete a master's degree you should apply for the master's program. However, the postgraduate degrees are articulated, allowing easy progression (or regression) from the graduate certificate to the graduate diploma or master's degree, or vice versa. The main difference between the level of award is the total number of credit points required, as well as the number of core, optional and elective units of study required. A student who begins with a graduate certificate can easily upgrade to a higher award. A student who begins with a master's degree but decides not to continue may be able to graduate with a graduate diploma or graduate certificate.

**Master's degrees requiring 72 and 96 credit points**

Most of the master's degrees listed here require 72 credit points, or 1.5 years of full-time study. However, the following master's degrees require 96 credit points, or two years of full-time study, and allow the combination of two programs:

- Master of Urbanism (Heritage Conservation)
- Master of Urbanism (Urban Design)
- Master of Urbanism (Urban and Regionnal Planning)
- Master of Architectural Science (combination of any two Architectural Science streams)
- Master of Interaction Design and Electronic Arts (Audio and Acoustics)
- Master of Interaction Design and Electronic Arts (Illumination Design)

The same principles of articulation apply: a candidate enrolled in a 72 credit point master's can upgrade to an appropriate 96 credit point master's, and vice-versa. However, students intending to complete a 96 credit point master's degree are advised to plan this carefully from the beginning of their candidature to ensure they can complete all requirements in a timely fashion.

## Graduation

Students who choose to articulate their program will only graduate with the highest qualification they achieve. Candidates should note that the Master of Urbanism with two streams and Master of Architectural Science with two streams leads to the award of one master's degree only.

# Degree requirements summary

The following summary is subordinate to the full set of resolutions of the school and the resolutions specific to each program. It does not contain all of the terms of candidature. Students are strongly advised to read the full resolutions and monitor their progress through their course.

**Master's degrees** 72 credit points selected from the relevant degree table, comprising core and elective units to the number specified in the following table of requirements. A full-time student will finish the program in three semesters, except:

**Master of Architectural Science (two streams)** 96 credit points selected from the relevant degree table. The candidate must decide which of the two streams is primary, and meet the core and optional

requirements for that stream as specified in the 'Table of Requirements'. The candidate must decide which of the two streams is secondary, and meet the core requirements for that stream as specified in the 'Table of requirements'. A unit that is common to the requirements of both streams may count towards the requirements for both streams, but may only count once in the total credit points for the degree. A full-time student will finish the program in four semesters.

**Graduate diplomas** 48 credit points from the relevant degree table, comprising core and elective units to the number specified in the following 'Table of Requirements'. A full-time student will finish the program in two semesters.

**Graduate certificates** 24 credit points from the relevant degree table, comprising of core and elective units to the number specified in the following 'Table of Requirements'. A full-time student will finish the program in one semester.

### Study in other faculties

Students in the graduate diploma or master's programs may request permission to substitute up to 18 credit points worth of units of study with graduate units from other programs in the University or from other universities. Permission must be requested in advance.

# Master of Architecture

## Aims of the Master of Architecture

The Master of Architecture program focuses on preparing students for the complex and challenging role of the professional architect. The program centres on design studios, supported by taught units in history and theory, advanced architectural technologies, and practice. In addition, there are is a wide range of elective units for students to extend their knowledge and skills into other related areas.

The basic aims of the professional Master of Architecture program are to provide the knowledge, skills and experience to equip the graduate architects. The current practice of architecture is extraordinarily diverse and complex; and no course can provide training in depth training for all areas of practice. It is therefore essential that students obtain from the course a firm grounding in fundamentals, an ability to think creatively and logically, and a capacity to explore for themselves those areas they wish to pursue in detail.

The Master of Architecture program will enable the student to:

- gain knowledge and skills necessary to becoming an architect, noting the increasing complexity and diversity of the architect's role
- satisfy, where possible, the demands of the professional and statutory bodies for entry to the professional institute and to qualify for registration, with minimal additional examination. The contribution of the program is determined within the context of the university's academic independence in the judgements it makes on the education it provides.
- experience a range of cultural, technical and theoretical approaches to the production and understanding of architecture
- be exposed to and acquire a range of knowledge and skills that will result in graduates who can provide the community with the highest quality of architecture, including the ability to think clearly and critically, and to make reasoned judgements.

# Master of Architecture enrolment guide

The Master of Architecture is a two-year degree when undertaken full-time. To qualify for the degree, candidates must complete the degree requirements as specified in the resolutions of the Senate and School (see chapter 18). All students should read the degree resolutions and monitor their progress through the degree by reference to them. The following points summarise the resolutions but do not replace them.

## Summary of requirements

In order to qualify for the award of the pass degree candidates:

- must complete successfully 96 credit points
- must complete successfully 78 credit points from the core units of study as described in Table M
- must complete successfully 18 credit points from elective units of study from those listed in Table M or, with permission from the unit coordinator concerned, from graduate units within the School.

## Planning your degree

The program has been designed so that some core units should be taken in a certain order and the remaining core and elective units fitted with them. A recommended enrolment planner for the core units of the degree follows.

### Master of Architecture enrolment planner – Semester One commencement

| March Semester | July Semester | March Semester | July Semester |
|---|---|---|---|
| **Research studios (12 Credit Points)** | | | |
| **MARC4001** Urban Architecture or **MARC4002** Sustainable Architecture or **MARC4003** Digital Architecture | **MARC4001** Urban Architecture or **MARC4002** Sustainable Architecture or **MARC4003** Digital Architecture | **MARC4001** Urban Architecture or **MARC4002** Sustainable Architecture or **MARC4003** Digital Architecture | **MARC5001** Graduation Studio (12) |
| (and) | (and) | (and) | (and) |
| **Core (6 Credit Points)** | | | |
| **MARC4101** Advanced Technologies 1 | **MARC5101** Advanced Technologies 2 | **MARC4101** Advanced Technologies | **MARC5101** Advanced Technologies 2 |
| (and/or) | (and/or) | (and/or) | (and/or) |
| **MARC4201** Modern Architectural History | **MARC4102** Modern Architectural Theory | **MARC4201** Modern Architectural History | **MARC4102** Modern Architectural Theory |
| | (and/or) | | (and/or) |
| | **MARC5102** Contract Documentation | | **MARC5102** Contract Documentation |

### Master of Architecture enrolment planner – Semester Two commencement

| July Semester | March Semester | July Semester | March Semester |
|---|---|---|---|
| **Research studios (12 Credit Points)** | | | |
| **MARC4001** Urban Architecture or **MARC4002** Sustainable Architecture or **MARC4003** Digital Architecture | **MARC4001** Urban Architecture or **MARC4002** Sustainable Architecture or **MARC4003** Digital Architecture | **MARC4001** Urban Architecture or **MARC4002** Sustainable Architecture or **MARC4003** Digital Architecture | **MARC5001** Graduation Studio (12) |
| (and) | (and) | (and) | (and) |

| July Semester | March Semester | July Semester | March Semester |
|---|---|---|---|
| **Core (6 Credit Points)** | | | |
| **MARC5101**<br>Advanced Technologies 2 | **MARC4101**<br>Advanced Technologies 1 | **MARC5101**<br>Advanced Technologies 2 | **MARC4101**<br>Advanced Technologies 1 |
| (and/or) | (and/or) | (and/or) | (and/or) |
| **MARC4102**<br>Modern Architectural Theory | **MARC4201**<br>Modern Architectural History | **MARC4102**<br>Modern Architectural Theory | |
| (and/or) | | (and/or) | |
| **MARC5102**<br>Contract Documentation | | **MARC5102**<br>Contract Documentation | |

# Master of Architecture

## Master of Architecture

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the School, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

### Course Resolutions

#### 1 Course Codes

| Code | Course title |
|---|---|
| MAARCHIT-02 | Master of Architecture |

#### 2 Attendance pattern

The attendance pattern for this course is full time or part time, depending on study load.

#### 3 Master's type

The master's degree in these resolutions is a professional master's course, as defined by the Coursework Rule.

#### 4 Admission to candidature

(1) Available places will be offered to qualified applicants based on merit, according to the following admission criteria. In exceptional circumstances the Head of School and Dean may admit applicants without these qualifications but where evidence of experience and achievement is deemed by the Head of School and Dean to be equivalent.

(2) Admission to the degree requires:

(a) a Bachelor of Design in Architecture, or an equivalent qualification, from the University of Sydney, with a credit average across all units (65% or equivalent), and completion of the Master of Architecture prerequisite unit of study BDES3025 Architectural Professional Practice; or

(b) a Bachelor of Architecture and Environments from the University of Sydney with a credit average across all units (65% or equivalent); completion of the Master of Architecture prerequisite unit of study BDES3025 Architectural Professional Practice; and provision of a portfolio of a standard considered to be satisfactory by the Program Director; or

(c) completion of a recognised undergraduate program in architectural studies from another institution with a credit average (65% or equivalent) over the final two years of study, with the provision of a portfolio of a standard considered to be satisfactory by the Program Director.

#### 5 Requirements for award

(1) The units of study that may be taken for this award are set out in Table M.

(2) To qualify for the award of the Master of Architecture a candidate must complete 96 credit points, including:

(a) 78 credit points of core units of study; and

(b) 18 credit points of elective units of study.

#### 6 Credit for previous study

Credit transfer is subject to the provisions of the Coursework Rule and the Resolutions of the University of Sydney School of Architecture, Design and Planning. Credit may be granted in the Master of Architecture for a unit of study completed in excess of the requirements for completion of the Bachelor of Design in Architecture only if that unit is deemed by the Head of School and Dean to contribute to the degree requirements of the Master of Architecture.

#### 7 Transitional provisions

(1) These resolutions apply to students who commenced their candidature after 1 January, 2017 and students who commenced their candidature prior to 1 January, 2017 who elect to proceed under these resolutions.

(2) Candidates who commenced prior to 1 January, 2017 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2022. The School may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

# Master of Architecture

## Units of study

| Unit of study | Credit points | A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition | Session |
|---|---|---|---|
| **Master of Architecture Core units of study** | | | |
| Candidates are required to complete the following core units of study: | | | |
| **MARC4001**<br>**Urban Architecture Research Studio** | 12 | *This studio cannot be taken in the same semester as MARC4002 or MARC4003. Students may incur materials costs in this unit.* | Semester 1<br>Semester 2 |
| **MARC4002**<br>**Sustainable Architecture Research Studio** | 12 | *Note: Department permission required for enrolment*<br>*This studio cannot be taken in the same semester with MARC4001 or MARC4003. Students may incur materials costs in this unit.* | Semester 1<br>Semester 2 |
| **MARC4003**<br>**Digital Architecture Research Studio** | 12 | *This studio cannot be taken in the same semester with MARC4001 or MARC4002. Students may incur materials costs in this unit.* | Semester 1<br>Semester 2 |
| **MARC5001**<br>**Graduation Studio** | 12 | **P** MARC4001 and MARC4002 and MARC4003<br>**N** ARCH5201 or MARF5201<br>*Students may incur materials costs in this unit.* | Semester 1<br>Semester 2 |
| **MARC4101**<br>**Advanced Technologies 1** | 6 | **C** MARC4001 or MARC4002 or MARC4003<br>**N** ARCH4202 | Semester 1 |
| **MARC5101**<br>**Advanced Technologies 2** | 6 | **N** ARCH4203 | Semester 2 |
| **MARC4102**<br>**Modern Architectural Theory** | 6 | **N** ARCH6104 or ARCH9048 or ARCH9049 | Semester 2 |
| **MARC4201**<br>**Modern Architectural History** | 6 | **N** ARCH4102 | Semester 1 |
| **MARC5102**<br>**Contract Documentation** | 6 | **N** ARCH4103 | Semester 2 |
| **Elective units of study** | | | |
| Candidates must complete 18 credit points from the units of study listed below. With permission of the unit of study coordinator, students may also undertake graduate units of study in the School. | | | |
| **ARCH9001**<br>**Urban Design Studio: Urban Precinct** | 12 | **P** ARCH9100 | Semester 2 |
| **ARCH9063**<br>**Urban Form and Design** | 6 | **A** Some prior study of architectural, urban or planning history.<br>**P** ARCH9100<br>**N** ARCH9021 | Semester 2 |
| **ARCH9074**<br>**Principles of Heritage Conservation** | 6 | **N** ARCH9003<br>*Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9075**<br>**New Design in Old Settings** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9094**<br>**Counter-Practices in Architecture**<br>*This unit of study is not available in 2018* | 6 | **A** BDES1011 and BDES2027 and BDES3011<br>**N** DESA3012<br>*Note: Department permission required for enrolment* | Semester 2 |
| **ARCH9104**<br>**Architecture and Diagrams**<br>*This unit of study is not available in 2018* | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9105**<br>**Architectural Drawing Through History** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9106**<br>**Architectural Investigations: Models** | 6 | *Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **ARCH9107**<br>**Prefab Architecture** | 6 | *Note: Department permission required for enrolment* | Intensive February |
| **ARCH9109**<br>**Advanced Fabrication** | 6 | *Note: Department permission required for enrolment* | Semester 2 |
| **ARCH9110**<br>**Code to Production** | 6 | *Note: Department permission required for enrolment* | Intensive July |
| **ARCH9111**<br>**Broken Hill and Far West NSW Projects**<br>*This unit of study is not available in 2018* | 6 | *Note: Department permission required for enrolment* | Intensive July |
| **ARCH9112**<br>**Finding Country** | 6 | *Note: Department permission required for enrolment* | Intensive January |
| **ARCH9113**<br>**Advanced Topics in Australian Architecture** | 6 | **N** DAAE2001 | Semester 2 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **DESA9008**<br>**Object Design (Material and Light)** | 6 | **A** DESA1555<br>**N** AWSS2020<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DESA9012**<br>**2D Print Processes in Design** | 6 | **N** AWSS2026<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DESA9013**<br>**Arch + Design Material Processes (Casting)** | 6 | **N** AWSS2027<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DESA9014**<br>**Arch + Design Material Processes (Ceramics)** | 6 | **N** AWSS2010<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DESC9014**<br>**Building Construction Technology** | 6 | | Semester 1 |
| **DESC9015**<br>**Building Energy Analysis** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **DESC9048**<br>**Operational Facility Management** | 6 | | Semester 1 |
| **DESC9074**<br>**Project Management** | 6 | | Semester 2 |
| **DESC9138**<br>**Architectural and Audio Acoustics** | 6 | | Semester 1 |
| **DESC9169**<br>**Daylight in Buildings** | 6 | **N** DESC9106 | Semester 2 |
| **IDEA9106**<br>**Design Thinking** | 6 | *Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **MARF5201**<br>**Honours Studio** | 12 | **P** MARC4001 and MARC4002 and MARC4003<br>**C** MARF5301<br>**N** MARC5001 or MARC5002 or MARC5003 or MARC5004<br>*Note: Department permission required for enrolment*<br>*Students may incur materials costs in this unit. To qualify for honours equivalence in the MArch students must achieve a WAM of at least 80 in all units of study attempted.* | Semester 1<br>Semester 2 |
| **MARF5301**<br>**Honours Report** | 6 | **P** 72 credit points with WAM of at least 80.<br>**C** MARF5201<br>**N** ARCF5301<br>*Note: Department permission required for enrolment*<br>*To qualify for honours equivalence in the MArch students must achieve a WAM of at least 80 in all units attempted.* | Semester 1<br>Semester 2 |
| **MARC6102**<br>**3D Computer Design Modelling** | 6 | *Enrolment numbers limited by teaching resources. If your attempt to enrol online is unsuccessful, please seek permission from the Student Administration Centre (SAC).* | Semester 1<br>Semester 2 |
| **MARC6202**<br>**Architecture Workshop A** | 6 | *Note: Department permission required for enrolment*<br>*This unit is offered only when a workshop has been arranged. When available, workshops are advertised to students. Students may incur materials costs in this unit.* | Intensive March<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **MARC6203**<br>**Architecture Workshop B** | 6 | *Note: Department permission required for enrolment*<br>*This unit is offered only when a workshop has been arranged. When available, workshops are advertised to students. Students may incur materials costs in this unit.* | Intensive March<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **MARC6204**<br>**Graduate Exhibition** | 6 | *Note: Department permission required for enrolment* | Semester 2 |
| **ARCH9039**<br>**General Elective 1** | 6 | *Note: Department permission required for enrolment* | Intensive April<br>Intensive August<br>Intensive February<br>Intensive July<br>Intensive June<br>Intensive March<br>Intensive May<br>Intensive November<br>Intensive October<br>Intensive September<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |

| Unit of study | Credit points | A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition | Session |
|---|---|---|---|
| **ARCH9040**<br>**General Elective 2** | 6 | *Note: Department permission required for enrolment* | Intensive April<br>Intensive August<br>Intensive July<br>Intensive June<br>Intensive March<br>Intensive May<br>Intensive November<br>Intensive October<br>Intensive September<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **ARCH9058**<br>**General Elective 7** | 6 | *Note: Department permission required for enrolment* | Intensive April<br>Intensive August<br>Intensive February<br>Intensive January<br>Intensive July<br>Intensive June<br>Intensive March<br>Intensive May<br>Intensive November<br>Intensive October<br>Intensive September<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **ARCH9059**<br>**General Elective 8** | 6 | *Note: Department permission required for enrolment* | Intensive April<br>Intensive August<br>Intensive January<br>Intensive July<br>Intensive June<br>Intensive March<br>Intensive May<br>Intensive November<br>Intensive October<br>Intensive September<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **ARCH9085**<br>**General Elective 9** | 6 | *Note: Department permission required for enrolment* | Intensive April<br>Intensive August<br>Intensive July<br>Intensive June<br>Intensive March<br>Intensive May<br>Intensive November<br>Intensive October<br>Intensive September<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **ARCH9086**<br>**General Elective 10** | 6 | *Note: Department permission required for enrolment* | Intensive April<br>Intensive August<br>Intensive July<br>Intensive June<br>Intensive March<br>Intensive May<br>Intensive November<br>Intensive October<br>Intensive September<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **ARCH9087**<br>**General Elective 11** | 6 | *Note: Department permission required for enrolment* | Intensive April<br>Intensive August<br>Intensive July<br>Intensive June<br>Intensive March<br>Intensive May<br>Intensive November<br>Intensive October<br>Intensive September<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |
| **ARCH9088**<br>**General Elective 12** | 6 | *Note: Department permission required for enrolment* | Intensive April<br>Intensive August<br>Intensive July<br>Intensive June<br>Intensive March<br>Intensive May<br>Intensive November<br>Intensive October<br>Intensive September<br>Semester 1<br>Semester 1a<br>Semester 1b<br>Semester 2<br>Semester 2a<br>Semester 2b |

# Master of Architecture

## Unit of Study descriptions

### Master of Architecture Core units of study

Candidates are required to complete the following core units of study:

**MARC4001**
**Urban Architecture Research Studio**

**Credit points:** 12 **Teacher/Coordinator:** Dr Francois Blanciak **Session:** Semester 1, Semester 2 **Classes:** Lecture and studio contact (technical consultants and demonstrations as required), plus self-directed preparation and assignments, for a minimum student commitment averaging 18 hours per week. **Assessment:** Preliminary research, design development, interim reviews (40%); Final project and portfolio review (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This studio cannot be taken in the same semester as MARC4002 or MARC4003. Students may incur materials costs in this unit.*

The studio examines the role and agency of architecture in the urban context - interrogating the internal and external parameters that act on the design process at incremental urban scales and intensities and engaging with the societal, financial, legislative and managerial frameworks that shape urban development. The studio will prompt students to develop critical positions in regard to urban issues and to research, extend and explore those positions through the architectural design process.

MARC4001 Urban Architecture Research Studio, MARC4002 Sustainable Architecture Research Studio and MARC4003 Digital Architecture Research Studio are all available in both Semesters 1 and 2. Students may enrol or pre-enrol freely, but some will be asked to swap to create equal groups. After three semesters each student will have done each of the studios. The studios examine the relationships between architecture and urbanism; architecture and sustainability; and architecture and digital design. Each is based around one or more design projects which address a specialised area of study, supported by lectures and seminars which introduce the relevant theory, knowledge and design precedents. Studios require the investigation of key technical issues and systems, and their innovative integration in the design, with the preparation of appropriate documentation. On the successful completion of these units, students will have demonstrated: an ability to formulate, interpret and communicate appropriate concepts derived from the study of brief and site; an ability to extend those starting points into a working design proposal; an ability to develop the design proposal in response to critique, and produce a building design which demonstrably embodies understanding of the principles associated with the specialised study area; an ability to communicate the design ideas effectively through appropriate graphic and three-dimensional means using architectural conventions; and an ability to cohesively design and execute a comprehensive presentation of the project. These units are core to the Master of Architecture.

**MARC4002**
**Sustainable Architecture Research Studio**

**Credit points:** 12 **Teacher/Coordinator:** Semester 1 Mr Michael Muir, Semester 2 Mr Daniel Ryan **Session:** Semester 1, Semester 2 **Classes:** Lecture and studio contact (technical consultants and demonstrations as required), plus self-directed preparation and assignments, for a minimum total student commitment averaging 18 hours per week. **Assessment:** Preliminary research, design development, interim reviews (40%); Final project and portfolio review (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment. Note: This studio cannot be taken in the same semester with MARC4001 or MARC4003. Students may incur materials costs in this unit.*

MARC4002 Studio B Sustainable Architecture will focus on the theories, technologies and techniques that promote the creation of a sustainable built environment. The studio projects will directly explore the interdependent issues of environmental, social and economic sustainability. The studio will prompt students to develop critical positions in regard to sustainability and to research, extend and explore those positions through the architectural design process.

MARC4001 Urban Architecture Research Studio, MARC4002 Sustainable Architecture Research Studio and MARC4003 Digital Architecture Research Studio are all available in both Semesters 1 and 2. Students may enrol or pre-enrol freely, but some will be asked to swap to create equal groups. After three semesters each student will have done each of the studios. The studios examine the relationships between architecture and urbanism; architecture and sustainability; and architecture and digital design. Each is based around one or more design projects which address a specialised area of study, supported by lectures and seminars which introduce the relevant theory, knowledge and design precedents. Studios require the investigation of key technical issues and systems, and their innovative integration in the design, with the preparation of appropriate documentation. On the successful completion of these units, students will have demonstrated: an ability to formulate, interpret and communicate appropriate concepts derived from the study of brief and site; an ability to extend those starting points into a working design proposal; an ability to develop the design proposal in response to critique, and produce a building design which demonstrably embodies understanding of the principles associated with the specialised study area; an ability to communicate the design ideas effectively through appropriate graphic and three-dimensional means using architectural conventions; and an ability to cohesively design and execute a comprehensive presentation of the project. These units are core to the Master of Architecture.

**MARC4003**
**Digital Architecture Research Studio**

**Credit points:** 12 **Teacher/Coordinator:** Semester 1 Dr Rizal Muslimin, Semester 2 Dr Dagmar Reinhardt **Session:** Semester 1, Semester 2 **Classes:** Lecture and studio contact (technical consultants and demonstrations as required), plus self-directed preparation and assignments, for a minimum total student commitment averaging 18 hours per week. **Assessment:** Preliminary research, design development, interim reviews (40%); Final project and portfolio review (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This studio cannot be taken in the same semester with MARC4001 or MARC4002. Students may incur materials costs in this unit.*

MARC4003 Studio C Digital Architecture explores theories, media and techniques that involve digital mediation to create engaging architectural designs that stimulate all human senses in their relationship with the built environment. The studio addresses various issues related to design theories, digital media, digital design techniques, rule-based design processes, computational concepts and other factors influencing the development of architectural production using digital tools. The studio will prompt students to develop critical reflections and positions on design conventions and to research, extend and explore those positions through the architectural design process.

MARC4001 Urban Architecture Research Studio, MARC4002 Sustainable Architecture Research Studio and MARC4003 Digital Architecture Research Studio are all available in both Semesters 1 and 2. Students may enrol or pre-enrol freely, but some will be asked to swap to create equal groups. After three semesters each student will have done each of the studios. The studios examine the

relationships between architecture and urbanism; architecture and sustainability; and architecture and digital design. Each is based around one or more design projects which address a specialised area of study, supported by lectures and seminars which introduce the relevant theory, knowledge and design precedents. Studios require the investigation of key technical issues and systems, and their innovative integration in the design, with the preparation of appropriate documentation. On the successful completion of these units, students will have demonstrated: an ability to formulate, interpret and communicate appropriate concepts derived from the study of brief and site; an ability to extend those starting points into a working design proposal; an ability to develop the design proposal in response to critique, and produce a building design which demonstrably embodies understanding of the principles associated with the specialised study area; an ability to communicate the design ideas effectively through appropriate graphic and three-dimensional means using architectural conventions; and an ability to cohesively design and execute a comprehensive presentation of the project. These units are core to the Master of Architecture.

**MARC5001**
**Graduation Studio**

**Credit points:** 12 **Teacher/Coordinator:** Semester 1 Dr Sandra Loschke; Semester 2 Dr Ross Anderson **Session:** Semester 1, Semester 2 **Classes:** Lecture and studio contact (technical consultants and demonstrations as required), plus self-directed preparation and assignments, for a minimum total student commitment averaging 24 hours per week. **Prerequisites:** MARC4001 and MARC4002 and MARC4003 **Prohibitions:** ARCH5201 or MARF5201 **Assessment:** Preliminary Research and Design Development (30%); Final Design Project (40%); Portfolio (30%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Students may incur materials costs in this unit.*

Graduation Studio is the culminating architectural design studio of the Master of Architecture degree. It affords students the opportunity to assert an individual position in respect to current architectural research, discourse and practice by elaborating a intellectual framework and line of inquiry in response to a studio brief selected from a suite of options. Students set their individual research agenda within the broad conceptual and programmatic framework established by the unit of study coordinator and their individual project tutor, and they are expected to produce rigorously investigated, well-resolved and technically adept architectural projects that make a solid contribution to knowledge in their field.

**MARC4101**
**Advanced Technologies 1**

**Credit points:** 6 **Teacher/Coordinator:** Dr Stephen Neille **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Corequisites:** MARC4001 or MARC4002 or MARC4003 **Prohibitions:** ARCH4202 **Assessment:** Weekly detailing exercises (60%), design development drawing (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit introduces students to concepts, issues and techniques relating to the design of some advanced structural, construction and services systems, and the integration of these systems within the design decision making process. This unit has a modular structure and aims to give students the tools to initiate and develop their design intentions in relation to structural, construction and services technologies. The knowledge will move from an understanding of the nature and impact of materiality on the architectural design process through to the implementation of this knowledge in the practice of a professional architect through design, consultation and building processes. The unit aims to examine the foundation and structural systems of large scale public buildings, the construction of the elements of the external fabric and the impact on the design process of the anthropomorphic, environmental and engineering requirements of the internal spaces. The unit stresses the primacy of detailing, skills in the development of individual design processes, and the understanding of design principles of construction materials in relation to structural and environmental concerns. It also aims to develop an understanding of the impact of the BCA and relevant Australian Standards on the building interior and exterior. Knowledge required for the selection of strategies, systems, and integration of the systems for a variety of design situations, is assessed through case study assignments and an examination. This unit is core to the Master of Architecture. Contact hours: 6 hours per week (lecture and tutorial); student effort expected for an average student to achieve a pass level result: class preparation: 3 hours per week; assessment preparation: 30 hours per semester.

**MARC5101**
**Advanced Technologies 2**

**Credit points:** 6 **Teacher/Coordinator:** Dr Stephen Neille **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk, tutorial 1 hr/wk **Prohibitions:** ARCH4203 **Assessment:** Assignment 1 (50%), Assignment 2 (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit explores architecture and the integration of structural, construction, environmental and services systems within the design decision making process. It aims to give students the ability to understand how structural, constructional technologies and systems are conceptualised, developed and integrated within a range of architectural design approaches. The unit aims to provide a basis for the development of technical and design skills required within ongoing design studio projects and for reference as a professional architect. This unit reviews a series of seminal architectural approaches and explores the technological approaches associated with realising such buildings, including case study buildings recognised by the architectural professional, it explores the nature of both the building fabric and, the environmental and management systems which enable the building to function optimally in a complex and dynamic urban environment. Students are expected to develop the ability to research structural, environmental and construction systems that satisfy aesthetic and philosophical intentions and to evaluate them based on clearly articulated decision criteria. Knowledge required for the selection of strategies, systems, and the integration of the systems, within a variety of design situations, is assessed through assignments and presentations, including the digital and physical modelling of selected case studies.

**MARC4102**
**Modern Architectural Theory**

**Credit points:** 6 **Teacher/Coordinator:** Prof Andrew Leach **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** ARCH6104 or ARCH9048 or ARCH9049 **Assessment:** Assignment 1 (30%); Essay (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The objective of the Modern Architectural Theory unit is to equip students with a critical understanding of key Western architectural theories from the Enlightenment to the present. Emphasis is placed on those theories which have contemporary traction. Emphasis is also placed on the specific historical situations and cultural and philosophical contexts in which those theories arose, and ultimately how they were represented within the domain of architecture. It is organized predominantly as a conceptual survey which clearly identifies particular trains of thought in their continuity and transformation. Students will become generally conversant in the principles of central theories, and will understand their terms and references. Through readings, lectures, and tutorial sessions, students will acquire the literacy required to perceive and articulate contemporary theoretical standpoints, and will refine their research and writing skills through independent research into a particular aspect of recent architectural theory and history related to their concurrent studio design project. Close attention will be paid to the exchange between practice and theory and the relevance of the discussed theories to the formation of current circumstances, and to the place of architecture within contemporary culture as a whole.

**MARC4201**
**Modern Architectural History**

**Credit points:** 6 **Teacher/Coordinator:** Dr Jennifer Ferng **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per

week. **Prohibitions:** ARCH4102 **Assessment:** Illustrated Research Essay (60%), Short response essay (30%), and visual diagram (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit presents foundational knowledge concerning modern architecture in global context. It commences briefly with fundamental principles of the European Enlightenment as a means of discussing modern architecture's relationship to a number of external disciplinary fields including archaeology, biology, economics, history, landscape studies, and philosophy. Vital Enlightenment inquiries not only set the stage for historical debates about architecture but have also influenced contemporary questions about what constitutes architectural practice. Attitudes towards classical antiquity, art collections in museums, craft and industrialization, and building materials exemplified how architects have actively participated in creating intellectual discourse. Some principal qualities of modernism evident within the arts and sciences heralded historical contingencies, self-conscious agency, and the rise of technical developments. Architecture's enduring involvement with the modern sciences, in particular, has been conditioned by the shifting tensions existing between many polarizing pairings: empiricism and subjectivity, art and techne, representations and their models.

Instead of employing a chronological structure, course readings are grouped into core areas of exposition. We will survey a range of topics on autonomy, class, construction, drawing, gender, nationalism, ornament, primitivism, science, technocracy, urbanism, and utopia to understand how the complexities of these issues have created frameworks for architectural historiography, theory, and design in a variety of cultural contexts. The Enlightenment influence over these issues engendered lasting modes of resistance against these canonical formations, which remain highly evident in colonial and post-colonial dialogues as well as post-industrial interventions. The intersection of architecture with external disciplines set the agenda for a global modernity spanning from the eighteenth century into the present moment.

**MARC5102**
**Contract Documentation**

**Credit points:** 6 **Teacher/Coordinator:** Dr Peter Armstrong **Session:** Semester 2 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** ARCH4103 **Assessment:** 4 assignments (40%); contract documentation set (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit aims to provide knowledge of basic contract law and building contracts; as well as information about, and skills in, the production of working drawings, specifications and opinions of probable construction costs, as commonly prepared by an architect. On the successful completion of this unit of study, students will have demonstrated: a competent ability in the production of working drawings, specifications and cost control for the building designed during the semester studio; an ability to communicate this documentation to clients, statutory authorities, consultants, tenderers, contractors and sub-contractors etc. such that they are able to understand what is required to be built; an understanding of the significance of contract documents in contracts, the relationship between contract documents and relevant law, and the provision of a context for understanding the full examination of commonly used building contracts in the Management in Architecture unit of study; an ability in the making of working drawings and specifications, the coordination of these documents into contact documents; an understanding of the role of consultants with specific reference to cost control, and the management of the process. This unit is core to the Master of Architecture. Contact hours: 3 hours per week. Class preparation and assessment preparation: 39 hours per semester.

## Elective units of study

Candidates must complete 18 credit points from the units of study listed below. With permission of the unit of study coordinator, students may also undertake graduate units of study in the School.

**ARCH9001**
**Urban Design Studio: Urban Precinct**

**Credit points:** 12 **Teacher/Coordinator:** Senior Lecturer Deena Ridenour **Session:** Semester 2 **Classes:** Half-day weekly lectures and studio based tutorials **Prerequisites:** ARCH9100 **Assessment:** Mid-term Presentation and Submission (50%); Final Presenation and Submission (50%); Assessments will include both group and individaul work. Group work is peer reviewed. An individual Design Journal is a requirement. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Design studios are the heart of the urban design program. Values, knowledge and skills acquired in other units and from previous experience are supplemented and enhanced, and applied creatively to both the investigation and development phases of design projects at an urban scale.

Urban Design Studio: Urban Precinct is concerned with developing design propositions that respond to the changing environmental, economic and social context of the city and that challenge `business as usualÂ¿ practice. Projects are carefully chosen to explore large complex urban areas, such as urban centres, waterfront precincts, renewal precincts, institutional campuses or major infrastructure interventions. The studio will generate proposals for major urban structures, spaces and forms which are rigourously informed by design methodologies.

Inter-disciplinary group work is an essential part of the studio and integrates the broad range of backgrounds and skills of the students while mimicing the reality of practice.

The central aim of this unit is to develop illustrative, writing and verbal skills which will enable students to carry out urban design projects such as the preparation of strategies, frameworks, master plans and public domain concepts in a professional and visionary manner. Students will be expected to demonstrate appropriate problem recognition, investigative, analytical, interpretative, design and presentation skills and abilities on projects of major urban scale. Assessment may also embrace abilities to prepare and interpret project briefs, program proposals and work in groups.

**ARCH9063**
**Urban Form and Design**

**Credit points:** 6 **Teacher/Coordinator:** Senior Lecturer Deena Ridenour **Session:** Semester 2 **Classes:** Weekly lectures and tutorials **Prerequisites:** ARCH9100 **Prohibitions:** ARCH9021 **Assumed knowledge:** Some prior study of architectural, urban or planning history. **Assessment:** Formative Assessment (40%) and Summative Assessment (60%). Assessments comprise both group and individual components. Peer review of group work will be required. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit explores the complexity and evolution of city form and the influences of planning and design processes and practice.

Using Australian and international case studies, the unit will investigate how urban functions, cultural values; technological, socio-economic and political circumstances; and design theory and practice shape the form of specific cities over time. The morphological elements of the city including: ecological systems; settlement and landownership patterns; transport, open space and street networks; urban infrastucture; open space, street and building typologies Â¿ are investigated to reveal often distinct local characteristics and the forces that shaped them.

The ability to recognize, investigate and respond to the forces that shape the city lies at the heart of good urban design. On completion, a student will be better able to: recognize structures and patterns, and key building and spatial typologies that contribute to overall city morphology; record and describe these, investigate and explain their origins, and discuss informatively their place in the evolving city and contemporary design.

It complements the History and Theory Planning and Design (PLAN9068) which emphasises the theories and models underpinning the forms that are covered in this unit. It is a core unit that supports the Urban Design Studios in the Urban Design program and the Integrated Urbanism Studio in the Urbanism program and an informative elective for students enrolled in or intending to enrol in the Urban Architecture Research Studio.

**ARCH9074**
**Principles of Heritage Conservation**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 1 **Classes:** Lectures 1.5 hrs/wk; tutorials 1 hr/wk **Prohibitions:** ARCH9003 **Assessment:** Weekly Discussion Forum/In-class Test (50%), Research Paper (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit will introduce students to key controversies, theoretical propositions and practical innovations that have driven the historical development of heritage conservation. The unit covers ideas and examples from the ancient world until the present, with the main focus being on the period from 1850 until today.

The aim of the unit is to help students to arrive at a clear understanding of the concepts and practices that define heritage conservation and to promote a strong historical perspective on the field. Students will consider, for example, the meaning of, and differences between, conservation, restoration and reconstruction; the different forms of historical value that inform our place protection efforts; the function of conservation protocols such as the Venice Charter, Burra Charter and Hoi An Protocols; the importance of advocacy and activism; the growth of world heritage and its relationship to human rights and cultural rights; and the ideas of cultural landscape and historic urban landscape. The unit also challenges students to think about areas of practice and theory that challenge traditional approaches and knowledge such as indigenous heritage and the conservation of modernism.

**ARCH9075**
**New Design in Old Settings**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 1 **Classes:** 3 hrs/week combination of lectures, tutorials, seminars, site visits. **Assessment:** Group work (30%); individual assignments (70%). Total of 4000-5000 words. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

New Design in Old Settings explores the architectural approaches, conservation methodologies and planning issues relevant to situations when new meets old in the built environment. The unit highlights architecturally innovative reuse projects, exemplary additions and alterations to historic places, and architecturally distinguished new buildings in historic precincts and landscapes. We also examine historic theming, façadism and some of the design ideas and planning compromises that have blighted historic places.

The aims of the unit are to develop an understanding of the history of designing and building new buildings in old settings; to develop an understanding of the major theoretical and practical issues of designing new buildings in old settings; and to develop an ability to assess critically the appropriateness of new development in culturally significant places. Students will develop analytical skills in assessing design strategies and develop confidence in making critical judgements about design propositions in historically significant settings.

**ARCH9094**
**Counter-Practices in Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Lee Stickells **Session:** Semester 2 **Classes:** tutorials 1hr/week; seminars 2hrs/week **Prohibitions:** DESA3012 **Assumed knowledge:** BDES1011 and BDES2027 and BDES3011 **Assessment:** illustrated research essay (50%), critical summaries (20%) and seminar presentation (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Focused on the 1960s and 1970s, this unit will explore an alternative genealogy of the postmodern turn in architecture. It will introduce students to experimental practices and polemics that emerged when architects and figures from the counterculture responded to the identification of global environmental emergency, urban instabilities; revolutions in communication technologies and expanded forms of environmental control; growing militarism and globalising forces; and burgeoning claims to self-determination and environmental justice.

**ARCH9104**
**Architecture and Diagrams**

**Credit points:** 6 **Teacher/Coordinator:** Dr Francois Blanciak **Session:** Semester 1 **Classes:** 1hr lectures/ weeks 1 2 and 3, 3hr tutorials/week, 1hr seminars/week **Assessment:** (50%) Diagramming, (25%)Seminar presentation , (15%) Active participation, (10%) Report on one reading **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Architecture and Diagrams is an elective that aims to provide students with an overview of various techniques of production and theories that relate to architectural diagrams, Its objectives are: to learn how to analyse buildings from a diagrammatic point of view, to acquire a basic knowledge of the history and theory of diagrams in architecture, and to develop basic skills to generate urban and architectural diagrams directly related to the students' respective design work in other units of study.

**ARCH9105**
**Architectural Drawing Through History**

**Credit points:** 6 **Teacher/Coordinator:** Dr Ross Anderson **Session:** Semester 1 **Classes:** 1-hr lectures/week, 3 hrs studio/week **Assessment:** Seminar presentation (30%), Studio project (50%), Illustration report (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

In Architectural Drawing Through History, students critically investigate and then imaginatively deploy in a studio project an unconventional historical drawing technique of their choosing. Close studies of the widely differing range of drawings that were produced to achieve the architecture of Ancient Egypt, Classical Greece and Rome, the Middle Ages, Renaissance and Baroque, can illuminate aesthetic sensibilities that are often profoundly difference to our own, and can provide insights into the worldviews of the cultures that produced them. Drawings are a vital mediator between that which can be imagined and that which can be built, and the elective contributes to architectural historian Robin Evans' claim that it would be possible to 'write a history of western architecture that would have little to do with either style or signification, concentrating instead on the manner of working. Students conduct textual and graphic analyses of case study drawings and buildings, but engage equally in practical experimentation in an effort to unfold and re-animate the potential of forgotten or marginalised drawing methods to inform current architectural practice.

**ARCH9106**
**Architectural Investigations: Models**

**Credit points:** 6 **Teacher/Coordinator:** Ms Catherine Lassen **Session:** Semester 1, Semester 2 **Classes:** 3 hr seminars/week **Assessment:** Seminar presentation (30%), Final studio project presentation (30%), Illustrated report (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This elective will explore the relationship between a range of representational strategies and embedded content in a selection of significant 20th century architectural works. Via a series of meticulous analytical models we will interrogate these works to develop precise yet productive close readings. Our tools will be detailed analysis, accurate measurement and conceptually ambitious re-modelling. Within a search for inventive, literate, contributions, a rigorous yet experimental attitude to architectural thought and its rich disciplined development in weekly classes will be encouraged.

**ARCH9107**
**Prefab Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Mathew Aitchison **Session:** Intensive February **Classes:** 5 intensive days **Assessment:** Case study report (50%), Presentation report (50%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit will introduce students to the benefits and limitations of prefabricated architecture through case study analysis and design exercises. Architects have long used prefabricated housing to explore industrialised building solutions, often with disappointing results. Yet, recent developments show the conditions for a more industrialised approach to housing - especially its promise of low-cost, more socially

inclusive, and well-designed housing - have rarely been better. Australia's housing affordability crisis, changing design needs, sustainability concerns, and the rise of digital and automated fabrication technologies, have conspired to challenge a housing industry deeply resistant to change. Using design research tools, students will assess case study projects before developing their own prefab building 'offering'. Through a series of workshops running parallel to 'live' research projects within the Innovation in Applied Design Lab, students will have contact with professionals and researchers active in the industry. Learning outcomes will include the ability to analyze complex case studies using graphic, physical, and textual media for the case study report. Design, communication and presentation skills will be examined in the form of a PowerPoint presentation 'Pitch' and report.

**ARCH9109**
**Advanced Fabrication**

**Credit points:** 6 **Teacher/Coordinator:** Dr Simon Weir **Session:** Semester 2 **Classes:** 3 hr/week Lecture/lab/tutorial **Assessment:** Assignments (2x50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This design elective bridges the domains of design theory and advanced fabrication practices. In this unit students will make complex and polished objects using the fabrication tools in the DMaF lab, that demonstrate and/or embody design ideas intrinsic to their formulation. The unit is divided into two halves: additive fabrication and subtractive fabrication. Each half will be accompanied by lectures on the technical knowledge related to these fabrication processes, and lectures on the theoretical premises and associations generated by the internal logic, and expressive languages of each fabrication type. Tutorials will also be divided between technical developing machine control, and design tutorials in which students will develop control of the design trajectory and expressive languages.

**ARCH9110**
**Code to Production**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dagmar Reinhardt **Session:** Intensive July **Classes:** 1hr lectures/week, 2hr tutorials/week, 2hr workshops/week **Assessment:** Small exercises (50%), Documentation (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Code to Production is an elective that explores the potential of an iterative design process from parametric variations; to analysis and simulation; to digital prototyping and manufacturing. The course has a two-fold agenda: to examine the performance of complex geometries available through computational design processes, and to translate the optimised design by digital manufacturing into construction and prototype (CNC/robotic fabrication). Based upon the development of a series of controlled variations derived through parametric and scripting methods, the elective aims to further expand an understanding of structural and acoustic performance of these geometries. It reviews an open system of design research in which design process, structural analysis and acoustic analysis are deployed to improve the acoustic and structural performance of complex spatial geometries, and derive fabrication knowledge for architectural practice. The unit of study extends students' knowledge of advanced computational design, interdisciplinary processes and fabrication methodologies by application of commercial and specialist 3D-modelling, scripting, analysis and manufacturing packages (including various software such as McNeel Rhino and Grasshopper, Karamba, RhinoNest and KUKA/prc).

**ARCH9111**
**Broken Hill and Far West NSW Projects**

**Credit points:** 6 **Teacher/Coordinator:** Prof Michael Tawa **Session:** Intensive July **Classes:** 4 day intensive and fieldwork **Assessment:** project proposal (20%), reflective journal (20%), critique (20%), presentation (10%) and major project report (30%) **Mode of delivery:** Field experience

*Note: Department permission required for enrolment.*

This unit of study introduces students to a community engaged learning and teaching setting, working on collaborative, multidisciplinary action research project that crosses over business and architecture. The

design project will exercise and extend design skills and knowledge required to produce a plausible conceptual solution to a large-scale regional city condition that addresses educational, sociocultural,

business, heritage, architectural, landscape and technological issues, with an emphasis on indigenous community needs. Architecture students will work with their Innovative and Enterprise counterparts from the Business School to develop viable architectural and business solutions that integrate multiple criteria (contextual, sustainable, urban design, structural, material, constructional, representational) into a design within rigorous conceptual and theoretical framework. The project will offer students opportunities to engage with the professionals and the broader community.

**ARCH9112**
**Finding Country**

**Credit points:** 6 **Teacher/Coordinator:** Prof Michael Tawa **Session:** Intensive January **Classes:** 4 day intensive and studio **Assessment:** proposition (20%), mapping process (20%) and finding country (60%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit of study involves an intensive 4-day workshop focusing on 'finding country': that, is recuperating the erased or imperceptible layers of Aboriginal and Torres Strait Islander histories within the urban fabric of Sydney. The workshop also aims to make propositions for urban interventions within the city fabric that would re-establish the value and importance of those histories to the cultural and experiential futures of the city.

**ARCH9113**
**Advanced Topics in Australian Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Prof Andrew Leach **Session:** Semester 2 **Classes:** lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DAAE2001 **Assessment:** One process development presentation and one 4,000-word essay (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will explore the history of Australian architecture in its various contexts. Lectures and seminars will cover key architects, projects and building types and their relation to Australian history. Students will explore a range of architectural styles and movements and their characteristics. They will undertake individual self-directed research and learn how to record and present the results of this research. Students will develop an appreciation of the factors that shape architectural design and thought in Australia and how these relate to wider social and cultural circumstances. Tutorials will explore key books, essays and journals concerned with Australian architecture. On successful completion of this unit, students will be able to: demonstrate an advanced familiarity with a range of Australian architects, buildings and types; research, record and present a specific project in Sydney; connect specific works to other works of a similar style, period or cultural context. This will be assessed in the submitted essay.

**DESA9008**
**Object Design (Material and Light)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Prohibitions:** AWSS2020 **Assumed knowledge:** DESA1555 **Assessment:** Studio Projects and associated tasks (70%); Research Process Journal (30%) **Practical field work:** Studio practice. NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

In this unit students produce light objects exploring diverse materials and fabrication techniques in the DMaF workshops. Emphasis is placed on developing and inter-relating manufacturing and artisan skills with research, analysis and design development. The course aims to develop a critical awareness of the nature of objects that surround us, exploring cultural, contextual and symbolic aspects of

object design as well as functional and aesthetic qualities working with light. Sustainability and social issues relating to their manufacture, use and disposal are also discussed; the unit aims to increase appreciation of the materiality of objects focusing on timber as an example paying attention to associated environmental and ethical issues, and emerging alternative materials. Through a series of exercises, experiments and production of their major project, students develop knowledge of construction techniques and skills in using wood/plastics tools and machinery and in so doing, build an awareness of industrial and craft practices and how they impact on the design process and outcome. Students will be expected to produce a research process journal and report on how a particular designer/s or movement has informed or influenced their final project/s

**DESA9012**
**2D Print Processes in Design**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Prohibitions:** AWSS2026 **Assessment:** Studio Projects and associated tasks (70%); Research Process Journal (30%) **Practical field work:** Studio practice. NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This studio-based unit introduces a variety of traditional and experimental techniques that will enable students to design and print a series of 2D works both within and around the context of design and Architecture. It will provide students with the knowledge and skills to design and print on a variety of substrates including paper, wood, and perspex through a range of techniques and creative exercises that can be developed into an edition or a series of experimental printed works. Students will also explore the historical roots of print and print as an element in design and architecture. Techniques covered include: digital photography and vector illustration, typography, hand and laser-cut paper stencils, ink mixing, registration and print set-up for multi-coloured prints. Through studio practice, set exercises, illustrated talks, gallery visits and library research, students will develop an understanding of their creative process and ability to interpret ideas through the medium of printing and with particular focus on design and architecture applications.

**DESA9013**
**Arch + Design Material Processes (Casting)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Prohibitions:** AWSS2027 **Assessment:** Studio Projects and associated tasks (70%); Research Process Journal (30%) **Practical field work:** Studio practice. NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This studio-based unit focuses on critical engagement with materiality and form. The course introduces fundamental knowledge and technical skills for students to produce a series of 3D objects through high-definition casting and complimentary construction techniques. Students will work with a broad range of traditional and experimental materials including wax, silicone, metal, sand and plaster. Emphasis is placed on developing students' material and spatial awareness of three-dimensional forms in context and investigating their conceptual applications. Students will be required to design, plan and produce a series of sculptural works, utilizing mediums and techniques explored throughout the semester. Additionally, students will critically contextualise and discuss their projects against historical precedents and contemporary practices that inform their creative inquiries. Postgraduate students will further investigate possibilities to expand their project into an ambitious site-based intervention.

**DESA9014**
**Arch + Design Material Processes (Ceramics)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Prohibitions:** AWSS2010 **Assessment:** Studio Projects and associated tasks (70%); Research Process Journal (30%) **Practical field work:** Studio practice. NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This studio-based unit explores ceramic media and processes. Students will investigate different fabrication techniques such as slip-casting, ceramic rapid prototyping and analogue modelling. There will be an emphasis on ceramics as a modelling medium in design and architecture. Students will use the digital modelling and fabrication lab within the school to investigate possibilities for ceramic production. This exploration will be in relation to historic and contemporary architectural frameworks. Set projects will enable students to explore expression and design in an architectural form and materiality context. Students will be expected to produce a research process journal and report on how a particular practitioner/s or movement has informed or influenced their project/s.

**DESC9014**
**Building Construction Technology**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

This unit covers three related areas of investigation: basic building construction practices, advanced building construction practices and sustainable construction. It begins by introducing a number of recurrent themes in construction in Australia at the present time including the idea of building culture, the various modes of delivery and variety of classifications of buildings and building elements, rational construction and construction detailing from first principles. There follows a review of construction techniques of domestic scaled buildings using, where appropriate, examples of well documented and/or accessible exemplars. The second part of the unit reviews current approaches to building technologies employed in more complex public and commercial scaled buildings, particularly with regard to processes of structural system selection, façade systems design and construction and material performance. The fundamentals of heat transfer and effects of external conditions on indoor comfort, aspects of the National Construction Code and integration of services into the building fabric relevant to building services engineers will also be reviewed. Again, accessible exemplars will be covered. Finally the unit will review current issues related to key attributes of buildings which make them sustainable, particularly with regard to material selection, appropriate detailing for energy and resources conservation and building reuse and recycling.

**DESC9015**
**Building Energy Analysis**

**Credit points:** 6 **Teacher/Coordinator:** Dr PC Thomas **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

The aim of the unit is to acquaint students with the range of analytical and design tools available for low energy building design; to provide the opportunity for students to become proficient at using some of these tools. Among the techniques and tools explored are: climate data analysis; graphical and model techniques for solar studies; steady state and dynamic heat flow analysis; simplified methods for sizing passive solar elements; computer models of thermal performance; modelling ventilation; estimating energy consumption. Emphasis is given to tools which assist the design of the building fabric rather than building systems. At the end of the unit it is expected that students will: be aware of the importance of quantitative analysis in the design of low energy buildings; have an understanding of the theoretical basis of a range of analytical techniques; be familiar with the range of techniques available for building energy analysis; be able to apply many of these to design analysis; be familiar with the range of thermal analysis computer software available; and be able to use a software package to analyse the thermal performance of a typical small scale building. All of the assignments are designed to provide students with hands-on experience of each of the analysis tools.

**DESC9048**
**Operational Facility Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** 2000wd individual assessment (30%); 4000wd group assignment (50%); presentation and written paper (20%) **Mode of delivery:** Block mode

Operational Facility Management is a service industry concerned with the day-to-day operations required to run an organisation's facilities. Primarily facility operation has to satisfy the user organisation's statutory responsibilities. Beyond that, whilst some major costs (such as rates, land taxes, Insurance premiums, etc.) are fixed, other costs are amenable to management. Operational Facility Management necessarily requires those charged with the task to evaluate where their effort is spent and where the significant resourcing costs lie, thus allowing them to prioritise and match their effort to the effect.

This unit will involve considerations of subcontracting and examine 'best practice' guidelines for both hard and soft service provision.

**DESC9074**
**Project Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

Project Management is specific form of establishing, programming, and coordinating an activity having a specific start point and end point. This body of knowledge - as for example in the Project Management Book of Knowledge (PMBOK) - needs to be understood in general terms. Initially project managers must identify and define the services that are needed, (scope) and that their employers are willing to endorse. The activities requiring to be carried out need to be sorted and sequenced; the materials, labour and plant required need to be estimated and procured. Projects involve the management of information, and communications. This unit will develop the student's ability to ascertain and document the scope of a project, schedule a programme, and understand the difficulties in directing it. This unit approaches the profession of Project Management as a cooperative undertaking rather than adversarial: it promotes the adoption of soft-skills rather than that of forceful command and supervision.

**DESC9138**
**Architectural and Audio Acoustics**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 1 **Classes:** Lecture 3 hrs/wk **Assessment:** Exercise-based assignments (1x30%, 1x70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces the fundamental concepts and issues of audio and architectural acoustics, with an emphasis on theory. The unit introduces topics such as: basic acoustical concepts, quantities and units; principles of sound radiation and propagation; sound absorption and room acoustics; psychological acoustics; noise measurement and specification; speech intelligibility; and principles and specification of airborne sound insulation. Acoustics theory involves mathematics, and this unit aims to provide knowledge and skills so that such theory can be applied, with the help of spreadsheets and computer programs. Teaching is supported by demonstrations and tutorials. By completing this unit students will be able to understand acoustical terminology, and perform calculations and analysis applicable to sound in the environment, in buildings, and in audio contexts. They will have the ability to critically assess claims of acoustical performance. This unit provides the theoretical foundation for advanced units in audio and acoustics.

**DESC9169**
**Daylight in Buildings**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Wendy Davis **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Prohibitions:** DESC9106 **Assessment:** Group Report (30%), Individual Assignment (70%) **Mode of delivery:** Block mode

Daylight can be used in buildings to reduce the energy spent on electric lighting and create aesthetically appealing interiors. Design decisions that affect the success of daylighting in a building span every phase of the design process, from site selection to the application of interior finishes. This unit discusses the role of daylight in indoor illuminated environments. Calculations to predict the quantity and distribution of daylight in spaces and predict the effects of shading devices are covered. Students learn about the local and global variables that influence daylight availability, recognize the challenges and opportunities with daylight in interior spaces, and the appropriate use of daylighting technologies. Modelling tools (Radiance based) will be used in order to assess the efficacy of selected daylight strategies.

**IDEA9106**
**Design Thinking**

**Credit points:** 6 **Teacher/Coordinator:** Dr Naseem Ahmadpour **Session:** Semester 1, Semester 2 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Assessment:** Design assignments (90%), Quizzes (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study provides an overview of a human-centred approach to the design of products and systems. It introduces students to design thinking and how it can be productively applied to different design situations. The theoretical concepts, methods and tools for the key stages of interaction design are covered including user research, ideation, prototyping and user evaluation. It provides students with the principles, processes and tools for working collaboratively on design projects in studio. Students learn to build empathy with users, identify and reframe the problem space, develop value-driven design concepts and persuasively communicate design proposals with an emphasis on the user experience through visual storytelling.

**MARF5201**
**Honours Studio**

**Credit points:** 12 **Teacher/Coordinator:** Semester 1 Dr Sandra Loschke, Semester 2 Dr Ross Anderson **Session:** Semester 1, Semester 2 **Classes:** Tutorial 6 hrs/wk; lectures, technical consultations and demonstrations as required **Prerequisites:** MARC4001 and MARC4002 and MARC4003 **Corequisites:** MARF5301 **Prohibitions:** MARC5001 or MARC5002 or MARC5003 or MARC5004 **Assessment:** Portfolio (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment. Note: Students may incur materials costs in this unit. To qualify for honours equivalence in the MArch students must achieve a WAM of at least 80 in all units of study attempted.*

Honours Studio replaces MARC5001 as the culminating studio of the degree. On the basis of the student's own in-depth research, the Honours Studio develops a design project to a high level of resolution. The design project may be linked to research being carried out in the Honours Report unit of study. On the successful completion of this unit, students will have demonstrated: an ability to develop a design project arising out of, and grounded in, their own research; an ability to undertake a design project that incorporates all technical and theoretical aspects appropriate to that project; an ability to communicate and present the design ideas together with the theoretical ground for those design ideas using appropriate graphic, written, and verbal presentation techniques.

**MARF5301**
**Honours Report**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Glen Hill **Session:** Semester 1, Semester 2 **Classes:** Research methods instruction: 20 hours total; 0.5 hrs/wk individual supervision. **Prerequisites:** 72 credit points with WAM of at least 80. **Corequisites:** MARF5201 **Prohibitions:** ARCF5301 **Assessment:** Report / Major work with exegesis (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment. Note: To qualify for honours equivalence in the MArch students must achieve a WAM of at least 80 in all units attempted.*

The Honours Report allows Master of Architecture students to explore and research an area of architectural study in depth. Areas of research might include sustainability, urban design, digital media and design, architectural history, architectural theory, design science, and art in relation to architecture. The research may be developed through MARF5201 Honours Studio such that the design project forms part

of the honours submission. The unit facilitates students completing their research under the direction of their individual supervisor. The outcome of the research is presented for assessment in a form appropriate to the research topic (which might include, but not be limited to, a short dissertation, or a design or art project presented with supporting text.) A digital and hardbound copy of the report describing the outcome of the research is required to be submitted upon completion.

**MARC6102**
**3D Computer Design Modelling**

**Credit points:** 6 **Teacher/Coordinator:** Ms Ivana Kuzmanovska **Session:** Semester 1, Semester 2 **Classes:** Computer laboratory contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Assessment:** Assignments Weeks 1-13 (80%); Final Portfolio Week 15 (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Enrolment numbers limited by teaching resources. If your attempt to enrol online is unsuccessful, please seek permission from the Student Administration Centre (SAC).*

This unit of study consolidates students' knowledge of advanced concepts in digital modelling, visualization media and digital fabrication techniques available for architectural design. The unit develops conceptual understanding of generative geometric logic through a case study analysis followed by a small design project. Students will explore the practical applications of the digital geometry they create using commercial modelling and rendering packages in conjunction with the digital fabrication equipment available in DMaF. It will help students: generate sophisticated digital geometry through pre-packaged techniques and scripting processes, assign colour and texture information, generate sophisticated images for visualization purposes and fabricate prototypes. At the conclusion of this unit students should be conversant with 3D modelling, photo-rendering and digital fabrication terminology and be able to generate complex 3D models. Class preparation: 3 hours/week, assessment preparation 8 hours/semester.

**MARC6202**
**Architecture Workshop A**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Glen Hill **Session:** Intensive March, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Classes:** 40 hours intensive mode **Assessment:** Design jury (100%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment. Note: This unit is offered only when a workshop has been arranged. When available, workshops are advertised to students. Students may incur materials costs in this unit.*

Through design projects offered by visiting national and international design practitioners and Faculty staff, this unit of study will provide students with the opportunity to explore a wide range of design issues and ideas in an intensive design studio environment. At the successful completion of this unit of study students will have: extended their ability to develop creative responses to a design brief or situation; extended their understanding of the theoretical, historical, cultural, environmental or technical framework of design; applied these understandings and demonstrated good architectural judgement; and communicated these ideas and understandings effectively through presentation means including drawings, models and CAD, which are assessed in a jury context. This unit is Pass/Fail. Contact hours: 40 hours intensive. Assessment and preparation: 38 hours.

**MARC6203**
**Architecture Workshop B**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Glen Hill **Session:** Intensive March, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Classes:** 40 hours intensive mode. **Assessment:** Design jury (100%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment. Note: This unit is offered only when a workshop has been arranged. When available, workshops are advertised to students. Students may incur materials costs in this unit.*

Through design projects offered by visiting national and international design practitioners and Faculty staff, this unit of study will provide students with the opportunity to explore a wide range of design issues and ideas in an intensive design studio environment. At the successful completion of this unit of study students will have: extended their ability to develop creative responses to a design brief or situation; extended their understanding of the theoretical, historical, cultural, environmental or technical framework of design; applied these understandings and demonstrated good architectural judgement; and communicated these ideas and understandings effectively through presentation means including drawings, models and CAD, which are assessed in a jury context. This unit is Pass/Fail. Contact hours: 40 hours intensive. Assessment and preparation: 38 hours.

**MARC6204**
**Graduate Exhibition**

**Credit points:** 6 **Teacher/Coordinator:** Dr Sandra Loschke **Session:** Semester 2 **Classes:** 3-hour design intensives twice weekly in Weeks 1-3 and 3-hour pre-production meetings and production intensives in Weeks 9-14 **Assessment:** Preliminary research, exhibition design and performance assessment (individual work) (40%); Exhibition and Yearbook (group work) (60%). **Practical field work:** 3-hour intensive fabrication workshops in Weeks 10-14 and as required to produce the exhibition. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study enables students to engage in a collaborative project to research, design and produce a high-profile public exhibition and accompanying yearbook of graduating work from the BDesArch and MArch programs. The project will exercise and extend design skills and knowledge required to produce a plausible concept for the exhibition and yearbook and to implement the necessary logistical, technical and practical means to realise it. The project integrates multiple activities which exercise different skill sets including research and precedent studies of exhibition, curation and potential venues; developing a critical, plausible and achievable concept for the event; budgeting and financial management; exhibition design; graphic design; construction and installation of the exhibition; production of the yearbook; consultation with stakeholders and implementation. Students will extend their research, design and implementation skills through a real project with a concrete outcome to real-time deadlines and resource limitations.

**ARCH9039**
**General Elective 1**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive April, Intensive August, Intensive February, Intensive July, Intensive June, Intensive March, Intensive May, Intensive November, Intensive October, Intensive September, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Assessment:** Assignments as determined by Coordinator **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows an individual to pursue an agreed topic with a member of academic staff, or for a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

For individual study arrangements this is an opportunity to develop independent study skills. The unit is undertaken with an agreement between the student and a supervisor on a topic related to the supervisor's expertise. The student will meet with the supervisor regularly to discuss progress.

For group study arrangements the unit of study is available to engage in a topic that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic.

Students will develop an understanding of a special topic through reports, projects, and/or tutorial exercises.

**ARCH9040**
**General Elective 2**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive April, Intensive August, Intensive July, Intensive June, Intensive March, Intensive May, Intensive November, Intensive October, Intensive September, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester

2b **Assessment:** Assignments as determined by Coordinator **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows an individual to pursue an agreed topic with a member of academic staff, or for a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

For individual study arrangements this is an opportunity to develop independent study skills. The unit is undertaken with an agreement between the student and a supervisor on a topic related to the supervisor's expertise. The student will meet with the supervisor regularly to discuss progress.

For group study arrangements the unit of study is available to engage in a topic that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic.

Students will develop an understanding of a special topic through reports, projects, and/or tutorial exercises.

**ARCH9058**
**General Elective 7**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive April, Intensive August, Intensive February, Intensive January, Intensive July, Intensive June, Intensive March, Intensive May, Intensive November, Intensive October, Intensive September, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Assessment:** Assignments as determined by Coordinator **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows an individual to pursue an agreed topic with a member of academic staff, or for a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment. For individual study arrangements this is an opportunity to develop independent study skills. The unit is undertaken with an agreement between the student and a supervisor on a topic related to the supervisor's expertise. The student will meet with the supervisor regularly to discuss progress. For group study arrangements the unit of study is available to engage in a topic that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. Students will develop an understanding of a special topic through reports, projects, and/or tutorial exercises.

**ARCH9059**
**General Elective 8**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive April, Intensive August, Intensive January, Intensive July, Intensive June, Intensive March, Intensive May, Intensive November, Intensive October, Intensive September, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Assessment:** Assignments as determined by Coordinator **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows an individual to pursue an agreed topic with a member of academic staff, or for a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment. For individual study arrangements this is an opportunity to develop independent study skills. The unit is undertaken with an agreement between the student and a supervisor on a topic related to the supervisor's expertise. The student will meet with the supervisor regularly to discuss progress. For group study arrangements the unit of study is available to engage in a topic that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. Students will develop an understanding of a special topic through reports, projects, and/or tutorial exercises.

**ARCH9085**
**General Elective 9**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive April, Intensive August, Intensive July, Intensive June, Intensive March, Intensive May, Intensive November, Intensive October, Intensive September, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Assessment:** Assignments as determined by Coordinator **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows an individual to pursue an agreed topic with a member of academic staff, or for a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

For individual study arrangements this is an opportunity to develop independent study skills. The unit is undertaken with an agreement between the student and a supervisor on a topic related to the supervisor's expertise. The student will meet with the supervisor regularly to discuss progress.

For group study arrangements the unit of study is available to engage in a topic that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic.

Students will develop an understanding of a special topic through reports, projects, and/or tutorial exercises.

**ARCH9086**
**General Elective 10**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive April, Intensive August, Intensive July, Intensive June, Intensive March, Intensive May, Intensive November, Intensive October, Intensive September, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Assessment:** Assignments as determined by Coordinator **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows an individual to pursue an agreed topic with a member of academic staff, or for a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

For individual study arrangements this is an opportunity to develop independent study skills. The unit is undertaken with an agreement between the student and a supervisor on a topic related to the supervisor's expertise. The student will meet with the supervisor regularly to discuss progress.

For group study arrangements the unit of study is available to engage in a topic that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic.

Students will develop an understanding of a special topic through reports, projects, and/or tutorial exercises.

**ARCH9087**
**General Elective 11**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive April, Intensive August, Intensive July, Intensive June, Intensive March, Intensive May, Intensive November, Intensive October, Intensive September, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Assessment:** Assignments as determined by Coordinator **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows an individual to pursue an agreed topic with a member of academic staff, or for a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

For individual study arrangements this is an opportunity to develop independent study skills. The unit is undertaken with an agreement between the student and a supervisor on a topic related to the

supervisor's expertise. The student will meet with the supervisor regularly to discuss progress.

For group study arrangements the unit of study is available to engage in a topic that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic.

Students will develop an understanding of a special topic through reports, projects, and/or tutorial exercises.

**ARCH9088**
**General Elective 12**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive April, Intensive August, Intensive July, Intensive June, Intensive March, Intensive May, Intensive November, Intensive October, Intensive September, Semester 1, Semester 1a, Semester 1b, Semester 2, Semester 2a, Semester 2b **Assessment:** Assignments as determined by Coordinator **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

This elective allows an individual to pursue an agreed topic with a member of academic staff, or for a group of students to pursue a topic proposed by a member of academic staff in a formal learning environment.

For individual study arrangements this is an opportunity to develop independent study skills. The unit is undertaken with an agreement between the student and a supervisor on a topic related to the supervisor's expertise. The student will meet with the supervisor regularly to discuss progress.

For group study arrangements the unit of study is available to engage in a topic that is organised by a member of academic staff. This allows a member of staff to teach a topic of special interest or for a visiting academic to teach a subject related to their specialty. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic.

Students will develop an understanding of a special topic through reports, projects, and/or tutorial exercises.

# Overseas exchange

## Exchange in the Master of Architecture

The school may approve international exchange for qualified students in semesters one to three of the Master of Architecture. All students must complete the final semester at the University of Sydney.

Students must apply through the Study Abroad and Exchange Office. Each student's program must be approved in consultation with the Program Director of the degree.

Students who wish to, may go on exchange for one semester at the commencement of the degree and use this both to satisfy the 'Architectural Experience Requirement' for entry to the degree, and for credit towards the first year of the program.

Students should plan to follow the enrolment pattern prescribed for their chosen semester of exchange as closely as possible. Exchange units should be taken as part of the degree and not in addition to the degree requirements. Consideration should be given to how you will be able to complete your degree requirements when you return, paying attention to the semester of offer of the core units.

Exchange students are required to enroll in a full-time load at the University of Sydney in the semester of exchange, and will incur the tuition costs associated with that load. No tuition costs will be incurred with the partner university.

Specially designated units of study will be recorded on the transcript. A result of 'SR' for 'Satisfied Requirements' will be recorded by the University against each successfully completed unit. The transcript of the exchange university will be the official detailed record of exactly what was completed during the exchange. Exchange results will not count towards a student's weighted average mark.

For more information please contact the Study Abroad and Exchange Office.

Exchanges may be for one semester only. Exchange agreements require students to be enrolled in no less than a full time load while on exchange. Students who wish to extend their studies overseas beyond one semester will need to suspend their enrolment at the University of Sydney and apply for a study abroad option with the host institution. This may involve additional tuition fees payable to the host institution. Students may apply for credit of units completed in excess of the exchange semester to be transferred as credit to their University of Sydney degree on return.

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Master of Architecture exchange units** | | | |
| **Core units of study** | | | |
| **MARC6601**<br>**Architecture Exchange Studio** | 12 | | Semester 1<br>Semester 2 |
| **MARC6602**<br>**Architecture History Exchange** | 6 | | Semester 1<br>Semester 2 |
| **MARC6603**<br>**Architecture Theory Exchange** | 6 | | Semester 1<br>Semester 2 |
| **MARC6604**<br>**Architecture Technology Exchange A** | 6 | | Semester 1<br>Semester 2 |
| **MARC6605**<br>**Architecture Technology Exchange B** | 6 | | Semester 1<br>Semester 2 |
| **MARC6606**<br>**Architecture Practice Exchange** | 6 | | Semester 1<br>Semester 2 |
| **Elective units of study** | | | |
| **MARC6607**<br>**Architecture Studio Workshop Exchange** | 6 | | Semester 1<br>Semester 2 |
| **MARC6608**<br>**Architecture Elective Exchange A** | 6 | | Semester 1<br>Semester 2 |
| **MARC6609**<br>**Architecture Elective Exchange B** | 6 | | Semester 1<br>Semester 2 |
| **MARC6610**<br>**Architecture Elective Exchange C** | 6 | | Semester 1<br>Semester 2 |

# Master of Architectural Science

Students in the Graduate Certificate, Graduate Diploma or Master of Architectural Science are required to complete one or two of the following streams:

- Audio and Acoustics
- High Performance Buildings
- Illumination Design
- Sustainable Design

It is also possible for students in the Gradaute Certificate in Architectural Science to undertake a single stream of

- Facilities Management; or
  Building Services

The requirements for these streams are outlined in the tables of units of study.

# Master of Architectural Science

## Graduate Certificate in Architectural Science

## Graduate Diploma in Architectural Science

## Master of Architectural Science

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the University school, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

### Course Resolutions

### 1 Course codes

| Code | Course and stream title |
|---|---|
| GCARCHSC-01 | Graduate Certificate in Architectural Science |
| GNARCHSC-01 | Graduate Diploma in Architectural Science |
| MAARCHSC-01 | Master of Architectural Science (single specialisation) |
| MAARCHSC-02 | Master of Architectural Science (double specialisation) |

### 2 Attendance pattern

1. The attendance pattern for these courses is full time or part time, according to candidate choice, with the exception of the following courses which are only offered part time:

(a) the Graduate Certificate in Architectural Science (Building Services)
(b) the Graduate Certificate in Architectural Science (Facilities Management)
(c) the Graduate Certificate in Architectural Science (Sustainable Design) if commenced in semester two.
(d) the Graduate Certificate in Architectural Science (Audio and Acoustics) if commenced in semester two.
(e) the Graduate Certificate in Architectural Science (Illumination Design) if commenced in semester two.

### 3 Master's type

The master's degrees in these resolutions are professional master's courses, as defined by the Coursework Policy.

### 4 Embedded courses in this sequence

(1) The embedded courses in this sequence are:
(a) the Graduate Certificate in Architectural Science
(b) the Graduate Diploma in Architectural Science
(c) the Master of Architectural Science
(2) Providing candidates satisfy the admission requirements for each stage, a candidate may progress to the award of any of the courses in this sequence. Only the longest award completed will be conferred.

### 5 Admission to candidature

(1) Available places will be offered to qualified applicants in the order in which complete applications are received, according to the following admissions criteria.
(2) Admission to the Graduate Certificate in Architectural Science requires a bachelor's degree from the University of Sydney, or an equivalent qualification.
(3) Admission to the Graduate Diploma in Architectural Science requires:
(a) a bachelor's degree from the University of Sydney, or an equivalent qualification; or
(b) completion of the requirements of the embedded graduate certificate with a weighted average mark of at least 70 across all units attempted for the award.
(4) Admission to the Master of Architectural Science requires:
(a) a bachelor's degree from the University of Sydney or an equivalent qualification; or
(b) completion of the requirements of the embedded graduate diploma; or
(c) completion of the requirement of the graduate certificate with a weighted average mark of at least 70 across all the units attempted for the award.
(5) In exceptional circumstances the Head of School and Dean may admit applicants without the preceding qualifications but whose evidence of experience and achievement is deemed by the Head of School and Dean or nominee to be equivalent.

### 6 Requirements for award

(1) The units of study that may be taken for these awards are set out in the relevant degree table, together with their designation as foundational, advanced, capstone and elective for each specialisation.
(2) To qualify for the award of the Graduate Certificate in Architectural Science, a candidate must complete 24 credit points in a single stream, as specified in the tables of requirements below.
(3) To qualify for the award of the Graduate Diploma in Architectural Science, a candidate must complete 48 credit points in a single stream, as specified in the tables of requirements below.
(4) To qualify for the award of the Master of Architectural Science with a single specialisation, a candidate must complete 72 credit points in a single stream, as specified in the tables of requirements below.
(5) To qualify for the award of the Master of Architectural Science with two specialisations, a candidate must: complete 96 credit points in two streams, as specified in the tables of requirements below, and;

(a) nominate which of the streams is primary, and meet the foundation core, advanced core and capstone requirements for that stream;
(b) nominate which of the streams is secondary, and complete 24 credit points of core advanced for that stream.
(c) a unit that is common to the requirements of both specialisations may count towards the requirements for both streams, but may only count once in the total credit points for the degree.

(6) Core units completed in excess of the minimum requirements may count as elective units of study.

## 7 Tables of Requirements

This table specifies credit points (CP) required for the awards.

| Audio and Acoustics | Minimum Core Foundational CP | Minimum Core Advanced CP | Maximum Elective CP | Minimum Capstone CP |
|---|---|---|---|---|
| Graduate Certificate | 6 | 18 | 0 | 0 |
| Graduate Diploma | 6 | 36 | 6 | 0 |
| Masters | 6 | 36 | 24 | 6 |

| Building Services | Minimum Core Foundational CP | Minimum Core Advanced CP | Maximum Elective CP | Minimum Capstone CP |
|---|---|---|---|---|
| Graduate Certificate | 6 | 12 | 6 | 0 |

| Facilities Management | Minimum Core Foundational CP | Minimum Core Advanced CP | Maximum Electives CP | Minimum Capstone CP |
|---|---|---|---|---|
| Graduate Certificate | 6 | 12 | 6 | 0 |

| High Performance Buildings | Minimum Core Foundational CP | Minimum Core Advanced CP | Maximum Electives CP | Minimum Capstone CP |
|---|---|---|---|---|
| Graduate Certificate | 6 | 18 | 0 | 0 |
| Graduate Diploma | 6 | 36 | 6 | 0 |
| Masters | 6 | 36 | 24 | 6 |

| Illumination Design | Minimum Core Foundational CP | Minimum Core Advanced CP | Maximum Elective CP | Minimum Capstone CP |
|---|---|---|---|---|
| Graduate Certificate | 6 | 12 | 6 | 0 |
| Graduate Diploma | 6 | 30 | 12 | 0 |
| Masters | 6 | 36 | 24 | 6 |

| Sustainable Design | Minimum Core Foundational CP | Minimum Core Advanced CP | Minimum Elective CP | Minimum Capstone CP |
|---|---|---|---|---|
| Graduate Certificate | 6 | 18 | 0 | 0 |
| Graduate Diploma | 6 | 36 | 6 | 0 |
| Masters | 6 | 36 | 24 | 6 |

## 8 Specialisations

(1) Completion of a specialisation is a requirement of the course.
(2) The available specialisations are:
(a) Audio and acoustics;
(b) Building Services;
(c) Facilities management;
(d) High performance buildings;
(e) Illumination design; or
(f) Sustainable design.
(3) The Facilities Management and Building Services specialisations are only available in the Graduate Certificate.
(4) Candidates may complete one specialisation only, unless enrolled in the Master of Architectural Science (double specialisation) which requires completion of two.

## 9 Course transfer

A candidate for the master's degree or graduate diploma may elect to discontinue study and graduate with a shorter award from this embedded sequence, with the approval of the Head of School and Dean, and provided the requirements of the shorter award have been met.

## 10 Transitional provisions

These resolutions apply to students who commenced their candidature after 1 January, 2018.

# Master of Architectural Science (Audio and Acoustics)

The Audio and Acoustics program is unique in Australia and one of only a few comparable programs in the world. The program offers a balance of studio-based production subjects and theoretical and investigative subjects in acoustics and technical audio. It aims to extend students' existing skills to a high level of proficiency and professionalism in the various disciplines that contribute to the audio and acoustics fields. The program suits people with an academic and/or professional track record in audio or related areas, wishing to extend the breadth and level of their expertise.

The sound studios consist of a recording studio and a 5.1 format production studio. The acoustical laboratory has an anechoic room and a reverberant room, and is equipped with state-of-the-art acoustical measurement and analysis tools.

Students in the Audio and Acoustics program have the opportunity to develop a sophisticated understanding of and skills in audio production and its application to new media, audio system and component design, audio and architectural acoustics, digital audio systems and electronics, and music as it relates to audio design.

Students are exposed to world-class research activity and have the opportunity to undertake research projects of their own. The program is currently developing in the areas of sound reinforcement system design, interactive sound design, spatial audio, psychoacoustics and advanced measurement methods.

## Unit of study table

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Audio and Acoustics Stream** | | | |
| **Core Foundational units** | | | |
| **DESC9200**<br>**Introduction to Architectural Science** | 6 | | Semester 1 |
| **Core Advanced units** | | | |
| **DESC9011**<br>**Audio Production** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **DESC9090**<br>**Audio Systems and Measurement** | 6 | **A** DESC9138 | Semester 2 |
| **DESC9115**<br>**Digital Audio Systems** | 6 | | Semester 1 |
| **DESC9138**<br>**Architectural and Audio Acoustics** | 6 | | Semester 1 |
| **DESC9201**<br>**Indoor Environmental Quality (IEQ)** | 6 | | Semester 2 |
| **DESC9117**<br>**Sound Design for New Media** | 6 | | Semester 2 |
| **Capstone** | | | |
| **DESC9134**<br>**Audio and Acoustics Seminar** | 6 | **A** DESC9138 and DESC9011<br>**P** DESC9090 or DESC9133 | Semester 1 |
| **Electives**<br>Electives may be selected from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University. | | | |
| **Research**<br>DESC9300 in combination with either a Report or Dissertation may replace the capstone unit with permission of the Program Director. | | | |
| **DESC9300**<br>**Research in Arch. and Design Science** | 6 | **N** ARCF9001<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **ARCH9031**<br>**Research Report** | 12 | *Note: Department permission required for enrolment*<br>*Available to Masters students only.* | Semester 1<br>Semester 2 |
| **ARCH9045**<br>**Dissertation 1** | 12 | **P** 48 credit points and a WAM of at least 75<br>**C** ARCH9046<br>**N** ARCH9031 or PLAN9018 or ARCH9060 or PLAN9010 or PLAN9011<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **ARCH9046**<br>**Dissertation 2** | 12 | **C** ARCH9045 | Semester 1<br>Semester 2 |
| **Recommended electives** | | | |
| **DESC9137**<br>**Spatial Audio** | 6 | **A** DESC9138 and DESC9011<br>*Note: Department permission required for enrolment* | Semester 1 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **DESC9135**<br>**Digital Audio Production with ProTools**<br>*This unit of study is not available in 2018* | 6 | | Intensive June |
| **CAEL5035**<br>**The Art of Sound and Noise** | 6 | | Semester 1 |
| **DESC9153**<br>**Graduate Internship** | 6 | *Note: Department permission required for enrolment*<br>*Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.* | Intensive December<br>Intensive July<br>Intensive November<br>Semester 1<br>Semester 2 |
| **DESC9191**<br>**Building Acoustics and Noise Control** | 6 | **A** DESC9200 or DESC9138<br>*This unit is offered in even-numbered years.* | Semester 2 |
| **DESC9133**<br>**Architectural Acoustics Practice** | 6 | **A** DESC9138 | Semester 2 |
| DESC9133 (offered in odd years) DESC9191 (offered in even years) | | | |

# Unit of study descriptions

## Audio and Acoustics Stream

### Core Foundational units

**DESC9200**
**Introduction to Architectural Science**

**Credit points:** 6 **Teacher/Coordinator:** Dr Christhina Candido **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Block mode

This unit aims to explore the scientific concepts of heat, light and sound, and from this develops foundational principles and methods applicable to buildings. It is divided into five topics: climate, thermal environment, mechanical services, lighting, and acoustics. Students will gain an understanding of the terminology, physical values and metrics in each of these topics, and how they apply to the design and function of buildings. Theoretical models to predict key physical values in buildings are presented and used in assessments. Learning is supported by measurement exercises. This unit has a focused pedagogy intended for all graduate students in Architectural Science. It is a common core unit for all of the programs (Audio and Acoustics, High Performance Buildings, Illumination Design and Sustainable Design). Students within these programs should undertake this unit in their first semester of study if possible.

### Core Advanced units

**DESC9011**
**Audio Production**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 1 **Classes:** Lecture 3 hrs/wk **Assessment:** Two assignments (1x40%, 1x50%); in-class quizzes and exercises (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit examines tools, techniques, processes and value systems involved in audio production. Proficiency in sound recording techniques, including field and studio recordings, is developed, including technical acoustic, audio and aesthetic considerations. Students extend their understanding and experience of production principles by which sound recordings are used for building up realistic and hyper-realistic auditory scenes. Perspectives on audio production come from aesthetics, practice, acoustics theory, audio technology and digital audio systems, but ultimately are founded in the discipline of listening. By bringing these perspectives together, this unit is designed for students with a wide range of production experience at a postgraduate level.

Students are expected to work individually and in groups to produce audio for accompanying screen media, as well as audio works that rely solely on audio to transmit a message. Students are expected to: participate in the workshops; complete class exercises/constructions; read additional materials to discuss in classes; submit a script, composition or otherwise detailed proposal for recording and postproduction with detailed rationale of production values; produce and present a completed audio project, including documentation, evidence of background research, a commentary on the production and production outcomes, track sheets, mixing notes.

**DESC9090**
**Audio Systems and Measurement**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 2 **Classes:** Lectures 10x3 hrs, Labs 3x3 hrs (and continued lab projects) **Assumed knowledge:** DESC9138 **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Students will learn to make and understand a wide range of acoustical and electroacoustical measurements, assessed through laboratory or field work, and learn major aspects of sound system design, assessed through project work. Students will work in small groups in laboratory or field project work. Audio Systems and Measurement will develop knowledge and practical skills in electroacoustics; and the laboratory and project work will extend thinking and personal skills, so that students can apply the unit content to new situations.

Upon completing Audio Systems and Measurement, students will be expected to understand the signal-processing basis, implementation and limitations of a wide range of audio and acoustical measurement techniques, such as sound pressure, linear time-invariant system response, source directivity, non-linear distortion, time variance, uncertainty in measurement, intelligibility, and audio quality. Students will also be expected to be able to design sound reinforcement systems, and to model audio system performance using various theoretical techniques.

**DESC9115**
**Digital Audio Systems**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof William Martens **Session:** Semester 1 **Classes:** lectures 2hrs/wk; labs 1hr/wk **Assessment:** Two written review assignments (40%); one laboratory report (20%); weekly lab assignments (20%), 4 x in-class quiz (20%) **Practical field work:** Practical exercises include programming for digital signal processing of audio signals using high-level software packages to generate, manipulate and analyse sounds. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The objective of this unit is to provide both a strong theoretical understanding of digital audio and practical experience in applying these principles to digital audio systems. This unit offers a systematic approach to understanding digital audio systems. Beginning with basic principles the unit provides a knowledge base for understanding advanced digital audio components, systems and techniques. Examples of everyday audio signals are used and characterised in terms of their temporal and spectral properties. Practical application is emphasised and is supported through laboratory exercises that include programming as well as the use of current hardware and software packages. Topics include: digital principles, digital systems,

sampling and quantisation, 1-bit and multi-bit conversion, digital signal processing, filtering, spectral analysis, sampling-rate conversion, data compression (MPEG, etc.), effects processing (echo, reverb, etc.), virtual reality audio, mixing, editing, digital audio storage and transmission formats.

Having successfully completed this unit the student will have the tools to understand what happens to a digital audio signal when a given process is applied to it; how to best apply this process and how to successfully combine digital audio components.

**DESC9138**
**Architectural and Audio Acoustics**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 1 **Classes:** Lecture 3 hrs/wk **Assessment:** Exercise-based assignments (1x30%, 1x70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces the fundamental concepts and issues of audio and architectural acoustics, with an emphasis on theory. The unit introduces topics such as: basic acoustical concepts, quantities and units; principles of sound radiation and propagation; sound absorption and room acoustics; psychological acoustics; noise measurement and specification; speech intelligibility; and principles and specification of airborne sound insulation. Acoustics theory involves mathematics, and this unit aims to provide knowledge and skills so that such theory can be applied, with the help of spreadsheets and computer programs. Teaching is supported by demonstrations and tutorials. By completing this unit students will be able to understand acoustical terminology, and perform calculations and analysis applicable to sound in the environment, in buildings, and in audio contexts. They will have the ability to critically assess claims of acoustical performance. This unit provides the theoretical foundation for advanced units in audio and acoustics.

**DESC9201**
**Indoor Environmental Quality (IEQ)**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Lab-based assignment (40%); Exam (60%) **Mode of delivery:** Block mode

Humans' thermal, visual, auditory and olfactory senses determine the perceived quality of a built environment. This unit analyses built environments in context of these human factors. This unit relates human experience of buildings to the main dimensions of Indoor Environmental Quality (IEQ): thermal, acoustic, lighting and indoor pollution. This understanding of human comfort perceptions is contextualised by an understanding of the various approaches to the evaluation of built environmental performance. You will study post-occupancy evaluation tools and workplace productivity metrics. Regulations from Australia and abroad will be explored to understand their impact on acoustics, thermal comfort, lighting, indoor air quality and ventilation. The unit also pays particular attention to sustainability rating tools from around the world, including GreenStar, NABERS, LEED and BREEAM. This unit gives students extensive hands-on experience in laboratory- and field-based methods of IEQ research and building diagnostics. A recurring theme will be instrumental measurements of indoor environments, and how they can be analysed in relation to perceptual and behavioural data collected from occupants of those environments.

**DESC9117**
**Sound Design for New Media**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 2 **Classes:** Seminars 3 hrs/wk **Assessment:** Three assignments (1x30%, 1x30%, 1x40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit aims to introduce essential concepts in sound design for a range of applications in emerging media technologies such as: interactive systems, video games, immersive video and virtual reality. A grounding will be provided in the theory and criticism of sound design in order to develop an understanding of the potentialities of utilizing audio in synergy with accompanying media. The sound designer's role in the process of creation of meaning will be examined in cultural as well as technical contexts, with the aim of developing and extending production practices towards an articulate and coherent aesthetic. The unit will also look at current computer-based tools and techniques available to the sound designer, as well as examine the various underlying strategies, processes, and sound design philosophies.

Upon completion of this unit students will be expected to: understand the opportunities and challenges of different media and their essential concepts and terminology. Students will also acquaint themselves with the history, theory and criticism of sound design. Students will develop technical and conceptual skills in audio production including: building and programming physical computing audio systems, general miking techniques, producing sound effects, and mixing sound for different media, video game and interactive audio programming and immersive audio production.

## Capstone

**DESC9134**
**Audio and Acoustics Seminar**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 1 **Classes:** Seminar 1 hr + individual supervision **Prerequisites:** DESC9090 or DESC9133 **Assumed knowledge:** DESC9138 and DESC9011 **Assessment:** Preliminary Report (25%), Peer Review (10%); Oral Presentation (25%); Final Report (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to a broad range of current research in audio and acoustics, and gives them experience in research. It consists of a series of seminars on current research projects presented by active researchers in audio and acoustics, together with individual or small-group supervision of small-scale research projects.

By completing this unit students will gain an understanding of the research process, and receive some modest experience in research. They will appreciate a range of research methods and subject areas at the forefront of audio and acoustics. They will be in a good position to assess their interest in undertaking further academic research.

## Electives

Electives may be selected from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University.

## Research

DESC9300 in combination with either a Report or Dissertation may replace the capstone unit with permission of the Program Director.

**DESC9300**
**Research in Arch. and Design Science**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof William Martens **Session:** Semester 1, Semester 2 **Classes:** 5 workshop sessions (1 hr/wk for first five weeks) followed by individual student supervision by an appropriate staff member, and returning for the final oral report (in-class presentation) in week 13 of the semester. **Prohibitions:** ARCF9001 **Assessment:** Individual project based: 1x1500wd research proposal (30%); 1x3500wd final written report (50%); final oral report (20%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit aims to prepare students for undertaking a research project in the various sub-disciplines of Architectural and Design Science. It begins with the workshop-based presentation of foundations of experimental science relevant to research projects within these sub-disciplines. It highlights principles of experimental design and methods of data collection and analysis. Examples of previous projects undertaken by graduate students in Design Science will be presented, as appropriate, in any of the following areas: Audio and Acoustics, Building Services, Facilities Management, Illumination Design and Sustainable Design). Although this unit has a focused pedagogy intended for all graduate students in Design Science, enrollment may be expected by other coursework students within the Faculty of Architecture, Design and Planning, such as those undertaking the Master of Interaction Design and Electronic Arts (M.IDEA).

**ARCH9031**
**Research Report**

**Credit points:** 12 **Teacher/Coordinator:** Program Director **Session:** Semester 1, Semester 2 **Classes:** Independent research under academic supervision. **Assessment:** Research proposal (10%), 10,000 to 15,000 word Report (90%). Final reports due by the end of the first week of the formal examination period. **Mode of delivery:** Supervision

*Note: Department permission required for enrolment. Note: Available to Masters students only.*

The report is a substantial piece of research conducted over one semester. It takes the form of a report (between 10,000 and 15,000 words) on an approved subject of your choice. The report is an opportunity to advance your knowledge and skills in a particular area. The objective of the report is to allow you to develop research and analytic skills by undertaking an in-depth study of your own selection. The expected learning outcomes of the report include the ability to think critically about a problem and develop an appropriate research methodology or analytical approach to address it; identify and access appropriate sources of information, research and literature relevant to the issues; undertake relevant primary and secondary research; and present your findings in a way that demonstrates academic and professional competence. A report generally includes a literature review to delineate a problem; a statement of research aims or objectives, as well as research questions; an explanation of research methods; presentation and analysis of data; and discussion of conclusions. Permission to continue the Report may be subject to a satisfactory research proposal being approved by your supervisor by week 3 of semester. Reports are due at the end of the first week of exams for the semester in which you are enrolled. The assessment is based solely on the submission of your report. The report is generally marked by two examiners, neither of whom is your supervisor.

**ARCH9045**
**Dissertation 1**

**Credit points:** 12 **Teacher/Coordinator:** An academic supervisor is required. Discuss with your program coordinator. **Session:** Semester 1, Semester 2 **Classes:** Research under academic supervision **Prerequisites:** 48 credit points and a WAM of at least 75 **Corequisites:** ARCH9046 **Prohibitions:** ARCH9031 or PLAN9018 or ARCH9060 or PLAN9010 or PLAN9011 **Assessment:** 15,000 to 25,000 word dissertation (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

ARCH9045 and ARCH9046 Dissertation 1 and 2 are only available to candidates with permission from an appropriate supervisor. Planning students should take PLAN9010 and PLAN9011 Planning Dissertations 1 and 2. Students enrol either full time over one semester (ARCH9045 and ARCH9046) or part time over two semesters (ARCH9045 then ARCH9046). The units are not assessed separately - a single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student. Students and their supervisors should complete an Independent Study Approval form and return it to the Student Administration Centre to effect enrolment. The aim of the dissertation is to train the student in how to undertake advanced study. The student should learn how to examine published and unpublished data, survey and experimental results, set objectives, organise a program of work, analyse information, evaluate this in relation to existing knowledge and document the work; and to allow the student to pursue an area of interest in greater depth than is possible in coursework or to investigate an area of interest which is not covered in coursework. The dissertation will normally involve a critical review of published material in a specified subject area, but it may also be an experimental or theoretical investigation, a feasibility study, a case study, a computer program, or other work demonstrating the student's analytical ability. The dissertation should be 15,000 to 25,000 words in length. The dissertation should contain a literature review, a research methodology, analysis of data, a discussion of results and conclusions. The dissertation will be judged on the extent and quality of the student's work, and in particular on how critical, perceptive and constructive the student has been in assessing his or her own work and that of others. Three typed A4 sized copies of the dissertation are required to be presented for examination. These may be in either temporary or permanent binding. If in temporary binding they must be able to withstand ordinary handling and postage. The preferred method is "perfect binding"; spring back, ring back or spiral binding is not permitted. Students are required to submit one copy in permanent binding on acid free paper for the library, including any emendations recommended by the examiners. For more details see the requirements for the PhD thesis in the Postgraduate Research Studies Handbook. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled for Dissertation 2. The assessment is based solely on the submission of your dissertation. The dissertation is generally marked by two examiners.

**ARCH9046**
**Dissertation 2**

**Credit points:** 12 **Teacher/Coordinator:** An academic supervisor is required. Discuss with your program coordinator. **Session:** Semester 1, Semester 2 **Classes:** Research under academic supervision. **Corequisites:** ARCH9045 **Assessment:** 15,000 to 25,000 word dissertation (100%) **Mode of delivery:** Supervision

ARCH9045 and ARCH9046 Dissertation 1 and 2 are only available to candidates with permission from an appropriate supervisor. Planning students should take PLAN9010 and PLAN9011 Planning Dissertations 1 and 2. Students enrol either full time over one semester (ARCH9045 and ARCH9046) or part time over two semesters (ARCH9045 then ARCH9046). The units are not assessed separately - a single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student. Students and their supervisors should complete an Independent Study Approval form and return it to the Student Administration Centre to effect enrolment. The aim of the dissertation is to train the student in how to undertake advanced study. The student should learn how to examine published and unpublished data, survey and experimental results, set objectives, organise a program of work, analyse information, evaluate this in relation to existing knowledge and document the work; and to allow the student to pursue an area of interest in greater depth than is possible in coursework or to investigate an area of interest which is not covered in coursework. The dissertation will normally involve a critical review of published material in a specified subject area, but it may also be an experimental or theoretical investigation, a feasibility study, a case study, a computer program, or other work demonstrating the student's analytical ability. The dissertation should be 15,000 to 25,000 words in length. The dissertation should contain a literature review, a research methodology, analysis of data, a discussion of results and conclusions. The dissertation will be judged on the extent and quality of the student's work, and in particular on how critical, perceptive and constructive the student has been in assessing his or her own work and that of others. Three typed A4 sized copies of the dissertation are required to be presented for examination. These may be in either temporary or permanent binding. If in temporary binding they must be able to withstand ordinary handling and postage. The preferred method is "perfect binding"; spring back, ring back or spiral binding is not permitted. Students are required to submit one copy in permanent binding on acid free paper for the library, including any emendations recommended by the examiners. For more details see the requirements for the PhD thesis in the Postgraduate Research Studies Handbook. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled for Dissertation 2. The assessment is based solely on the submission of your dissertation. The dissertation is generally marked by two examiners.

## Recommended electives

**DESC9137**
**Spatial Audio**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Bates, Assoc Prof William Martens **Session:** Semester 1 **Classes:** Seminars 3 hrs/wk **Assumed knowledge:** DESC9138 and DESC9011 **Assessment:** 1x1000wd project proposal (10%); 1x2000wd review (20%); review presentation (20%); final project (40%); participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

Unit content: Stereophonic, binaural, and multichannel surround sound production techniques; Spatial acoustics and auditory spatial perception; spatial hearing and auditory spatial attributes (beyond localization): spatial sound quality; high resolution spatial audio recording and rendering techniques; auralisation in architectural design; virtual auditory space and hybrid real/virtual sound spaces; and interactive spatial audio technology and applications. By completing this unit students will acquire: strong theoretical foundations in spatial audio; experience with spatial audio systems (physical and computational); an appreciation of spatial audio potential of emerging technologies; and an ability to integrate spatial audio into their broader practice.

**DESC9135**
**Digital Audio Production with ProTools**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Bates, Assoc Prof Densil Cabrera **Session:** Intensive June **Classes:** 5-day intensive (9am-5pm) **Assessment:** Written project proposal (30%); class presentation (30%); project (40%). **Mode of delivery:** Block mode

This unit is intended to give an understanding of the principles and practice of computer-based audio production and post-production, through the focus of the industry standard ProTools software. This unit will: introduce the student to multitrack audio production concepts and practices as used with a personal computer; give an understanding of the specialised approaches and techniques used with various media, genres and formats; teach skills in computer-based audio production by way of lectures, practical demonstrations and individual or small-group practical work, both in-class and by assignments. Students will develop technical and conceptual digital sound recording skills across a wide range of production areas. They will gain an understanding of the implications of non-linear, hard disk based recording systems on production practices. They will develop sound design skills in composition, editing, signal processing and mixing, as well as data management and archiving.

**CAEL5035**
**The Art of Sound and Noise**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x3-hour studio class/week **Assessment:** thematic project (25%) and self-directed project (75%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will engage a studio-based approach to the production of sound art works through the prism of two of its primary means, namely recording and amplification. The emphasis will be on the production of recorded sound works and sound devices that can expand and develop the relationships between the analogue and the digital and between the composed and the open-ended structures of noise as an event. The unit will begin with ideas from sound ecology and music concrete and by way of field recording, sound manipulation and performance heading in an exploratory way towards the limits of sound as noise, situating the spectrum of a material practice with sound in a historical context. This unit will be conducted in an open studio framework within workshops, sound studios and digital labs suitable for candidates working in a broad range of artistic disciplines.

Sound has the potential to invent new sonic landscapes and to demarcate unheard psycho-geographies: from radical approaches towards production to potential new collaborations in the street (or in the landscape), from the technical and the scientific to oral investigations of the social. This open studio investigates sound as a primary vehicle for artistic expression in a work of contemporary art.

**DESC9153**
**Graduate Internship**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive December, Intensive July, Intensive November, Semester 1, Semester 2 **Classes:** Fieldwork **Assessment:** Log book signed by practice supervisor and report on the benefits of the internship (100); pass/fail only **Mode of delivery:** Professional practice

*Note: Department permission required for enrolment. Note: Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.*

The aims of the internship are to provide a direct link between the academic core of the course and the disciplines and methods of practice; to enable candidates to experience aspects of practice and provide the opportunity for them to work in areas of the field outside their specific expertise; to enable candidates to observe, analyse and comment on the interaction between theoretical and practical issues of their Program as it is practiced, and to establish connections between practice and the development of relevant research programs. The internship is intended to provide the opportunity for students to work in various situations in their Program's area. A secondary intention is that students use the opportunities of placement to broaden their own experience beyond the limitations of their chosen discipline. Candidates must find a suitable professional placement. Permission to enrol is given after the proposed placement has been approved by the Program Director. The host organisation will nominate a supervisor for the student for the internship. The student must complete at least 120 hours of full or part-time experience, supervised by a practicing designer (or other professional depending upon the field). A log-book of each day's work, signed by the supervisor must be submitted on completion. A 2000-word report on the benefits of the internship must also be produced. At the end of the internship the student will: demonstrate that they have completed a program of work (through a log-book); present a report; analyse their experiences and compare these to the theoretical content of the units they have completed, and suggest appropriate research directions so as to improve the complementarity of theory to practice.

**DESC9191**
**Building Acoustics and Noise Control**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 2 **Classes:** Lectures 3 hrs/wk **Assumed knowledge:** DESC9200 or DESC9138 **Assessment:** Two projects: 1x2000wd theoretical report (40%); 1x1500wd practical report (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit is offered in even-numbered years.*

This unit investigates the attenuation and control of noise generated by mechanical building services systems, sound insulation in buildings, and the effects of room acoustics. The unit includes fundamental theory, practical techniques to predict acoustic performance, measurement techniques and design principles. Students will gain an awareness of the statutory noise control and acoustic requirements and recommendations, current standards and sources of data. Moreover, students will obtain an ability in design and selection of acoustic treatment methods to meet those statutory requirements. Standard and advanced measurement techniques are examined. On the successful completion of this unit students will have an awareness of the statutory noise control requirements, current standards and sources of data; an understanding of the fundamentals of the basics of sound transmission; sound pressure and power; room acoustics and human auditory response; and an ability in design and selection of acoustic treatment methods to meet those statutory requirements.

**DESC9133**
**Architectural Acoustics Practice**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 2 **Classes:** Lectures 3 x 3 hrs/wk **Assumed knowledge:** DESC9138 **Assessment:** Two projects - 1x2000wd theoretical report (50%) and 1x1500wd practical report (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will cover a range of theoretical, practical and professional issues in architectural acoustics.

Codes and standards pertaining to architectural acoustics; Method and integrity of measurement; Room acoustical measurement, modelling, simulation and criteria; Sound absorption theory, measurement and specification; Sound insulation theory, measurement and specification; Design of spaces using acoustical criteria; and Field assessment of acoustical problems in and around buildings.

By the completion of this unit students will acquire knowledge and experience in areas commonly dealt with by the acoustical consulting profession. They will gain an appreciation of current issues in architectural acoustics, possibly inspiring future research.

DESC9133 (offered in odd years) DESC9191 (offered in even years)

# Graduate Certificate in Architectural Science (Building Services)

As the sustainability agenda focuses on optimisation of the carbon footprint of buildings, it is essential that building services are understood by all stakeholders in the built environment. The Building Services program's key objective is to impart this knowledge through a suite of core, optional and elective units of study that can be tailored to general or specialised interests.

The program is presented by a team comprising both industry and research leaders, and caters for graduates and practitioners wishing to advance their careers. Building Services units of study include mechanical, electrical, hydraulics, fire safety, energy performance and Indoor Environmental Quality.

## Unit of study table

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Graduate Certificate in Architectural Science (Building Services)** | | | |
| **Core Foundational Unit** | | | |
| **DESC9196**<br>**Building Services** | 6 | **A** DESC9200<br>*Note: Department permission required for enrolment* | Semester 1 |
| **Core Advanced units** | | | |
| **DESC9197**<br>**Energy Management and Code Compliance** | 6 | **A** DESC9015<br>*Note: Department permission required for enrolment* | Semester 2 |
| **DESC9067**<br>**Mechanical Services** | 6 | | Semester 2 |
| **Recommended Electives** | | | |
| **DESC9200**<br>**Introduction to Architectural Science** | 6 | | Semester 1 |
| **DESC9673**<br>**Intelligent Building Control Systems** | 6 | | Semester 1 |
| **DESC9164**<br>**Lighting Technologies** | 6 | **N** DESC9063 | Semester 2 |
| **DESC9074**<br>**Project Management** | 6 | | Semester 2 |
| **DESC9201**<br>**Indoor Environmental Quality (IEQ)** | 6 | | Semester 2 |

## Unit of study descriptions

### Graduate Certificate in Architectural Science (Building Services)

#### Core Foundational Unit

**DESC9196**
**Building Services**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assumed knowledge:** DESC9200 **Assessment:** Assignment (60%); Seminar (40%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

Technological advances have transformed virtually every aspect of building services including vertical transportation, fire detection and protection, hydraulics and plumbing, heating ventilation and air conditioning, electrical and lighting, security and data networking. This unit develops a critical understanding of the principles of selection, operation and management of these service systems in buildings of larger-than-domestic scale. Upon completion of the unit, students will be able to contribute competently to the decision-making processes related to these systems, and to be aware of the implications of these decisions upon both building design and operational performance. Students will also gain an understanding of the fundamentals of building services functioning, technologies currently available, along with the design and performance implications of competing solutions. Performance metrics to be discussed include energy consumption, space requirements, accessibility for maintenance, and impacts on adjacent floors. Topics will also include the roles of the facilities manager and building services manager in achieving high performance from building service systems. Utilisation of facilities management tools including state-of-the-art software packages will be discussed along with the inclusion of building services within Building Information Modeling and Management strategies.

*Textbooks*

Parlour, R.P. (2000). Building Services: a Guide to Integrated Design Engineering for Architects. Pymble, NSW: Integral Publishing
Atkin, B. and Brooks, A. (2005). Total Facilities Management. Oxford: Blackwell

#### Core Advanced units

**DESC9197**
**Energy Management and Code Compliance**

**Credit points:** 6 **Teacher/Coordinator:** Prof Jianlei Niu **Session:** Semester 2 **Classes:** 5 wks lecture, lab, tutorial; 7 hrs additional tutorials **Assumed**

**knowledge:** DESC9015 **Assessment:** Assignment 1 (40%); Assignment 2 (60%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

Objectives of this unit are to give students an understanding of energy consumption issues in buildings against the backdrop of escalating energy and carbon emission reduction targets for the built environment. In order to meet these targets, new design and operational management techniques are needed, including energy auditing, retrofitting and energy efficiency optimisation techniques. This unit is primarily concerned with energy management in buildings and Code compliance in Australia. The unit will expose students to the processes and considerations involved in undertaking an energy audit in buildings. Active energy systems and their fundamentals may be reviewed. Finally, methods of assessing energy performance will be covered, with emphasis on energy simulation. Understanding and application of Australian standards and rating schemes such as NCC/Section J, NABERS Energy, GBCAÂ¿s Green Star, Living Building Challenge, etc., will also be explored.

**DESC9067**
**Mechanical Services**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment (90%); participation (10%) **Mode of delivery:** Block mode

This unit reviews the need for and application of Mechanical services in the built environment - in particular commercial buildings. Mechanical services are responsible for significant portion of energy and water consumption in buildings. Thus they have become important components of most modern building complexes, with a strong influence on other services and the architecture. This unit provides an introduction to these services by experienced presenters, including from the industry, for recent graduates or diplomats in mechanical engineering and an understanding of fundamental principles and practice for people from backgrounds other than mechanical engineering. Students will acquire skills in appreciation of impact of mechanical services on the environment, including recent mandatory regulations, together with estimating ventilation, cooling and heating requirements, design of simple ventilation, air conditioning and smoke hazard management systems, combined with an overview of water, refrigerant, ducted systems, with applicable equipment, energy, noise, human comfort, air quality criteria. Principles of heat transfer and fluid flow are applied to applications of mechanical ventilation, air conditioning and smoke hazard magagement, to satisfy regulations and standards, occupant and community expectations. The practical basis of the programme leads to a design assignment involving selecting equipment and systems to provide mechanical services in a building.

## Recommended Electives

**DESC9200**
**Introduction to Architectural Science**

**Credit points:** 6 **Teacher/Coordinator:** Dr Christhina Candido **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Block mode

This unit aims to explore the scientific concepts of heat, light and sound, and from this develops foundational principles and methods applicable to buildings. It is divided into five topics: climate, thermal environment, mechanical services, lighting, and acoustics. Students will gain an understanding of the terminology, physical values and metrics in each of these topics, and how they apply to the design and function of buildings. Theoretical models to predict key physical values in buildings are presented and used in assessments. Learning is supported by measurement exercises. This unit has a focused pedagogy intended for all graduate students in Architectural Science. It is a common core unit for all of the programs (Audio and Acoustics, High Performance Buildings, Illumination Design and Sustainable Design). Students within these programs should undertake this unit in their first semester of study if possible.

**DESC9673**
**Intelligent Building Control Systems**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment (60%), Seminar/site visit (40%) **Mode of delivery:** Block mode

The term 'intelligent buildings' was coined some thirty years ago with the advent of Direct Digital Controls (DDC), but only recently can buildings can truly be considered 'intelligent' thanks to advances in sensor technology, control systems theory, information technology, and electronics in general. This unit presents an overview of intelligent buildings from the Building Management and Control System (BMCS) perspective, focusing specifically on Heating Ventilation Air Conditioning (HVAC) processes, plus other building services including security, lighting, and vertical transportation. Fundamentals of control systems theory and technology will be presented. State-of-the-art BMCS capabilities will be demonstrated in relation to optimising the environmental, workplace productivity and economic performance of buildings. Sustainability issues covered by the unit include the role of BMCS in monitoring and managing energy and carbon footprint, water resources and indoor environmental quality (IEQ). The learning outcomes of this unit of study will include sufficient understanding of building controls to enable optimum building performance. It will also provide a platform for critical analysis of control and operational strategies adopted through techniques such as diagnostics and trend logging of parameters such as energy, water, temperature, humidity, to mention a few.

**DESC9164**
**Lighting Technologies**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2 **Classes:** 5-day intensive **Prohibitions:** DESC9063 **Assessment:** Two assignments (2x50%) **Mode of delivery:** Block mode

This unit covers the technologies employed in generating, distributing, and controlling light in illuminated environments. Students learn the advantages and disadvantages of different hardware options for various lighting applications. A brief history of lighting technologies and the physical processes involved with electrically generating light are included in this unit. Practical characteristics of currently popular lamp types, as well as emerging lighting technologies, are presented. The effects of integral luminaires and other light fittings on the resulting illumination are covered, as are the electrical requirements of different lighting technologies. This unit also includes calculation techniques for predicting the illumination in spaces from lighting products. The selection, operation, and implications of lighting control options are discussed. The underlying principles and practical consequences of the different characteristics of various lighting technologies are emphasised to enable students to independently evaluate future innovations in lighting technologies.

**DESC9074**
**Project Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

Project Management is specific form of establishing, programming, and coordinating an activity having a specific start point and end point. This body of knowledge - as for example in the Project Management Book of Knowledge (PMBOK) - needs to be understood in general terms. Initially project managers must identify and define the services that are needed, (scope) and that their employers are willing to endorse. The activities requiring to be carried out need to be sorted and sequenced; the materials, labour and plant required need to be estimated and procured. Projects involve the management of information, and communications. This unit will develop the student's ability to ascertain and document the scope of a project, schedule a programme, and understand the difficulties in directing it. This unit approaches the profession of Project Management as a cooperative undertaking rather than adversarial: it promotes the adoption of soft-skills rather than that of forceful command and supervision.

**DESC9201**
**Indoor Environmental Quality (IEQ)**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Lab-based assignment (40%); Exam (60%) **Mode of delivery:** Block mode

Humans' thermal, visual, auditory and olfactory senses determine the perceived quality of a built environment. This unit analyses built environments in context of these human factors. This unit relates human experience of buildings to the main dimensions of Indoor Environmental Quality (IEQ): thermal, acoustic, lighting and indoor pollution. This understanding of human comfort perceptions is contextualised by an understanding of the various approaches to the evaluation of built environmental performance. You will study post-occupancy evaluation tools and workplace productivity metrics. Regulations from Australia and abroad will be explored to understand their impact on acoustics, thermal comfort, lighting, indoor air quality and ventilation. The unit also pays particular attention to sustainability rating tools from around the world, including GreenStar, NABERS, LEED and BREEAM. This unit gives students extensive hands-on experience in laboratory- and field-based methods of IEQ research and building diagnostics. A recurring theme will be instrumental measurements of indoor environments, and how they can be analysed in relation to perceptual and behavioural data collected from occupants of those environments.

# Graduate Certificate in Architectural Science (Facilities Management)

The Facilities Management stream is available in the Master of Design Science as a secondary stream. See the Master of Facilities Management entry for details of this program which is offered primarily under its own named award courses.

## Units of study table

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Graduate Certificate in Architectural Science (Facilities Management)** | | | |
| Core Foundational unit | | | |
| **DESC9048**<br>**Operational Facility Management** | 6 | | Semester 1 |
| Core Advanced units | | | |
| **DESC9194**<br>**Asset and Facility Management** | 6 | | Semester 1 |
| **DESC9195**<br>**Building Economics** | 6 | | Semester 2 |
| Recommended Electives | | | |
| **DESC9200**<br>**Introduction to Architectural Science** | 6 | | Semester 1 |
| **DESC9673**<br>**Intelligent Building Control Systems** | 6 | | Semester 1 |
| **DESC9074**<br>**Project Management** | 6 | | Semester 2 |
| **DESC9201**<br>**Indoor Environmental Quality (IEQ)** | 6 | | Semester 2 |

# Unit of study descriptions

# Graduate Certificate in Architectural Science (Facilities Management)

## Core Foundational unit

**DESC9048**
**Operational Facility Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** 2000wd individual assessment (30%); 4000wd group assignment (50%); presentation and written paper (20%) **Mode of delivery:** Block mode

Operational Facility Management is a service industry concerned with the day-to-day operations required to run an organisation's facilities. Primarily facility operation has to satisfy the user organisation's statutory responsibilities. Beyond that, whilst some major costs (such as rates, land taxes, Insurance premiums, etc.) are fixed, other costs are amenable to management. Operational Facility Management necessarily requires those charged with the task to evaluate where their effort is spent and where the significant resourcing costs lie, thus allowing them to prioritise and match their effort to the effect.

This unit will involve considerations of subcontracting and examine 'best practice' guidelines for both hard and soft service provision.

## Core Advanced units

**DESC9194**
**Asset and Facility Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5 weeks lectures/tutorials; 6 hours additional tutorials **Assessment:** Assignment 1: Written Assignment - Individual (30%); Assignment 2: Written Assignment - Group (40%); Project Critique/Class Presentation (30%) **Mode of delivery:** Block mode

Property and physical infrastructure are essential elements of business operations and organisational functions. This unit of study will examine the key issues in built assets and facilities management (FM), and how they relate to strategic management within the context of high performance buildings. The unit will enable students to develop an understanding of strategic asset management, portfolio planning, benchmarking of operational services, mandatory code compliances, and business needs for high performing facilities. The functions of facilities management within built assets have a direct relationship with the organisation's performance within a constantly changing business environment. A technical understanding of built assets is a prerequisite to optimising business efficiency and future-proofing against market changes. The unit is taught using a case-study methodology with students working through actual industry projects, thus stimulating a broader appreciation of the FM work involved and encouraging students to work collaboratively and creatively towards practical solutions.

*Textbooks*

Booty, F. (2009). Facilities Management Handbook. Oxford: Butterworth-Heinemann
Best, R., Langston, C., De Valence, G. (2003). Workplace Strategies and Facilities Management. Oxford: Butterworth-Heinemann
Finch, E. (2012). Facilities Change Management. Chichester, West Sussex, UK: Blackwell

**DESC9195**
**Building Economics**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Individual Written Assignment 1 (30%); Group Written Assignment 2 (40%); Project Critique/Class Presentation (30%) **Mode of delivery:** Block mode

Investors associated with the property industry require at the outset Return On Investment (ROI) evaluations before committing capital. This unit of study examines the economic principles as they apply to buildings, from capital growth and life cycle management perspectives. The focus is on economic and financial practices required for high performing building assets, contract procurement strategies, cash flow analysis, return on investment for retro-fitting, and economic appraisals of existing or new building assets. This unit will develop an understanding of carbon accounting in relation to building management and its importance to sustainable built asset portfolios. The unit, taught by case studies, will equip students with an understanding of economic principles and professional tools necessary for the procurement and management of real estate property, facilities and buildings at optimum economic and environmental performance.

*Textbooks*

Langston, C. A. (2005). Life-cost approach to building evaluation. Sydney: UNSW Press
Dell'Isola, A. J., and Kirk, S. J. (1995). Life cycle costing for design professionals. New York: McGraw-Hill
Manser, J. E. (1994). Economics: A foundation course for the built environment. London: Spon.

## Recommended Electives

**DESC9200**
**Introduction to Architectural Science**

**Credit points:** 6 **Teacher/Coordinator:** Dr Christhina Candido **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Block mode

This unit aims to explore the scientific concepts of heat, light and sound, and from this develops foundational principles and methods applicable to buildings. It is divided into five topics: climate, thermal environment, mechanical services, lighting, and acoustics. Students will gain an understanding of the terminology, physical values and metrics in each of these topics, and how they apply to the design and function of buildings. Theoretical models to predict key physical values in buildings are presented and used in assessments. Learning is supported by measurement exercises. This unit has a focused pedagogy intended for all graduate students in Architectural Science. It is a common core unit for all of the programs (Audio and Acoustics, High Performance Buildings, Illumination Design and Sustainable Design). Students within these programs should undertake this unit in their first semester of study if possible.

**DESC9673**
**Intelligent Building Control Systems**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment (60%), Seminar/site visit (40%) **Mode of delivery:** Block mode

The term 'intelligent buildings' was coined some thirty years ago with the advent of Direct Digital Controls (DDC), but only recently can buildings can truly be considered 'intelligent' thanks to advances in sensor technology, control systems theory, information technology, and electronics in general. This unit presents an overview of intelligent buildings from the Building Management and Control System (BMCS) perspective, focusing specifically on Heating Ventilation Air Conditioning (HVAC) processes, plus other building services including security, lighting, and vertical transportation. Fundamentals of control systems theory and technology will be presented. State-of-the-art BMCS capabilities will be demonstrated in relation to optimising the environmental, workplace productivity and economic performance of buildings. Sustainability issues covered by the unit include the role of BMCS in monitoring and managing energy and carbon footprint, water resources and indoor environmental quality (IEQ). The learning outcomes of this unit of study will include sufficient understanding of building controls to enable optimum building performance. It will also provide a platform for critical analysis of control and operational strategies adopted through techniques such as diagnostics and trend logging of parameters such as energy, water, temperature, humidity, to mention a few.

**DESC9074**
**Project Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

Project Management is specific form of establishing, programming, and coordinating an activity having a specific start point and end point. This body of knowledge - as for example in the Project Management Book of Knowledge (PMBOK) - needs to be understood in general terms. Initially project managers must identify and define the services that are needed, (scope) and that their employers are willing to endorse. The activities requiring to be carried out need to be sorted and sequenced; the materials, labour and plant required need to be estimated and procured. Projects involve the management of information, and communications. This unit will develop the student's ability to ascertain and document the scope of a project, schedule a programme, and understand the difficulties in directing it. This unit approaches the profession of Project Management as a cooperative undertaking rather than adversarial: it promotes the adoption of soft-skills rather than that of forceful command and supervision.

**DESC9201**
**Indoor Environmental Quality (IEQ)**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Lab-based assignment (40%); Exam (60%) **Mode of delivery:** Block mode

Humans' thermal, visual, auditory and olfactory senses determine the perceived quality of a built environment. This unit analyses built environments in context of these human factors. This unit relates human experience of buildings to the main dimensions of Indoor Environmental Quality (IEQ): thermal, acoustic, lighting and indoor pollution. This understanding of human comfort perceptions is contextualised by an understanding of the various approaches to the evaluation of built environmental performance. You will study post-occupancy evaluation tools and workplace productivity metrics. Regulations from Australia and abroad will be explored to understand their impact on acoustics, thermal comfort, lighting, indoor air quality and ventilation. The unit also pays particular attention to sustainability rating tools from around the world, including GreenStar, NABERS, LEED and BREEAM. This unit gives students extensive hands-on experience in laboratory- and field-based methods of IEQ research and building diagnostics. A recurring theme will be instrumental measurements of indoor environments, and how they can be analysed in relation to perceptual and behavioural data collected from occupants of those environments.

# Master of Architectural Science (High Performance Buildings)

The Master of Architectural Science (High Performance Buildings) is a pathway to an exciting and rewarding career in the built environment field.

This unique degree specialisation allows you to pursue a career within a range of areas, including building services, architectural practice, business, sustainable design, commercial development, property management and more.

You will also gain the skills to ensure maximum operational efficiencies and optimal comfort and health for occupants of corporate and residential environments.

As the world's population becomes increasingly urbanised and buildings account for 40 percent of our energy costs, high performance buildings are more important than ever.

The challenge is to reduce energy consumption and maintenance costs of large buildings while ensuring a comfortable and productive environment for occupants.

To achieve this, the industry requires a new type of professional, an expert with specialised skills in optimising new and existing buildings for the best design and delivery of services. Graduates from this program can expect to work in facilities management, building services, sustainable design and property development.

## Unit of study table

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **High Performance Buildings Stream** | | | |
| **Core Foundational units** | | | |
| **DESC9200**<br>**Introduction to Architectural Science** | 6 | | Semester 1 |
| **Core Advanced units** | | | |
| **DESC9014**<br>**Building Construction Technology** | 6 | | Semester 1 |
| **DESC9675**<br>**High Performance Facades** | 6 | | Semester 1 |
| **DESC9067**<br>**Mechanical Services** | 6 | | Semester 2 |
| **DESC9201**<br>**Indoor Environmental Quality (IEQ)** | 6 | | Semester 2 |
| **DESC9015**<br>**Building Energy Analysis** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **DESC9195**<br>**Building Economics** | 6 | | Semester 2 |
| **Capstone** | | | |
| **DESC9674**<br>**Building Information Management** | 6 | **P** DESC9200 and DESC9014 | Semester 1 |
| **DESC9673**<br>**Intelligent Building Control Systems** | 6 | | Semester 1 |
| **Electives**<br>Electives may be selected from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University. | | | |
| **Research Electives**<br>DESC93000 in combination with either a Report or Dissertation may replace the capstone with the permission of the Program Director. | | | |
| **DESC9300**<br>**Research in Arch. and Design Science** | 6 | **N** ARCF9001<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **ARCH9045**<br>**Dissertation 1** | 12 | **P** 48 credit points and a WAM of at least 75<br>**C** ARCH9046<br>**N** ARCH9031 or PLAN9018 or ARCH9060 or PLAN9010 or PLAN9011<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **ARCH9046**<br>**Dissertation 2** | 12 | **C** ARCH9045 | Semester 1<br>Semester 2 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| Electives | | | |
| **DESC9164**<br>**Lighting Technologies** | 6 | **N** DESC9063 | Semester 2 |
| **DESC9196**<br>**Building Services** | 6 | **A** DESC9200<br>*Note: Department permission required for enrolment* | Semester 1 |
| **DESC9197**<br>**Energy Management and Code Compliance** | 6 | **A** DESC9015<br>*Note: Department permission required for enrolment* | Semester 2 |
| **DESC9048**<br>**Operational Facility Management** | 6 | | Semester 1 |
| **DESC9074**<br>**Project Management** | 6 | | Semester 2 |
| **DESC9194**<br>**Asset and Facility Management** | 6 | | Semester 1 |
| **DESC9147**<br>**Sustainable Building Design Principles** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **DESC9148**<br>**Sustainable Building Design Practice** | 6 | **P** DESC9201 | Semester 1 |
| **DESC9169**<br>**Daylight in Buildings** | 6 | **N** DESC9106 | Semester 2 |
| **DESC9153**<br>**Graduate Internship** | 6 | *Note: Department permission required for enrolment*<br>*Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.* | Intensive December<br>Intensive July<br>Intensive November<br>Semester 1<br>Semester 2 |

# Unit of study descriptions

## High Performance Buildings Stream

### Core Foundational units

**DESC9200**
**Introduction to Architectural Science**

**Credit points:** 6 **Teacher/Coordinator:** Dr Christhina Candido **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Block mode

This unit aims to explore the scientific concepts of heat, light and sound, and from this develops foundational principles and methods applicable to buildings. It is divided into five topics: climate, thermal environment, mechanical services, lighting, and acoustics. Students will gain an understanding of the terminology, physical values and metrics in each of these topics, and how they apply to the design and function of buildings. Theoretical models to predict key physical values in buildings are presented and used in assessments. Learning is supported by measurement exercises. This unit has a focused pedagogy intended for all graduate students in Architectural Science. It is a common core unit for all of the programs (Audio and Acoustics, High Performance Buildings, Illumination Design and Sustainable Design). Students within these programs should undertake this unit in their first semester of study if possible.

### Core Advanced units

**DESC9014**
**Building Construction Technology**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

This unit covers three related areas of investigation: basic building construction practices, advanced building construction practices and sustainable construction. It begins by introducing a number of recurrent themes in construction in Australia at the present time including the idea of building culture, the various modes of delivery and variety of classifications of buildings and building elements, rational construction and construction detailing from first principles. There follows a review of construction techniques of domestic scaled buildings using, where appropriate, examples of well documented and/or accessible exemplars. The second part of the unit reviews current approaches to building technologies employed in more complex public and commercial scaled buildings, particularly with regard to processes of structural system selection, façade systems design and construction and material performance. The fundamentals of heat transfer and effects of external conditions on indoor comfort, aspects of the National Construction Code and integration of services into the building fabric relevant to building services engineers will also be reviewed. Again, accessible exemplars will be covered. Finally the unit will review current issues related to key attributes of buildings which make them sustainable, particularly with regard to material selection, appropriate detailing for energy and resources conservation and building reuse and recycling.

**DESC9675**
**High Performance Facades**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

This unit explores advanced building façades and their role in reducing environmental impacts while simultaneously enhancing indoor environment quality for building occupants. Advanced façades are those that are designed, analysed, procured and operated as a system. Optimisation of the often conflicting performance criteria of cooling load, lighting and daylighting, sound isolation, occupant comfort, costs and aesthetics requires an integrated approach from the whole team including architects, project managers, suppliers and engineers, from the earliest stages of the advanced façade design process. Specific topics to be covered in this unit include the integrated design approach to façades, the fundamental building physics determiningfaçadeperformance, structural façade typologies, solar control façades, daylighting façades, double-skin façades, ventilated façades and dynamicfaçadesystems. Variousanalyticalprocedures and simulation tools for the evaluation of high performancefaçadedesigns will also be examined.Costs and benefits of various design approaches will also be assessed from both owner and occupant perspectives.

**DESC9067**
**Mechanical Services**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment (90%); participation (10%) **Mode of delivery:** Block mode

This unit reviews the need for and application of Mechanical services in the built environment - in particular commercial buildings. Mechanical services are responsible for significant portion of energy and water consumption in buildings. Thus they have become important components of most modern building complexes, with a strong influence on other services and the architecture. This unit provides an introduction to these services by experienced presenters, including from the industry, for recent graduates or diplomats in mechanical engineering and an understanding of fundamental principles and practice for people from backgrounds other than mechanical engineering. Students will acquire skills in appreciation of impact of mechanical services on the environment, including recent mandatory regulations, together with estimating ventilation, cooling and heating requirements, design of simple ventilation, air conditioning and smoke hazard management systems, combined with an overview of water, refrigerant, ducted systems, with applicable equipment, energy, noise, human comfort, air quality criteria. Principles of heat transfer and fluid flow are applied to applications of mechanical ventilation, air conditioning and smoke hazard magagement, to satisfy regulations and standards, occupant and community expectations. The practical basis of the programme leads to a design assignment involving selecting equipment and systems to provide mechanical services in a building.

**DESC9201**
**Indoor Environmental Quality (IEQ)**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Lab-based assignment (40%); Exam (60%) **Mode of delivery:** Block mode

Humans' thermal, visual, auditory and olfactory senses determine the perceived quality of a built environment. This unit analyses built environments in context of these human factors. This unit relates human experience of buildings to the main dimensions of Indoor Environmental Quality (IEQ): thermal, acoustic, lighting and indoor pollution. This understanding of human comfort perceptions is contextualised by an understanding of the various approaches to the evaluation of built environmental performance. You will study post-occupancy evaluation tools and workplace productivity metrics. Regulations from Australia and abroad will be explored to understand their impact on acoustics, thermal comfort, lighting, indoor air quality and ventilation. The unit also pays particular attention to sustainability rating tools from around the world, including GreenStar, NABERS, LEED and BREEAM. This unit gives students extensive hands-on experience in laboratory- and field-based methods of IEQ research and building diagnostics. A recurring theme will be instrumental measurements of indoor environments, and how they can be analysed in relation to perceptual and behavioural data collected from occupants of those environments.

**DESC9015**
**Building Energy Analysis**

**Credit points:** 6 **Teacher/Coordinator:** Dr PC Thomas **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

The aim of the unit is to acquaint students with the range of analytical and design tools available for low energy building design; to provide the opportunity for students to become proficient at using some of these tools. Among the techniques and tools explored are: climate data analysis; graphical and model techniques for solar studies; steady state and dynamic heat flow analysis; simplified methods for sizing passive solar elements; computer models of thermal performance; modelling ventilation; estimating energy consumption. Emphasis is given to tools which assist the design of the building fabric rather than building systems. At the end of the unit it is expected that students will: be aware of the importance of quantitative analysis in the design of low energy buildings; have an understanding of the theoretical basis of a range of analytical techniques; be familiar with the range of techniques available for building energy analysis; be able to apply many of these to design analysis; be familiar with the range of thermal analysis computer software available; and be able to use a software package to analyse the thermal performance of a typical small scale building. All of the assignments are designed to provide students with hands-on experience of each of the analysis tools.

**DESC9195**
**Building Economics**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Individual Written Assignment 1 (30%); Group Written Assignment 2 (40%); Project Critique/Class Presentation (30%) **Mode of delivery:** Block mode

Investors associated with the property industry require at the outset Return On Investment (ROI) evaluations before committing capital. This unit of study examines the economic principles as they apply to buildings, from capital growth and life cycle management perspectives. The focus is on economic and financial practices required for high performing building assets, contract procurement strategies, cash flow analysis, return on investment for retro-fitting, and economic appraisals of existing or new building assets. This unit will develop an understanding of carbon accounting in relation to building management and its importance to sustainable built asset portfolios. The unit, taught by case studies, will equip students with an understanding of economic principles and professional tools necessary for the procurement and management of real estate property, facilities and buildings at optimum economic and environmental performance.

*Textbooks*

Langston, C. A. (2005). Life-cost approach to building evaluation. Sydney: UNSW Press
Dell'Isola, A. J., and Kirk, S. J. (1995). Life cycle costing for design professionals. New York: McGraw-Hill
Manser, J. E. (1994). Economics: A foundation course for the built environment. London: Spon.

## Capstone

**DESC9674**
**Building Information Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Prerequisites:** DESC9200 and DESC9014 **Assessment:** Assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

This unit will introduce students to the theory and practice of building information management and modelling. The unit starts with building management, which brings knowledge and skill on how to operate buildings to optimise performance. It also introduces Building Information Modelling (BIM), which is a digital representation of physical and functional characteristics of a facility. Building information models are shared knowledge resources about a facility, forming a reliable basis for decisions during its life-cycle from earliest conception to demolition. The unit explores the wider use of building information models not only in design but also in construction management, facility management, post construction evaluation, and retrofitting. By bringing together the building management and the information modelling, the unit responds to emergent requirements within the building sector for new tools and practices to offset the growing complexity in the design and construction of high performance buildings.

**DESC9673**
**Intelligent Building Control Systems**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment (60%), Seminar/site visit (40%) **Mode of delivery:** Block mode

The term 'intelligent buildings' was coined some thirty years ago with the advent of Direct Digital Controls (DDC), but only recently can buildings can truly be considered 'intelligent' thanks to advances in sensor technology, control systems theory, information technology, and electronics in general. This unit presents an overview of intelligent

buildings from the Building Management and Control System (BMCS) perspective, focusing specifically on Heating Ventilation Air Conditioning (HVAC) processes, plus other building services including security, lighting, and vertical transportation. Fundamentals of control systems theory and technology will be presented. State-of-the-art BMCS capabilities will be demonstrated in relation to optimising the environmental, workplace productivity and economic performance of buildings. Sustainability issues covered by the unit include the role of BMCS in monitoring and managing energy and carbon footprint, water resources and indoor environmental quality (IEQ). The learning outcomes of this unit of study will include sufficient understanding of building controls to enable optimum building performance. It will also provide a platform for critical analysis of control and operational strategies adopted through techniques such as diagnostics and trend logging of parameters such as energy, water, temperature, humidity, to mention a few.

# Electives

Electives may be selected from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University.

## Research Electives

DESC93000 in combination with either a Report or Dissertation may replace the capstone with the permission of the Program Director.

**DESC9300**
**Research in Arch. and Design Science**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof William Martens **Session:** Semester 1, Semester 2 **Classes:** 5 workshop sessions (1 hr/wk for first five weeks) followed by individual student supervision by an appropriate staff member, and returning for the final oral report (in-class presentation) in week 13 of the semester. **Prohibitions:** ARCF9001 **Assessment:** Individual project based: 1x1500wd research proposal (30%); 1x3500wd final written report (50%); final oral report (20%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit aims to prepare students for undertaking a research project in the various sub-disciplines of Architectural and Design Science. It begins with the workshop-based presentation of foundations of experimental science relevant to research projects within these sub-disciplines. It highlights principles of experimental design and methods of data collection and analysis. Examples of previous projects undertaken by graduate students in Design Science will be presented, as appropriate, in any of the following areas: Audio and Acoustics, Building Services, Facilities Management, Illumination Design and Sustainable Design). Although this unit has a focused pedagogy intended for all graduate students in Design Science, enrollment may be expected by other coursework students within the Faculty of Architecture, Design and Planning, such as those undertaking the Master of Interaction Design and Electronic Arts (M.IDEA).

**ARCH9045**
**Dissertation 1**

**Credit points:** 12 **Teacher/Coordinator:** An academic supervisor is required. Discuss with your program coordinator. **Session:** Semester 1, Semester 2 **Classes:** Research under academic supervision **Prerequisites:** 48 credit points and a WAM of at least 75 **Corequisites:** ARCH9046 **Prohibitions:** ARCH9031 or PLAN9018 or ARCH9060 or PLAN9010 or PLAN9011 **Assessment:** 15,000 to 25,000 word dissertation (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

ARCH9045 and ARCH9046 Dissertation 1 and 2 are only available to candidates with permission from an appropriate supervisor. Planning students should take PLAN9010 and PLAN9011 Planning Dissertations 1 and 2. Students enrol either full time over one semester (ARCH9045 and ARCH9046) or part time over two semesters (ARCH9045 then ARCH9046). The units are not assessed separately - a single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student. Students and their supervisors should complete an Independent Study Approval form and return it to the Student Administration Centre to effect enrolment. The aim of the dissertation is to train the student in how to undertake advanced study. The student should learn how to examine published and unpublished data, survey and experimental results, set objectives, organise a program of work, analyse information, evaluate this in relation to existing knowledge and document the work; and to allow the student to pursue an area of interest in greater depth than is possible in coursework or to investigate an area of interest which is not covered in coursework. The dissertation will normally involve a critical review of published material in a specified subject area, but it may also be an experimental or theoretical investigation, a feasibility study, a case study, a computer program, or other work demonstrating the student's analytical ability. The dissertation should be 15,000 to 25,000 words in length. The dissertation should contain a literature review, a research methodology, analysis of data, a discussion of results and conclusions. The dissertation will be judged on the extent and quality of the student's work, and in particular on how critical, perceptive and constructive the student has been in assessing his or her own work and that of others. Three typed A4 sized copies of the dissertation are required to be presented for examination. These may be in either temporary or permanent binding. If in temporary binding they must be able to withstand ordinary handling and postage. The preferred method is "perfect binding"; spring back, ring back or spiral binding is not permitted. Students are required to submit one copy in permanent binding on acid free paper for the library, including any emendations recommended by the examiners. For more details see the requirements for the PhD thesis in the Postgraduate Research Studies Handbook. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled for Dissertation 2. The assessment is based solely on the submission of your dissertation. The dissertation is generally marked by two examiners.

**ARCH9046**
**Dissertation 2**

**Credit points:** 12 **Teacher/Coordinator:** An academic supervisor is required. Discuss with your program coordinator. **Session:** Semester 1, Semester 2 **Classes:** Research under academic supervision. **Corequisites:** ARCH9045 **Assessment:** 15,000 to 25,000 word dissertation (100%) **Mode of delivery:** Supervision

ARCH9045 and ARCH9046 Dissertation 1 and 2 are only available to candidates with permission from an appropriate supervisor. Planning students should take PLAN9010 and PLAN9011 Planning Dissertations 1 and 2. Students enrol either full time over one semester (ARCH9045 and ARCH9046) or part time over two semesters (ARCH9045 then ARCH9046). The units are not assessed separately - a single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student. Students and their supervisors should complete an Independent Study Approval form and return it to the Student Administration Centre to effect enrolment. The aim of the dissertation is to train the student in how to undertake advanced study. The student should learn how to examine published and unpublished data, survey and experimental results, set objectives, organise a program of work, analyse information, evaluate this in relation to existing knowledge and document the work; and to allow the student to pursue an area of interest in greater depth than is possible in coursework or to investigate an area of interest which is not covered in coursework. The dissertation will normally involve a critical review of published material in a specified subject area, but it may also be an experimental or theoretical investigation, a feasibility study, a case study, a computer program, or other work demonstrating the student's analytical ability. The dissertation should be 15,000 to 25,000 words in length. The dissertation should contain a literature review, a research methodology, analysis of data, a discussion of results and conclusions. The dissertation will be judged on the extent and quality of the student's work, and in particular on how critical, perceptive and constructive the student has been in assessing his or her own work and that of others. Three typed A4 sized copies of the dissertation are required to be presented for examination. These may be in either temporary or

permanent binding. If in temporary binding they must be able to withstand ordinary handling and postage. The preferred method is "perfect binding"; spring back, ring back or spiral binding is not permitted. Students are required to submit one copy in permanent binding on acid free paper for the library, including any emendations recommended by the examiners. For more details see the requirements for the PhD thesis in the Postgraduate Research Studies Handbook. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled for Dissertation 2. The assessment is based solely on the submission of your dissertation. The dissertation is generally marked by two examiners.

## Electives

**DESC9164**
**Lighting Technologies**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2 **Classes:** 5-day intensive **Prohibitions:** DESC9063 **Assessment:** Two assignments (2x50%) **Mode of delivery:** Block mode

This unit covers the technologies employed in generating, distributing, and controlling light in illuminated environments. Students learn the advantages and disadvantages of different hardware options for various lighting applications. A brief history of lighting technologies and the physical processes involved with electrically generating light are included in this unit. Practical characteristics of currently popular lamp types, as well as emerging lighting technologies, are presented. The effects of integral luminaires and other light fittings on the resulting illumination are covered, as are the electrical requirements of different lighting technologies. This unit also includes calculation techniques for predicting the illumination in spaces from lighting products. The selection, operation, and implications of lighting control options are discussed. The underlying principles and practical consequences of the different characteristics of various lighting technologies are emphasised to enable students to independently evaluate future innovations in lighting technologies.

**DESC9196**
**Building Services**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assumed knowledge:** DESC9200 **Assessment:** Assignment (60%); Seminar (40%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

Technological advances have transformed virtually every aspect of building services including vertical transportation, fire detection and protection, hydraulics and plumbing, heating ventilation and air conditioning, electrical and lighting, security and data networking. This unit develops a critical understanding of the principles of selection, operation and management of these service systems in buildings of larger-than-domestic scale. Upon completion of the unit, students will be able to contribute competently to the decision-making processes related to these systems, and to be aware of the implications of these decisions upon both building design and operational performance. Students will also gain an understanding of the fundamentals of building services functioning, technologies currently available, along with the design and performance implications of competing solutions. Performance metrics to be discussed include energy consumption, space requirements, accessibility for maintenance, and impacts on adjacent floors. Topics will also include the roles of the facilities manager and building services manager in achieving high performance from building service systems. Utilisation of facilities management tools including state-of-the-art software packages will be discussed along with the inclusion of building services within Building Information Modeling and Management strategies.

*Textbooks*

Parlour, R.P. (2000). Building Services: a Guide to Integrated Design Engineering for Architects. Pymble, NSW: Integral Publishing

Atkin, B. and Brooks, A. (2005). Total Facilities Management. Oxford: Blackwell

**DESC9197**
**Energy Management and Code Compliance**

**Credit points:** 6 **Teacher/Coordinator:** Prof Jianlei Niu **Session:** Semester 2 **Classes:** 5 wks lecture, lab, tutorial; 7 hrs additional tutorials **Assumed knowledge:** DESC9015 **Assessment:** Assignment 1 (40%); Assignment 2 (60%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

Objectives of this unit are to give students an understanding of energy consumption issues in buildings against the backdrop of escalating energy and carbon emission reduction targets for the built environment. In order to meet these targets, new design and operational management techniques are needed, including energy auditing, retrofitting and energy efficiency optimisation techniques. This unit is primarily concerned with energy management in buildings and Code compliance in Australia. The unit will expose students to the processes and considerations involved in undertaking an energy audit in buildings. Active energy systems and their fundamentals may be reviewed. Finally, methods of assessing energy performance will be covered, with emphasis on energy simulation. Understanding and application of Australian standards and rating schemes such as NCC/Section J, NABERS Energy, GBCAÂ¿s Green Star, Living Building Challenge, etc., will also be explored.

**DESC9048**
**Operational Facility Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** 2000wd individual assessment (30%); 4000wd group assignment (50%); presentation and written paper (20%) **Mode of delivery:** Block mode

Operational Facility Management is a service industry concerned with the day-to-day operations required to run an organisation's facilities. Primarily facility operation has to satisfy the user organisation's statutory responsibilities. Beyond that, whilst some major costs (such as rates, land taxes, Insurance premiums, etc.) are fixed, other costs are amenable to management. Operational Facility Management necessarily requires those charged with the task to evaluate where their effort is spent and where the significant resourcing costs lie, thus allowing them to prioritise and match their effort to the effect.

This unit will involve considerations of subcontracting and examine 'best practice' guidelines for both hard and soft service provision.

**DESC9074**
**Project Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

Project Management is specific form of establishing, programming, and coordinating an activity having a specific start point and end point. This body of knowledge - as for example in the Project Management Book of Knowledge (PMBOK) - needs to be understood in general terms. Initially project managers must identify and define the services that are needed, (scope) and that their employers are willing to endorse. The activities requiring to be carried out need to be sorted and sequenced; the materials, labour and plant required need to be estimated and procured. Projects involve the management of information, and communications. This unit will develop the student's ability to ascertain and document the scope of a project, schedule a programme, and understand the difficulties in directing it. This unit approaches the profession of Project Management as a cooperative undertaking rather than adversarial: it promotes the adoption of soft-skills rather than that of forceful command and supervision.

**DESC9194**
**Asset and Facility Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5 weeks lectures/tutorials; 6 hours additional tutorials **Assessment:** Assignment 1: Written Assignment - Individual (30%); Assignment 2: Written Assignment - Group (40%); Project Critique/Class Presentation (30%) **Mode of delivery:** Block mode

Property and physical infrastructure are essential elements of business operations and organisational functions. This unit of study will examine the key issues in built assets and facilities management (FM), and how they relate to strategic management within the context of high performance buildings. The unit will enable students to develop an understanding of strategic asset management, portfolio planning, benchmarking of operational services, mandatory code compliances, and business needs for high performing facilities. The functions of facilities management within built assets have a direct relationship with the organisation's performance within a constantly changing business environment. A technical understanding of built assets is a prerequisite to optimising business efficiency and future-proofing against market changes. The unit is taught using a case-study methodology with students working through actual industry projects, thus stimulating a broader appreciation of the FM work involved and encouraging students to work collaboratively and creatively towards practical solutions.

*Textbooks*

Booty, F. (2009). Facilities Management Handbook. Oxford: Butterworth-Heinemann

Best, R., Langston, C., De Valence, G. (2003). Workplace Strategies and Facilities Management. Oxford: Butterworth-Heinemann

Finch, E. (2012). Facilities Change Management. Chichester, West Sussex, UK: Blackwell

**DESC9147**
**Sustainable Building Design Principles**

**Credit points:** 6 **Teacher/Coordinator:** Dr Daniel Ryan **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x35%, 1x65%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit aims to develop a critical understanding in students of building design principles that reduce the impact of the built environment on energy, water and material resource flows. Students will gain an overview of technical strategies that reduce the environmental impact of buildings and develop an awareness of the benchmarks and metrics used to judge the implementation of environmental design principles. The unit pays particular attention to design principles that relate to the environmental performance of the building fabric and the thermal and hydraulic systems of buildings.

**DESC9148**
**Sustainable Building Design Practice**

**Credit points:** 6 **Teacher/Coordinator:** Dr Daniel Ryan **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Prerequisites:** DESC9201 **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

Assessing building performance and integrating environmental building systems and construction forms the core of sustainable building design practice. This advanced unit explores the methods, workflows and regulatory frameworks to design best-practice sustainable buildings. It develops your ability to work as a sustainable building consultant. You will learn how to evaluate and critique the environmental performance of real-world projects and set targets and apply strategies to improve designs. The unit also reviews working methods for integrated design and will develop your ability to communicate environmental performance to other design team members.

**DESC9169**
**Daylight in Buildings**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Wendy Davis **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Prohibitions:** DESC9106 **Assessment:** Group Report (30%), Individual Assignment (70%) **Mode of delivery:** Block mode

Daylight can be used in buildings to reduce the energy spent on electric lighting and create aesthetically appealing interiors. Design decisions that affect the success of daylighting in a building span every phase of the design process, from site selection to the application of interior finishes. This unit discusses the role of daylight in indoor illuminated environments. Calculations to predict the quantity and distribution of daylight in spaces and predict the effects of shading devices are covered. Students learn about the local and global variables that influence daylight availability, recognize the challenges and opportunities with daylight in interior spaces, and the appropriate use of daylighting technologies. Modelling tools (Radiance based) will be used in order to assess the efficacy of selected daylight strategies.

**DESC9153**
**Graduate Internship**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive December, Intensive July, Intensive November, Semester 1, Semester 2 **Classes:** Fieldwork **Assessment:** Log book signed by practice supervisor and report on the benefits of the internship (100); pass/fail only **Mode of delivery:** Professional practice

*Note: Department permission required for enrolment. Note: Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.*

The aims of the internship are to provide a direct link between the academic core of the course and the disciplines and methods of practice; to enable candidates to experience aspects of practice and provide the opportunity for them to work in areas of the field outside their specific expertise; to enable candidates to observe, analyse and comment on the interaction between theoretical and practical issues of their Program as it is practiced, and to establish connections between practice and the development of relevant research programs. The internship is intended to provide the opportunity for students to work in various situations in their Program's area. A secondary intention is that students use the opportunities of placement to broaden their own experience beyond the limitations of their chosen discipline. Candidates must find a suitable professional placement. Permission to enrol is given after the proposed placement has been approved by the Program Director. The host organisation will nominate a supervisor for the student for the internship. The student must complete at least 120 hours of full or part-time experience, supervised by a practicing designer (or other professional depending upon the field). A log-book of each day's work, signed by the supervisor must be submitted on completion. A 2000-word report on the benefits of the internship must also be produced. At the end of the internship the student will: demonstrate that they have completed a program of work (through a log-book); present a report; analyse their experiences and compare these to the theoretical content of the units they have completed, and suggest appropriate research directions so as to improve the complementarity of theory to practice.

# Master of Architectural Science (Illumination Design)

This professional program welcomes students from diverse backgrounds, including architecture, engineering, computer science, human factors, interior design and psychology.

Our entire visual experience depends on light. It has a profound impact on both the function and aesthetics of architectural spaces. The Illumination Design program offers strong technical education in human visual perception, methods for quantifying light, lighting technologies, and issues of sustainability. This field is enjoying rapid and exciting technological innovations and this program emphasises the knowledge and critical thinking skills to enable students to adapt to, and even lead, future changes.

Upon successful completion of this master's coursework program, students are qualified for full membership in the Illuminating Engineering Society of Australia and New Zealand, subject to the required practical experience.

## Unit of study table

| *Unit of study* | *Credit points* | *Session* |
|---|---|---|
| **DESC9200**<br>**Introduction to Architectural Science** | 6 | Semester 1 |
| **DESC9167**<br>**Light and Vision** | 6 | Semester 1 |
| **DESC9166**<br>**Photometry and Colorimetry** | 6 | Semester 1 |
| **DESC9164**<br>**Lighting Technologies** | 6 | Semester 2 |
| **DESC9154**<br>**Lighting Design Software** | 6 | Semester 2 |
| **DESC9201**<br>**Indoor Environmental Quality (IEQ)** | 6 | Semester 2 |
| **DESC9198**<br>**Subjective Analysis in Lighting Design** | 6 | Semester 2 |
| **DESC9152**<br>**Practice of Lighting Design** | 6 | Semester 1 |
| **DESC9300**<br>**Research in Arch. and Design Science** | 6 | Semester 1<br>Semester 2 |
| **ARCH9031**<br>**Research Report** | 12 | Semester 1<br>Semester 2 |
| **ARCH9045**<br>**Dissertation 1** | 12 | Semester 1<br>Semester 2 |
| **ARCH9046**<br>**Dissertation 2** | 12 | Semester 1<br>Semester 2 |
| **DESC9153**<br>**Graduate Internship** | 6 | Intensive December<br>Intensive July<br>Intensive November<br>Semester 1<br>Semester 2 |
| **DESC9169**<br>**Daylight in Buildings** | 6 | Semester 2 |
| **DESC9147**<br>**Sustainable Building Design Principles** | 6 | Semester 1 |
| **DESC9148**<br>**Sustainable Building Design Practice** | 6 | Semester 1 |
| **DESC9074**<br>**Project Management** | 6 | Semester 2 |
| **DESC9195**<br>**Building Economics** | 6 | Semester 2 |
| **DESC9196**<br>**Building Services** | 6 | Semester 1 |
| **DESC9197**<br>**Energy Management and Code Compliance** | 6 | Semester 2 |
| **DESC9674**<br>**Building Information Management** | 6 | Semester 1 |
| **DESC9675**<br>**High Performance Facades** | 6 | Semester 1 |

## Unit of study descriptions

### Illumination Design Stream

#### Core Foundational unit

**DESC9200**
**Introduction to Architectural Science**

**Credit points:** 6 **Teacher/Coordinator:** Dr Christhina Candido **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Block mode

This unit aims to explore the scientific concepts of heat, light and sound, and from this develops foundational principles and methods applicable to buildings. It is divided into five topics: climate, thermal environment, mechanical services, lighting, and acoustics. Students will gain an understanding of the terminology, physical values and metrics in each of these topics, and how they apply to the design and function of buildings. Theoretical models to predict key physical values in buildings are presented and used in assessments. Learning is supported by measurement exercises. This unit has a focused pedagogy intended for all graduate students in Architectural Science. It is a common core unit for all of the programs (Audio and Acoustics, High Performance Buildings, Illumination Design and Sustainable Design). Students within these programs should undertake this unit in their first semester of study if possible.

#### Core Advanced units

**DESC9167**
**Light and Vision**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Wendy Davis **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Prohibitions:** DESC9085 **Assessment:** Two assignments (2x50%) **Mode of delivery:** Block mode

In lighting design, the primary function of light is to facilitate visual perception of the illuminated scene. User-centred lighting design requires a thorough understanding of the biological link between light and vision. In this unit, students learn the fundamentals of the human visual system and the physical properties of light that impact perception. Specific topics include an overview of visual anatomy, the behaviour of the photoreceptors, and post-receptoral processing that leads to colour perception. The spectral, spatial, and temporal characteristics of visual processing are also covered. Important visual phenomena, such as chromatic adaptation and contrast sensitivity, are discussed. The link between fundamental knowledge of the human visual system and the practical application of lighting design is emphasised.

**DESC9166**
**Photometry and Colorimetry**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Wendy Davis **Session:** Semester 1 **Classes:** 5-day intensive. **Prohibitions:** DESC9072 **Assessment:** Two assignments (2x50%) **Mode of delivery:** Block mode

Measurements of light based only on physical properties are of limited use to the lighting designer. Instead, the tools to measure and communicate the characteristics of light sources and illumination consider the impact of the physical attributes of light on the human visual system. This unit covers the photometric measures related to the quantity of light and illumination and the colorimetric systems used to characterise the colour of lights and objects. The calculation methods underlying these measures are included, with an emphasis on useful simulation techniques. The derivations, meanings, proper applications, and limitations of these measurements systems are discussed. An overview of physical instruments for photometric and colorimetric measurements is included. Students learn to apply knowledge of photometry and colorimetry to evaluate lighting products.

**DESC9164**
**Lighting Technologies**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2 **Classes:** 5-day intensive **Prohibitions:** DESC9063 **Assessment:** Two assignments (2x50%) **Mode of delivery:** Block mode

This unit covers the technologies employed in generating, distributing, and controlling light in illuminated environments. Students learn the advantages and disadvantages of different hardware options for various lighting applications. A brief history of lighting technologies and the physical processes involved with electrically generating light are included in this unit. Practical characteristics of currently popular lamp types, as well as emerging lighting technologies, are presented. The effects of integral luminaires and other light fittings on the resulting illumination are covered, as are the electrical requirements of different lighting technologies. This unit also includes calculation techniques for predicting the illumination in spaces from lighting products. The selection, operation, and implications of lighting control options are discussed. The underlying principles and practical consequences of the different characteristics of various lighting technologies are emphasised to enable students to independently evaluate future innovations in lighting technologies.

**DESC9154**
**Lighting Design Software**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assumed knowledge:** DESC9166, fundamental knowledge of lighting **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Block mode

Modern lighting design practice requires the use of computer software to create design plans that can be easily modified, shared, and presented to clients. In this unit, students learn the basic operation of popular lighting design software packages, with particular emphasis on AGi32. This unit discusses the advantages and limitations of different calculation models used within lighting software. The fundamentals of rendering, importing and exporting data, selecting calculation modes, interpreting outputs, and complying with lighting design standards are included. Students gain hands-on experience modelling the effects of different lighting technologies within various architectural spaces. The use of lighting design software as a tool in the design process, rather than a replacement for it, is emphasised.

**DESC9201**
**Indoor Environmental Quality (IEQ)**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Lab-based assignment (40%); Exam (60%) **Mode of delivery:** Block mode

Humans' thermal, visual, auditory and olfactory senses determine the perceived quality of a built environment. This unit analyses built environments in context of these human factors. This unit relates human experience of buildings to the main dimensions of Indoor Environmental Quality (IEQ): thermal, acoustic, lighting and indoor pollution. This understanding of human comfort perceptions is contextualised by an understanding of the various approaches to the evaluation of built environmental performance. You will study post-occupancy evaluation tools and workplace productivity metrics. Regulations from Australia and abroad will be explored to understand their impact on acoustics, thermal comfort, lighting, indoor air quality and ventilation. The unit also pays particular attention to sustainability rating tools from around the world, including GreenStar, NABERS, LEED and BREEAM. This unit gives students extensive hands-on experience in laboratory- and field-based methods of IEQ research and building diagnostics. A recurring theme will be instrumental measurements of indoor environments, and how they can be analysed in relation to perceptual and behavioural data collected from occupants of those environments.

**DESC9198**
**Subjective Analysis in Lighting Design**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2 **Classes:** Lectures and Studio - 35 hours/semester **Assumed knowledge:** Fundamental knowledge of lighting **Assessment:** Group Design Project Report and Presentation (50%); Individual Design Report (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Lighting to a high aesthetic standard under pre-determined constraints requires an understanding of visual perception, quality of light, form and modelling, human sensitivity to a wide range of lighting environments, and a balanced approach involving critical reasoning and subjective analysis. This unit will be valuable for those interested in the lighting of architectural forms, objects and environments that demand a high level of aesthetic sensitivity. It will not only draw on learning outcomes from other illumination design units, but also be open to related disciplines with the aim of extending acquired skills beyond the confines of traditional lighting practices. Students will gain a broadened ability to interpret and respond to a wide range of illumination applications.

## Capstone

**DESC9152**
**Practice of Lighting Design**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 1 **Classes:** 5-day intensive **Prerequisites:** At least 12 credit points of core advanced units of study in Illumination Design **Assumed knowledge:** DESC9164 **Assessment:** Group design proposal and presentation (50%); Individual design proposal (50%) **Mode of delivery:** Block mode

This studio-based unit introduces students to the practical process of professional lighting design. Led by an experienced lighting designer, the content centres on a real lighting design problem. Students complete a group project, representative of the collaborative design in practice, which culminates in a client presentation. This unit covers the interpretation of design briefs, the process of conducting a site visit, the identification of lighting design problems, and the proposal of lighting solutions. The process of preparing and revising lighting plans is discussed. Techniques for successful presentations of the final plan to clients are also included.

## Electives

Electives may be chosen from across Table G or, with the permission of the Program Director, from any postgraduate course in the University.

## Research

DESC9300 in combination with either a Report or Dissertation may replace the capstone unit with the permission of the Program Director.

**DESC9300**
**Research in Arch. and Design Science**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof William Martens **Session:** Semester 1, Semester 2 **Classes:** 5 workshop sessions (1 hr/wk for first five weeks) followed by individual student supervision by an appropriate staff member, and returning for the final oral report (in-class presentation) in week 13 of the semester. **Prohibitions:** ARCF9001 **Assessment:** Individual project

based: 1x1500wd research proposal (30%); 1x3500wd final written report (50%); final oral report (20%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit aims to prepare students for undertaking a research project in the various sub-disciplines of Architectural and Design Science. It begins with the workshop-based presentation of foundations of experimental science relevant to research projects within these sub-disciplines. It highlights principles of experimental design and methods of data collection and analysis. Examples of previous projects undertaken by graduate students in Design Science will be presented, as appropriate, in any of the following areas: Audio and Acoustics, Building Services, Facilities Management, Illumination Design and Sustainable Design). Although this unit has a focused pedagogy intended for all graduate students in Design Science, enrollment may be expected by other coursework students within the Faculty of Architecture, Design and Planning, such as those undertaking the Master of Interaction Design and Electronic Arts (M.IDEA).

**ARCH9031**
**Research Report**

**Credit points:** 12 **Teacher/Coordinator:** Program Director **Session:** Semester 1, Semester 2 **Classes:** Independent research under academic supervision. **Assessment:** Research proposal (10%), 10,000 to 15,000 word Report (90%). Final reports due by the end of the first week of the formal examination period. **Mode of delivery:** Supervision

*Note: Department permission required for enrolment. Note: Available to Masters students only.*

The report is a substantial piece of research conducted over one semester. It takes the form of a report (between 10,000 and 15,000 words) on an approved subject of your choice. The report is an opportunity to advance your knowledge and skills in a particular area. The objective of the report is to allow you to develop research and analytic skills by undertaking an in-depth study of your own selection. The expected learning outcomes of the report include the ability to think critically about a problem and develop an appropriate research methodology or analytical approach to address it; identify and access appropriate sources of information, research and literature relevant to the issues; undertake relevant primary and secondary research; and present your findings in a way that demonstrates academic and professional competence. A report generally includes a literature review to delineate a problem; a statement of research aims or objectives, as well as research questions; an explanation of research methods; presentation and analysis of data; and discussion of conclusions. Permission to continue the Report may be subject to a satisfactory research proposal being approved by your supervisor by week 3 of semester. Reports are due at the end of the first week of exams for the semester in which you are enrolled. The assessment is based solely on the submission of your report. The report is generally marked by two examiners, neither of whom is your supervisor.

**ARCH9045**
**Dissertation 1**

**Credit points:** 12 **Teacher/Coordinator:** An academic supervisor is required. Discuss with your program coordinator. **Session:** Semester 1, Semester 2 **Classes:** Research under academic supervision **Prerequisites:** 48 credit points and a WAM of at least 75 **Corequisites:** ARCH9046 **Prohibitions:** ARCH9031 or PLAN9018 or ARCH9060 or PLAN9010 or PLAN9011 **Assessment:** 15,000 to 25,000 word dissertation (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

ARCH9045 and ARCH9046 Dissertation 1 and 2 are only available to candidates with permission from an appropriate supervisor. Planning students should take PLAN9010 and PLAN9011 Planning Dissertations 1 and 2. Students enrol either full time over one semester (ARCH9045 and ARCH9046) or part time over two semesters (ARCH9045 then ARCH9046). The units are not assessed separately - a single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student. Students and their supervisors should complete an Independent Study Approval form and return it to the Student Administration Centre to effect enrolment. The aim of the dissertation is to train the student in how to undertake advanced study. The student should learn how to examine published and unpublished data, survey and experimental results, set objectives, organise a program of work, analyse information, evaluate this in relation to existing knowledge and document the work; and to allow the student to pursue an area of interest in greater depth than is possible in coursework or to investigate an area of interest which is not covered in coursework. The dissertation will normally involve a critical review of published material in a specified subject area, but it may also be an experimental or theoretical investigation, a feasibility study, a case study, a computer program, or other work demonstrating the student's analytical ability. The dissertation should be 15,000 to 25,000 words in length. The dissertation should contain a literature review, a research methodology, analysis of data, a discussion of results and conclusions. The dissertation will be judged on the extent and quality of the student's work, and in particular on how critical, perceptive and constructive the student has been in assessing his or her own work and that of others. Three typed A4 sized copies of the dissertation are required to be presented for examination. These may be in either temporary or permanent binding. If in temporary binding they must be able to withstand ordinary handling and postage. The preferred method is "perfect binding"; spring back, ring back or spiral binding is not permitted. Students are required to submit one copy in permanent binding on acid free paper for the library, including any emendations recommended by the examiners. For more details see the requirements for the PhD thesis in the Postgraduate Research Studies Handbook. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled for Dissertation 2. The assessment is based solely on the submission of your dissertation. The dissertation is generally marked by two examiners.

**ARCH9046**
**Dissertation 2**

**Credit points:** 12 **Teacher/Coordinator:** An academic supervisor is required. Discuss with your program coordinator. **Session:** Semester 1, Semester 2 **Classes:** Research under academic supervision. **Corequisites:** ARCH9045 **Assessment:** 15,000 to 25,000 word dissertation (100%) **Mode of delivery:** Supervision

ARCH9045 and ARCH9046 Dissertation 1 and 2 are only available to candidates with permission from an appropriate supervisor. Planning students should take PLAN9010 and PLAN9011 Planning Dissertations 1 and 2. Students enrol either full time over one semester (ARCH9045 and ARCH9046) or part time over two semesters (ARCH9045 then ARCH9046). The units are not assessed separately - a single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student. Students and their supervisors should complete an Independent Study Approval form and return it to the Student Administration Centre to effect enrolment. The aim of the dissertation is to train the student in how to undertake advanced study. The student should learn how to examine published and unpublished data, survey and experimental results, set objectives, organise a program of work, analyse information, evaluate this in relation to existing knowledge and document the work; and to allow the student to pursue an area of interest in greater depth than is possible in coursework or to investigate an area of interest which is not covered in coursework. The dissertation will normally involve a critical review of published material in a specified subject area, but it may also be an experimental or theoretical investigation, a feasibility study, a case study, a computer program, or other work demonstrating the student's analytical ability. The dissertation should be 15,000 to 25,000 words in length. The dissertation should contain a literature review, a research methodology, analysis of data, a discussion of results and conclusions. The dissertation will be judged on the extent and quality of the student's work, and in particular on how critical, perceptive and constructive the student has been in assessing his or her own work and that of others. Three typed A4 sized copies of the dissertation are required to be presented for examination. These may be in either temporary or permanent binding. If in temporary binding they must be able to withstand ordinary handling and postage. The preferred method is "perfect binding"; spring back, ring back or spiral binding is not permitted. Students are required to submit one copy in permanent

binding on acid free paper for the library, including any emendations recommended by the examiners. For more details see the requirements for the PhD thesis in the Postgraduate Research Studies Handbook. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled for Dissertation 2. The assessment is based solely on the submission of your dissertation. The dissertation is generally marked by two examiners.

## Recommended electives

**DESC9153**
**Graduate Internship**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive December, Intensive July, Intensive November, Semester 1, Semester 2 **Classes:** Fieldwork **Assessment:** Log book signed by practice supervisor and report on the benefits of the internship (100); pass/fail only **Mode of delivery:** Professional practice

*Note: Department permission required for enrolment. Note: Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.*

The aims of the internship are to provide a direct link between the academic core of the course and the disciplines and methods of practice; to enable candidates to experience aspects of practice and provide the opportunity for them to work in areas of the field outside their specific expertise; to enable candidates to observe, analyse and comment on the interaction between theoretical and practical issues of their Program as it is practiced, and to establish connections between practice and the development of relevant research programs. The internship is intended to provide the opportunity for students to work in various situations in their Program's area. A secondary intention is that students use the opportunities of placement to broaden their own experience beyond the limitations of their chosen discipline. Candidates must find a suitable professional placement. Permission to enrol is given after the proposed placement has been approved by the Program Director. The host organisation will nominate a supervisor for the student for the internship. The student must complete at least 120 hours of full or part-time experience, supervised by a practicing designer (or other professional depending upon the field). A log-book of each day's work, signed by the supervisor must be submitted on completion. A 2000-word report on the benefits of the internship must also be produced. At the end of the internship the student will: demonstrate that they have completed a program of work (through a log-book); present a report; analyse their experiences and compare these to the theoretical content of the units they have completed, and suggest appropriate research directions so as to improve the complementarity of theory to practice.

**DESC9169**
**Daylight in Buildings**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Wendy Davis **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Prohibitions:** DESC9106 **Assessment:** Group Report (30%), Individual Assignment (70%) **Mode of delivery:** Block mode

Daylight can be used in buildings to reduce the energy spent on electric lighting and create aesthetically appealing interiors. Design decisions that affect the success of daylighting in a building span every phase of the design process, from site selection to the application of interior finishes. This unit discusses the role of daylight in indoor illuminated environments. Calculations to predict the quantity and distribution of daylight in spaces and predict the effects of shading devices are covered. Students learn about the local and global variables that influence daylight availability, recognize the challenges and opportunities with daylight in interior spaces, and the appropriate use of daylighting technologies. Modelling tools (Radiance based) will be used in order to assess the efficacy of selected daylight strategies.

**DESC9147**
**Sustainable Building Design Principles**

**Credit points:** 6 **Teacher/Coordinator:** Dr Daniel Ryan **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x35%, 1x65%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit aims to develop a critical understanding in students of building design principles that reduce the impact of the built environment on energy, water and material resource flows. Students will gain an overview of technical strategies that reduce the environmental impact of buildings and develop an awareness of the benchmarks and metrics used to judge the implementation of environmental design principles. The unit pays particular attention to design principles that relate to the environmental performance of the building fabric and the thermal and hydraulic systems of buildings.

**DESC9148**
**Sustainable Building Design Practice**

**Credit points:** 6 **Teacher/Coordinator:** Dr Daniel Ryan **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Prerequisites:** DESC9201 **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

Assessing building performance and integrating environmental building systems and construction forms the core of sustainable building design practice. This advanced unit explores the methods, workflows and regulatory frameworks to design best-practice sustainable buildings. It develops your ability to work as a sustainable building consultant. You will learn how to evaluate and critique the environmental performance of real-world projects and set targets and apply strategies to improve designs. The unit also reviews working methods for integrated design and will develop your ability to communicate environmental performance to other design team members.

**DESC9074**
**Project Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

Project Management is specific form of establishing, programming, and coordinating an activity having a specific start point and end point. This body of knowledge - as for example in the Project Management Book of Knowledge (PMBOK) - needs to be understood in general terms. Initially project managers must identify and define the services that are needed, (scope) and that their employers are willing to endorse. The activities requiring to be carried out need to be sorted and sequenced; the materials, labour and plant required need to be estimated and procured. Projects involve the management of information, and communications. This unit will develop the student's ability to ascertain and document the scope of a project, schedule a programme, and understand the difficulties in directing it. This unit approaches the profession of Project Management as a cooperative undertaking rather than adversarial: it promotes the adoption of soft-skills rather than that of forceful command and supervision.

**DESC9195**
**Building Economics**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Individual Written Assignment 1 (30%); Group Written Assignment 2 (40%); Project Critique/Class Presentation (30%) **Mode of delivery:** Block mode

Investors associated with the property industry require at the outset Return On Investment (ROI) evaluations before committing capital. This unit of study examines the economic principles as they apply to buildings, from capital growth and life cycle management perspectives. The focus is on economic and financial practices required for high performing building assets, contract procurement strategies, cash flow analysis, return on investment for retro-fitting, and economic appraisals of existing or new building assets. This unit will develop an understanding of carbon accounting in relation to building management and its importance to sustainable built asset portfolios. The unit, taught by case studies, will equip students with an understanding of economic principles and professional tools necessary for the procurement and management of real estate property, facilities and buildings at optimum economic and environmental performance.

*Textbooks*

Langston, C. A. (2005). Life-cost approach to building evaluation. Sydney: UNSW Press

Dell'Isola, A. J., and Kirk, S. J. (1995). Life cycle costing for design professionals. New York: McGraw-Hill
Manser, J. E. (1994). Economics: A foundation course for the built environment. London: Spon.

**DESC9196**
**Building Services**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assumed knowledge:** DESC9200 **Assessment:** Assignment (60%); Seminar (40%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

Technological advances have transformed virtually every aspect of building services including vertical transportation, fire detection and protection, hydraulics and plumbing, heating ventilation and air conditioning, electrical and lighting, security and data networking. This unit develops a critical understanding of the principles of selection, operation and management of these service systems in buildings of larger-than-domestic scale. Upon completion of the unit, students will be able to contribute competently to the decision-making processes related to these systems, and to be aware of the implications of these decisions upon both building design and operational performance. Students will also gain an understanding of the fundamentals of building services functioning, technologies currently available, along with the design and performance implications of competing solutions. Performance metrics to be discussed include energy consumption, space requirements, accessibility for maintenance, and impacts on adjacent floors. Topics will also include the roles of the facilities manager and building services manager in achieving high performance from building service systems. Utilisation of facilities management tools including state-of-the-art software packages will be discussed along with the inclusion of building services within Building Information Modeling and Management strategies.

*Textbooks*

Parlour, R.P. (2000). Building Services: a Guide to Integrated Design Engineering for Architects. Pymble, NSW: Integral Publishing
Atkin, B. and Brooks, A. (2005). Total Facilities Management. Oxford: Blackwell

**DESC9197**
**Energy Management and Code Compliance**

**Credit points:** 6 **Teacher/Coordinator:** Prof Jianlei Niu **Session:** Semester 2 **Classes:** 5 wks lecture, lab, tutorial; 7 hrs additional tutorials **Assumed knowledge:** DESC9015 **Assessment:** Assignment 1 (40%); Assignment 2 (60%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

Objectives of this unit are to give students an understanding of energy consumption issues in buildings against the backdrop of escalating energy and carbon emission reduction targets for the built environment. In order to meet these targets, new design and operational management techniques are needed, including energy auditing, retrofitting and energy efficiency optimisation techniques. This unit is primarily concerned with energy management in buildings and Code compliance in Australia. The unit will expose students to the processes and considerations involved in undertaking an energy audit in buildings. Active energy systems and their fundamentals may be reviewed. Finally, methods of assessing energy performance will be covered, with emphasis on energy simulation. Understanding and application of Australian standards and rating schemes such as NCC/Section J, NABERS Energy, GBCAÂ¿s Green Star, Living Building Challenge, etc., will also be explored.

**DESC9674**
**Building Information Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Prerequisites:** DESC9200 and DESC9014 **Assessment:** Assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

This unit will introduce students to the theory and practice of building information management and modelling. The unit starts with building management, which brings knowledge and skill on how to operate buildings to optimise performance. It also introduces Building Information Modelling (BIM), which is a digital representation of physical and functional characteristics of a facility. Building information models are shared knowledge resources about a facility, forming a reliable basis for decisions during its life-cycle from earliest conception to demolition. The unit explores the wider use of building information models not only in design but also in construction management, facility management, post construction evaluation, and retrofitting. By bringing together the building management and the information modelling, the unit responds to emergent requirements within the building sector for new tools and practices to offset the growing complexity in the design and construction of high performance buildings.

**DESC9675**
**High Performance Facades**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

This unit explores advanced building façades and their role in reducing environmental impacts while simultaneously enhancing indoor environment quality for building occupants. Advanced façades are those that are designed, analysed, procured and operated as a system. Optimisation of the often conflicting performance criteria of cooling load, lighting and daylighting, sound isolation, occupant comfort, costs and aesthetics requires an integrated approach from the whole team including architects, project managers, suppliers and engineers, from the earliest stages of the advanced façade design process. Specific topics to be covered in this unit include the integrated design approach to façades, the fundamental building physics determiningfaçadeperformance, structural façade typologies, solar control façades, daylighting façades, double-skin façades, ventilated façades and dynamicfaçadesystems. Variousanalyticalprocedures and simulation tools for the evaluation of high performancefaçadedesigns will also be examined.Costs and benefits of various design approaches will also be assessed from both owner and occupant perspectives.

# Master of Architectural Science (Sustainable Design)

This program provides the necessary skills and knowledge to design energy-efficient and environmentally conscious buildings. It addresses the relationship between architecture and current environmental issues, and it explores environmentally sustainable architecture. There is flexibility to study areas of specific interest to each student. Options are available in other related programs offered by the school (e.g. Building Services, Facilities Management, Illumination Design) and elective units may be taken from any other program in the school or from other relevant programs at the University of Sydney.

## Unit of study table

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Sustainable Design Stream** | | | |
| **Core Foundational units** | | | |
| **DESC9200**<br>**Introduction to Architectural Science** | 6 | | Semester 1 |
| **Core Advanced units** | | | |
| **DESC9014**<br>**Building Construction Technology** | 6 | | Semester 1 |
| **DESC9015**<br>**Building Energy Analysis** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **DESC9147**<br>**Sustainable Building Design Principles** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **DESC9169**<br>**Daylight in Buildings** | 6 | **N** DESC9106 | Semester 2 |
| **DESC9201**<br>**Indoor Environmental Quality (IEQ)** | 6 | | Semester 2 |
| **ARCH9080**<br>**Urban Ecology, Design and Planning** | 6 | **N** PLAN9048 | Semester 2 |
| **Capstone** | | | |
| **DESC9148**<br>**Sustainable Building Design Practice** | 6 | **P** DESC9201 | Semester 1 |
| **DESC9197**<br>**Energy Management and Code Compliance** | 6 | **A** DESC9015<br>*Note: Department permission required for enrolment* | Semester 2 |
| **Electives**<br>Electives may be selected from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University. | | | |
| **Research electives**<br>DESC9300 in combination with either a Report or Dissertation may replace the capstone unit with the permission of the Program Director. | | | |
| **DESC9300**<br>**Research in Arch. and Design Science** | 6 | **N** ARCF9001<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **ARCH9031**<br>**Research Report** | 12 | *Note: Department permission required for enrolment*<br>*Available to Masters students only.* | Semester 1<br>Semester 2 |
| **ARCH9045**<br>**Dissertation 1** | 12 | **P** 48 credit points and a WAM of at least 75<br>**C** ARCH9046<br>**N** ARCH9031 or PLAN9018 or ARCH9060 or PLAN9010 or PLAN9011<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **ARCH9046**<br>**Dissertation 2** | 12 | **C** ARCH9045 | Semester 1<br>Semester 2 |
| **Electives in Sustainable Architecture** | | | |
| **MARC4002**<br>**Sustainable Architecture Research Studio** | 12 | *Note: Department permission required for enrolment*<br>*This studio cannot be taken in the same semester with MARC4001 or MARC4003. Students may incur materials costs in this unit.* | Semester 1<br>Semester 2 |
| **DESC9674**<br>**Building Information Management** | 6 | **P** DESC9200 and DESC9014 | Semester 1 |
| **DESC9675**<br>**High Performance Facades** | 6 | | Semester 1 |

| Unit of study | Credit points | A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition | Session |
|---|---|---|---|
| **Electives in Sustainable Resources** | | | |
| **SUST5001**<br>**Introduction to Sustainability** | 6 | *This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.* | Semester 1<br>Semester 2 |
| **SUST5003**<br>**Energy and Resources** | 6 | **C** SUST5001<br>*This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.* | Semester 1 |
| **PHYS5034**<br>**Life Cycle Analysis** | 6 | *Minimum class size of 5 students.* | Semester 2 |
| **PHYS5033**<br>**Environmental Footprints and IO Analysis** | 6 | *Minimum class size of 5 students.* | Semester 1<br>Semester 2 |
| **Other electives** | | | |
| **DESC9067**<br>**Mechanical Services** | 6 | | Semester 2 |
| **DESC9164**<br>**Lighting Technologies** | 6 | **N** DESC9063 | Semester 2 |
| **DESC9138**<br>**Architectural and Audio Acoustics** | 6 | | Semester 1 |
| **PLAN9068**<br>**History and Theory of Planning and Design** | 6 | **N** PLAN9031 or ARCH9062 or ARCH9031 or MARC4201<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **PLAN9064**<br>**Land Use and Infrastructure Planning** | 6 | **A** ARCH9100<br>*Note: Department permission required for enrolment* | Semester 2 |
| **DESC9153**<br>**Graduate Internship** | 6 | *Note: Department permission required for enrolment*<br>*Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.* | Intensive December<br>Intensive July<br>Intensive November<br>Semester 1<br>Semester 2 |
| **DESC9195**<br>**Building Economics** | 6 | | Semester 2 |

# Unit of study descriptions

## Sustainable Design Stream

### Core Foundational units

**DESC9200**
**Introduction to Architectural Science**

**Credit points:** 6 **Teacher/Coordinator:** Dr Christhina Candido **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Block mode

This unit aims to explore the scientific concepts of heat, light and sound, and from this develops foundational principles and methods applicable to buildings. It is divided into five topics: climate, thermal environment, mechanical services, lighting, and acoustics. Students will gain an understanding of the terminology, physical values and metrics in each of these topics, and how they apply to the design and function of buildings. Theoretical models to predict key physical values in buildings are presented and used in assessments. Learning is supported by measurement exercises. This unit has a focused pedagogy intended for all graduate students in Architectural Science. It is a common core unit for all of the programs (Audio and Acoustics, High Performance Buildings, Illumination Design and Sustainable Design). Students within these programs should undertake this unit in their first semester of study if possible.

### Core Advanced units

**DESC9014**
**Building Construction Technology**

**Credit points:** 6 **Teacher/Coordinator:** Mr Michael Muir **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

This unit covers three related areas of investigation: basic building construction practices, advanced building construction practices and sustainable construction. It begins by introducing a number of recurrent themes in construction in Australia at the present time including the idea of building culture, the various modes of delivery and variety of classifications of buildings and building elements, rational construction and construction detailing from first principles. There follows a review of construction techniques of domestic scaled buildings using, where appropriate, examples of well documented and/or accessible exemplars. The second part of the unit reviews current approaches to building technologies employed in more complex public and commercial scaled buildings, particularly with regard to processes of structural system selection, façade systems design and construction and material performance. The fundamentals of heat transfer and effects of external conditions on indoor comfort, aspects of the National Construction Code and integration of services into the building fabric relevant to building services engineers will also be reviewed. Again, accessible exemplars will be covered. Finally the unit will review current issues related to key attributes of buildings which make them sustainable, particularly with regard to material selection, appropriate detailing for energy and resources conservation and building reuse and recycling.

**DESC9015**
**Building Energy Analysis**

**Credit points:** 6 **Teacher/Coordinator:** Dr PC Thomas **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

The aim of the unit is to acquaint students with the range of analytical and design tools available for low energy building design; to provide the opportunity for students to become proficient at using some of these tools. Among the techniques and tools explored are: climate data analysis; graphical and model techniques for solar studies; steady state and dynamic heat flow analysis; simplified methods for sizing passive solar elements; computer models of thermal performance; modelling ventilation; estimating energy consumption. Emphasis is given to tools which assist the design of the building fabric rather than building systems. At the end of the unit it is expected that students will: be aware of the importance of quantitative analysis in the design

of low energy buildings; have an understanding of the theoretical basis of a range of analytical techniques; be familiar with the range of techniques available for building energy analysis; be able to apply many of these to design analysis; be familiar with the range of thermal analysis computer software available; and be able to use a software package to analyse the thermal performance of a typical small scale building. All of the assignments are designed to provide students with hands-on experience of each of the analysis tools.

**DESC9147**
**Sustainable Building Design Principles**

**Credit points:** 6 **Teacher/Coordinator:** Dr Daniel Ryan **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x35%, 1x65%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit aims to develop a critical understanding in students of building design principles that reduce the impact of the built environment on energy, water and material resource flows. Students will gain an overview of technical strategies that reduce the environmental impact of buildings and develop an awareness of the benchmarks and metrics used to judge the implementation of environmental design principles. The unit pays particular attention to design principles that relate to the environmental performance of the building fabric and the thermal and hydraulic systems of buildings.

**DESC9169**
**Daylight in Buildings**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Wendy Davis **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Prohibitions:** DESC9106 **Assessment:** Group Report (30%), Individual Assignment (70%) **Mode of delivery:** Block mode

Daylight can be used in buildings to reduce the energy spent on electric lighting and create aesthetically appealing interiors. Design decisions that affect the success of daylighting in a building span every phase of the design process, from site selection to the application of interior finishes. This unit discusses the role of daylight in indoor illuminated environments. Calculations to predict the quantity and distribution of daylight in spaces and predict the effects of shading devices are covered. Students learn about the local and global variables that influence daylight availability, recognize the challenges and opportunities with daylight in interior spaces, and the appropriate use of daylighting technologies. Modelling tools (Radiance based) will be used in order to assess the efficacy of selected daylight strategies.

**DESC9201**
**Indoor Environmental Quality (IEQ)**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Lab-based assignment (40%); Exam (60%) **Mode of delivery:** Block mode

Humans' thermal, visual, auditory and olfactory senses determine the perceived quality of a built environment. This unit analyses built environments in context of these human factors. This unit relates human experience of buildings to the main dimensions of Indoor Environmental Quality (IEQ): thermal, acoustic, lighting and indoor pollution. This understanding of human comfort perceptions is contextualised by an understanding of the various approaches to the evaluation of built environmental performance. You will study post-occupancy evaluation tools and workplace productivity metrics. Regulations from Australia and abroad will be explored to understand their impact on acoustics, thermal comfort, lighting, indoor air quality and ventilation. The unit also pays particular attention to sustainability rating tools from around the world, including GreenStar, NABERS, LEED and BREEAM. This unit gives students extensive hands-on experience in laboratory- and field-based methods of IEQ research and building diagnostics. A recurring theme will be instrumental measurements of indoor environments, and how they can be analysed in relation to perceptual and behavioural data collected from occupants of those environments.

**ARCH9080**
**Urban Ecology, Design and Planning**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 2 **Classes:** 3 hrs lectures/tutorials/wk **Prohibitions:** PLAN9048 **Assessment:** Two assessments, each 50%; both assessments may comprise group and individual work. Peer assessment of group tasks may be required. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce the conceptual bases for sustainable development and explore how principles of sustainability can be introduced into land use planning and urban design, including environmental management and multi-criteria evaluation methodologies in three modules. The unit will examine the evolution of urban areas in relation to their biophysical setting. This will lead to an understanding and appreciation of the urban ecology of a city in terms of the flows of materials, resources and energy, and the challenges presented by climate change and peak oil. The principles of sustainability and the history and development of concepts of urban sustainability will be demonstrated through case studies. Assessments will explore a student's learning of the methods and frameworks for evaluating and measuring sustainability that are introduced in this unit.

## Capstone

**DESC9148**
**Sustainable Building Design Practice**

**Credit points:** 6 **Teacher/Coordinator:** Dr Daniel Ryan **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Prerequisites:** DESC9201 **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

Assessing building performance and integrating environmental building systems and construction forms the core of sustainable building design practice. This advanced unit explores the methods, workflows and regulatory frameworks to design best-practice sustainable buildings. It develops your ability to work as a sustainable building consultant. You will learn how to evaluate and critique the environmental performance of real-world projects and set targets and apply strategies to improve designs. The unit also reviews working methods for integrated design and will develop your ability to communicate environmental performance to other design team members.

**DESC9197**
**Energy Management and Code Compliance**

**Credit points:** 6 **Teacher/Coordinator:** Prof Jianlei Niu **Session:** Semester 2 **Classes:** 5 wks lecture, lab, tutorial; 7 hrs additional tutorials **Assumed knowledge:** DESC9015 **Assessment:** Assignment 1 (40%); Assignment 2 (60%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

Objectives of this unit are to give students an understanding of energy consumption issues in buildings against the backdrop of escalating energy and carbon emission reduction targets for the built environment. In order to meet these targets, new design and operational management techniques are needed, including energy auditing, retrofitting and energy efficiency optimisation techniques. This unit is primarily concerned with energy management in buildings and Code compliance in Australia. The unit will expose students to the processes and considerations involved in undertaking an energy audit in buildings. Active energy systems and their fundamentals may be reviewed. Finally, methods of assessing energy performance will be covered, with emphasis on energy simulation. Understanding and application of Australian standards and rating schemes such as NCC/Section J, NABERS Energy, GBCAÂ¿s Green Star, Living Building Challenge, etc., will also be explored.

## Electives

Electives may be selected from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University.

## Research electives

DESC9300 in combination with either a Report or Dissertation may replace the capstone unit with the permission of the Program Director.

**DESC9300**
**Research in Arch. and Design Science**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof William Martens **Session:** Semester 1, Semester 2 **Classes:** 5 workshop sessions (1 hr/wk for first five weeks) followed by individual student supervision by an appropriate staff member, and returning for the final oral report (in-class presentation) in week 13 of the semester. **Prohibitions:** ARCF9001 **Assessment:** Individual project based: 1x1500wd research proposal (30%); 1x3500wd final written report (50%); final oral report (20%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit aims to prepare students for undertaking a research project in the various sub-disciplines of Architectural and Design Science. It begins with the workshop-based presentation of foundations of experimental science relevant to research projects within these sub-disciplines. It highlights principles of experimental design and methods of data collection and analysis. Examples of previous projects undertaken by graduate students in Design Science will be presented, as appropriate, in any of the following areas: Audio and Acoustics, Building Services, Facilities Management, Illumination Design and Sustainable Design). Although this unit has a focused pedagogy intended for all graduate students in Design Science, enrollment may be expected by other coursework students within the Faculty of Architecture, Design and Planning, such as those undertaking the Master of Interaction Design and Electronic Arts (M.IDEA).

**ARCH9031**
**Research Report**

**Credit points:** 12 **Teacher/Coordinator:** Program Director **Session:** Semester 1, Semester 2 **Classes:** Independent research under academic supervision. **Assessment:** Research proposal (10%), 10,000 to 15,000 word Report (90%). Final reports due by the end of the first week of the formal examination period. **Mode of delivery:** Supervision

*Note: Department permission required for enrolment. Note: Available to Masters students only.*

The report is a substantial piece of research conducted over one semester. It takes the form of a report (between 10,000 and 15,000 words) on an approved subject of your choice. The report is an opportunity to advance your knowledge and skills in a particular area. The objective of the report is to allow you to develop research and analytic skills by undertaking an in-depth study of your own selection. The expected learning outcomes of the report include the ability to think critically about a problem and develop an appropriate research methodology or analytical approach to address it; identify and access appropriate sources of information, research and literature relevant to the issues; undertake relevant primary and secondary research; and present your findings in a way that demonstrates academic and professional competence. A report generally includes a literature review to delineate a problem; a statement of research aims or objectives, as well as research questions; an explanation of research methods; presentation and analysis of data; and discussion of conclusions. Permission to continue the Report may be subject to a satisfactory research proposal being approved by your supervisor by week 3 of semester. Reports are due at the end of the first week of exams for the semester in which you are enrolled. The assessment is based solely on the submission of your report. The report is generally marked by two examiners, neither of whom is your supervisor.

**ARCH9045**
**Dissertation 1**

**Credit points:** 12 **Teacher/Coordinator:** An academic supervisor is required. Discuss with your program coordinator. **Session:** Semester 1, Semester 2 **Classes:** Research under academic supervision **Prerequisites:** 48 credit points and a WAM of at least 75 **Corequisites:** ARCH9046 **Prohibitions:** ARCH9031 or PLAN9018 or ARCH9060 or PLAN9010 or PLAN9011 **Assessment:** 15,000 to 25,000 word dissertation (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

ARCH9045 and ARCH9046 Dissertation 1 and 2 are only available to candidates with permission from an appropriate supervisor. Planning students should take PLAN9010 and PLAN9011 Planning Dissertations 1 and 2. Students enrol either full time over one semester (ARCH9045 and ARCH9046) or part time over two semesters (ARCH9045 then ARCH9046). The units are not assessed separately - a single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student. Students and their supervisors should complete an Independent Study Approval form and return it to the Student Administration Centre to effect enrolment. The aim of the dissertation is to train the student in how to undertake advanced study. The student should learn how to examine published and unpublished data, survey and experimental results, set objectives, organise a program of work, analyse information, evaluate this in relation to existing knowledge and document the work; and to allow the student to pursue an area of interest in greater depth than is possible in coursework or to investigate an area of interest which is not covered in coursework. The dissertation will normally involve a critical review of published material in a specified subject area, but it may also be an experimental or theoretical investigation, a feasibility study, a case study, a computer program, or other work demonstrating the student's analytical ability. The dissertation should be 15,000 to 25,000 words in length. The dissertation should contain a literature review, a research methodology, analysis of data, a discussion of results and conclusions. The dissertation will be judged on the extent and quality of the student's work, and in particular on how critical, perceptive and constructive the student has been in assessing his or her own work and that of others. Three typed A4 sized copies of the dissertation are required to be presented for examination. These may be in either temporary or permanent binding. If in temporary binding they must be able to withstand ordinary handling and postage. The preferred method is "perfect binding"; spring back, ring back or spiral binding is not permitted. Students are required to submit one copy in permanent binding on acid free paper for the library, including any emendations recommended by the examiners. For more details see the requirements for the PhD thesis in the Postgraduate Research Studies Handbook. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled for Dissertation 2. The assessment is based solely on the submission of your dissertation. The dissertation is generally marked by two examiners.

**ARCH9046**
**Dissertation 2**

**Credit points:** 12 **Teacher/Coordinator:** An academic supervisor is required. Discuss with your program coordinator. **Session:** Semester 1, Semester 2 **Classes:** Research under academic supervision. **Corequisites:** ARCH9045 **Assessment:** 15,000 to 25,000 word dissertation (100%) **Mode of delivery:** Supervision

ARCH9045 and ARCH9046 Dissertation 1 and 2 are only available to candidates with permission from an appropriate supervisor. Planning students should take PLAN9010 and PLAN9011 Planning Dissertations 1 and 2. Students enrol either full time over one semester (ARCH9045 and ARCH9046) or part time over two semesters (ARCH9045 then ARCH9046). The units are not assessed separately - a single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student. Students and their supervisors should complete an Independent Study Approval form and return it to the Student Administration Centre to effect enrolment. The aim of the dissertation is to train the student in how to undertake advanced study. The student should learn how to examine published and unpublished data, survey and experimental results, set objectives, organise a program of work, analyse information, evaluate this in relation to existing knowledge and document the work; and to allow the student to pursue an area of interest in greater depth than is possible in coursework or to investigate an area of interest which is not covered in coursework. The dissertation will normally involve a critical review of published material in a specified subject area, but it may also be an experimental or theoretical investigation, a feasibility study, a case study, a computer program, or other work demonstrating the student's analytical ability. The dissertation should be 15,000 to 25,000 words in length. The dissertation should contain a literature review, a research methodology,

analysis of data, a discussion of results and conclusions. The dissertation will be judged on the extent and quality of the student's work, and in particular on how critical, perceptive and constructive the student has been in assessing his or her own work and that of others. Three typed A4 sized copies of the dissertation are required to be presented for examination. These may be in either temporary or permanent binding. If in temporary binding they must be able to withstand ordinary handling and postage. The preferred method is "perfect binding"; spring back, ring back or spiral binding is not permitted. Students are required to submit one copy in permanent binding on acid free paper for the library, including any emendations recommended by the examiners. For more details see the requirements for the PhD thesis in the Postgraduate Research Studies Handbook. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled for Dissertation 2. The assessment is based solely on the submission of your dissertation. The dissertation is generally marked by two examiners.

## Electives in Sustainable Architecture

**MARC4002**
**Sustainable Architecture Research Studio**

**Credit points:** 12 **Teacher/Coordinator:** Semester 1 Mr Michael Muir, Semester 2 Mr Daniel Ryan **Session:** Semester 1, Semester 2 **Classes:** Lecture and studio contact (technical consultants and demonstrations as required), plus self-directed preparation and assignments, for a minimum total student commitment averaging 18 hours per week. **Assessment:** Preliminary research, design development, interim reviews (40%); Final project and portfolio review (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment. Note: This studio cannot be taken in the same semester with MARC4001 or MARC4003. Students may incur materials costs in this unit.*

MARC4002 Studio B Sustainable Architecture will focus on the theories, technologies and techniques that promote the creation of a sustainable built environment. The studio projects will directly explore the interdependent issues of environmental, social and economic sustainability. The studio will prompt students to develop critical positions in regard to sustainability and to research, extend and explore those positions through the architectural design process.

MARC4001 Urban Architecture Research Studio, MARC4002 Sustainable Architecture Research Studio and MARC4003 Digital Architecture Research Studio are all available in both Semesters 1 and 2. Students may enrol or pre-enrol freely, but some will be asked to swap to create equal groups. After three semesters each student will have done each of the studios. The studios examine the relationships between architecture and urbanism; architecture and sustainability; and architecture and digital design. Each is based around one or more design projects which address a specialised area of study, supported by lectures and seminars which introduce the relevant theory, knowledge and design precedents. Studios require the investigation of key technical issues and systems, and their innovative integration in the design, with the preparation of appropriate documentation. On the successful completion of these units, students will have demonstrated: an ability to formulate, interpret and communicate appropriate concepts derived from the study of brief and site; an ability to extend those starting points into a working design proposal; an ability to develop the design proposal in response to critique, and produce a building design which demonstrably embodies understanding of the principles associated with the specialised study area; an ability to communicate the design ideas effectively through appropriate graphic and three-dimensional means using architectural conventions; and an ability to cohesively design and execute a comprehensive presentation of the project. These units are core to the Master of Architecture.

**DESC9674**
**Building Information Management**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Prerequisites:** DESC9200 and DESC9014 **Assessment:** Assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

This unit will introduce students to the theory and practice of building information management and modelling. The unit starts with building management, which brings knowledge and skill on how to operate buildings to optimise performance. It also introduces Building Information Modelling (BIM), which is a digital representation of physical and functional characteristics of a facility. Building information models are shared knowledge resources about a facility, forming a reliable basis for decisions during its life-cycle from earliest conception to demolition. The unit explores the wider use of building information models not only in design but also in construction management, facility management, post construction evaluation, and retrofitting. By bringing together the building management and the information modelling, the unit responds to emergent requirements within the building sector for new tools and practices to offset the growing complexity in the design and construction of high performance buildings.

**DESC9675**
**High Performance Facades**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignments (1x40%, 1x60%) **Mode of delivery:** Block mode

This unit explores advanced building façades and their role in reducing environmental impacts while simultaneously enhancing indoor environment quality for building occupants. Advanced façades are those that are designed, analysed, procured and operated as a system. Optimisation of the often conflicting performance criteria of cooling load, lighting and daylighting, sound isolation, occupant comfort, costs and aesthetics requires an integrated approach from the whole team including architects, project managers, suppliers and engineers, from the earliest stages of the advanced façade design process. Specific topics to be covered in this unit include the integrated design approach to façades, the fundamental building physics determiningfaçadeperformance, structural façade typologies, solar control façades, daylighting façades, double-skin façades, ventilated façades and dynamicfaçadesystems. Variousanalyticalprocedures and simulation tools for the evaluation of high performancefaçadedesigns will also be examined.Costs and benefits of various design approaches will also be assessed from both owner and occupant perspectives.

## Electives in Sustainable Resources

**SUST5001**
**Introduction to Sustainability**

**Credit points:** 6 **Teacher/Coordinator:** Professor Philip McManus **Session:** Semester 1, Semester 2 **Classes:** One 2 to 2.5 hour interactive lecture per week with up to four hours per week spent on a combination of additional (e.g. on-line) learning tasks, small group sessions and consultation with lecturers. **Assessment:** Essays, oral presentations, short written assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.*

This unit of study will introduce students to the concepts and multidisciplinary nature of sustainability, starting with the physical basis of climate change and its impact on the environment and human development. This will be followed by several case studies covering Energy, Health, Development and Environment. The case studies will be presented by industry professionals and will illustrate sustainability issues currently before Australia- their origins, impacts and industry responses. The unit of study will provide students with a holistic systems lens through which to view their learning throughout the Masters program. This will underpin understanding of the integrated nature of sustainability and facilitate the challenging of silo-based assumptions- their own and those of others. The intention is to ground understanding of complex systems in the real world through the use of case studies that will demonstrate organisational change and problem solving in a world with competing values and conflicting views of what it means to live sustainably. Students completing the unit of study will have a "sustainability tool kit" to apply to sustainability issues in their professional and community activities.

**SUST5003**
**Energy and Resources**

**Credit points:** 6 **Teacher/Coordinator:** Professor Tony Vassallo **Session:** Semester 1 **Classes:** One 2 to 2.5 hour interactive lecture per week presented in an intensive format with up to four hours per week spent on a combination of additional (e.g. on-line) learning tasks, small group sessions and consultation with lecturers. **Corequisites:** SUST5001 **Assessment:** Essays, classroom presentations, short written assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.*

This unit will examine the critical roles that energy and resource usage play in global, national and local sustainability. The need for developed economies to decarbonise their energy supply and for developing countries to have access to clean energy and sustainable resources will require major changes in technology, policy and business systems. This unit of study will cover the fundamentals of energy and resource supply; sustainable supply and use of energy for industry, business and consumers; life cycle analysis; energy security and alternative energy systems. Students will gain an understanding of: different sources of energy and their uses; the economic, environmental and societal contexts of energy and resource use; the need and scope for a transition from conventional energy sources; sound principles for analysing different resource and energy supply options; the role of international agreements and federal policy in influencing resource and energy use.

**PHYS5034**
**Life Cycle Analysis**

**Credit points:** 6 **Teacher/Coordinator:** Dr Arunima Malik **Session:** Semester 2 **Classes:** 2.5-hour lecture interspersed with hands-on exercises per week **Assessment:** Essay, presentation and comprehensive diary/notes from lectures (100%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Minimum class size of 5 students.*

This unit of study covers philosophy, techniques, applications and standards of Life-Cycle Assessment (LCA). It introduces methods from engineering (Process Analysis) and economics (Input-Output Analysis), and discusses current popular LCA tools. The unit places imporance on practical relevance by including real-world cases studies and business applications as well as global standards such as the GHG Protocol for accounting for scopes -1, -2 and -3 emissions and ISO standards. The unit of study will culminate with practical exercises using current software tools to provide students with hands-on experience of preparing a comprehensive Life-Cycle Assessment of an application of their choice. Students will also benefit from also enrolling in PHYS5033 for a sound understanding of input-output analysis as the basis of hybrid LCA methods.

**PHYS5033**
**Environmental Footprints and IO Analysis**

**Credit points:** 6 **Teacher/Coordinator:** Dr Arunima Malik and Prof Manfred Lenzen **Session:** Semester 1, Semester 2 **Classes:** 2-hour lecture interspersed with hands-on exercises per week **Assessment:** Comprehensive diary/notes from lectures, including a quantitative example (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Minimum class size of 5 students.*

This unit of study will provide students with both the theoretical understanding and the practical skills needed to carry out their own environmental footprint and impact analyses. This unit uses state of the art economic input-output theory and input-output analysis, and focuses on contemporary environmental applications such as carbon footprints and life-cycle assessment. The unit first explores national and global economic and environmental accounting systems and their relationships to organisational accounting. Second, it will present cutting-edge techniques enabling the global analysis of environmental impacts of international trade. Third, it offers hands-on instruction to master the basic input-output calculus conceived by Nobel Prize Laureate Wassily Leontief, and provide a step-by-step recipe for how to undertake boundary-free environmental footprinting by integrating economic and environmental accounts, and by applying Leontief's calculus to data published by statistical offices. Students will walk away from this unit equipped with all skills needed to calculate footprints, and prepare sustainability reports for any organisation, city, region, or nation, using organisational data, economic input-output tables and environmental accounts. Students will also benefit from also enrolling in PHYS5034 for a sound understanding of the role of input-output analysis within the field of Life-Cycle Assessment.

## Other electives

**DESC9067**
**Mechanical Services**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Assignment (90%); participation (10%) **Mode of delivery:** Block mode

This unit reviews the need for and application of Mechanical services in the built environment - in particular commercial buildings. Mechanical services are responsible for significant portion of energy and water consumption in buildings. Thus they have become important components of most modern building complexes, with a strong influence on other services and the architecture. This unit provides an introduction to these services by experienced presenters, including from the industry, for recent graduates or diplomats in mechanical engineering and an understanding of fundamental principles and practice for people from backgrounds other than mechanical engineering. Students will acquire skills in appreciation of impact of mechanical services on the environment, including recent mandatory regulations, together with estimating ventilation, cooling and heating requirements, design of simple ventilation, air conditioning and smoke hazard management systems, combined with an overview of water, refrigerant, ducted systems, with applicable equipment, energy, noise, human comfort, air quality criteria. Principles of heat transfer and fluid flow are applied to applications of mechanical ventilation, air conditioning and smoke hazard magagement, to satisfy regulations and standards, occupant and community expectations. The practical basis of the programme leads to a design assignment involving selecting equipment and systems to provide mechanical services in a building.

**DESC9164**
**Lighting Technologies**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2 **Classes:** 5-day intensive **Prohibitions:** DESC9063 **Assessment:** Two assignments (2x50%) **Mode of delivery:** Block mode

This unit covers the technologies employed in generating, distributing, and controlling light in illuminated environments. Students learn the advantages and disadvantages of different hardware options for various lighting applications. A brief history of lighting technologies and the physical processes involved with electrically generating light are included in this unit. Practical characteristics of currently popular lamp types, as well as emerging lighting technologies, are presented. The effects of integral luminaires and other light fittings on the resulting illumination are covered, as are the electrical requirements of different lighting technologies. This unit also includes calculation techniques for predicting the illumination in spaces from lighting products. The selection, operation, and implications of lighting control options are discussed. The underlying principles and practical consequences of the different characteristics of various lighting technologies are emphasised to enable students to independently evaluate future innovations in lighting technologies.

**DESC9138**
**Architectural and Audio Acoustics**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 1 **Classes:** Lecture 3 hrs/wk **Assessment:** Exercise-based assignments (1x30%, 1x70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces the fundamental concepts and issues of audio and architectural acoustics, with an emphasis on theory. The unit introduces topics such as: basic acoustical concepts, quantities and units; principles of sound radiation and propagation; sound absorption

and room acoustics; psychological acoustics; noise measurement and specification; speech intelligibility; and principles and specification of airborne sound insulation. Acoustics theory involves mathematics, and this unit aims to provide knowledge and skills so that such theory can be applied, with the help of spreadsheets and computer programs. Teaching is supported by demonstrations and tutorials. By completing this unit students will be able to understand acoustical terminology, and perform calculations and analysis applicable to sound in the environment, in buildings, and in audio contexts. They will have the ability to critically assess claims of acoustical performance. This unit provides the theoretical foundation for advanced units in audio and acoustics.

**PLAN9068**

**History and Theory of Planning and Design**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Paul Jones **Session:** Semester 1, Semester 2 **Classes:** Lecture 2hrs/wk (and may include some tutorials and group discussions) **Prohibitions:** PLAN9031 or ARCH9062 or ARCH9031 or MARC4201 **Assessment:** Assignment 1: short questions including local field work/observation (40%); Assignment 2 is an analytical portfolio of inqury into 3-4 papers with a strong emphasis on understanding key concepts in the modern planning era via clarity of text and strong visual/image support (50%).Group work (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit is in two overlapping modules, each of which is assessed.

Module one enables students to understand how the main concepts and practices of urban planning and development have evolved; appreciate different perspectives about the roles and purposes of planning; undertake basic historical research about Australian urban planning and development issues, and prepare basic stories and arguments about practical planning issues and current theories. There is a strong emphasis on enriching the ability of students to better appreciate urban form, structure and planning practice generally by analysing such form, structure and process through the lens of history (as 'snapshots' in time), and the understanding of planning theory as drivers that shape and express such urban change such as Garden City values. Interpreting planning practice, places and spaces at different scales and what this reflects (such as underlying theory, values, norms attitudes, public interest, etc.) is a key element of this module.

Concurrent with module one, module two familiarises students with the main ideas and methods that have influenced urban design practice from the late nineteenth century to the present. It covers the dominant urban design theories, principles, conceptual and physical models, analytical methods and drawings from key contributing authors over the period, and explores critically how and why these arose, their interrelationships, spheres of influence, and continuing validity. In this module, the work of key urban planning and design idealists and visionaries are discussed such as Ebenezer Howard and Le Corbusier.

Students will be able to: critically review and interpret key planning and urban design texts/papers; construct and present basic arguments orally and in conjunction with graphics/images in illustrated documents; access and engage with key literature and other sources of knowledge; and use basic conceptual frameworks about planning arguments and stories for both the overlapping fields of urban planning and urban design. Interpreting the built form around you from an historical lens is an important learning outcome.

*Textbooks*

"City Reader" (Fifth Edition) by Richard Le Gates and Frederic Stout (Routledge)

**PLAN9064**

**Land Use and Infrastructure Planning**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dallas Rogers **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk. Additional tuition time may be assigned for introduction to graphic plan making. **Assumed knowledge:** ARCH9100 **Assessment:** Two illustrated reports, each equivalent to 2,000 to 2,500 words, consisting of: 1 x individual report of short questions on key metropolitan concepts such as density and land use relationships (50%); 1 x group work on a local government Masterplan project where land use change is being leveraged from a major infrastructure project (50%). Peer assessment may apply to group work presentations.Practical field work:Second part of the semester involves group work in the field and in class. **Practical field work:** Second part of the semester involves group work in the field and in class. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit is concerned with planning, land use and infrastructure within the built environments. It emphasises conceptual knowledge with examples and case studies to demonstrate the application of concepts in practice. Students are encouraged to think independently, creatively and critically in developing understanding and practical knowledge about environmental planning at the metropolitan and local level. This unit is in two modules, each of which is assessed.

1. Land use, infrastructure planning and urban development: different forms of infrastructure and the role of infrastructure in creating good environments and urban development; transport and the space economy; accessibility, the emergence of transport technologies and their influence on urban form; the impacts of car travel on densities, dispersion, congestion, etc.; orthodox transport planning; transport systems management; mobility and accessibility; networks, centres, and development corridors; transit-oriented development and implications on urban form and structure. The Sydney Metropolitan Strategy and concepts and ideas associated with the current work of the Greater Sydney Commission are used as a main focus for this module.

2. Land use planning, development control and plan making: within the context of more effective land use planning, this module examines the process of assessing a local area (such as structure, form and understanding character), developing local vision and neighbourhood strategies and structure plan, translating the strategy and structure plan into basic land use and planning controls (such as building height, floor space ratio, heritage, and other local area provisions) and producing a basic plan for development control purposes. A case study is used for group work so as to understand how the plan making process evolves and is constructed for both the private and public realms. In 2015 and 2016, this involved working with an inner city local government on priority urban renewal issues. Questioning the assumptions and values that underpin planning controls and guidelines is a key skill emphasised in the unit via the group work.

**DESC9153**

**Graduate Internship**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive December, Intensive July, Intensive November, Semester 1, Semester 2 **Classes:** Fieldwork **Assessment:** Log book signed by practice supervisor and report on the benefits of the internship (100); pass/fail only **Mode of delivery:** Professional practice

*Note: Department permission required for enrolment. Note: Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.*

The aims of the internship are to provide a direct link between the academic core of the course and the disciplines and methods of practice; to enable candidates to experience aspects of practice and provide the opportunity for them to work in areas of the field outside their specific expertise; to enable candidates to observe, analyse and comment on the interaction between theoretical and practical issues of their Program as it is practiced, and to establish connections between practice and the development of relevant research programs. The internship is intended to provide the opportunity for students to work in various situations in their Program's area. A secondary intention is that students use the opportunities of placement to broaden their own experience beyond the limitations of their chosen discipline. Candidates must find a suitable professional placement. Permission to enrol is given after the proposed placement has been approved by the Program Director. The host organisation will nominate a supervisor for the student for the internship. The student must complete at least 120 hours of full or part-time experience, supervised by a practicing designer (or other professional depending upon the field). A log-book of each day's work, signed by the supervisor must be submitted on completion. A 2000-word report on the benefits of the internship must also be produced. At the end of the internship the student will: demonstrate that they have completed a program of work (through a log-book); present a report; analyse their experiences and compare these to the theoretical content of the units they have completed, and

suggest appropriate research directions so as to improve the complementarity of theory to practice.

**DESC9195**
**Building Economics**

**Credit points:** 6 **Teacher/Coordinator:** Prof Richard de Dear **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Individual Written Assignment 1 (30%); Group Written Assignment 2 (40%); Project Critique/Class Presentation (30%) **Mode of delivery:** Block mode

Investors associated with the property industry require at the outset Return On Investment (ROI) evaluations before committing capital. This unit of study examines the economic principles as they apply to buildings, from capital growth and life cycle management perspectives. The focus is on economic and financial practices required for high performing building assets, contract procurement strategies, cash flow analysis, return on investment for retro-fitting, and economic appraisals of existing or new building assets. This unit will develop an understanding of carbon accounting in relation to building management and its importance to sustainable built asset portfolios. The unit, taught by case studies, will equip students with an understanding of economic principles and professional tools necessary for the procurement and management of real estate property, facilities and buildings at optimum economic and environmental performance.

*Textbooks*

Langston, C. A. (2005). Life-cost approach to building evaluation. Sydney: UNSW Press
Dell'Isola, A. J., and Kirk, S. J. (1995). Life cycle costing for design professionals. New York: McGraw-Hill
Manser, J. E. (1994). Economics: A foundation course for the built environment. London: Spon.

# Overseas exchange

## Exchange in Architectural Science

The school may approve international exchange for qualified students in graduate coursework master degrees.

Exchanges may be for one semester only. Students must apply through the Study Abroad and Exchange Office. Each student's program must be approved in consultation with the program director of the degree.

No program will be approved that involves the completion of more than 50 percent of the core requirements of the degree on exchange.

Exchange units should be taken as part of the degree, satisfying the requirements that would normally be covered at this university during the same period. Exchange should not be in addition to the degree requirements.

Exchange students are required to enrol in a full-time load at the University of Sydney and will incur the tuition costs associated with that load. No tuition costs will be incurred with the partner university.

Specially designated units of study will be recorded on the transcript. A result of 'SR' for 'Satisfied Requirements' will be recorded by the University against each successfully completed unit. The transcript of the exchange university will be the official detailed record of exactly what was completed during the exchange. Exchange results will not count towards a student's Weighted Average Mark.

For more information please contact the Study Abroad and Exchange Office.

The exchange units for enrolment at the University of Sydney, to be approved with the program director, shall be selected from the following table.

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Graduate exchange units** | | | |
| **Core units of study** | | | |
| **DESC9660**<br>**Graduate Exchange Core A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9661**<br>**Graduate Exchange Core B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9662**<br>**Graduate Exchange Core C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9663**<br>**Graduate Exchange Core D** | 6 | | Semester 1<br>Semester 2 |
| **DESC9672**<br>**Graduate Exchange Core E** | 12 | | Semester 1<br>Semester 2 |
| **Optional units of study** | | | |
| **DESC9664**<br>**Graduate Exchange Optional A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9665**<br>**Graduate Exchange Optional B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9666**<br>**Graduate Exchange Optional C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9667**<br>**Graduate Exchange Optional D** | 6 | | Semester 1<br>Semester 2 |
| **Elective units of study** | | | |
| **DESC9668**<br>**Graduate Exchange Elective A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9669**<br>**Graduate Exchange Elective B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9670**<br>**Graduate Exchange Elective C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9671**<br>**Graduate Exchange Elective D** | 6 | | Semester 1<br>Semester 2 |

# Master of Heritage Conservation

The program's primary aim is to develop skills in the assessment, interpretation, management, formulation of policy and documentation of culturally significant places, including buildings, sites and cultural landscapes. Secondary aims include the analysis of pressures for change and the promotion of cross-cultural study. The program emphasises the importance of management issues and a practical understanding of mechanisms of statutory authorities, both local and international, which affect conservation and development.

## Course rules

### Graduate Certificate in Heritage Conservation

### Graduate Diploma in Heritage Conservation

### Master of Heritage Conservation

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the University school, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

#### Course Resolutions

##### 1 Course codes

| Code | Course title |
|---|---|
| GCHERICO-01 | Graduate Certificate in Heritage Conservation |
| GNHERICO-03 | Graduate Diploma in Heritage Conservation |
| MAHERICO-03 | Master of Heritage Conservation |

##### 2 Attendance pattern

The attendance pattern for this course is full time or part time.

##### 3 Master's type

The master's degree in these resolutions is a professional master's course, as defined by the Coursework Rule.

##### 4 Embedded courses in this sequence

(1) The embedded courses in this sequence are:
(a) the Graduate Certificate in Heritage Conservation
(b) the Graduate Diploma in Heritage Conservation
(c) the Master of Heritage Conservation
(2) Providing candidates satisfy the admission requirements for each stage, a candidate may progress to the award of any of the courses in this sequence. Only the longest award completed will be conferred.

##### 5 Admission to candidature

(1) Available places will be offered to qualified applicants in the order in which complete applications are received, according to the following admissions criteria.
(2) Admission to the Graduate Certificate in Heritage Conservation requires a bachelor's degree from the University of Sydney or an equivalent qualification.
(3) Admission to the Graduate Diploma in Heritage Conservation requires:
(a) a bachelor's degree from the University of Sydney or an equivalent qualification; or
(b) completion of the requirements of the embedded graduate certificate with a weighted average mark of at least 70 across all units attempted for the award.
(4) Admission to the Master of Heritage Conservation requires:
(a) a bachelor's degree from the University of Sydney or an equivalent qualification with a credit average mark across all units; or
(b) completion of the requirements of the embedded graduate diploma; or
(c) completion of the requirements of the graduate certificate with a weighted average mark of at least 70 across all units attempted for the award.
(5) In exceptional circumstances the Head of School and Dean may admit applicants without these qualifications but whose evidence of experience and achievement is deemed by the Head of School and Dean to be equivalent.

##### 6 Requirements for award

(1) The units of study that may be taken for these awards are set out in the relevant degree table.
(2) To qualify for the award of the Graduate Certificate in Heritage Conservation, a candidate must complete 24 credit points, including:
(a) minimum 18 credit points of core units of study; and
(b) maximum 6 credit points of elective units of study.
(3) To qualify for the award of the Graduate Diploma in Heritage Conservation, a candidate must complete 48 credit points, including:
(a) minimum 30 credit points of core units of study; and
(b) maximum 18 credit points of elective units of study.
(4) To qualify for the award of the Master of Heritage Conservation, a candidate must complete 72 credit points, including:
(a) minimum 48 credit points of core units of study; and
(b) maximum 24 credit points of elective units of study.

##### 7 Course transfer

A candidate for the master's degree or graduate diploma may elect to discontinue study and graduate with a shorter award from this embedded sequence, with the approval of the Head of School and Dean, and provided the requirements of the shorter award have been met.

##### 8 Transitional provisions

(1) These resolutions apply to students who commenced their candidature after 1 January, 2017 and students who commenced their candidature prior to 1 January, 2017 who elect to proceed under these resolutions.
(2) Candidates who commenced prior to 1 January, 2017 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2020. The University school may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

# Master of Heritage Conservation

## Unit of study table

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Certificate, Diploma and Master of Heritage Conservation** | | | |
| **Core units** | | | |
| **ARCH9074**<br>**Principles of Heritage Conservation** | 6 | **N** ARCH9003<br>*Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9028**<br>**Conservation Methods and Practices** | 12 | *Note: Department permission required for enrolment* | Semester 2 |
| **ARCH9075**<br>**New Design in Old Settings** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9081**<br>**Heritage Law and Policy** | 6 | | Semester 2 |
| **ARCH9082**<br>**Conservation of Traditional Buildings** | 6 | *This unit of study is offered in even-numbered years only.* | Intensive March |
| **ARCH9083**<br>**Conservation of Modern Buildings** | 6 | *Note: Department permission required for enrolment*<br>*This unit of study is offered in odd-numbered years only.* | Intensive March |
| **ARCH9031**<br>**Research Report** | 12 | *Note: Department permission required for enrolment*<br>*Available to Masters students only.* | Semester 1<br>Semester 2 |
| ARCH9082 (offered even years) ARCH9083 (offered odd years) | | | |
| **Elective units** | | | |
| Electives may be taken from this list, or from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University. | | | |
| **ARCH9084**<br>**Conservation Studio** | 6 | **C** Recommended Co-requisites: ARCH9075 (for student with non-design undergraduate degree)<br>*Note: Department permission required for enrolment*<br>*First preference to Master of Heritage Conservation Students.* | Semester 2 |
| **ARCH9113**<br>**Advanced Topics in Australian Architecture** | 6 | **N** DAAE2001 | Semester 2 |
| **MARC4201**<br>**Modern Architectural History** | 6 | **N** ARCH4102 | Semester 1 |
| **ARCH9063**<br>**Urban Form and Design** | 6 | **A** Some prior study of architectural, urban or planning history.<br>**P** ARCH9100<br>**N** ARCH9021 | Semester 2 |
| **ARCH9080**<br>**Urban Ecology, Design and Planning** | 6 | **N** PLAN9048 | Semester 2 |
| **ARCH9100**<br>**Introduction to Urban Design** | 6 | *Students may be granted advanced standing based on portfolio.* | Semester 1a<br>Semester 2a |
| **MHST6901**<br>**Museum and Heritage: History and Theory** | 6 | **N** MUSM7033 | Semester 1 |
| **MHST6902**<br>**Museum and Heritage: Engaging audiences** | 6 | **N** MUSM7029 | Semester 2 |
| **MHST6904**<br>**Museum and Heritage: Objects and Places** | 6 | **N** MUSM7033 | Semester 2 |
| **MUSM7035**<br>**Ethics of Cultural Property**<br>*This unit of study is not available in 2018* | 6 | | Semester 2 |
| **MHST6913**<br>**Indigenous Museums and Heritage** | 6 | | Semester 2 |
| **MUSM7030**<br>**Exhibition Development** | 6 | | Semester 1b<br>Semester 2b |
| **PLAN9068**<br>**History and Theory of Planning and Design** | 6 | **N** PLAN9031 or ARCH9062 or ARCH9031 or MARC4201<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **PLAN9073**<br>**GIS Based Planning Policy and Analysis** | 6 | *Note: Department permission required for enrolment* | Intensive June<br>Intensive November |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **ARCH9045**<br>**Dissertation 1** | 12 | **P** 48 credit points and a WAM of at least 75<br>**C** ARCH9046<br>**N** ARCH9031 or PLAN9018 or ARCH9060 or PLAN9010 or PLAN9011<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **ARCH9046**<br>**Dissertation 2** | 12 | **C** ARCH9045 | Semester 1<br>Semester 2 |

# Master of Heritage Conservation

## Unit of study descriptions

## Certificate, Diploma and Master of Heritage Conservation

### Core units

**ARCH9074**
**Principles of Heritage Conservation**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 1 **Classes:** Lectures 1.5 hrs/wk; tutorials 1 hr/wk **Prohibitions:** ARCH9003 **Assessment:** Weekly Discussion Forum/In-class Test (50%), Research Paper (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit will introduce students to key controversies, theoretical propositions and practical innovations that have driven the historical development of heritage conservation. The unit covers ideas and examples from the ancient world until the present, with the main focus being on the period from 1850 until today.

The aim of the unit is to help students to arrive at a clear understanding of the concepts and practices that define heritage conservation and to promote a strong historical perspective on the field. Students will consider, for example, the meaning of, and differences between, conservation, restoration and reconstruction; the different forms of historical value that inform our place protection efforts; the function of conservation protocols such as the Venice Charter, Burra Charter and Hoi An Protocols; the importance of advocacy and activism; the growth of world heritage and its relationship to human rights and cultural rights; and the ideas of cultural landscape and historic urban landscape. The unit also challenges students to think about areas of practice and theory that challenge traditional approaches and knowledge such as indigenous heritage and the conservation of modernism.

**ARCH9028**
**Conservation Methods and Practices**

**Credit points:** 12 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 2 **Classes:** Lecture 4 hrs/wk + site visits **Assessment:** Two assignments (2 x 50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

The aims of this unit are to develop skills in the methods and practices of conservation at an accepted professional level, and to interpret and apply the theory taught in the mandatory core of the course in practical, on-site projects. The unit focuses on culturally significant structures and cultural landscapes and includes: methods of survey and documentation (locating, describing and recording components with possible heritage value; identifying and reading historic fabric; historic and archival research methods; thematic history methods; pattern recognition; natural systems; settlements; cultural mapping; aesthetic analysis; material and stylistic analysis); evaluation methodology (assigning heritage significance); assessment methodology (establishing conservation priorities); and appropriate conservation actions (conservation and management plans, policies and strategies). At the end of the unit the student will successfully demonstrate: an understanding of the Australia ICOMOS Burra Charter and the ability to prepare, in accordance with current accepted professional practice, a conservation plan of a place or places of cultural significance; skill in methods and techniques of analysis, assessment and documentation of cultural significance; and the ability to develop relevant policies and strategies for the conservation of a variety places of cultural significance. The intended outcomes are achieved through inquiry, individual study and research and are demonstrated by each student upon the successful completion of set assignments. The assignments are constructed to allow each student to demonstrate his or her level of understanding of the accepted professional methodology and practice in the preparation and presentation of a conservation plan. Assessment criteria based on unit outcomes are used for the examination of the assignments.

**ARCH9075**
**New Design in Old Settings**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 1 **Classes:** 3 hrs/week combination of lectures, tutorials, seminars, site visits. **Assessment:** Group work (30%); individual assignments (70%). Total of 4000-5000 words. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

New Design in Old Settings explores the architectural approaches, conservation methodologies and planning issues relevant to situations when new meets old in the built environment. The unit highlights architecturally innovative reuse projects, exemplary additions and alterations to historic places, and architecturally distinguished new buildings in historic precincts and landscapes. We also examine historic theming, façadism and some of the design ideas and planning compromises that have blighted historic places.

The aims of the unit are to develop an understanding of the history of designing and building new buildings in old settings; to develop an understanding of the major theoretical and practical issues of designing new buildings in old settings; and to develop an ability to assess critically the appropriateness of new development in culturally significant places. Students will develop analytical skills in assessing design strategies and develop confidence in making critical judgements about design propositions in historically significant settings.

**ARCH9081**
**Heritage Law and Policy**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 2 **Classes:** Lectures 2 hrs/wk **Assessment:** Class Exercise/Test (30%) and Paper (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this unit students will become familiar with the system of legal protections and policy instruments that underpin heritage conservation activity. They will explore the idea of cultural property and of shared environmental resources and the ways in which these are balanced with private property rights in heritage policy and law. Classes will address the varying levels at which heritage protections operate, from international protocols down to local planning schemes. Students will become familiar with legislation, regulations, planning instruments and policies as well as the use of registers, inventories and other records of significant items. The unit will also address the roles of various government agencies involved in heritage conservation and develop an understanding of how such agencies utilize heritage studies and assessments, and how they develop heritage law and policy. Students in this unit will consider how different instruments and heritage protections relate to different scales and types of place including landscapes, streetscapes, archaeological resources, gardens and individual buildings. They will also consider how different sanctions and incentives achieve policy aims and support statutory obligations. Finally, together, staff and students will explore innovative legal and policy mechanisms for preventing or redressing the destruction of

historically significant places and encouraging the meaningful protection of culturally significant places.

**ARCH9082**
**Conservation of Traditional Buildings**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Intensive March **Classes:** 5-day intensive (9am-5pm) **Assessment:** 1 x Building Condition Assessment in Groups (50%); 1 x Individual Conservation Analysis (50%) **Practical field work:** 2 hours of site visits each week for 2 weeks. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit of study is offered in even-numbered years only.*

The aims of the course are to introduce students to broad range of specialists from the related fields of architectural conservation and related disciplines who specialize in the conservation of traditional building fabric; to introduce students to the appropriate and accepted methods traditional construction and of the conservation traditional architectural materials; and to familiarise students with the relevant literature pertaining to the domain. The objectives of the course are to allow the student to develop a broad understanding of excellent contemporary conservation practice in the conservation of traditional materials; to develop a broad understanding of traditional building methods; to develop an understanding of good and bad practice in the conservation of traditional materials. Students will be expected to demonstrate the ability to research and prepare an academic paper related to the domain.

Class preparation: 1 hour/week; assessment preparation: 15-20 hours/semester

**ARCH9083**
**Conservation of Modern Buildings**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Intensive March **Classes:** Lectures/seminars 4 hrs/day (5 days), demonstrations and site visits 4 hrs/day (5 days) **Assessment:** 1 x condition assessment (group) (50%), 1 x conservation approach (individual) (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment. Note: This unit of study is offered in odd-numbered years only.*

This intensive unit is a practically focused introduction to the techniques and bodies of knowledge essential to conserving modern buildings and their materials. Expert conservation architects and tradespeople will describe and lead practical demonstrations of techniques in conservation. Students will be challenged to assess and understand forms of decay and to prescribe appropriate interventions to mitigate and prevent such decay. They will have the opportunity to work with materials and inspect work underway on real conservation projects at culturally significant buildings.

This unit provides an overview of key issues in building conservation as well as a close-up view of the conservation of modern buildings. The unit explores the distinctive materials used in Twentieth Century architecture, such as reinforced concrete, as well as modern building systems such as glazed curtain walls and stone cladding systems. The unit will assist students to recognise different uses of these materials, understand the basic tools and techniques required to assess their condition as well as the best practice approaches to their conservation.

Upon successful completion of the unit of study, students will be able to:

Understand the behavior of a range of modern building materials;

Recognise threats to building materials from moisture, wind, biological and chemical attack and other forces that lead to deterioration;

Record a building in drawings and photographs;

Document and assess the condition of the fabric of a building;

Develop an approach to conserving the fabric of a building.

**ARCH9031**
**Research Report**

**Credit points:** 12 **Teacher/Coordinator:** Program Director **Session:** Semester 1, Semester 2 **Classes:** Independent research under academic supervision. **Assessment:** Research proposal (10%), 10,000 to 15,000 word Report (90%). Final reports due by the end of the first week of the formal examination period. **Mode of delivery:** Supervision

*Note: Department permission required for enrolment. Note: Available to Masters students only.*

The report is a substantial piece of research conducted over one semester. It takes the form of a report (between 10,000 and 15,000 words) on an approved subject of your choice. The report is an opportunity to advance your knowledge and skills in a particular area. The objective of the report is to allow you to develop research and analytic skills by undertaking an in-depth study of your own selection. The expected learning outcomes of the report include the ability to think critically about a problem and develop an appropriate research methodology or analytical approach to address it; identify and access appropriate sources of information, research and literature relevant to the issues; undertake relevant primary and secondary research; and present your findings in a way that demonstrates academic and professional competence. A report generally includes a literature review to delineate a problem; a statement of research aims or objectives, as well as research questions; an explanation of research methods; presentation and analysis of data; and discussion of conclusions. Permission to continue the Report may be subject to a satisfactory research proposal being approved by your supervisor by week 3 of semester. Reports are due at the end of the first week of exams for the semester in which you are enrolled. The assessment is based solely on the submission of your report. The report is generally marked by two examiners, neither of whom is your supervisor.

ARCH9082 (offered even years) ARCH9083 (offered odd years)

## Elective units

Electives may be taken from this list, or from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University.

**ARCH9084**
**Conservation Studio**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 2 **Classes:** Lecture 1 hr/wk (10 wks), studio 3 hrs/wk (11 wks), Site Visit 6 hrs/wk (1 wk) **Corequisites:** Recommended Co-requisites: ARCH9075 (for student with non-design undergraduate degree) **Assessment:** Site analysis and design strategy (Group 50%), Statement of Heritage Impact (Individual 50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment. Note: First preference to Master of Heritage Conservation Students.*

The aim of the unit is to engage in an interdisciplinary collaboration to realise an innovative and culturally senstive new design project in a way that mirrors professional teamwork and meets best practice heritage and conservation standards. Students from the Heritage Conservation program will work together in teams with students from the Master of Architecture degree to realise the project. Each group will develop a sustainable strategy for the place that protects and enhances its heritage value. Heritage conservation students will then act as advisors on the design project considering possible impacts to significant buildings and historic landscapes. At the end of the semester heritage students will complete a Statement of Heritage Impact at professional level that accords with the guidelines established by the NSW Office of Environment and Heritage.

The unit objective is to analyse a given site with an existing building of identified heritage value and for the design-based students to prepare, with a given brief, a contemporary addition that is both a credible work of contemporary architecture whilst at the same time a sensitive and appropriate addition that respects the cultural significance of the existing building. The non-design based students will act as heritage consultants, in accordance with best professional practice and concurrently prepare for the proposed design a Heritage Impact Statement that conforms with the NSW Heritage Branch guidelines and standards of practice.

Class preparation: 2 hours/week

**ARCH9113**
**Advanced Topics in Australian Architecture**

**Credit points:** 6 **Teacher/Coordinator:** Prof Andrew Leach **Session:** Semester 2 **Classes:** lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** DAAE2001 **Assessment:** One process development presentation and one 4,000-word essay (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will explore the history of Australian architecture in its various contexts. Lectures and seminars will cover key architects, projects and building types and their relation to Australian history. Students will explore a range of architectural styles and movements and their characteristics. They will undertake individual self-directed research and learn how to record and present the results of this research. Students will develop an appreciation of the factors that shape architectural design and thought in Australia and how these relate to wider social and cultural circumstances. Tutorials will explore key books, essays and journals concerned with Australian architecture. On successful completion of this unit, students will be able to: demonstrate an advanced familiarity with a range of Australian architects, buildings and types; research, record and present a specific project in Sydney; connect specific works to other works of a similar style, period or cultural context. This will be assessed in the submitted essay.

**MARC4201**
**Modern Architectural History**

**Credit points:** 6 **Teacher/Coordinator:** Dr Jennifer Ferng **Session:** Semester 1 **Classes:** Lecture and tutorial contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Prohibitions:** ARCH4102 **Assessment:** Illustrated Research Essay (60%), Short response essay (30%), and visual diagram (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit presents foundational knowledge concerning modern architecture in global context. It commences briefly with fundamental principles of the European Enlightenment as a means of discussing modern architecture's relationship to a number of external disciplinary fields including archaeology, biology, economics, history, landscape studies, and philosophy. Vital Enlightenment inquiries not only set the stage for historical debates about architecture but have also influenced contemporary questions about what constitutes architectural practice. Attitudes towards classical antiquity, art collections in museums, craft and industrialization, and building materials exemplified how architects have actively participated in creating intellectual discourse. Some principal qualities of modernism evident within the arts and sciences heralded historical contingencies, self-conscious agency, and the rise of technical developments. Architecture's enduring involvement with the modern sciences, in particular, has been conditioned by the shifting tensions existing between many polarizing pairings: empiricism and subjectivity, art and techne, representations and their models.

Instead of employing a chronological structure, course readings are grouped into core areas of exposition. We will survey a range of topics on autonomy, class, construction, drawing, gender, nationalism, ornament, primitivism, science, technocracy, urbanism, and utopia to understand how the complexities of these issues have created frameworks for architectural historiography, theory, and design in a variety of cultural contexts. The Enlightenment influence over these issues engendered lasting modes of resistance against these canonical formations, which remain highly evident in colonial and post-colonial dialogues as well as post-industrial interventions. The intersection of architecture with external disciplines set the agenda for a global modernity spanning from the eighteenth century into the present moment.

**ARCH9063**
**Urban Form and Design**

**Credit points:** 6 **Teacher/Coordinator:** Senior Lecturer Deena Ridenour **Session:** Semester 2 **Classes:** Weekly lectures and tutorials **Prerequisites:** ARCH9100 **Prohibitions:** ARCH9021 **Assumed knowledge:** Some prior study of architectural, urban or planning history. **Assessment:** Formative Assessment (40%) and Summative Assessment (60%). Assessments comprise both group and individual components. Peer review of group work will be required. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit explores the complexity and evolution of city form and the influences of planning and design processes and practice.

Using Australian and international case studies, the unit will investigate how urban functions, cultural values; technological, socio-economic and political circumstances; and design theory and practice shape the form of specific cities over time. The morphological elements of the city including: ecological systems; settlement and landownership patterns; transport, open space and street networks; urban infrastucture; open space, street and building typologies Â¿ are investigated to reveal often distinct local characteristics and the forces that shaped them.

The ability to recognize, investigate and respond to the forces that shape the city lies at the heart of good urban design. On completion, a student will be better able to: recognize structures and patterns, and key building and spatial typologies that contribute to overall city morphology; record and describe these, investigate and explain their origins, and discuss informatively their place in the evolving city and contemporary design.

It complements the History and Theory Planning and Design (PLAN9068) which emphasises the theories and models underpinning the forms that are covered in this unit. It is a core unit that supports the Urban Design Studios in the Urban Design program and the Integrated Urbanism Studio in the Urbanism program and an informative elective for students enrolled in or intending to enrol in the Urban Architecture Research Studio.

**ARCH9080**
**Urban Ecology, Design and Planning**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 2 **Classes:** 3 hrs lectures/tutorials/wk **Prohibitions:** PLAN9048 **Assessment:** Two assessments, each 50%; both assessments may comprise group and individual work. Peer assessment of group tasks may be required. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce the conceptual bases for sustainable development and explore how principles of sustainability can be introduced into land use planning and urban design, including environmental management and multi-criteria evaluation methodologies in three modules. The unit will examine the evolution of urban areas in relation to their biophysical setting. This will lead to an understanding and appreciation of the urban ecology of a city in terms of the flows of materials, resources and energy, and the challenges presented by climate change and peak oil. The principles of sustainability and the history and development of concepts of urban sustainability will be demonstrated through case studies. Assessments will explore a student's learning of the methods and frameworks for evaluating and measuring sustainability that are introduced in this unit.

**ARCH9100**
**Introduction to Urban Design**

**Credit points:** 6 **Teacher/Coordinator:** Dr. Non Arkaraprasertkul **Session:** Semester 1a, Semester 2a **Classes:** Intensive delivery (lectures and tutorials) for total of 38 hours over 7 weeks **Assessment:** (60%) Formative assessment, (40%) summative assessment. Assessments comprise both group and individual components. Peer review of group work will be required. **Mode of delivery:** Block mode

*Note: Students may be granted advanced standing based on portfolio.*

This introductory unit of study will provide students with the necessary skills to participate effectively in the urban design studios and integrated urbanism studio. The unit will include site, spatial and public domain analysis, map and plan reading, visual, verbal and written communication techniques, and basic computer-based 3 dimensional modelling and numerical analysis. It will introduce students to the objectives and principles of urban design by analysing a number of public spaces, the spaces between buildings and the public domain and urban conditions in Sydney.

*Textbooks*

Glaeser, Edward. Triumph of the city: How our greatest invention makes us richer, smarter, greener, healthier, and happier. Penguin, 2011.

Montgomery, Charles. Happy city: transforming our lives through urban design. Macmillan, 2013. APA

**MHST6901**
**Museum and Heritage: History and Theory**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x1hr lecture and 1x2hr seminar/week **Prohibitions:** MUSM7033 **Assessment:** 1x500wd tutorial post and presentation (20%), 1x1500wd short essay (35%), 1x2500wd long essay (45%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The historical, cultural and social roles of museums, heritage places and collections are the focus of contemporary debate. This unit examines the relationships between the production of cultural material, its management and display, and audience to understand museum and heritage sites as places of knowledge, politics and power. Current critical and theoretical perspectives incorporate ideas about the production, consumption, contestation and conservation of intangible values, identities, memories, cultural practices and different knowledge systems.

**MHST6902**
**Museum and Heritage: Engaging audiences**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x1hr lecture and 1x2hr seminar/week **Prohibitions:** MUSM7029 **Assessment:** 1x500wd tutorial post and presentation (20%), 1x1500wd essay (35%), 1x2500wd project proposal (45%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Presenting collections, objects and places to the public is a major focus for museums, galleries and heritage organisations. The development of interpretation strategies and public programs to engage, educate and entertain audiences are regarded as key to the long-term viability of cultural institutions. This unit examines the theories and practices of museum education, heritage interpretation, audience research, communication and learning. The development and delivery of education, interpretation and visitor programs are examined in case studies and through practical work.

**MHST6904**
**Museum and Heritage: Objects and Places**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x1hr lecture and 1x2hr seminar/week **Prohibitions:** MUSM7033 **Assessment:** 1x500wd tutorial post and presentation (20%), 1x1500wd object/place assessment (35%), 1x2500wd esssay (45%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Objects and heritage places (such as indigenous sites, historical buildings, parks, gardens, ruins, archaeological sites, memorials, cultural landscapes) can be studied from a range of multi-disciplinary approaches. In this unit students are introduced to different theoretical and methodological frameworks used in object and place analysis. Changing ideas about the roles and meanings of objects and places from historical, contemporary and cross-cultural perspectives will be introduced. Practical work and case studies will used to examine these issues.

**MUSM7035**
**Ethics of Cultural Property**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x2hr seminar/week **Assessment:** 1x2500wd case study (35%), 1x3000wd Essay (45%), 1x500wd Seminar presentation (10%), participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit tracks the ethical and political disputes surrounding the ownership, control and care of cultural property. While giving historical background on religious iconoclasm, the focus will be on notable modern cases, from the Elgin Marbles or the Benin Bronzes in the colonial era to recent acts like the destruction of the Bamiyan Buddhas or the ransack of the Iraq Museum. Australian museum practice in relation to Indigenous cultural property and issues of repatriation will be considered, as will the art market, in both legal and philosophical dimensions.

**MHST6913**
**Indigenous Museums and Heritage**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x2hr seminar/week **Assessment:** 1x2500wd Essay (45%), 1x2000wd Blog (35%), 1x750wd Presentation (10%), 1x750wd On-line Participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Globally, Indigenous peoples have challenged museums, heritage agencies and professional practitioners over issues of ownership, control, management, display and interpretation of Indigenous culture, history and cultural property. We will examine how Indigenous communities, scholars and practitioners are decolonising museum and heritage practices and spaces.

**MUSM7030**
**Exhibition Development**

**Credit points:** 6 **Session:** Semester 1b, Semester 2b **Classes:** Intensive mode in weeks 2-6 in Semester 1 **Assessment:** 1x1000wd equivalent online discussions (15%), 1x2000wd exhibition proposal (35%), 1x3000wd Essay (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Understanding display practices in museums is central to the functions of these cultural institutions. This unit of study examines the way in which exhibitions may function by exploring current issues and debates associated with the practice of exhibiting. We will consider how different spaces inform the interpretation of the cultural material and information displayed. In particular, we will examine the issue of representation as it relates to the museum context. This unit of study will provide students with an overview of the intellectual discourses and practical knowledge used to analyse, conceptualise, propose and develop exhibitions.

**PLAN9068**
**History and Theory of Planning and Design**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Paul Jones **Session:** Semester 1, Semester 2 **Classes:** Lecture 2hrs/wk (and may include some tutorials and group discussions) **Prohibitions:** PLAN9031 or ARCH9062 or ARCH9031 or MARC4201 **Assessment:** Assignment 1: short questions including local field work/observation (40%); Assignment 2 is an analytical portfolio of inqury into 3-4 papers with a strong emphasis on understanding key concepts in the modern planning era via clarity of text and strong visual/image support (50%).Group work (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit is in two overlapping modules, each of which is assessed.

Module one enables students to understand how the main concepts and practices of urban planning and development have evolved; appreciate different perspectives about the roles and purposes of planning; undertake basic historical research about Australian urban planning and development issues, and prepare basic stories and arguments about practical planning issues and current theories. There is a strong emphasis on enriching the ability of students to better appreciate urban form, structure and planning practice generally by analysing such form, structure and process through the lens of history (as 'snapshots' in time), and the understanding of planning theory as drivers that shape and express such urban change such as Garden City values. Interpreting planning practice, places and spaces at different scales and what this reflects (such as underlying theory, values, norms attitudes, public interest, etc.) is a key element of this module.

Concurrent with module one, module two familiarises students with the main ideas and methods that have influenced urban design practice from the late nineteenth century to the present. It covers the dominant urban design theories, principles, conceptual and physical models, analytical methods and drawings from key contributing authors over the period, and explores critically how and why these arose, their interrelationships, spheres of influence, and continuing validity. In this module, the work of key urban planning and design idealists and visionaries are discussed such as Ebenezer Howard and Le Corbusier.

Students will be able to: critically review and interpret key planning and urban design texts/papers; construct and present basic arguments orally and in conjunction with graphics/images in illustrated documents; access and engage with key literature and other sources of knowledge; and use basic conceptual frameworks about planning arguments and stories for both the overlapping fields of urban planning and urban

design. Interpreting the built form around you from an historical lens is an important learning outcome.

*Textbooks*
"City Reader" (Fifth Edition) by Richard Le Gates and Frederic Stout (Routledge)

**PLAN9073**
**GIS Based Planning Policy and Analysis**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Intensive June, Intensive November **Classes:** 4-day intensive (9am-5pm) **Assessment:** Two smaller analytical assessments (2 x 25%) and a larger report (50%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit is concerned with using GIS to analyse planning problems and undertake policy analyses. The unit will include a comprehensive introduction to mapping and the use of GIS: data structures, topology, projections, spatial and non-spatial queries. Australian census products will be described and students will be expected to analyse census statistics using GIS maps. The role of GIS in coordinating various forms of information for policy analyses, preparing master plans, in presenting information for development control, impact analyses and wider management purposes will also be covered. The use of GIS to support visualisation will be covered, using examples about designing development projects and planning instruments. Finally, the various forms of distributing maps to the public and policy-makers will be discussed. The unit integrates the hands-on learning of GIS software with a `research-based` approach. Teaching will involve short lectures, studios and workshops. Assessment will be on a series of smaller assignments and a larger report prepared by each student that integrates GIS-based (and other) graphics into a coherent policy analysis. In addition, each student will make oral presentations on their work in studio sessions.

**ARCH9045**
**Dissertation 1**

**Credit points:** 12 **Teacher/Coordinator:** An academic supervisor is required. Discuss with your program coordinator. **Session:** Semester 1, Semester 2 **Classes:** Research under academic supervision **Prerequisites:** 48 credit points and a WAM of at least 75 **Corequisites:** ARCH9046 **Prohibitions:** ARCH9031 or PLAN9018 or ARCH9060 or PLAN9010 or PLAN9011 **Assessment:** 15,000 to 25,000 word dissertation (100%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment.*

ARCH9045 and ARCH9046 Dissertation 1 and 2 are only available to candidates with permission from an appropriate supervisor. Planning students should take PLAN9010 and PLAN9011 Planning Dissertations 1 and 2. Students enrol either full time over one semester (ARCH9045 and ARCH9046) or part time over two semesters (ARCH9045 then ARCH9046). The units are not assessed separately - a single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student. Students and their supervisors should complete an Independent Study Approval form and return it to the Student Administration Centre to effect enrolment. The aim of the dissertation is to train the student in how to undertake advanced study. The student should learn how to examine published and unpublished data, survey and experimental results, set objectives, organise a program of work, analyse information, evaluate this in relation to existing knowledge and document the work; and to allow the student to pursue an area of interest in greater depth than is possible in coursework or to investigate an area of interest which is not covered in coursework. The dissertation will normally involve a critical review of published material in a specified subject area, but it may also be an experimental or theoretical investigation, a feasibility study, a case study, a computer program, or other work demonstrating the student's analytical ability. The dissertation should be 15,000 to 25,000 words in length. The dissertation should contain a literature review, a research methodology, analysis of data, a discussion of results and conclusions. The dissertation will be judged on the extent and quality of the student's work, and in particular on how critical, perceptive and constructive the student has been in assessing his or her own work and that of others. Three typed A4 sized copies of the dissertation are required to be presented for examination. These may be in either temporary or permanent binding. If in temporary binding they must be able to withstand ordinary handling and postage. The preferred method is "perfect binding"; spring back, ring back or spiral binding is not permitted. Students are required to submit one copy in permanent binding on acid free paper for the library, including any emendations recommended by the examiners. For more details see the requirements for the PhD thesis in the Postgraduate Research Studies Handbook. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled for Dissertation 2. The assessment is based solely on the submission of your dissertation. The dissertation is generally marked by two examiners.

**ARCH9046**
**Dissertation 2**

**Credit points:** 12 **Teacher/Coordinator:** An academic supervisor is required. Discuss with your program coordinator. **Session:** Semester 1, Semester 2 **Classes:** Research under academic supervision. **Corequisites:** ARCH9045 **Assessment:** 15,000 to 25,000 word dissertation (100%) **Mode of delivery:** Supervision

ARCH9045 and ARCH9046 Dissertation 1 and 2 are only available to candidates with permission from an appropriate supervisor. Planning students should take PLAN9010 and PLAN9011 Planning Dissertations 1 and 2. Students enrol either full time over one semester (ARCH9045 and ARCH9046) or part time over two semesters (ARCH9045 then ARCH9046). The units are not assessed separately - a single dissertation is required. The appointment of a supervisor will depend on the topic chosen for the dissertation by the student. Students and their supervisors should complete an Independent Study Approval form and return it to the Student Administration Centre to effect enrolment. The aim of the dissertation is to train the student in how to undertake advanced study. The student should learn how to examine published and unpublished data, survey and experimental results, set objectives, organise a program of work, analyse information, evaluate this in relation to existing knowledge and document the work; and to allow the student to pursue an area of interest in greater depth than is possible in coursework or to investigate an area of interest which is not covered in coursework. The dissertation will normally involve a critical review of published material in a specified subject area, but it may also be an experimental or theoretical investigation, a feasibility study, a case study, a computer program, or other work demonstrating the student's analytical ability. The dissertation should be 15,000 to 25,000 words in length. The dissertation should contain a literature review, a research methodology, analysis of data, a discussion of results and conclusions. The dissertation will be judged on the extent and quality of the student's work, and in particular on how critical, perceptive and constructive the student has been in assessing his or her own work and that of others. Three typed A4 sized copies of the dissertation are required to be presented for examination. These may be in either temporary or permanent binding. If in temporary binding they must be able to withstand ordinary handling and postage. The preferred method is "perfect binding"; spring back, ring back or spiral binding is not permitted. Students are required to submit one copy in permanent binding on acid free paper for the library, including any emendations recommended by the examiners. For more details see the requirements for the PhD thesis in the Postgraduate Research Studies Handbook. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled for Dissertation 2. The assessment is based solely on the submission of your dissertation. The dissertation is generally marked by two examiners.

# Overseas exchange

## Exchange in Heritage Conservation

The school may approve international exchange for qualified students in graduate coursework master's degrees.

Exchanges may be for one semester only. Students must apply through the Study Abroad and Exchange Office. Each student's program must be approved in consultation with the program director of the degree.

No program will be approved that involves the completion of more than 50 percent of the core requirements of the degree on exchange.

Exchange units should be taken as part of the degree, satisfying the requirements that would normally be covered at this university during the same period. Exchange should not be in addition to the degree requirements.

Exchange students are required to enrol in a full-time load at the University of Sydney and will incur the tuition costs associated with that load. No tuition costs will be incurred with the partner university.

Specially designated units of study will be recorded on the transcript. A result of 'SR' for 'Satisfied Requirements' will be recorded by the University against each successfully completed unit. The transcript of the exchange university will be the official detailed record of exactly what was completed during the exchange. Exchange results will not count towards a student's Weighted Average Mark.

For more information please contact the Study Abroad and Exchange Office.

The exchange units for enrolment at the University of Sydney, to be approved with the program director, shall be selected from the following table.

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Graduate exchange units** | | | |
| **Core units of study** | | | |
| **DESC9660**<br>**Graduate Exchange Core A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9661**<br>**Graduate Exchange Core B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9662**<br>**Graduate Exchange Core C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9663**<br>**Graduate Exchange Core D** | 6 | | Semester 1<br>Semester 2 |
| **DESC9672**<br>**Graduate Exchange Core E** | 12 | | Semester 1<br>Semester 2 |
| **Optional units of study** | | | |
| **DESC9664**<br>**Graduate Exchange Optional A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9665**<br>**Graduate Exchange Optional B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9666**<br>**Graduate Exchange Optional C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9667**<br>**Graduate Exchange Optional D** | 6 | | Semester 1<br>Semester 2 |
| **Elective units of study** | | | |
| **DESC9668**<br>**Graduate Exchange Elective A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9669**<br>**Graduate Exchange Elective B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9670**<br>**Graduate Exchange Elective C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9671**<br>**Graduate Exchange Elective D** | 6 | | Semester 1<br>Semester 2 |

# Master of Interaction Design and Electronic Arts

The MIDEA program enables you to design for the future, using the emergent technologies of today. Technology is becoming closely interwoven into everyday life. How we create and design these interactions is crucial to their success and the positive impact they have on our lives. This understanding forms the core of the program's design philosophy: technology that is designed to delight its users.

We aim to infuse the latest technological innovation with a human-centred design thinking to solve complex problems. The program promotes a creative and critical approach, within the framework of research-driven interaction design and user experience methodologies. The result is an understanding of how to design interactive products, services and systems that will have lasting cultural and commercial importance.

In the Graduate Certificate, students will develop the essential industry knowledge and skills for working as an interaction or user experience designer, at ease with web and mobile applications. Once you have these core skills in human-centred design thinking, web/mobile interface design and creative coding, you are trained to analyse and evaluate their application in a range of design contexts. This evaluative approach is what enables our students to create meaningful interactive experiences that will become ubiquitous parts of our everyday life.

In the Graduate Diploma, students will engage in design studio projects to extend these skills, both conceptually and technically. We offer a studio-based teaching environment in which students work individually or in teams to creatively solve design challenges. You will learn to design across multiple platforms and scales - from natural, tangible and wearable user interfaces to interactive architecture, creative robotics and urban informatics. Your ideas may even become the basis of prototype products, patents or start-up services.

The Masters program culminates in a capstone research project, industry internship or graduation design project. This is where you can dive deep into a topic of your interest, collaborate on a design research project with one of our academic researchers, or gain valuable industry experience. The School draws on industry and alumni contacts to enable opportunities to build your professional network. These factors combine to position you as a well-connected creative industry specialist with expertise across the strategic, creative and technical domains.

The Masters program with a specialisation in Audio and Acoustics, or Illumination Design will further differentiate your skill set and enable you to work in the emerging area of interactive sound and lighting in entertainment, buildings and public space.

# Course rules

## Graduate Certificate in Interaction Design and Electronic Arts

## Graduate Diploma in Interaction Design and Electronic Arts

## Master of Interaction Design and Electronic Arts

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the University school, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

### Course Resolutions

### 1 Course codes

| Code | Course title |
|---|---|
| GCINDEAR-01 | Graduate Certificate in Interaction Design and Electronic Arts |
| GNINDEAR-01 | Graduate Diploma in Interaction Design and Electronic Arts |
| MAINDEAR-01 | Master of Interaction Design and Electronic Arts (72cp) |
| MAINDEAR-02 | Master of Interaction Design and Electronic Arts (96cp) |

### 2 Attendance pattern

The attendance pattern for this course is full time or part time according to student choice.

### 3 Master's type

The master's degree in these resolutions is a professional master's course, as defined by the Coursework Rule.

### 4 Embedded courses in this sequence

(1) The embedded courses in this sequence are:
(a) the Graduate Certificate in Interaction Design and Electronic Arts
(b) the Graduate Diploma in Interaction Design and Electronic Arts
(c) the Master of Interaction Design and Electronic Arts
(2) Providing candidates satisfy the admission requirements for each stage, a candidate may progress to the award of any of the courses in this sequence. Only the longest award completed will be conferred.

### 5 Admission to candidature

(1) Available places will be offered to qualified applicants based on merit, according to the following admissions criteria.
(2) Admission to the Graduate Certificate in Interaction Design and Electronic Arts requires a bachelor's degree from the University of Sydney or an equivalent qualification.
(3) Admission to the Graduate Diploma in Interaction Design and Electronic Arts requires:
(a) a bachelor's degree from the University of Sydney or an equivalent qualification; or
(b) completion of the requirements of the embedded graduate certificate with a WAM of at least 70.
(4) Admission to the Master of Interaction Design and Electronic Arts requires:
(a) a bachelor's degree from the University of Sydney or an equivalent qualification with a credit average mark across all units; or
(b) completion of the requirements of the embedded graduate diploma; or
(c) completion of the requirements of the embedded graduate certificate with a weighted average mark of at least 70.
(5) In exceptional circumstances the Head of School and Dean may admit applicants without these qualifications but whose evidence of experience and achievement is deemed by the Head of School and Dean to be equivalent.

### 6 Requirements for award

(1) The units of study that may be taken for the courses are set out in the relevant degree table.

(2) To qualify for the award of the Graduate Certificate in Interaction Design and Electronic Arts, a candidate must complete 24 credit points, including:
(a) minimum 18 credit points of core foundational units of study; and
(b) maximum 6 credit points of elective units of study.
(3) To qualify for the award of the Graduate Diploma in Interaction Design and Electronic Arts, a candidate must complete 48 credit points, including:
(a) minimum 18 credit points of core foundational units of study;
(b) minimum 18 credit points of core advanced units of study; and
(c) maximum 12 credit points of elective units of study.
(4) To qualify for the award of the Master of Interaction Design and Electronic Arts, a candidate must complete 72 credit points, including:
(a) minimum 18 credit points of core foundational units of study; and
(b) minimum 18 credit points of core advanced units of study;
(c) minimum 12 credit point capstone unit of study; and
(d) maximum 24 credit points of elective units of study
(5) To qualify for the award of Master of Interaction Design and Electronic Arts (Specialisation), a candidate must complete 96 credit points, including:
(a) minimum 18 credit points of core foundational unit of study: and
(b) minimum 18 credit points of core advanced units of study;
(c) minimum 12 credit point capstone unit of study; and
(d) minimum 24 credit points of core specialisation units; and
(e) maximum 24 credit points of elective units of study.
(6) Core units completed in excess of the minimum requirements may count as elective units of study.

7. Specialisations

(1) Completion of one specialisation is a requirement of the Master of Interaction Design and Electronic Arts (Specialisation) course. A specialisation requires the completion of at least 24 credit points chosen from units of study listed in the table for that specialisation. The specialisations available are:
(a) Audio and Acoustics
(b) Illumination Design

## 8 Course transfer

A candidate for the master's degree or graduate diploma may elect to discontinue study and graduate with a shorter award from this embedded sequence, with the approval of the Head of School and Dean, and provided the requirements of the shorter award have been met.

## 9 Transitional provisions

(1) These resolutions apply to students who commenced their candidature after 1 January, 2016 and students who commenced their candidature prior to 1 January, 2016 who elect to proceed under these resolutions.
(2) Candidates who commenced prior to 1 January, 2016 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2018. The University school may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

# Master of Interaction Design and Electronic Arts

## Unit of study table

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Core Foundational units** | | | |
| Core foundational students must be taken in the first semester of enrolment. | | | |
| **IDEA9103**<br>**Design Programming** | 6 | | Semester 1<br>Semester 2 |
| **IDEA9105**<br>**Interface Design** | 6 | *Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **IDEA9106**<br>**Design Thinking** | 6 | *Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **Core Advanced units** | | | |
| Students have a choice of IDEA9101 and IDEA9102 in Semester 1, or IDEA9201 and IDEA9202 in Semester 2 for advanced core units | | | |
| **IDEA9101**<br>**IDEA Laboratory 1** | 6 | **P** IDEA9103<br>**C** IDEA9102<br>*Students may incur materials costs in this unit.* | Semester 1 |
| **IDEA9102**<br>**IDEA Studio 1** | 12 | **P** IDEA9106<br>**C** IDEA9101<br>*Students may incur materials costs in this unit.* | Semester 1 |
| **IDEA9201**<br>**IDEA Laboratory 2** | 6 | **P** IDEA9103<br>**C** IDEA9202<br>*Students may incur materials costs in this unit.* | Semester 2 |
| **IDEA9202**<br>**IDEA Studio 2** | 12 | **P** IDEA9106<br>**C** IDEA9201<br>*Students may incur materials costs in this unit.* | Semester 2 |
| **Capstone** | | | |
| **IDEA9301**<br>**Graduation Studio** | 12 | **P** 48 Credit Points including (18 credit points from IDEA9103 and IDEA9105 and IDEA9106) and [18 credit points from (IDEA9101 and IDEA9102) or (IDEA9201 and IDEA9202)] | Semester 1<br>Semester 2 |
| **Electives** | | | |
| Electives may be chosen from the recommended set below or, with the permission of the Progam Director, from any postgraduate couse in the University. | | | |
| **Research** | | | |
| IDEA9302, IDEA9303 or IDEA9311 may replace the capstone unit with the permission of the Program Director. | | | |
| **IDEA9302**<br>**IDEA Research Project** | 12 | **P** 48 Credit Points including (18 credit points from IDEA9103 and IDEA9105 and IDEA9106) and (18 credit points from IDEA9101 and IDEA9102 and IDEA9201 and IDEA9202)<br>*Note: Department permission required for enrolment*<br>*This unit of study is available to MIDEA students only. Students must seek permission to enrol from the Program Director before the start of the teaching semester.* | Semester 1<br>Semester 2 |
| **IDEA9303**<br>**IDEA Dissertation** | 12 | **P** 48 credit points including (18 credit points from IDEA9103 and IDEA9105 and IDEA9106) and (18 credit points from IDEA9101 and IDEA9102 and IDEA9201 and IDEA9202)<br>**C** IDEA9302<br>*Note: Department permission required for enrolment*<br>*This unit of study is available to MIDEA students only. Students must seek permission to enrol from the Program Director before the start of the teaching semester.* | Semester 1<br>Semester 2 |
| **IDEA9311**<br>**IDEA Research Internship** | 12 | **P** 48 Credit Points including (18 credit points from IDEA9103 and IDEA9105 and IDEA9106) and (18 credit points from IDEA9101 and IDEA9102 and IDEA9201 and IDEA9202)<br>*Note: Department permission required for enrolment*<br>*Students must seek permission to enrol from the Program Director before the start of the teaching semester. Internship must end before end of semester. Advanced standing will not be granted for this unit of study.* | Semester 1<br>Semester 2 |
| **Foundational Recommended electives** | | | |
| **ARIN6904**<br>**Mobile Media and Games** | 6 | | Semester 2 |
| **ARIN6905**<br>**New Media Audiences** | 6 | **N** ARIN6903 | Semester 1 |
| **Recommended electives** | | | |
| **MARC6102**<br>**3D Computer Design Modelling** | 6 | *Enrolment numbers limited by teaching resources. If your attempt to enrol online is unsuccessful, please seek permission from the Student Administration Centre (SAC).* | Semester 1<br>Semester 2 |
| **DESC9117**<br>**Sound Design for New Media** | 6 | | Semester 2 |
| **DESC9154**<br>**Lighting Design Software** | 6 | **A** DESC9166, fundamental knowledge of lighting | Semester 2 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **DESC9164**<br>**Lighting Technologies** | 6 | **N** DESC9063 | Semester 2 |
| **DESA9008**<br>**Object Design (Material and Light)** | 6 | **A** DESA1555<br>**N** AWSS2020<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **DESC9153**<br>**Graduate Internship** | 6 | *Note: Department permission required for enrolment*<br>*Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.* | Intensive December<br>Intensive July<br>Intensive November<br>Semester 1<br>Semester 2 |
| **ARIN6901**<br>**Network Society**<br>*This unit of study is not available in 2018* | 6 | | Semester 2 |
| **ARIN6902**<br>**Internet Cultures and Governance** | 6 | | Semester 1 |
| **COMP5047**<br>**Pervasive Computing** | 6 | **A** Background in programming and operating systems that is sufficient for the student to independently learn new programming tools from standard online technical materials. Ability to conduct a literature search. Ability to write reports of work done.<br>*Note: Department permission required for enrolment* | Semester 2 |
| **COMP5216**<br>**Mobile Computing** | 6 | **A** COMP5214 OR COMP9103. Software Development in JAVA, or similar introductory software development units. | Semester 2 |
| **COMP5347**<br>**Web Application Development** | 6 | **A** COMP9220 or COMP5028. The course assumes basic knowledge on OO design and proficiency in a programming language | Semester 1 |
| **COMP5427**<br>**Usability Engineering** | 6 | | Semester 2 |
| **COMP5415**<br>**Multimedia Design and Authoring** | 6 | | Semester 2 |
| **COMP9007**<br>**Algorithms** | 6 | **A** This unit of study assumes that students have general knowledge of mathematics (especially Discrete Math) and problem solving. Having moderate knowledge about Data structure can also help students to better understand the concepts of Algorithms will be taught in this course.<br>**N** COMP5211 | Semester 1<br>Semester 2 |
| **COMP9103**<br>**Software Development in Java** | 6 | **N** COMP5214 | Semester 1<br>Semester 2 |
| **COMP9419**<br>**Digital Media Fundamentals**<br>*This unit of study is not available in 2018* | 6 | **N** COMP5114 | Semester 1 |
| **COMP9120**<br>**Database Management Systems** | 6 | **A** Some exposure to programming and some familiarity with data model concepts<br>**N** INFO2120 OR INFO2820 OR INFO2005 OR INFO2905 OR COMP5138 OR ISYS2120. Students who have previously studied an introductory database subject as part of their undergraduate degree should not enrol in this foundational unit, as it covers the same foundational content. | Semester 1<br>Semester 2 |
| **COMP9110**<br>**System Analysis and Modelling** | 6 | **A** Experience with a data model as in COMP9129 or COMP9103 or COMP9220 or COMP9120 or COMP5212 or COMP5214 or COMP5028 or COMP5138<br>**N** ELEC3610 OR ELEC5743 OR INFO2110 OR INFO5001 OR ISYS2110 | Semester 1<br>Semester 2 |
| **COMP9121**<br>**Design of Networks and Distributed Systems** | 6 | **N** COMP5116 | Semester 2 |
| **COMP9601**<br>**Computer and Network Organisation** | 6 | **N** COMP5213 | Semester 1 |
| **COMP9220**<br>**Object-Oriented Design**<br>*This unit of study is not available in 2018* | 6 | **A** Students enrolled in COMP5028/INFO9220 are assumed to have elementary Java programming experience or equivalent experience in another object oriented programming language. This unit does not have assessment with heavy coding task. But some knowledge in object-oriented programming would have big impact on learning experience.<br>**N** : COMP5028 OR INFO3220<br>*Note: Department permission required for enrolment* | Semester 1 |
| **MFDI9303**<br>**Digital Effects for Film and Video** | 6 | | Semester 2 |
| **MFDI9313**<br>**Digital Editing for Film and Video** | 6 | | Semester 1 |
| **CMPN5006**<br>**Recording Portfolio** | 6 | | Semester 1 |
| Audio and Acoustics specialisation | | | |
| **DESC9090**<br>**Audio Systems and Measurement** | 6 | **A** DESC9138 | Semester 2 |
| **DESC9011**<br>**Audio Production** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **DESC9115**<br>**Digital Audio Systems** | 6 | | Semester 1 |
| **DESC9117**<br>**Sound Design for New Media** | 6 | | Semester 2 |
| Illumination Design specialisation | | | |
| **DESC9164**<br>**Lighting Technologies** | 6 | **N** DESC9063 | Semester 2 |
| **DESC9166**<br>**Photometry and Colorimetry** | 6 | **N** DESC9072 | Semester 1 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **DESC9167**<br>**Light and Vision** | 6 | **N** DESC9085 | Semester 1 |
| **DESC9198**<br>**Subjective Analysis in Lighting Design** | 6 | **A** Fundamental knowledge of lighting | Semester 2 |
| **DESC9153**<br>**Graduate Internship** | 6 | *Note: Department permission required for enrolment*<br>*Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.* | Intensive December<br>Intensive July<br>Intensive November<br>Semester 1<br>Semester 2 |

# Master of Interaction Design and Electronic Arts

## Unit of study descriptions

### Core Foundational units

Core foundational students must be taken in the first semester of enrolment.

**IDEA9103**
**Design Programming**

**Credit points:** 6 **Teacher/Coordinator:** Liam Bray **Session:** Semester 1, Semester 2 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Assessment:** Assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides an introduction to the development of software in design and the creative industries. It teaches an understanding of the fundamentals of computational thinking, as well as skills in the design and implementation of software for creative expression. It introduces students to tools for building interactive design prototypes that express their interaction design skills through programming. It covers knowledge of programming concepts; creative coding practices; and Javascript and the p5.js library. Key concepts covered in this unit include: variables, functions, control flows, and algorithmic thinking. Students learn how to approach creative expression through the medium of code, which will allow them to incorporate programming into their own design practice as well as to collaborate effectively with software developers. This unit is a foundational core unit in the Master of Interaction Design and Electronic Arts program.

**IDEA9105**
**Interface Design**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Martin Tomitsch **Session:** Semester 1, Semester 2 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Assessment:** Design assignments (90%), Quizzes (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit introduces students to the fundamentals of user interface design. Interface design is an important element of a human-centred design approach to the development of interactive computational systems. Students will learn about industry standard user interface design and usability principles and guidelines, based in visual design theory and visual perception. They will acquire practical knowledge through the application of tools and techniques for designing and evaluating user interfaces for web and mobile products. The unit increases awareness of good and bad design through observation and evaluation of existing technology, and develops appreciation of visual design principles and their impact on the user experience of interactive products. The knowledge and skills developed in this unit will equip students with the essential capabilities for working in the interaction design and user experience profession. This unit is a foundational core unit in the Master of Interaction Design and Electronic Arts program.

**IDEA9106**
**Design Thinking**

**Credit points:** 6 **Teacher/Coordinator:** Dr Naseem Ahmadpour **Session:** Semester 1, Semester 2 **Classes:** Lecture 1 hr/wk, tutorial 2 hrs/wk **Assessment:** Design assignments (90%), Quizzes (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit of study provides an overview of a human-centred approach to the design of products and systems. It introduces students to design thinking and how it can be productively applied to different design situations. The theoretical concepts, methods and tools for the key stages of interaction design are covered including user research, ideation, prototyping and user evaluation. It provides students with the principles, processes and tools for working collaboratively on design projects in studio. Students learn to build empathy with users, identify and reframe the problem space, develop value-driven design concepts and persuasively communicate design proposals with an emphasis on the user experience through visual storytelling.

### Core Advanced units

Students have a choice of IDEA9101 and IDEA9102 in Semester 1, or IDEA9201 and IDEA9202 in Semester 2 for advanced core units

**IDEA9101**
**IDEA Laboratory 1**

**Credit points:** 6 **Teacher/Coordinator:** Liam Bray **Session:** Semester 1 **Classes:** Friday and/or Saturday blocks 3hrs/day **Prerequisites:** IDEA9103 **Corequisites:** IDEA9102 **Assessment:** Class exercises (30%), Assignment (30%), Assignment (40%) **Mode of delivery:** Block mode

*Note: Students may incur materials costs in this unit.*

The aim of this unit of study is the learning of key technical skills for prototyping and building interactive digital media within a creative design framework. The unit provides an introduction to the fundamentals of various software and hardware construction tools, and the technological platforms available for building sensor-based interfaces. The lab sessions will be conducted as a series of intensive workshops during the first half of the semester. Students will gain practical experience through a series of exercises and assignments. For those students enrolled in IDEA9102 IDEA Studio 1, it will provide the foundation for the technical implementation of the studio project.

**IDEA9102**
**IDEA Studio 1**

**Credit points:** 12 **Teacher/Coordinator:** Dr Luke Hespanhol **Session:** Semester 1 **Classes:** Friday and/or Saturday blocks 3hrs/day **Prerequisites:** IDEA9106 **Corequisites:** IDEA9101 **Assessment:** Project (100%) **Mode of delivery:** Block mode

*Note: Students may incur materials costs in this unit.*

The aim of the studio is to explore new interaction possibilities offered by emerging digital technologies through a design-led approach. Each studio is based around one or more design projects, which address a specialised area of study, supported by lectures and workshops to introduce the relevant theory, knowledge and design precedents. The specialized areas of study will vary from semester to semester, ranging for example from small-scale wearable devices to large-scale environments, and will reflect contemporary issues in interaction, art, design, culture and technology. The studio aims to develop the student's conceptual design abilities together with their technical skills, within the framework of a highly creative, research-based and human-centred design process. Students will be expected to apply interaction design methodologies to their project work and follow a design-oriented approach to the development of hardware and software, through experimentation and iterative prototyping.

**IDEA9201**
**IDEA Laboratory 2**

**Credit points:** 6 **Teacher/Coordinator:** Liam Bray **Session:** Semester 2 **Classes:** Friday and/or Saturday blocks 3hrs/day **Prerequisites:** IDEA9103 **Corequisites:** IDEA9202 **Assessment:** Class exercises (30%), Assignment (30%), Assignment (40%) **Mode of delivery:** Block mode

*Note: Students may incur materials costs in this unit.*

The aim of this unit of study is the learning of key technical skills for prototyping and building interactive digital media within a creative design framework. The unit provides an introduction to the fundamentals of various software and hardware construction tools, and the technological platforms available for building sensor-based interfaces. The lab sessions will be conducted as a series of intensive workshops during the first half of the semester. Students will gain practical experience through a series of exercises and assignments. For those students enrolled in IDEA9202 IDEA Studio 2, it will provide the foundation for the technical implementation of the studio project.

**IDEA9202**
**IDEA Studio 2**

**Credit points:** 12 **Teacher/Coordinator:** Dr Lian Loke **Session:** Semester 2 **Classes:** Friday and/or Saturday blocks 3hrs/day **Prerequisites:** IDEA9106 **Corequisites:** IDEA9201 **Assessment:** Project (100%) **Mode of delivery:** Block mode

*Note: Students may incur materials costs in this unit.*

The aim of the studio is to explore new interaction possibilities offered by emerging digital technologies through a design-led approach. Each studio is based around one or more design projects, which address a specialised area of study, supported by lectures and workshops to introduce the relevant theory, knowledge and design precedents. The specialized areas of study will vary from semester to semester, ranging for example from small-scale wearable devices to large-scale environments, and will reflect contemporary issues in interaction, art, design, culture and technology. The studio aims to develop the student's conceptual design abilities together with their technical skills, within the framework of a highly creative, research-based and human-centred design process. Students will be expected to apply interaction design methodologies to their project work and follow a design-oriented approach to the development of hardware and software, through experimentation and iterative prototyping.

## Capstone

**IDEA9301**
**Graduation Studio**

**Credit points:** 12 **Teacher/Coordinator:** Dr Caitilin de Berigny **Session:** Semester 1, Semester 2 **Classes:** 2 hrs/wk **Prerequisites:** 48 Credit Points including (18 credit points from IDEA9103 and IDEA9105 and IDEA9106) and [18 credit points from (IDEA9101 and IDEA9102) or (IDEA9201 and IDEA9202)] **Assessment:** Project (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This is the culminating studio of the Master of Interaction Design and Electronic Arts that provides students with a capstone experience. The aim of this studio is to draw together and synthesise the learning that has taken place during the whole degree. The student will develop a graduation design project based on an industry- or community-focused brief. Students will work in small teams or individually to produce a design proposal and solution that addresses contemporary issues and challenges and incorporates innovate interactions and applications of emergent technologies. The submitted design work should be of high quality suitable for professional presentation and portfolio.

## Electives

Electives may be chosen from the recommended set below or, with the permission of the Progam Director, from any postgraduate couse in the University.

## Research

IDEA9302, IDEA9303 or IDEA9311 may replace the capstone unit with the permission of the Program Director.

**IDEA9302**
**IDEA Research Project**

**Credit points:** 12 **Teacher/Coordinator:** Dr Luke Hespanhol **Session:** Semester 1, Semester 2 **Classes:** Group Supervision 2 hrs/wk **Prerequisites:** 48 Credit Points including (18 credit points from IDEA9103 and IDEA9105 and IDEA9106) and (18 credit points from IDEA9101 and IDEA9102 and IDEA9201 and IDEA9202) **Assessment:** 2000wd Proposal and Presentation (10%); 5000wd Research Report and Built work (80%); Final presentation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment. Note: This unit of study is available to MIDEA students only. Students must seek permission to enrol from the Program Director before the start of the teaching semester.*

The research project offers students the opportunity to work on an individual research project exploring current problems and issues in a wide range of application areas that would benefit from an inter-disciplinary design research approach to design, technology and human-computer interaction. Students can choose to follow one of the primary types of design research: design (a fundamental component of the research is the design and implementation of an artefact/system); empirical (empirical data gathering is required to understand a phenomenon); model (a computational model is generated to understand a phenomenon); and studio-based (creative/experimental design or artform is produced for exhibition). Students must prepare a research proposal outlining the research objectives and questions, a brief literature review, the research methodology and a timeline. The project is written up into a research report, and may include evidence and documentation of Built Work.

This unit of study can be taken alone for students wishing to focus on the practice of design research, or in conjunction with IDEA9303 Research Dissertation for students wishing to develop their academic research capacity and with an interest in further postgraduate research study.

**IDEA9303**
**IDEA Dissertation**

**Credit points:** 12 **Teacher/Coordinator:** Dr Luke Hespanhol **Session:** Semester 1, Semester 2 **Classes:** Group Supervision 2 hrs/wk **Prerequisites:** 48 credit points including (18 credit points from IDEA9103 and IDEA9105 and IDEA9106) and (18 credit points from IDEA9101 and IDEA9102 and IDEA9201 and IDEA9202) **Corequisites:** IDEA9302 **Assessment:** 2000wd Proposal and presentation (10%); 10,000wd Research Dissertation and Built work (80%); Final presentation (10%) **Mode of delivery:** Supervision

*Note: Department permission required for enrolment. Note: This unit of study is available to MIDEA students only. Students must seek permission to enrol from the Program Director before the start of the teaching semester.*

The combined research project and dissertation offers students the opportunity to work on an individual research project exploring current problems and issues in a wide range of application areas that would benefit from an inter-disciplinary design research approach to design, technology and human-computer interaction. Students can choose to follow one of the primary types of design research: design (a fundamental component of the research is the design and implementation of an artefact/system); empirical (empirical data gathering is required to understand a phenomenon); model (a computational model is generated to understand a phenomenon); and studio-based (creative/experimental design or artform is produced for exhibition). Students must prepare a research proposal outlining the research objectives and questions, a brief literature review, the research methodology and a timeline. The project is written up into a research dissertation, and may include evidence and documentation of Built Work. A single result is given for the combined project and dissertation.

**IDEA9311**
**IDEA Research Internship**

**Credit points:** 12 **Teacher/Coordinator:** Dr Luke Hespanhol **Session:** Semester 1, Semester 2 **Classes:** Min. 8 hrs/semester group supervision; 2 hrs/wk supervision by private partner **Prerequisites:** 48 Credit Points including (18 credit points from IDEA9103 and IDEA9105 and IDEA9106) and (18 credit points from IDEA9101 and IDEA9102 and IDEA9201 and IDEA9202) **Assessment:** 2000wd Proposal and presentation (10%); 5000wd Written report and Built work (70%); Critical reflection on design process and Logbook (10%); Final presentation (10%) **Mode of delivery:** Professional practice

*Note: Department permission required for enrolment. Note: Students must seek permission to enrol from the Program Director before the start of the teaching semester. Internship must end before end of semester. Advanced standing will not be granted for this unit of study.*

This unit allows students to collaborate with a private partner on a project with a strong design research character. Such project would typically not be connected to the direct commercial goals, require a

certain degree of risk, and necessitate a level of technical and design expertise that is not available by the private partner. The unit coordinator can choose to offer pre-approved client briefs from known external partners to interested students. Students need to submit a written project proposal, detailing the project objectives, the approach, the intended outcomes and timeline of the internship, and the agreement from the private partner. The proposal must describe how the outcomes of the internship will include design research work that has a clear relationship to the skills and knowledge taught in the MIDEA program. The project is written up into a final report, and may include evidence and documentation of Built Work.

## Foundational Recommended electives

**ARIN6904**
**Mobile Media and Games**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x2hr seminar/week **Assessment:** 1x1500wd Review and presentation (25%), 1x3000wd Critical Essay (40%), 1x1500wd Game/app concept (25%), Seminar participation (10%), **Mode of delivery:** Normal (lecture/lab/tutorial) day

Networked mobile devices and computer games are increasingly prominent in today's mediascapes, supporting practices of individualised mobility and play. This unit of study critically examines the aesthetics, politics and everyday uses of these emerging cultural technologies. It draws on new media studies, game studies and platform studies to explore themes such as the complication of leisure and work spaces, new media industries, gamification, playbour and mobile social media.

**ARIN6905**
**New Media Audiences**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x2hr seminar/week **Prohibitions:** ARIN6903 **Assessment:** 1x1500wd Seminar presentation (20%), 1x2500wd Essay (40%), 1x2000wd case study reviews (blog) (30%), Seminar participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Media audiences are experiencing knowledge, art and entertainment in novel ways as cultural industries increasingly take up emerging technologies. New Media Audiences investigates the range of contemporary practices of production, distribution and consumption associated with digital tools. We examine the sites where audiences experience digital media: art galleries, cinemas, theatres, homes, mobile devices, public spaces, workplaces and online. We analyse how these spaces and interfaces structure audience experience, afford interaction and encourage participation.

## Recommended electives

**MARC6102**
**3D Computer Design Modelling**

**Credit points:** 6 **Teacher/Coordinator:** Ms Ivana Kuzmanovska **Session:** Semester 1, Semester 2 **Classes:** Computer laboratory contact, plus self-directed preparation and assignments, for a minimum total student commitment averaging 9 hours per week. **Assessment:** Assignments Weeks 1-13 (80%); Final Portfolio Week 15 (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Enrolment numbers limited by teaching resources. If your attempt to enrol online is unsuccessful, please seek permission from the Student Administration Centre (SAC).*

This unit of study consolidates students' knowledge of advanced concepts in digital modelling, visualization media and digital fabrication techniques available for architectural design. The unit develops conceptual understanding of generative geometric logic through a case study analysis followed by a small design project. Students will explore the practical applications of the digital geometry they create using commercial modelling and rendering packages in conjunction with the digital fabrication equipment available in DMaF. It will help students: generate sophisticated digital geometry through pre-packaged techniques and scripting processes, assign colour and texture information, generate sophisticated images for visualization purposes and fabricate prototypes. At the conclusion of this unit students should be conversant with 3D modelling, photo-rendering and digital fabrication terminology and be able to generate complex 3D models. Class preparation: 3 hours/week, assessment preparation 8 hours/semester.

**DESC9117**
**Sound Design for New Media**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 2 **Classes:** Seminars 3 hrs/wk **Assessment:** Three assignments (1x30%, 1x30%, 1x40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit aims to introduce essential concepts in sound design for a range of applications in emerging media technologies such as: interactive systems, video games, immersive video and virtual reality. A grounding will be provided in the theory and criticism of sound design in order to develop an understanding of the potentialities of utilizing audio in synergy with accompanying media. The sound designer's role in the process of creation of meaning will be examined in cultural as well as technical contexts, with the aim of developing and extending production practices towards an articulate and coherent aesthetic. The unit will also look at current computer-based tools and techniques available to the sound designer, as well as examine the various underlying strategies, processes, and sound design philosophies.

Upon completion of this unit students will be expected to: understand the opportunities and challenges of different media and their essential concepts and terminology. Students will also acquaint themselves with the history, theory and criticism of sound design. Students will develop technical and conceptual skills in audio production including: building and programming physical computing audio systems, general miking techniques, producing sound effects, and mixing sound for different media, video game and interactive audio programming and immersive audio production.

**DESC9154**
**Lighting Design Software**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2 **Classes:** 5-day intensive (9am-5pm) **Assumed knowledge:** DESC9166, fundamental knowledge of lighting **Assessment:** Assignment 1 (40%), Assignment 2 (60%) **Mode of delivery:** Block mode

Modern lighting design practice requires the use of computer software to create design plans that can be easily modified, shared, and presented to clients. In this unit, students learn the basic operation of popular lighting design software packages, with particular emphasis on AGi32. This unit discusses the advantages and limitations of different calculation models used within lighting software. The fundamentals of rendering, importing and exporting data, selecting calculation modes, interpreting outputs, and complying with lighting design standards are included. Students gain hands-on experience modelling the effects of different lighting technologies within various architectural spaces. The use of lighting design software as a tool in the design process, rather than a replacement for it, is emphasised.

**DESC9164**
**Lighting Technologies**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2 **Classes:** 5-day intensive **Prohibitions:** DESC9063 **Assessment:** Two assignments (2x50%) **Mode of delivery:** Block mode

This unit covers the technologies employed in generating, distributing, and controlling light in illuminated environments. Students learn the advantages and disadvantages of different hardware options for various lighting applications. A brief history of lighting technologies and the physical processes involved with electrically generating light are included in this unit. Practical characteristics of currently popular lamp types, as well as emerging lighting technologies, are presented. The effects of integral luminaires and other light fittings on the resulting illumination are covered, as are the electrical requirements of different lighting technologies. This unit also includes calculation techniques for predicting the illumination in spaces from lighting products. The selection, operation, and implications of lighting control options are discussed. The underlying principles and practical consequences of the different characteristics of various lighting technologies are emphasised to enable students to independently evaluate future innovations in lighting technologies.

**DESA9008**
**Object Design (Material and Light)**

**Credit points:** 6 **Teacher/Coordinator:** Mr Koji Ryui **Session:** Semester 1, Semester 2 **Classes:** Workshop 3 hrs/wk **Prohibitions:** AWSS2020 **Assumed knowledge:** DESA1555 **Assessment:** Studio Projects and associated tasks (70%); Research Process Journal (30%) **Practical field work:** Studio practice. NB: Students may incur costs for materials in some units **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

In this unit students produce light objects exploring diverse materials and fabrication techniques in the DMaF workshops. Emphasis is placed on developing and inter-relating manufacturing and artisan skills with research, analysis and design development. The course aims to develop a critical awareness of the nature of objects that surround us, exploring cultural, contextual and symbolic aspects of object design as well as functional and aesthetic qualities working with light. Sustainability and social issues relating to their manufacture, use and disposal are also discussed; the unit aims to increase appreciation of the materiality of objects focusing on timber as an example paying attention to associated environmental and ethical issues, and emerging alternative materials. Through a series of exercises, experiments and production of their major project, students develop knowledge of construction techniques and skills in using wood/plastics tools and machinery and in so doing, build an awareness of industrial and craft practices and how they impact on the design process and outcome. Students will be expected to produce a research process journal and report on how a particular designer/s or movement has informed or influenced their final project/s

**DESC9153**
**Graduate Internship**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive December, Intensive July, Intensive November, Semester 1, Semester 2 **Classes:** Fieldwork **Assessment:** Log book signed by practice supervisor and report on the benefits of the internship (100); pass/fail only **Mode of delivery:** Professional practice

*Note: Department permission required for enrolment. Note: Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.*

The aims of the internship are to provide a direct link between the academic core of the course and the disciplines and methods of practice; to enable candidates to experience aspects of practice and provide the opportunity for them to work in areas of the field outside their specific expertise; to enable candidates to observe, analyse and comment on the interaction between theoretical and practical issues of their Program as it is practiced, and to establish connections between practice and the development of relevant research programs. The internship is intended to provide the opportunity for students to work in various situations in their Program's area. A secondary intention is that students use the opportunities of placement to broaden their own experience beyond the limitations of their chosen discipline. Candidates must find a suitable professional placement. Permission to enrol is given after the proposed placement has been approved by the Program Director. The host organisation will nominate a supervisor for the student for the internship. The student must complete at least 120 hours of full or part-time experience, supervised by a practicing designer (or other professional depending upon the field). A log-book of each day's work, signed by the supervisor must be submitted on completion. A 2000-word report on the benefits of the internship must also be produced. At the end of the internship the student will: demonstrate that they have completed a program of work (through a log-book); present a report; analyse their experiences and compare these to the theoretical content of the units they have completed, and suggest appropriate research directions so as to improve the complementarity of theory to practice.

**ARIN6901**
**Network Society**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x2hr seminar/week **Assessment:** 1x1000wd Online activities (20%), 1x1500wd Report and network analysis (25%), 1x1000wd equivalent Responses to readings (20%), 1x500wd Abstract (5%), 1x2000wd Major Essay (30%), **Mode of delivery:** Normal (lecture/lab/tutorial) day

Is the network the distinctive mode of organisation for the 21st century? The Internet is the paradigmatic mode of decentralised many-to-many communication that interconnects with the century-old telecommunications and broadcasting networks. Geopolitical networks have displaced left/right Cold War oppositions. Social and professional networks extend influence beyond traditional institutional and family allegiances. Network models have challenged rationalist rule-governed models of thought and practice. The interdisciplinary critical analysis of current research, theory and debates will allow students to understand and evaluate the significance of networks in the contemporary world.

**ARIN6902**
**Internet Cultures and Governance**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x2hr seminar/week **Assessment:** 1x2000wd journalism piece (40%), 1x3000wd essay (50%), 1x1000wd tutorial exercise (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The internet plays an increasingly important role in all aspects of social, cultural and economic life. This unit of study explores cultures and governance of the online world and investigates how politics manifest not only in public debates and policy, but also in the struggle to develop new information architectures and digital ecosystems.

**COMP5047**
**Pervasive Computing**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Studio class **Assumed knowledge:** Background in programming and operating systems that is sufficient for the student to independently learn new programming tools from standard online technical materials. Ability to conduct a literature search. Ability to write reports of work done. **Assessment:** Through semester assessment (60%) and Final Exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This is an advanced course on Pervasive Computing, with a focus on the "Internet of Things" (IoT). It introduces the key aspects of the IoT and explores these in terms of the new research towards creating user interfaces that disappear into the environment and are available pervasively, for example in homes, workplaces, cars and carried.

**COMP5216**
**Mobile Computing**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Tutorials **Assumed knowledge:** COMP5214 OR COMP9103. Software Development in JAVA, or similar introductory software development units. **Assessment:** Through semester assessment (45%) and Final Exam (55%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Mobile computing is becoming a main stream for many IT applications, due to the availability of more and more powerful and affordable mobile devices with rich sensors such as cameras and GPS, which have already significantly changed many aspects in business, education, social network, health care, and entertainment in our daily life. Therefore it has been critical for students to be equipped with sufficient knowledge of such new computing platform and necessary skills. The unit aims to provide an in-depth overview of existing and emerging mobile computing techniques and applications, the eco-system of the mobile computing platforms, and its key building components. The unit will also train students with hand-on experiences in developing mobile applications in a broad range of areas.

**COMP5347**
**Web Application Development**

**Credit points:** 6 **Session:** Semester 1 **Classes:** Lectures, Laboratory, Project Work **Assumed knowledge:** COMP9220 or COMP5028. The course assumes basic knowledge on OO design and proficiency in a programming language **Assessment:** Through semester assessment (40%) and Final Exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Nowadays most client facing enterprise applications are running on web or at least with a web interface. The design and implementation of a web application require totally different set of skills to those are

required for traditional desktop applications. All web applications are of client/ server architecture. Requests sent to a web application are expected to go through the public Internet, which slows the responsiveness and increases the possible security threat. A typical web application is also expected to handle large number of requests coming from every corner of the Internet and sent by all sorts of client systems. This further complicates the design of such system.

This course aims at providing both conceptual understanding and hand-on experiences for the technologies used in building web applications. We will examine how data/messages are communicated between client and server; how to improve the responsiveness using rich client technology; as well as how to build a secure web application.

At the end of this course, students are expected to have a clear understanding of the structure and technologies of web applications. Students are also expected to have practical knowledge of some major web application environments and to be able to develop and deploy simple web applications. Cloud based platform are increasingly popular as the development and deployment platform. This course will incorporate the cloud aspect of web application development as well.

**COMP5427**
**Usability Engineering**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Laboratory **Assessment:** Through semester assessment (60%) and Final Exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Usability engineering is the systematic process of designing and evaluating user interfaces so that they are usable. This means that people can readily learn to use them efficiently, can later remember how to use them and find it pleasant to use them. The wide use of computers in many aspects of people's lives means that usability engineering is of the utmost importance.

There is a substantial body of knowledge about how to elicit usability requirements, identify the tasks that a system needs to support, design interfaces and then evaluate them. This makes for systematic ways to go about the creation and evaluation of interfaces to be usable for the target users, where this may include people with special needs. The field is extremely dynamic with the fast emergence of new ways to interact, ranging from conventional WIMP interfaces, to touch and gesture interaction, and involving mobile, portable, embedded and desktop computers.

This unit will enable students to learn the fundamental concepts, methods and techniques of usability engineering. Students will practice these in small classroom activities. They will then draw them together to complete a major usability evaluation assignment in which they will design the usability testing process, recruit participants, conduct the evaluation study, analyse these and report the results

**COMP5415**
**Multimedia Design and Authoring**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Tutorials **Assessment:** Through semester assessment (40%) and Final Exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides principles and practicalities of creating interactive and effective multimedia products. It gives an overview of the complete spectrum of different media platforms and current authoring techniques used in multimedia production. Coverage includes the following key topics: enabling multimedia technologies; multimedia design issues; interactive 2D and 3D computer animation; multimedia object modelling and rendering; multimedia scripting programming; post-production and delivery of multimedia applications.

**COMP9007**
**Algorithms**

**Credit points:** 6 **Session:** Semester 1, Semester 2 **Classes:** Lectures, Tutorials **Prohibitions:** COMP5211 **Assumed knowledge:** This unit of study assumes that students have general knowledge of mathematics (especially Discrete Math) and problem solving. Having moderate knowledge about Data structure can also help students to better understand the concepts of Algorithms will be taught in this course. **Assessment:** Through semester assessment (40%) and Final Exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The study of algorithms is a fundamental aspect of computing. This unit of study covers data structures, algorithms, and gives an overview of the main ways of computational thinking from simple list manipulation and data format conversion, up to shortest paths and cycle detection in graphs. Students will gain essential knowledge in computer science, including basic concepts in data structures, algorithms, and intractability, using paradigms such as dynamic programming, divide and conquer, greed, local search, and randomisation, as well NP-hardness.

**COMP9103**
**Software Development in Java**

**Credit points:** 6 **Session:** Semester 1, Semester 2 **Classes:** Lecture, Laboratory **Prohibitions:** COMP5214 **Assessment:** Through semester assessment (40%) and Final Exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Programming in a legible, maintainable, reusable way is essential to solve complex problems in the pervasive computing environments. This unit will equip students with foundation of programming concepts that are common to widely used programming languages. Students will be progressively guided in this introductory unit from necessary and important building blocks of programming to the object-oriented approach. Java, one of the most popular programming languages, is used in this unit. It provides interdisciplinary approaches, applications and examples to support students from broad backgrounds such as science, engineering, and mathematics.

**COMP9419**
**Digital Media Fundamentals**

**Credit points:** 6 **Teacher/Coordinator:** Dr Zhiyong Wang, Prof David Feng **Session:** Semester 1 **Classes:** One 2 hour lecture and one 1 hour tutorial per week. **Prohibitions:** COMP5114 **Assessment:** Through semester assessment (50%) and Final Exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Digital media has become indispensable our heterogeneous computing and communication environment. This unit provides an overview of creating, processing, manipulating, and compressing digital media which mainly include image, audio and video. It introduces principles and current techniques such as multimedia data acquisition, analysis, processing and compression and management. It also elaborates different multimedia coding standards, various multimedia systems and cutting-edge multimedia applications such as web media.

*Textbooks*
Jennifer Burg/The Science of Digital Media/2009/0132435802//

**COMP9120**
**Database Management Systems**

**Credit points:** 6 **Session:** Semester 1, Semester 2 **Classes:** Lectures, Tutorials, Project work **Prohibitions:** INFO2120 OR INFO2820 OR INFO2005 OR INFO2905 OR COMP5138 OR ISYS2120. Students who have previously studied an introductory database subject as part of their undergraduate degree should not enrol in this foundational unit, as it covers the same foundational content. **Assumed knowledge:** Some exposure to programming and some familiarity with data model concepts **Assessment:** Through semester assessment (50%) and Final Exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides a conceptual and practical introduction to the use of common platforms that manage large relational databases. Students will understand the foundations of database management and enhance their theoretical and practical knowledge of the widespread relational database systems, as these are used for both operational (OLTP) and decision-support (OLAP) purposes. The unit covers the main aspects of SQL, the industry-standard database query language. Students will further develop the ability to create robust relational database designs by studying conceptual modelling, relational design and normalization theory. This unit also covers aspects of relational database management systems which are important for database administration. Topics covered include storage structures, indexing and its impact on query plans, transaction management and data warehousing.

In this unit students will develop the ability to: Understand the foundations of database management; Strengthen their theoretical

knowledge of database systems in general and relational data model and systems in particular; Create robust relational database designs; Understand the theory and applications of relational query processing and optimisation; Study the critical issues in data and database administration; Explore the key emerging topics in database management.

**COMP9110**
**System Analysis and Modelling**

**Credit points:** 6 **Session:** Semester 1, Semester 2 **Classes:** Lectures, Tutorials **Prohibitions:** ELEC3610 OR ELEC5743 OR INFO2110 OR INFO5001 OR ISYS2110 **Assumed knowledge:** Experience with a data model as in COMP9129 or COMP9103 or COMP9220 or COMP9120 or COMP5212 or COMP5214 or COMP5028 or COMP5138 **Assessment:** Through semester assessment (30%) and Final Exam (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides a comprehensive introduction to the analysis of complex systems. Key topics are the determination and expression of system requirements (both functional and non-functional), and the representation of structural and behavioural models of the system in UML notations. Students will be expected to evaluate requirements documents and models as well as producing them. This unit covers essential topics from the ACM/IEEE SE2004 curriculum, especially from MAA Software Modelling and Analysis. Note: The lectures of this unit are co-taught with ISYS2110.

**COMP9121**
**Design of Networks and Distributed Systems**

**Credit points:** 6 **Session:** Semester 2 **Classes:** Lectures, Tutorials **Prohibitions:** COMP5116 **Assessment:** Through semester assessment (40%) Final Exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit covers general foundations of communication systems and a detailed walk through of the implementation of the TCP/IP protocol stack, which forms the basis of the Internet. The unit also covers the basic knowledge of how to analyse, design and implement simple communication protocols.

On completion of this unit students will have developed an understanding of the principles and practice of the layered model of communications architecture, the TCP/IP protocol stack and its component protocols, and various common techniques and tools for protocol analysis and design.

**COMP9601**
**Computer and Network Organisation**

**Credit points:** 6 **Session:** Semester 1 **Classes:** Lectures, Tutorials **Prohibitions:** COMP5213 **Assessment:** Through semester assessment (40%) Final Exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides an introduction to computer organisation and network protocols. It covers a broad range of topics including computer hardware, software architecture (operating systems, compilers, etc), and principles of communication network protocols. It is designed to give students an understanding of how software programs operate and run inside the computer hardware, and therefore the knowledge how to use computers most effectively.

**COMP9220**
**Object-Oriented Design**

**Credit points:** 6 **Teacher/Coordinator:** Dr Masahiro Takatsuka **Session:** Semester 1 **Classes:** One 2 hour lecture and one 1 hour tutorial per week. **Prohibitions:** : COMP5028 OR INFO3220 **Assumed knowledge:** Students enrolled in COMP5028/INFO9220 are assumed to have elementary Java programming experience or equivalent experience in another object oriented programming language. This unit does not have assessment with heavy coding task. But some knowledge in object-oriented programming would have big impact on learning experience. **Assessment:** Through semester assessment (50%) and Final Exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit introduces essential object-oriented design methods and language mechanisms, especially the principles of modelling through Rational Unified Process and agile processes using Unified Modeling Language (UML) and Java or C++, both of which are industry standard. Students work in small groups to experience the process of object-oriented analysis, object-oriented design, implementation and testing by building a real-world application. Java or C++ is used as the implementation language and a special emphasis is placed on those features of Java or C++ that are important for solving real-world problems. Advanced software engineering features, including exceptions and name spaces are thoroughly covered.

**MFDI9303**
**Digital Effects for Film and Video**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x3-hour studio class/week **Assessment:** project proposal (25%) and class presentation (15%) and project (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of this unit of study is to equip you with a conceptual understanding and technical expertise in the use of digital effects for film and video projects. You will be introduced to the use of software programs such as Adobe After Effects to explain how moving images can be transformed over time in combination with text, masks, animation, filters, effects and sound. You will learn how to author in After Effects through an intensive series of tutorials film/video screenings and practical studio workshops. This will culminate in the production of a studio project. The project is to be developed in consultation with an academic adviser.

**MFDI9313**
**Digital Editing for Film and Video**

**Credit points:** 6 **Session:** Semester 1 **Classes:** 1x3-hour studio class/week **Assessment:** project proposal (25%) and class presentation (15%) and project (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of this unit of study is to equip you with a conceptual understanding and technical expertise in the use of digital editing for film and video projects. You will be introduced to the use of software programs such as Final Cut Pro HD to explain how edit moving images in to a project and how moving images can be transformed over time in combination with text, masks, filters, effects and sound. You will learn how to edit and master in Final Cut Pro HD through an intensive series of tutorials film/video screenings and practical studio workshops. This will culminate in the production of a studio project. The project is to be developed in consultation with an academic adviser.

**CMPN5006**
**Recording Portfolio**

**Credit points:** 6 **Teacher/Coordinator:** Dr Ivan Zavada **Session:** Semester 1 **Classes:** 2 hours lecture/Wk, 1 hour tutorial/Wk **Assessment:** Recording projects and class presentation (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides a practical introduction to recording projects. Aspects of creative production are examined alongside project planning, management and the professional delivery of master recordings to appropriate standards. The student, in consultation with their supervisor, will devise a program of practical recording projects. This program will integrate into the existing musical activities that occur at the Conservatorium and as such the hours will be flexible and may include, evening and weekend projects. In addition students will be required to attend and participate in a number of seminars/workshops.

## Audio and Acoustics specialisation

**DESC9090**
**Audio Systems and Measurement**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 2 **Classes:** Lectures 10x3 hrs, Labs 3x3 hrs (and continued lab projects) **Assumed knowledge:** DESC9138 **Assessment:** Two assignments (1x40%, 1x60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Students will learn to make and understand a wide range of acoustical and electroacoustical measurements, assessed through laboratory or field work, and learn major aspects of sound system design, assessed through project work. Students will work in small groups in laboratory or field project work. Audio Systems and Measurement will develop knowledge and practical skills in electroacoustics; and the

laboratory and project work will extend thinking and personal skills, so that students can apply the unit content to new situations.

Upon completing Audio Systems and Measurement, students will be expected to understand the signal-processing basis, implementation and limitations of a wide range of audio and acoustical measurement techniques, such as sound pressure, linear time-invariant system response, source directivity, non-linear distortion, time variance, uncertainty in measurement, intelligibility, and audio quality. Students will also be expected to be able to design sound reinforcement systems, and to model audio system performance using various theoretical techniques.

**DESC9011**
**Audio Production**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 1 **Classes:** Lecture 3 hrs/wk **Assessment:** Two assignments (1x40%, 1x50%); in-class quizzes and exercises (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit examines tools, techniques, processes and value systems involved in audio production. Proficiency in sound recording techniques, including field and studio recordings, is developed, including technical acoustic, audio and aesthetic considerations. Students extend their understanding and experience of production principles by which sound recordings are used for building up realistic and hyper-realistic auditory scenes. Perspectives on audio production come from aesthetics, practice, acoustics theory, audio technology and digital audio systems, but ultimately are founded in the discipline of listening. By bringing these perspectives together, this unit is designed for students with a wide range of production experience at a postgraduate level.

Students are expected to work individually and in groups to produce audio for accompanying screen media, as well as audio works that rely solely on audio to transmit a message. Students are expected to: participate in the workshops; complete class exercises/constructions; read additional materials to discuss in classes; submit a script, composition or otherwise detailed proposal for recording and postproduction with detailed rationale of production values; produce and present a completed audio project, including documentation, evidence of background research, a commentary on the production and production outcomes, track sheets, mixing notes.

**DESC9115**
**Digital Audio Systems**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof William Martens **Session:** Semester 1 **Classes:** lectures 2hrs/wk; labs 1hr/wk **Assessment:** Two written review assignments (40%); one laboratory report (20%); weekly lab assignments (20%), 4 x in-class quiz (20%) **Practical field work:** Practical exercises include programming for digital signal processing of audio signals using high-level software packages to generate, manipulate and analyse sounds. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The objective of this unit is to provide both a strong theoretical understanding of digital audio and practical experience in applying these principles to digital audio systems. This unit offers a systematic approach to understanding digital audio systems. Beginning with basic principles the unit provides a knowledge base for understanding advanced digital audio components, systems and techniques. Examples of everyday audio signals are used and characterised in terms of their temporal and spectral properties. Practical application is emphasised and is supported through laboratory exercises that include programming as well as the use of current hardware and software packages. Topics include: digital principles, digital systems, sampling and quantisation, 1-bit and multi-bit conversion, digital signal processing, filtering, spectral analysis, sampling-rate conversion, data compression (MPEG, etc.), effects processing (echo, reverb, etc.), virtual reality audio, mixing, editing, digital audio storage and transmission formats.

Having successfully completed this unit the student will have the tools to understand what happens to a digital audio signal when a given process is applied to it; how to best apply this process and how to successfully combine digital audio components.

**DESC9117**
**Sound Design for New Media**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Densil Cabrera **Session:** Semester 2 **Classes:** Seminars 3 hrs/wk **Assessment:** Three assignments (1x30%, 1x30%, 1x40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit aims to introduce essential concepts in sound design for a range of applications in emerging media technologies such as: interactive systems, video games, immersive video and virtual reality. A grounding will be provided in the theory and criticism of sound design in order to develop an understanding of the potentialities of utilizing audio in synergy with accompanying media. The sound designer's role in the process of creation of meaning will be examined in cultural as well as technical contexts, with the aim of developing and extending production practices towards an articulate and coherent aesthetic. The unit will also look at current computer-based tools and techniques available to the sound designer, as well as examine the various underlying strategies, processes, and sound design philosophies.

Upon completion of this unit students will be expected to: understand the opportunities and challenges of different media and their essential concepts and terminology. Students will also acquaint themselves with the history, theory and criticism of sound design. Students will develop technical and conceptual skills in audio production including: building and programming physical computing audio systems, general miking techniques, producing sound effects, and mixing sound for different media, video game and interactive audio programming and immersive audio production.

## Illumination Design specialisation

**DESC9164**
**Lighting Technologies**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2 **Classes:** 5-day intensive **Prohibitions:** DESC9063 **Assessment:** Two assignments (2x50%) **Mode of delivery:** Block mode

This unit covers the technologies employed in generating, distributing, and controlling light in illuminated environments. Students learn the advantages and disadvantages of different hardware options for various lighting applications. A brief history of lighting technologies and the physical processes involved with electrically generating light are included in this unit. Practical characteristics of currently popular lamp types, as well as emerging lighting technologies, are presented. The effects of integral luminaires and other light fittings on the resulting illumination are covered, as are the electrical requirements of different lighting technologies. This unit also includes calculation techniques for predicting the illumination in spaces from lighting products. The selection, operation, and implications of lighting control options are discussed. The underlying principles and practical consequences of the different characteristics of various lighting technologies are emphasised to enable students to independently evaluate future innovations in lighting technologies.

**DESC9166**
**Photometry and Colorimetry**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Wendy Davis **Session:** Semester 1 **Classes:** 5-day intensive. **Prohibitions:** DESC9072 **Assessment:** Two assignments (2x50%) **Mode of delivery:** Block mode

Measurements of light based only on physical properties are of limited use to the lighting designer. Instead, the tools to measure and communicate the characteristics of light sources and illumination consider the impact of the physical attributes of light on the human visual system. This unit covers the photometric measures related to the quantity of light and illumination and the colorimetric systems used to characterise the colour of lights and objects. The calculation methods underlying these measures are included, with an emphasis on useful simulation techniques. The derivations, meanings, proper applications, and limitations of these measurements systems are discussed. An overview of physical instruments for photometric and colorimetric measurements is included. Students learn to apply knowledge of photometry and colorimetry to evaluate lighting products.

**DESC9167**
**Light and Vision**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Wendy Davis **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Prohibitions:** DESC9085 **Assessment:** Two assignments (2x50%) **Mode of delivery:** Block mode

In lighting design, the primary function of light is to facilitate visual perception of the illuminated scene. User-centred lighting design requires a thorough understanding of the biological link between light and vision. In this unit, students learn the fundamentals of the human visual system and the physical properties of light that impact perception. Specific topics include an overview of visual anatomy, the behaviour of the photoreceptors, and post-receptoral processing that leads to colour perception. The spectral, spatial, and temporal characteristics of visual processing are also covered. Important visual phenomena, such as chromatic adaptation and contrast sensitivity, are discussed. The link between fundamental knowledge of the human visual system and the practical application of lighting design is emphasised.

**DESC9198**
**Subjective Analysis in Lighting Design**

**Credit points:** 6 **Teacher/Coordinator:** Ms Wenye Hu **Session:** Semester 2 **Classes:** Lectures and Studio - 35 hours/semester **Assumed knowledge:** Fundamental knowledge of lighting **Assessment:** Group Design Project Report and Presentation (50%); Individual Design Report (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Lighting to a high aesthetic standard under pre-determined constraints requires an understanding of visual perception, quality of light, form and modelling, human sensitivity to a wide range of lighting environments, and a balanced approach involving critical reasoning and subjective analysis. This unit will be valuable for those interested in the lighting of architectural forms, objects and environments that demand a high level of aesthetic sensitivity. It will not only draw on learning outcomes from other illumination design units, but also be open to related disciplines with the aim of extending acquired skills beyond the confines of traditional lighting practices. Students will gain a broadened ability to interpret and respond to a wide range of illumination applications.

**DESC9153**
**Graduate Internship**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive December, Intensive July, Intensive November, Semester 1, Semester 2 **Classes:** Fieldwork **Assessment:** Log book signed by practice supervisor and report on the benefits of the internship (100); pass/fail only **Mode of delivery:** Professional practice

*Note: Department permission required for enrolment. Note: Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.*

The aims of the internship are to provide a direct link between the academic core of the course and the disciplines and methods of practice; to enable candidates to experience aspects of practice and provide the opportunity for them to work in areas of the field outside their specific expertise; to enable candidates to observe, analyse and comment on the interaction between theoretical and practical issues of their Program as it is practiced, and to establish connections between practice and the development of relevant research programs. The internship is intended to provide the opportunity for students to work in various situations in their Program's area. A secondary intention is that students use the opportunities of placement to broaden their own experience beyond the limitations of their chosen discipline. Candidates must find a suitable professional placement. Permission to enrol is given after the proposed placement has been approved by the Program Director. The host organisation will nominate a supervisor for the student for the internship. The student must complete at least 120 hours of full or part-time experience, supervised by a practicing designer (or other professional depending upon the field). A log-book of each day's work, signed by the supervisor must be submitted on completion. A 2000-word report on the benefits of the internship must also be produced. At the end of the internship the student will: demonstrate that they have completed a program of work (through a log-book); present a report; analyse their experiences and compare these to the theoretical content of the units they have completed, and suggest appropriate research directions so as to improve the complementarity of theory to practice.

# Overseas exchange

## Exchange in Interaction Design and Electronic Arts

The school may approve international exchange for qualified students in graduate coursework master degrees.

Exchanges may be for one semester only. Students must apply through the Study Abroad and Exchange Office. Each student's program must be approved in consultation with the program director of the degree.

No program will be approved that involves the completion of more than 50 percent of the core requirements of the degree on exchange.

Exchange units should be taken as part of the degree, satisfying the requirements that would normally be covered at this university during the same period. Exchange should not be in addition to the degree requirements.

Exchange students are required to enrol in a full-time load at the University of Sydney and will incur the tuition costs associated with that load. No tuition costs will be incurred with the partner university.

Specially designated units of study will be recorded on the transcript. A result of 'SR' for 'Satisfied Requirements' will be recorded by the University against each successfully completed unit. The transcript of the exchange university will be the official detailed record of exactly what was completed during the exchange. Exchange results will not count towards a student's Weighted Average Mark.

For more information please contact the Study Abroad and Exchange Office.

The exchange units for enrolment at the University of Sydney, to be approved with the program director, shall be selected from the following table.

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Graduate exchange units** | | | |
| **Core units of study** | | | |
| **DESC9660**<br>**Graduate Exchange Core A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9661**<br>**Graduate Exchange Core B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9662**<br>**Graduate Exchange Core C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9663**<br>**Graduate Exchange Core D** | 6 | | Semester 1<br>Semester 2 |
| **DESC9672**<br>**Graduate Exchange Core E** | 12 | | Semester 1<br>Semester 2 |
| **Optional units of study** | | | |
| **DESC9664**<br>**Graduate Exchange Optional A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9665**<br>**Graduate Exchange Optional B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9666**<br>**Graduate Exchange Optional C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9667**<br>**Graduate Exchange Optional D** | 6 | | Semester 1<br>Semester 2 |
| **Elective units of study** | | | |
| **DESC9668**<br>**Graduate Exchange Elective A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9669**<br>**Graduate Exchange Elective B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9670**<br>**Graduate Exchange Elective C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9671**<br>**Graduate Exchange Elective D** | 6 | | Semester 1<br>Semester 2 |

# Master of Urban Design

Over the last century, urban design gradually emerged as a distinct field in response to the need for architects and urban and regional planners to communicate efficiently. There was also a need for better design skills at urban scales: streets, street blocks, town centres, city districts, new suburbs, cross-city infrastructure. Since that time, urban design has expanded enormously.

Today, professionals with good urban design knowledge and skills are much sought after by private consulting firms, development organisations, and local and state governments, where they are required to prepare and evaluate urban design policies, strategies, frameworks, guidelines, concepts, master plans and programs, as well as be involved in the more detailed design and management of urban spaces. Urban design knowledge and skills also assist in designing for specific sites by providing a better appreciation of urban structure and context. They are crucial for good development evaluation, and enhance perspectives on urban conservation: and there is a small but growing demand for urban design educators and media commentators.

The Urban Design program is arranged to develop understanding and abilities for all of the above roles. At its core are studio projects that address emerging design issues, plus supporting units that cover essential morphological, ecological, cultural and other dimensions of urbanism. Graduates of the program occupy important urban design positions in all of the above-mentioned employment sectors in cities across Asia, Europe, North and South America, Australia and New Zealand.

# Master of Urban Design

## Graduate Certificate in Urban Design

## Graduate Diploma in Urban Design

## Master of Urban Design

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the University school, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

### Course Resolutions

### 1 Course codes

| Code | Course and stream title |
|---|---|
| GCURBDES-01 | Graduate Certificate in Urban Design |
| GNURBDES-04 | Graduate Diploma in Urban Design |
| MAURBDES-04 | Master of Urban Design |

### 2 Attendance pattern

The attendance pattern for this course is full time or part time according to student choice.

### 3 Master's type

The master's degree in these resolutions is a professional master's course, as defined by the Coursework Policy 2014.

### 4 Embedded courses in this sequence

(1) The embedded courses in this sequence are:
(a) the Graduate Certificate in Urban Design
(b) the Graduate Diploma in Urban Design
(c) the Master of Urban Design
(2) Providing candidates satisfy the admission requirements for each stage, a candidate may progress to the award of any of the courses in this sequence. Only the longest award completed will be conferred.

### 5 Admission to candidature

Available places will be offered to qualified applicants based on merit, according to the following admission criteria.
(1) Admission to the Graduate Certificate in Urban Design requires an undergraduate degree or relevant work experience.
(2) Admission to the Graduate Diploma in Urban Design and Master of Urban Design requires an undergraduate degree in architecture, landscape architecture, urban planning, town planning, urbanism, geography or a related field or completion of the requirements of the embedded Graduate Certificate with a WAM of at least 65.
(3) Based on the applicant's undergraduate performance, the Program Director reserves the right to require a portfolio of work indicating relevant design interests and capabilities for admission to the Graduate Diploma and Master of Urban Design. A portfolio should only be provided if requested by the Program Director.
(4) In exceptional circumstances, the Head of School and Dean may admit applicants without these qualifications but whose evidence of experience and achievement is deemed by the Head of School and Dean to be equivalent.

### 6 Requirements for award

(1) The units of study that may be taken for these awards are set out in the relevant degree table.
(2) To qualify for the award of the Graduate Certificate in Urban Design, a candidate must complete 24 credit points, including:
(a) a minimum of 18 credit points of core units of study comprising of ARCH9100 and either ARCH9001 or ARCH9002; and
(b) a maximum of 6 credit points of elective units of study.
(3) To qualify for the award of the Graduate Diploma in Urban Design, a candidate must complete 48 credit points, including:
(a) a minimum of 30 credit points of core units of study, which must include ARCH9001 or ARCH9002; and
(b) a maximum of 18 credit points of elective units of study.
(4) To qualify for the award of the Master of Urban Design, a candidate must complete 72 credit points, including:
(a) a minimum of 48 credit points of core units of study; and
(b) a maximum of 24 credit points of elective units of study.
(5) Core units completed in excess of the minimum requirements may count as elective units of study.

### 7 Course transfer

(1) A candidate for the master's degree or graduate diploma may elect to discontinue study and graduate with a shorter award from this embedded sequence, with the approval of the Head of School and Dean, and provided the requirements of the shorter award have been met.
(2) Only the longest award completed will be awarded.

### 8 Transitional provisions

(1) These resolutions apply to students who commenced their candidature after 1 January, 2018 and students who commenced their candidature prior to 1 January, 2018 who elect to proceed under these resolutions.

(2) Candidates who commenced prior to 1 January, 2018 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2021. The School may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

# Master of Urban Design

## Unit of study table

| Unit of study | Credit points | A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition | Session |
|---|---|---|---|
| **Certificate, Diploma and Master of Urban Design** | | | |
| **Core units** | | | |
| **ARCH9100**<br>**Introduction to Urban Design** | 6 | *Students may be granted advanced standing based on portfolio.* | Semester 1a<br>Semester 2a |
| **ARCH9063**<br>**Urban Form and Design** | 6 | **A** Some prior study of architectural, urban or planning history.<br>**P** ARCH9100<br>**N** ARCH9021 | Semester 2 |
| **PLAN9068**<br>**History and Theory of Planning and Design** | 6 | **N** PLAN9031 or ARCH9062 or ARCH9031 or MARC4201<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **ARCH9001**<br>**Urban Design Studio: Urban Precinct** | 12 | **P** ARCH9100 | Semester 2 |
| **ARCH9002**<br>**Urban Design Studio: Urban Project** | 12 | **P** ARCH9100 | Semester 1 |
| **ARCH9092**<br>**Urban Report** | 6 | **P** 48 credit points including- ARCH9100, ARCH9063, ARCH9074, ARCH9080, ARCH9075, PLAN9068, PLAN9061<br>**N** ARCH9060 or PLAN9018 or PLAN9010 or PLAN9011 | Semester 1<br>Semester 2 |
| **Electives** | | | |
| Electives may be selected from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University. | | | |
| **ARCH9080**<br>**Urban Ecology, Design and Planning** | 6 | **N** PLAN9048 | Semester 2 |
| **PLAN9063**<br>**Strategic Planning and Design** | 6 | **N** PLAN9027 | Semester 1 |
| **PLAN9045**<br>**Economics for the Built Environment** | 6 | | Semester 2 |
| **PLAN9064**<br>**Land Use and Infrastructure Planning** | 6 | **A** ARCH9100<br>*Note: Department permission required for enrolment* | Semester 2 |
| **PLAN9049**<br>**International Urban Development Planning** | 6 | *Note: Department permission required for enrolment*<br>*In 2018, this unit will be run as an overseas 8-10 day intensive and combined with the ITB Plancosmo Conference to be held in Bandung, April 2018. There is a cap of 20 students maximum in this unit.* | Semester 1a |
| **ARCH9074**<br>**Principles of Heritage Conservation** | 6 | **N** ARCH9003<br>*Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9075**<br>**New Design in Old Settings** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9093**<br>**Integrated Urbanism Studio** | 12 | **A** ARCH9080 and PLAN9063 and PLAN9073<br>**P** Students should have completed 48 credit points in their degrees including ARCH9100, PLAN9061 and PLAN9068 | Semester 1 |
| **ARCH9101**<br>**Future Cities**<br>*This unit of study is not available in 2018* | 6 | **A** Students to have completed a minimum of 12 credit points in the Urban and Regional Planning or Urban Design programs.<br>*Note: Department permission required for enrolment* | Intensive July |
| **PLAN9073**<br>**GIS Based Planning Policy and Analysis** | 6 | *Note: Department permission required for enrolment* | Intensive June<br>Intensive November |
| **PLAN9075**<br>**Urban Data and Science of Cities** | 6 | **A** Undergraduate-level mathematics and statistics, some experience with programming preferred | Semester 1 |
| **ITLS5100**<br>**Transport and Infrastructure Foundations** | 6 | **N** TPTM6241<br>*This is the foundation unit for all transport and infrastructure management programs and should be completed in the first period of study.* | Semester 1<br>Semester 2 |

# Master of Urban Design

## Unit of study descriptions

## Certificate, Diploma and Master of Urban Design

### Core units

**ARCH9100**
**Introduction to Urban Design**

**Credit points:** 6 **Teacher/Coordinator:** Dr. Non Arkaraprasertkul **Session:** Semester 1a, Semester 2a **Classes:** Intensive delivery (lectures and tutorials) for total of 38 hours over 7 weeks **Assessment:** (60%) Formative assessment, (40%) summative assessment. Assessments comprise both group and individual components. Peer review of group work will be required. **Mode of delivery:** Block mode

*Note: Students may be granted advanced standing based on portfolio.*

This introductory unit of study will provide students with the necessary skills to participate effectively in the urban design studios and integrated urbanism studio. The unit will include site, spatial and public domain analysis, map and plan reading, visual, verbal and written communication techniques, and basic computer-based 3 dimensional modelling and numerical analysis. It will introduce students to the objectives and principles of urban design by analysing a number of public spaces, the spaces between buildings and the public domain and urban conditions in Sydney.

*Textbooks*
Glaeser, Edward. Triumph of the city: How our greatest invention makes us richer, smarter, greener, healthier, and happier. Penguin, 2011.
Montgomery, Charles. Happy city: transforming our lives through urban design. Macmillan, 2013. APA

**ARCH9063**
**Urban Form and Design**

**Credit points:** 6 **Teacher/Coordinator:** Senior Lecturer Deena Ridenour **Session:** Semester 2 **Classes:** Weekly lectures and tutorials **Prerequisites:** ARCH9100 **Prohibitions:** ARCH9021 **Assumed knowledge:** Some prior study of architectural, urban or planning history. **Assessment:** Formative Assessment (40%) and Summative Assessment (60%). Assessments comprise both group and individual components. Peer review of group work will be required. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit explores the complexity and evolution of city form and the influences of planning and design processes and practice.

Using Australian and international case studies, the unit will investigate how urban functions, cultural values; technological, socio-economic and political circumstances; and design theory and practice shape the form of specific cities over time. The morphological elements of the city including: ecological systems; settlement and landownership patterns; transport, open space and street networks; urban infrastucture; open space, street and building typologies Â¿ are investigated to reveal often distinct local characteristics and the forces that shaped them.

The ability to recognize, investigate and respond to the forces that shape the city lies at the heart of good urban design. On completion, a student will be better able to: recognize structures and patterns, and key building and spatial typologies that contribute to overall city morphology; record and describe these, investigate and explain their origins, and discuss informatively their place in the evolving city and contemporary design.

It complements the History and Theory Planning and Design (PLAN9068) which emphasises the theories and models underpinning the forms that are covered in this unit. It is a core unit that supports the Urban Design Studios in the Urban Design program and the Integrated Urbanism Studio in the Urbanism program and an informative elective for students enrolled in or intending to enrol in the Urban Architecture Research Studio.

**PLAN9068**
**History and Theory of Planning and Design**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Paul Jones **Session:** Semester 1, Semester 2 **Classes:** Lecture 2hrs/wk (and may include some tutorials and group discussions) **Prohibitions:** PLAN9031 or ARCH9062 or ARCH9031 or MARC4201 **Assessment:** Assignment 1: short questions including local field work/observation (40%); Assignment 2 is an analytical portfolio of inqury into 3-4 papers with a strong emphasis on understanding key concepts in the modern planning era via clarity of text and strong visual/image support (50%).Group work (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit is in two overlapping modules, each of which is assessed.

Module one enables students to understand how the main concepts and practices of urban planning and development have evolved; appreciate different perspectives about the roles and purposes of planning; undertake basic historical research about Australian urban planning and development issues, and prepare basic stories and arguments about practical planning issues and current theories. There is a strong emphasis on enriching the ability of students to better appreciate urban form, structure and planning practice generally by analysing such form, structure and process through the lens of history (as 'snapshots' in time), and the understanding of planning theory as drivers that shape and express such urban change such as Garden City values. Interpreting planning practice, places and spaces at different scales and what this reflects (such as underlying theory, values, norms attitudes, public interest, etc.) is a key element of this module.

Concurrent with module one, module two familiarises students with the main ideas and methods that have influenced urban design practice from the late nineteenth century to the present. It covers the dominant urban design theories, principles, conceptual and physical models, analytical methods and drawings from key contributing authors over the period, and explores critically how and why these arose, their interrelationships, spheres of influence, and continuing validity. In this module, the work of key urban planning and design idealists and visionaries are discussed such as Ebenezer Howard and Le Corbusier.

Students will be able to: critically review and interpret key planning and urban design texts/papers; construct and present basic arguments orally and in conjunction with graphics/images in illustrated documents; access and engage with key literature and other sources of knowledge; and use basic conceptual frameworks about planning arguments and stories for both the overlapping fields of urban planning and urban design. Interpreting the built form around you from an historical lens is an important learning outcome.

*Textbooks*
"City Reader" (Fifth Edition) by Richard Le Gates and Frederic Stout (Routledge)

**ARCH9001**
**Urban Design Studio: Urban Precinct**

**Credit points:** 12 **Teacher/Coordinator:** Senior Lecturer Deena Ridenour **Session:** Semester 2 **Classes:** Half-day weekly lectures and studio based tutorials **Prerequisites:** ARCH9100 **Assessment:** Mid-term Presentation and Submission (50%); Final Presenation and Submission (50%); Assessments will include both group and individaul work. Group work is peer reviewed. An

individual Design Journal is a requirement. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Design studios are the heart of the urban design program. Values, knowledge and skills acquired in other units and from previous experience are supplemented and enhanced, and applied creatively to both the investigation and development phases of design projects at an urban scale.

Urban Design Studio: Urban Precinct is concerned with developing design propositions that respond to the changing environmental, economic and social context of the city and that challenge `business as usualÂ¿ practice. Projects are carefully chosen to explore large complex urban areas, such as urban centres, waterfront precincts, renewal precincts, institutional campuses or major infrastructure interventions. The studio will generate proposals for major urban structures, spaces and forms which are rigourously informed by design methodologies.

Inter-disciplinary group work is an essential part of the studio and integrates the broad range of backgrounds and skills of the students while mimicing the reality of practice.

The central aim of this unit is to develop illustrative, writing and verbal skills which will enable students to carry out urban design projects such as the preparation of strategies, frameworks, master plans and public domain concepts in a professional and visionary manner. Students will be expected to demonstrate appropriate problem recognition, investigative, analytical, interpretative, design and presentation skills and abilities on projects of major urban scale. Assessment may also embrace abilities to prepare and interpret project briefs, program proposals and work in groups.

**ARCH9002**
**Urban Design Studio: Urban Project**

**Credit points:** 12 **Teacher/Coordinator:** Senior Lecturer Deena Ridenour **Session:** Semester 1 **Classes:** Half-day weekly lectures and studio based tutorials **Prerequisites:** ARCH9100 **Assessment:** Mid-term Presentation and Submission (50%); Final Presenation and Submission (50%); Assessments will include both group and individaul work. Group work is peer reviewed. An individual Design Journal is a requirement. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Design studios are the heart of the urban design program. Values, knowledge and skills acquired in other units and from previous experience are supplemented and enhanced, and applied creatively to both the investigation and development phases of design projects at an urban scale.

Urban Design Studio: Urban Project is concerned with the design development for a local urban project that explores how a specific design intervention can be a catalyst to broader urban change. Projects are carefully chosen to explore complex local urban sites or groups of sites and to generate proposals for public and private building types, streets, spaces and transport infrastructure that are rigourously informed by design methodologies. Implementation through staging, development controls and guidelines will also be addressed.

Inter-disciplinary group work is an essential part of the studio and integrates the broad range of backgrounds and skills of the students while mimicing the reality of practice.

The central aim of this unit is to develop illustrative, writing and verbal skills which will enable students to carry out urban design projects such as the preparation of frameworks, master plans and public domain concepts in a professional manner. Students will be expected to demonstrate appropriate problem recognition, investigative, analytical, interpretative, design and presentation skills and abilities on projects of local urban scale. Assessment may also embrace abilities to prepare and interpret project briefs, program proposals and work in groups.

**ARCH9092**
**Urban Report**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 1, Semester 2 **Classes:** Introductory Seminar - 2 hours; Presentation of Draft Outline - 3-hour Seminar; Presentation of Final Content - 3-hour Seminar; 10 weekly 1-hour meetings with Supervisor **Prerequisites:** 48 credit points including- ARCH9100, ARCH9063, ARCH9074, ARCH9080, ARCH9075, PLAN9068, PLAN9061 **Prohibitions:** ARCH9060 or PLAN9018 or PLAN9010 or PLAN9011 **Assessment:** Preliminary Report (5%); First Draft Report (20%); Final Presentation (5%); Report (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The Urbanism Report is a substantial project involving research conducted over one semester. It will usually take the form of an illustrated report (between 5,000 and 10,000 words) on an approved subject of the student's choice. The aim of the unit is to allow students to deepen their understanding, and methodological approach in relation to an aspect of urbanism of the student's choice and with the approval of the program director. The subject may be of a practical bent (e.g. review or preparation of an urban design, or urban development project) or more theoretical (e.g. review of a conceptual viewpoint), or it may occupy the middle ground (e.g. exploration of a contemporary issue or review/testing of a method). If of a more practical nature, its theoretical underpinning should be explicit. If more theoretical, it should refer to its practical implications. The report is an opportunity to advance knowledge and skills in a particular area of urbanism and so develop a 'professional edge'. The aim of the report is to enhance abilities and knowledge essential to the practice of urbanism.

*Textbooks*
N/A: the supervisor will provide advice in regards to appropriate text to assist in the preparation of the Report.

## Electives

Electives may be selected from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University.

**ARCH9080**
**Urban Ecology, Design and Planning**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 2 **Classes:** 3 hrs lectures/tutorials/wk **Prohibitions:** PLAN9048 **Assessment:** Two assessments, each 50%; both assessments may comprise group and individual work. Peer assessment of group tasks may be required. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce the conceptual bases for sustainable development and explore how principles of sustainability can be introduced into land use planning and urban design, including environmental management and multi-criteria evaluation methodologies in three modules. The unit will examine the evolution of urban areas in relation to their biophysical setting. This will lead to an understanding and appreciation of the urban ecology of a city in terms of the flows of materials, resources and energy, and the challenges presented by climate change and peak oil. The principles of sustainability and the history and development of concepts of urban sustainability will be demonstrated through case studies. Assessments will explore a student's learning of the methods and frameworks for evaluating and measuring sustainability that are introduced in this unit.

**PLAN9063**
**Strategic Planning and Design**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 1 **Classes:** Lectures 2 hrs/wk; site visits and workshops may be organised outside of timetabled hours **Prohibitions:** PLAN9027 **Assessment:** There are two assessments, each worth 50%. The assessments may include group work. Group work will be peer assessed. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of PLAN9063 Strategic Planning and Design is to provide students with grounding in the core knowledge and skills needed to practice as a contemporary planner. A key emphasis in the unit is understanding the skills needed to undertake strategic planning at a range of levels (both process and content). Strategic planning in one form or other is a generic process that underpins much of the work that planners and urban designers are involved in at varying spatial levels. This course will provide students with the basic skills required to function as a planner and it will also act as an introduction to a number of other units in the program by highlighting the connection between the work of a planner and the need to understand a range

of different knowledge and skill areas. Basic skills may include basic demographic analysis, graphic presentation, governance audits, consultation strategies and survey tools, economic analysis, and GIS. In addition, this Unit of Study will enable students to develop generic skills such as group discussion, productive group work and organisation, negotiation skills and information literacy skills. This is an introductory core unit for the Urban Planning degree, a specialisation unit for the Master of Urbanism and an elective for the Urban Design degree.

**PLAN9045**
**Economics for the Built Environment**

**Credit points:** 6 **Teacher/Coordinator:** Prof Peter Phibbs **Session:** Semester 2 **Classes:** 4-day intensive (9am-5pm) **Assessment:** 2 x individual written reports of 2,000 words (70%); 1 x group presentation and report (30%). Peer assessment may occur for group work. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of PLAN9045 Economics for the Built Environment is to introduce the key economic theories, processes and techniques used by contemporary urban planners. This unit of study has two parts. In the first part of the unit, students are introduced to the economic drivers shaping city and regional development outcomes, and the location and form of different land uses and how they evolve. The second part of the unit equips students with core technical skills, including project evaluation, economic impact analysis, development feasibility, and introductory aspects of public finance. A key focus of the course is to equip students with a very good working knowledge of property feasibility analysis.

**PLAN9064**
**Land Use and Infrastructure Planning**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dallas Rogers **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk. Additional tuition time may be assigned for introduction to graphic plan making. **Assumed knowledge:** ARCH9100 **Assessment:** Two illustrated reports, each equivalent to 2,000 to 2,500 words, consisting of: 1 x individual report of short questions on key metropolitan concepts such as density and land use relationships (50%); 1 x group work on a local government Masterplan project where land use change is being leveraged from a major infrastructure project (50%). Peer assessment may apply to group work presentations.Practical field work:Second part of the semester involves group work in the field and in class. **Practical field work:** Second part of the semester involves group work in the field and in class. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit is concerned with planning, land use and infrastructure within the built environments. It emphasises conceptual knowledge with examples and case studies to demonstrate the application of concepts in practice. Students are encouraged to think independently, creatively and critically in developing understanding and practical knowledge about environmental planning at the metropolitan and local level. This unit is in two modules, each of which is assessed.

1. Land use, infrastructure planning and urban development: different forms of infrastructure and the role of infrastructure in creating good environments and urban development; transport and the space economy; accessibility, the emergence of transport technologies and their influence on urban form; the impacts of car travel on densities, dispersion, congestion, etc.; orthodox transport planning; transport systems management; mobility and accessibility; networks, centres, and development corridors; transit-oriented development and implications on urban form and structure. The Sydney Metropolitan Strategy and concepts and ideas associated with the current work of the Greater Sydney Commission are used as a main focus for this module.

2. Land use planning, development control and plan making: within the context of more effective land use planning, this module examines the process of assessing a local area (such as structure, form and understanding character), developing local vision and neighbourhood strategies and structure plan, translating the strategy and structure plan into basic land use and planning controls (such as building height, floor space ratio, heritage, and other local area provisions) and producing a basic plan for development control purposes. A case study is used for group work so as to understand how the plan making process evolves and is constructed for both the private and public realms. In 2015 and 2016, this involved working with an inner city local government on priority urban renewal issues. Questioning the assumptions and values that underpin planning controls and guidelines is a key skill emphasised in the unit via the group work.

**PLAN9049**
**International Urban Development Planning**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Paul Jones **Session:** Semester 1a **Classes:** Overseas Intensive Mode Â¿ lectures, seminars and group work discussions, International Field Trip. **Assessment:** Three major assignments: (1) group presentations overseas (20%); (2) group portfoilios and posters (45%); (3) individual reflection piece on the nature of informal urbanism as learned and experienced in the field (35%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment. Note: In 2018, this unit will be run as an overseas 8-10 day intensive and combined with the ITB Plancosmo Conference to be held in Bandung, April 2018. There is a cap of 20 students maximum in this unit.*

This unit is designed to fill a significant gap in the evolution of the urban and regional planning syllabus by focusing on urban issues in a developing country context. This unit is designed for planners and urban designers who may work in the field of international development and/or who have an interest in better understanding urbanisation, especially in the Asia and Pacific Region. The unit is run as an international field trip with the highly esteemed Insititute of Technology Bandung (ITB), Indonesia, and is based around the theme of `informal urbanism'. By the end of this unit of study you should have an understanding of (i) the key policy themes of poverty, spatial justice, and environmental sustainability, (ii) tools to explore the nature of informal urbanism, including understanding patterns and types of urban form and structure at the local level, and (iii) cross cultural considerations in planning and urban design. The unit reflects the increasing internationalisation of Australian planning practice in better managing urbanisation, especially within the Asia and Pacific Region. It caters to the needs of local and international students intending to work on urban and regional planning projects internationally and wishing to better understand how the city is made and shaped incuding understanding dimensions of urban complexity.

*Textbooks*
Jones, P. (2016). Unpacking Informal Urbanism - Planning and Urban Design Education in Practice. Institute of Technology Bandung (ITB) University Press (Penerbit); Indonesia

**ARCH9074**
**Principles of Heritage Conservation**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 1 **Classes:** Lectures 1.5 hrs/wk; tutorials 1 hr/wk **Prohibitions:** ARCH9003 **Assessment:** Weekly Discussion Forum/In-class Test (50%), Research Paper (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit will introduce students to key controversies, theoretical propositions and practical innovations that have driven the historical development of heritage conservation. The unit covers ideas and examples from the ancient world until the present, with the main focus being on the period from 1850 until today.

The aim of the unit is to help students to arrive at a clear understanding of the concepts and practices that define heritage conservation and to promote a strong historical perspective on the field. Students will consider, for example, the meaning of, and differences between, conservation, restoration and reconstruction; the different forms of historical value that inform our place protection efforts; the function of conservation protocols such as the Venice Charter, Burra Charter and Hoi An Protocols; the importance of advocacy and activism; the growth of world heritage and its relationship to human rights and cultural rights; and the ideas of cultural landscape and historic urban landscape. The unit also challenges students to think about areas of practice and theory that challenge traditional approaches and knowledge such as indigenous heritage and the conservation of modernism.

**ARCH9075**
**New Design in Old Settings**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 1 **Classes:** 3 hrs/week combination of lectures, tutorials, seminars, site visits. **Assessment:** Group work (30%); individual assignments (70%). Total of 4000-5000 words. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

New Design in Old Settings explores the architectural approaches, conservation methodologies and planning issues relevant to situations when new meets old in the built environment. The unit highlights architecturally innovative reuse projects, exemplary additions and alterations to historic places, and architecturally distinguished new buildings in historic precincts and landscapes. We also examine historic theming, façadism and some of the design ideas and planning compromises that have blighted historic places.

The aims of the unit are to develop an understanding of the history of designing and building new buildings in old settings; to develop an understanding of the major theoretical and practical issues of designing new buildings in old settings; and to develop an ability to assess critically the appropriateness of new development in culturally significant places. Students will develop analytical skills in assessing design strategies and develop confidence in making critical judgements about design propositions in historically significant settings.

**ARCH9093**
**Integrated Urbanism Studio**

**Credit points:** 12 **Teacher/Coordinator:** Dr Tooran Alizadeh **Session:** Semester 1 **Classes:** Lectures; Seminars; Studio - 4 hrs/wk **Prerequisites:** Students should have completed 48 credit points in their degrees including ARCH9100, PLAN9061 and PLAN9068 **Assumed knowledge:** ARCH9080 and PLAN9063 and PLAN9073 **Assessment:** Mid-term presentation and submission (50%). Final presentation and submission (50%). Assessments will include both group and individual work. Group work is peer reviewed. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Integrated Urbanism Studio is a capstone unit for the Master of Urbanism. The studio will be focussed on "real world" strategic urban issues and the need for urbanists to formulate a compelling 'urban proposition' to convince the public, stakeholders, politicians and investors of the benefits of a particular approach or scheme. The studio will emulate practice by working with or being exposed to community groups, developers, politicians and practitioners to develop an appreciation of the strategic, economic, social and environmental context in which urban design and planning occurs. The specific intention will be to recognise and overcome the limitations imposed by professional 'silos' and give regard to, and reconcile the multitude of perspectives that are characteristic of the urban condition. Students will be working to develop abilities and skills (investigation, analysis and interpretation, design development and presentation) that enables them to prepare strategies, frameworks, concepts and master plans in a professional and visionary manner. Familiarity with economic, social and environmental factors, analytic and communication techniques will be assumed from previous units.

*Textbooks*

Exemplary planning documents, development strategies prepared by local government and state government agencies from NSW, other states and overseas will be used as reference material. A range of papers, articles and chapters of books related to planning theory will be used to provide a basis for a critique of the process. Readings will be distributed prior to and during the workshop.

**ARCH9101**
**Future Cities**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Intensive July **Classes:** 1 x 3 hr seminar, 20 hrs workshop (2.5 days) 1 x 6hr tutorial, 1 x 6 hr studio **Assumed knowledge:** Students to have completed a minimum of 12 credit points in the Urban and Regional Planning or Urban Design programs. **Assessment:** Assignments (1 x 10%, 1 x 20%), written report (70%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

The unit of study will provide students with the opportunity to work with practicing planners and urban designers in local government to formulate 'urban projects' for their respective areas that will then be the subject of interdisciplinary and inter-council critique in a workshop format over three days. Planning has been usually seen as a linear process where high level strategic objectives 'cascade' down through the various levels; from state, to regional, to subregional, to local to neighbourhood, to detailed public domain plans and individual controls for individual development proposals. Urban design and consideration of built form and quality of place only occur at the end of the process. But these end results of the process are arguably what matters to the public most. So the challenge is to find a way to engage with the detail and represent it early in the planning process. 'Strategic urban design' is about bringing these different aspects of planning and design together at the same time: long term and next steps, strategic and design-focused, visualised and quantified to enable the results to inform corporate plans and provide an evidence base for decision making while at the same time being able to answer the question 'what will it look like?'

**PLAN9073**
**GIS Based Planning Policy and Analysis**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Intensive June, Intensive November **Classes:** 4-day intensive (9am-5pm) **Assessment:** Two smaller analytical assessments (2 x 25%) and a larger report (50%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit is concerned with using GIS to analyse planning problems and undertake policy analyses. The unit will include a comprehensive introduction to mapping and the use of GIS: data structures, topology, projections, spatial and non-spatial queries. Australian census products will be described and students will be expected to analyse census statistics using GIS maps. The role of GIS in coordinating various forms of information for policy analyses, preparing master plans, in presenting information for development control, impact analyses and wider management purposes will also be covered. The use of GIS to support visualisation will be covered, using examples about designing development projects and planning instruments. Finally, the various forms of distributing maps to the public and policy-makers will be discussed. The unit integrates the hands-on learning of GIS software with a `research-based` approach. Teaching will involve short lectures, studios and workshops. Assessment will be on a series of smaller assignments and a larger report prepared by each student that integrates GIS-based (and other) graphics into a coherent policy analysis. In addition, each student will make oral presentations on their work in studio sessions.

**PLAN9075**
**Urban Data and Science of Cities**

**Credit points:** 6 **Teacher/Coordinator:** Dr Somwrita Sarkar **Session:** Semester 1 **Classes:** lecture 1 hr/week; tutorial 2 hrs/week **Assumed knowledge:** Undergraduate-level mathematics and statistics, some experience with programming preferred **Assessment:** assessment 1 (individual) (25%), major project (group) (20%), major project (individual) (50%), tutorial exercises and class participation (individual) (5%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The discipline of Science of Cities examines relationships between the physical form of cities and the social, cultural, economic, technological and spatial processes that give rise to this form. As technology evolves and changes, so do the ways in which we make and think about our cities. In this era of unprecedented and fast-accelerating changes, digital technologies are reshaping the ways in which we measure, sense, conceive of, design and plan for our cities. As a result, we collect and store large amounts of data on every aspect of the urban environment, but it is as yet unclear how this data can be used to inform evidence based planning and urban management. This unit of study will introduce the principles of science of cities and the tools, methods, algorithms and techniques on big urban data that enable transformative ways of thinking about, designing and planning for a fast urbanizing world. Emphasis will be placed on developing understanding of urban structure and fast and slow dynamics shaping this structure. This transdisciplinary unit of study will be relevant for designers, planners, geographers,

economists, physicists and data scientists interested in modelling urban systems.

*Textbooks*

Batty, M. (2015). The New Science of Cities. Cambridge, MA: MIT Press Townsend, A.M. (2013). Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia. New York: W.W. Norton Krugman, P. (1996). Confronting the mystery of urban hierarchy. Journal of the Japanese and International Economies, 10, pp. 399-418 Gabaix, X. (1999). Zipf's Law for Cities: An Explanation. The Quarterly Journal of Economics, 114(3), pp.739-767 Bettencourt, L., Lobo, J., Helbing, D., Kuhnert, C., and West, G.B. (2007). Growth, innovation, scaling and the pace of life in cities. PNAS, 104 (17), pp.7301-7306 Research and data reports, The Australian Bureau of Statistics (specific references provided through the unit)

**ITLS5100**

**Transport and Infrastructure Foundations**

**Credit points:** 6 **Session:** Semester 1, Semester 2 **Classes:** 12 x 3hr lectures, 1 x 2hr field trip **Prohibitions:** TPTM6241 **Assessment:** report 1 (20%), report 2 (20%), presentation (20%), final exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) evening

*Note: This is the foundation unit for all transport and infrastructure management programs and should be completed in the first period of study.*

Transport and infrastructure plays an important role both in terms of personal mobility as well as accessibility of businesses and their transportation needs. This unit provides a comprehensive introduction to the role of transportation and infrastructure within the economy. The key concepts and theories needed for management of transport and infrastructure are introduced along with the analysis and problem solving skills needed for confident decision making. In providing the foundational knowledge for students in transport and infrastructure, the unit also introduces students to the professional communication skills needed. Examples and case studies are drawn from all modes of transport and infrastructure.

# Overseas exchange

## Exchange in Urban Design

The school may approve international exchange for qualified students in graduate coursework master degrees.

Exchanges may be for one semester only. Students must apply through the Study Abroad and Exchange Office. Each student's program must be approved in consultation with the program director of the degree.

No program will be approved that involves the completion of more than 50 percent of the core requirements of the degree on exchange.

Exchange units should be taken as part of the degree, satisfying the requirements that would normally be covered at this university during the same period. Exchange should not be in addition to the degree requirements.

Exchange students are required to enrol in a full-time load at the University of Sydney and will incur the tuition costs associated with that load. No tuition costs will be incurred with the partner university.

Specially designated units of study will be recorded on the transcript. A result of 'SR' for 'Satisfied Requirements' will be recorded by the University against each successfully completed unit. The transcript of the exchange university will be the official detailed record of exactly what was completed during the exchange. Exchange results will not count towards a student's Weighted Average Mark.

For more information please contact the Study Abroad and Exchange Office.

The exchange units for enrolment at the University of Sydney, to be approved with the program director, shall be selected from the following table.

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Graduate exchange units** | | | |
| **Core units of study** | | | |
| **DESC9660**<br>**Graduate Exchange Core A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9661**<br>**Graduate Exchange Core B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9662**<br>**Graduate Exchange Core C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9663**<br>**Graduate Exchange Core D** | 6 | | Semester 1<br>Semester 2 |
| **DESC9672**<br>**Graduate Exchange Core E** | 12 | | Semester 1<br>Semester 2 |
| **Optional units of study** | | | |
| **DESC9664**<br>**Graduate Exchange Optional A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9665**<br>**Graduate Exchange Optional B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9666**<br>**Graduate Exchange Optional C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9667**<br>**Graduate Exchange Optional D** | 6 | | Semester 1<br>Semester 2 |
| **Elective units of study** | | | |
| **DESC9668**<br>**Graduate Exchange Elective A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9669**<br>**Graduate Exchange Elective B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9670**<br>**Graduate Exchange Elective C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9671**<br>**Graduate Exchange Elective D** | 6 | | Semester 1<br>Semester 2 |

# Master of Urban and Regional Planning

The sustainable management of our cities and regions is one of the most pressing issues in the 21st century. Urban and regional planners are at the forefront of this challenge, working in government and the private sector to guide urban and regional change and to manage the social, environmental, and economic impacts of development. Specialist planners work in fields such as urban design, heritage conservation, and housing policy. The school's urban and regional planning program provides the required knowledge and skills for professional planning practice within Australia. The program aims to introduce students to contemporary planning theories and debates while instilling professional expertise in key areas of planning practice. The program is accredited by the Planning Institute of Australia (PIA, formerly RAPI). Master's graduates are eligible, subject to professional experience requirements, for corporate membership of the PIA.

## Course rules

### Graduate Certificate in Urban and Regional Planning

### Graduate Diploma in Urban and Regional Planning

### Master of Urban and Regional Planning

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the School, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

#### Course Resolutions

##### 1 Course codes

| Code | Course and stream title |
|---|---|
| GCURREPL-01 | Graduate Certificate in Urban and Regional Planning |
| GNURREPL-04 | Graduate Diploma in Urban and Regional Planning |
| MAURREPL-04 | Master of Urban and Regional Planning |
| MAURREPL-04 | Master of Urban and Regional Planning (Heritage Conservation) |

##### 2 Attendance pattern

The attendance pattern for this course is full time or part time according to student choice.

##### 3 Master's type

The master's degree in these resolutions is a professional master's course, as defined by the Coursework Rule.

##### 4 Embedded courses in this sequence

(1) The embedded courses in this sequence are:
(a) the Graduate Certificate in Urban and Regional Planning
(b) the Graduate Diploma in Urban and Regional Planning
(c) the Master of Urban and Regional Planning
(2) Providing candidates satisfy the admission requirements for each stage, a candidate may progress to the award of any of the courses in this sequence. Only the longest award completed will be conferred.

##### 5 Streams

(1) The Master of Urban and Regional Planning is available in the following stream - Heritage Conservation.
(2) Completion of a stream is not a requirement of the course.
(3) Candidates wishing to transfer between streams should contact the School student office.

##### 6 Admission to candidature

(1) Available places will be offered to qualified applicants based on merit, according to the following admissions criteria.
(2) Admission to the Graduate Certificate in Urban and Regional Planning requires a bachelor's degree from the University of Sydney or an equivalent qualification.
(3) Admission to the Graduate Diploma in Urban and Regional Planning requires:
(a) a bachelor's degree from the University of Sydney or an equivalent qualification; or
(b) completion of the requirements of the embedded graduate certificate with a WAM of at least 70.
(4) Admission to the Master of Urban and Regional Planning requires:
(a) a bachelor's degree in design, human geography or related field from the University of Sydney or an equivalent qualification with a credit average mark across all units; or
(b) completion of the requirements of the embedded graduate diploma with a WAM of at least 70.
(5) In exceptional circumstances the Head of School and Dean may admit applicants without these qualifications but whose evidence of experience and achievement is deemed by the Head of School and Dean to be equivalent.

##### 7 Requirements for award

(1) The units of study that may be taken for the courses are set out in the relevant degree table.
(2) To qualify for the award of the Graduate Certificate in Urban and Regional Planning, a candidate must complete 24 credit points, including:
(a) minimum 18 credit points of core units of study; and
(b) maximum 6 credit points of elective units of study.
(3) To qualify for the award of the Graduate Diploma in Urban and Regional Planning, a candidate must complete 48 credit points, including:
(a) minimum 30 credit points of core units of study; and
(b) maximum 18 credit points of elective units of study.
(4) To qualify for the award of the Master of Urban and Regional Planning, a candidate must complete 72 credit points including:
(a) minimum 48 credit points of core units of study; and
(b) maximum 24 credit points of elective units of study.
(5) Heritage Conservation stream:
(a) minimum 48 credit points of core units of study; and
(b) minimum 18 credit points of optional units of study; and
(c) maximum 6 credit points of elective units of study.
(6) Core units completed in excess of the minimum requirements may count as optional or elective units of study.
(7) Optional units completed in excess of the minimum requirements may count as elective units of study.

##### 8 Course transfer

A candidate for the master's degree or graduate diploma may elect to discontinue study and graduate with a shorter award from this embedded sequence, with the approval of the Head of School and Dean, and provided the requirements of the shorter award have been met.

## 9 Transitional provisions

(1) These resolutions apply to students who commence their candidature after 1 January, 2017 and students who commenced their candidature prior to 1 January, 2017 who elect to proceed under these resolutions.

(2) Candidates who commenced prior to 1 January, 2017 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2019. The School may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

# Master of Urban and Regional Planning

## Unit of study table

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Certificate, Diploma and Master of Urban and Regional Planning** | | | |
| All Master degree candidates are required to complete either a Report or Dissertation. | | | |
| **All streams** | | | |
| **Core units** | | | |
| **PLAN9061**<br>**Planning Principles, Systems and Practice** | 6 | **N** PLAN9020 or PLAN9044<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2a |
| **PLAN9063**<br>**Strategic Planning and Design** | 6 | **N** PLAN9027 | Semester 1 |
| **PLAN9068**<br>**History and Theory of Planning and Design** | 6 | **N** PLAN9031 or ARCH9062 or ARCH9031 or MARC4201<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **PLAN9045**<br>**Economics for the Built Environment** | 6 | | Semester 2 |
| **PLAN9064**<br>**Land Use and Infrastructure Planning** | 6 | **A** ARCH9100<br>*Note: Department permission required for enrolment* | Semester 2 |
| **ARCH9100**<br>**Introduction to Urban Design** | 6 | *Students may be granted advanced standing based on portfolio.* | Semester 1a<br>Semester 2a |
| **PLAN9018**<br>**Planning Report** | 12 | **P** 48 credit points of units<br>**N** ARCH9031 or ARCH9060 or ARCH9045 or ARCH9046 or PLAN9010 or PLAN9011<br>*This unit is for Master of Urban and Regional Planning students only. As PLAN9018 is the capstone unit, it is undertaken in the final semester of a student's candidature.* | Semester 1<br>Semester 2 |
| **PLAN9010**<br>**Planning Dissertation 1** | 12 | **A** PLAN9068, PLAN9061, PLAN9063, PLAN9045, PLAN9064, ARCH9100<br>**N** PLAN9018 or ARCH9031 or ARCH9045 or ARCH9046 or ARCH9060<br>*Note: Department permission required for enrolment*<br>*The dissertation is suitable for students with a grade average at Distinction level or above or who wish to pursue a research career. The dissertation should be undertaken towards the end of the degree. This unit is for Master of Urban and Regional Planning students only. It MUST be undertaken in conjunction with PLAN9011 Planning Dissertation 2, either in the same or following semester.* | Semester 1<br>Semester 2 |
| **PLAN9011**<br>**Planning Dissertation 2** | 12 | **A** PLAN9068, PLAN9061, PLAN9063, PLAN9045, PLAN9064, ARCH9100<br>**C** PLAN9010<br>*This unit is for Master of Urban and Regional Planning students only. It MUST be taken in conjunction with PLAN9010 Planning Dissertation 1, either in the same or preceding semester.* | Semester 1<br>Semester 2 |
| **Elective units** | | | |
| **PLAN9049**<br>**International Urban Development Planning** | 6 | *Note: Department permission required for enrolment*<br>*In 2018, this unit will be run as an overseas 8-10 day intensive and combined with the ITB Plancosmo Conference to be held in Bandung, April 2018. There is a cap of 20 students maximum in this unit.* | Semester 1a |
| **PLAN9071**<br>**Housing and Urban and Regional Development** | 6 | | Semester 1 |
| **PLAN9073**<br>**GIS Based Planning Policy and Analysis** | 6 | *Note: Department permission required for enrolment* | Intensive June<br>Intensive November |
| **ARCH9063**<br>**Urban Form and Design** | 6 | **A** Some prior study of architectural, urban or planning history.<br>**P** ARCH9100<br>**N** ARCH9021 | Semester 2 |
| **ARCH9080**<br>**Urban Ecology, Design and Planning** | 6 | **N** PLAN9048 | Semester 2 |
| **ARCH9090**<br>**Dialogue, Deliberation and Engagement** | 6 | | Intensive November |
| **PLAN9075**<br>**Urban Data and Science of Cities** | 6 | **A** Undergraduate-level mathematics and statistics, some experience with programming preferred | Semester 1 |
| **GOVT6163**<br>**Critical Challenges of Governing Cities** | 6 | | Semester 2 |
| **ITLS5100**<br>**Transport and Infrastructure Foundations** | 6 | **N** TPTM6241<br>*This is the foundation unit for all transport and infrastructure management programs and should be completed in the first period of study.* | Semester 1<br>Semester 2 |
| Students may complete up to 18 credit points of related units of study from within the School or the University if they can substantiate that a unit undertaken elsewhere strengthens and complements their professional interest area in urban and regional planning. | | | |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| Heritage Conservation Stream | | | |
| Optional units | | | |
| **ARCH9082**<br>**Conservation of Traditional Buildings** | 6 | *This unit of study is offered in even-numbered years only.* | Intensive March |
| **ARCH9074**<br>**Principles of Heritage Conservation** | 6 | **N** ARCH9003<br>*Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9075**<br>**New Design in Old Settings** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9083**<br>**Conservation of Modern Buildings** | 6 | *Note: Department permission required for enrolment*<br>*This unit of study is offered in odd-numbered years only.* | Intensive March |

# Master of Urban and Regional Planning

## Unit of study descriptions

## Certificate, Diploma and Master of Urban and Regional Planning

All Master degree candidates are required to complete either a Report or Dissertation.

### All streams

#### Core units

**PLAN9061**
**Planning Principles, Systems and Practice**

**Credit points:** 6 **Teacher/Coordinator:** Professor Nicole Gurran **Session:** Semester 1, Semester 2a **Classes:** 4-day intensive **Prohibitions:** PLAN9020 or PLAN9044 **Assessment:** Assignment 1 (50%); Assignment 2 (50%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit aims to prepare you for professional practice as a strategic or development assessment planner. It focuses on social, economic and environmental principles for contemporary planning practice; the systems for land use planning and environmental management in Australia, and the practice of statutory planning and development assessment in NSW.

By the end of this unit of study you will: understand the social, economic, and environmental principles underpinning contemporary planning practice; appreciate key legal and institutional processes for environmental planning in Australia and internationally; be familiar with the various planning state, regional, and local planning instruments in NSW, and understand when and how they apply to planning proposals. You will also be able to assess the social, economic, and environmental impacts of basic planning proposals, and justify these recommendations in professional planning reports. In preparing for professional practice you will gain an understanding of the principles, techniques and requirements for public participation in environmental planning and assessment; and the ethical responsibilities of land use planners, including respect for diversity and the importance of social equity, in guiding decision making processes and assessing planning proposals.

**PLAN9063**
**Strategic Planning and Design**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 1 **Classes:** Lectures 2 hrs/wk; site visits and workshops may be organised outside of timetabled hours **Prohibitions:** PLAN9027 **Assessment:** There are two assessments, each worth 50%. The assessments may include group work. Group work will be peer assessed. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of PLAN9063 Strategic Planning and Design is to provide students with grounding in the core knowledge and skills needed to practice as a contemporary planner. A key emphasis in the unit is understanding the skills needed to undertake strategic planning at a range of levels (both process and content). Strategic planning in one form or other is a generic process that underpins much of the work that planners and urban designers are involved in at varying spatial levels. This course will provide students with the basic skills required to function as a planner and it will also act as an introduction to a number of other units in the program by highlighting the connection between the work of a planner and the need to understand a range of different knowledge and skill areas. Basic skills may include basic demographic analysis, graphic presentation, governance audits, consultation strategies and survey tools, economic analysis, and GIS. In addition, this Unit of Study will enable students to develop generic skills such as group discussion, productive group work and organisation, negotiation skills and information literacy skills. This is an introductory core unit for the Urban Planning degree, a specialisation unit for the Master of Urbanism and an elective for the Urban Design degree.

**PLAN9068**
**History and Theory of Planning and Design**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Paul Jones **Session:** Semester 1, Semester 2 **Classes:** Lecture 2hrs/wk (and may include some tutorials and group discussions) **Prohibitions:** PLAN9031 or ARCH9062 or ARCH9031 or MARC4201 **Assessment:** Assignment 1: short questions including local field work/observation (40%); Assignment 2 is an analytical portfolio of inqury into 3-4 papers with a strong emphasis on understanding key concepts in the modern planning era via clarity of text and strong visual/image support (50%).Group work (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit is in two overlapping modules, each of which is assessed.

Module one enables students to understand how the main concepts and practices of urban planning and development have evolved; appreciate different perspectives about the roles and purposes of planning; undertake basic historical research about Australian urban planning and development issues, and prepare basic stories and arguments about practical planning issues and current theories. There is a strong emphasis on enriching the ability of students to better appreciate urban form, structure and planning practice generally by analysing such form, structure and process through the lens of history (as 'snapshots' in time), and the understanding of planning theory as drivers that shape and express such urban change such as Garden City values. Interpreting planning practice, places and spaces at different scales and what this reflects (such as underlying theory, values, norms attitudes, public interest, etc.) is a key element of this module.

Concurrent with module one, module two familiarises students with the main ideas and methods that have influenced urban design practice from the late nineteenth century to the present. It covers the dominant urban design theories, principles, conceptual and physical models, analytical methods and drawings from key contributing authors over the period, and explores critically how and why these arose, their interrelationships, spheres of influence, and continuing validity. In this module, the work of key urban planning and design idealists and visionaries are discussed such as Ebenezer Howard and Le Corbusier.

Students will be able to: critically review and interpret key planning and urban design texts/papers; construct and present basic arguments orally and in conjunction with graphics/images in illustrated documents; access and engage with key literature and other sources of knowledge; and use basic conceptual frameworks about planning arguments and stories for both the overlapping fields of urban planning and urban design. Interpreting the built form around you from an historical lens is an important learning outcome.

*Textbooks*
"City Reader" (Fifth Edition) by Richard Le Gates and Frederic Stout (Routledge)

**PLAN9045**
**Economics for the Built Environment**

**Credit points:** 6 **Teacher/Coordinator:** Prof Peter Phibbs **Session:** Semester 2 **Classes:** 4-day intensive (9am-5pm) **Assessment:** 2 x individual written reports of 2,000 words (70%); 1 x group presentation and report (30%). Peer assessment may occur for group work. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of PLAN9045 Economics for the Built Environment is to introduce the key economic theories, processes and techniques used by contemporary urban planners. This unit of study has two parts. In the first part of the unit, students are introduced to the economic drivers shaping city and regional development outcomes, and the location and form of different land uses and how they evolve. The second part of the unit equips students with core technical skills, including project evaluation, economic impact analysis, development feasibility, and introductory aspects of public finance. A key focus of the course is to equip students with a very good working knowledge of property feasibility analysis.

**PLAN9064**
**Land Use and Infrastructure Planning**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dallas Rogers **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk. Additional tuition time may be assigned for introduction to graphic plan making. **Assumed knowledge:** ARCH9100 **Assessment:** Two illustrated reports, each equivalent to 2,000 to 2,500 words, consisting of: 1 x individual report of short questions on key metropolitan concepts such as density and land use relationships (50%); 1 x group work on a local government Masterplan project where land use change is being leveraged from a major infrastructure project (50%). Peer assessment may apply to group work presentations.Practical field work:Second part of the semester involves group work in the field and in class. **Practical field work:** Second part of the semester involves group work in the field and in class. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit is concerned with planning, land use and infrastructure within the built environments. It emphasises conceptual knowledge with examples and case studies to demonstrate the application of concepts in practice. Students are encouraged to think independently, creatively and critically in developing understanding and practical knowledge about environmental planning at the metropolitan and local level. This unit is in two modules, each of which is assessed.

1. Land use, infrastructure planning and urban development: different forms of infrastructure and the role of infrastructure in creating good environments and urban development; transport and the space economy; accessibility, the emergence of transport technologies and their influence on urban form; the impacts of car travel on densities, dispersion, congestion, etc.; orthodox transport planning; transport systems management; mobility and accessibility; networks, centres, and development corridors; transit-oriented development and implications on urban form and structure. The Sydney Metropolitan Strategy and concepts and ideas associated with the current work of the Greater Sydney Commission are used as a main focus for this module.

2. Land use planning, development control and plan making: within the context of more effective land use planning, this module examines the process of assessing a local area (such as structure, form and understanding character), developing local vision and neighbourhood strategies and structure plan, translating the strategy and structure plan into basic land use and planning controls (such as building height, floor space ratio, heritage, and other local area provisions) and producing a basic plan for development control purposes. A case study is used for group work so as to understand how the plan making process evolves and is constructed for both the private and public realms. In 2015 and 2016, this involved working with an inner city local government on priority urban renewal issues. Questioning the assumptions and values that underpin planning controls and guidelines is a key skill emphasised in the unit via the group work.

**ARCH9100**
**Introduction to Urban Design**

**Credit points:** 6 **Teacher/Coordinator:** Dr. Non Arkaraprasertkul **Session:** Semester 1a, Semester 2a **Classes:** Intensive delivery (lectures and tutorials) for total of 38 hours over 7 weeks **Assessment:** (60%) Formative assessment, (40%) summative assessment. Assessments comprise both group and individual components. Peer review of group work will be required. **Mode of delivery:** Block mode

*Note: Students may be granted advanced standing based on portfolio.*

This introductory unit of study will provide students with the necessary skills to participate effectively in the urban design studios and integrated urbanism studio. The unit will include site, spatial and public domain analysis, map and plan reading, visual, verbal and written communication techniques, and basic computer-based 3 dimensional modelling and numerical analysis. It will introduce students to the objectives and principles of urban design by analysing a number of public spaces, the spaces between buildings and the public domain and urban conditions in Sydney.

*Textbooks*
Glaeser, Edward. Triumph of the city: How our greatest invention makes us richer, smarter, greener, healthier, and happier. Penguin, 2011.
Montgomery, Charles. Happy city: transforming our lives through urban design. Macmillan, 2013. APA

**PLAN9018**
**Planning Report**

**Credit points:** 12 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 1, Semester 2 **Classes:** Independent Study + Seminars **Prerequisites:** 48 credit points of units **Prohibitions:** ARCH9031 or ARCH9060 or ARCH9045 or ARCH9046 or PLAN9010 or PLAN9011 **Assessment:** Final presentation and poster (10%); Report of between 10,000 and 12,000 words (90%); regular meetings with supervisor (pass/fail). Students who do not meet with their supervisor may not have their report examined. All assessment tasks need to be passed to pass the unit. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit is for Master of Urban and Regional Planning students only. As PLAN9018 is the capstone unit, it is undertaken in the final semester of a student's candidature.*

The planning report is a substantial piece of research conducted over one semester. It takes the form of report (between 10,000 and 12,000 words) on an approved urban and regional planning subject of your choice and/or maybe based on a priority thematic topic agreed with a local Council in the Sydney metropolitan area. You will be required to participate in a small number of relevant studios / meetings in developing and presenting this work. For example, in 2013, planning report topics evolved out of forum with officers from Liverpool City Council, for example, and were subsequently presented to Council officers at the end of semester. The objective of the planning report is therefore to advance your knowledge and analytical skills in a particular relevant and topical area and so develop a "professional edge" in a real world planning situation. The expected learning outcomes of the report include the ability to: think critically about a planning problem and develop an appropriate research methodology or analytical approach to address it; identify and access appropriate sources of information, research and literature relevant to urban and regional planning issues; undertake primary and secondary research relevant to problems in planning practice; present your findings in a way that demonstrates academic and professional competence. A planning report generally includes: a literature review to delineate a planning problem, concern or gap in knowledge; a statement of research aims or objectives, as well as research questions; an explanation of research methods; presentation and analysis of data; discussion of conclusions. Permission to continue the Planning Report is subject to a satisfactory research proposal which must be approved by your supervisor as per the Unit of Study outline timeline. Supervisors from the URP program are allocated at the end of week 1 of semester and students work with their supervisors on an agreed timetable throughout semester. Planning reports are due at the end of the first week of exams for the semester in which you are enrolled.

**PLAN9010**
**Planning Dissertation 1**

**Credit points:** 12 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 1, Semester 2 **Classes:** Independent Study + Seminars **Prohibitions:** PLAN9018 or ARCH9031 or ARCH9045 or ARCH9046 or ARCH9060 **Assumed knowledge:** PLAN9068, PLAN9061, PLAN9063, PLAN9045, PLAN9064, ARCH9100 **Assessment:** Progress presentation if continuing in the second semester - feedback only (5%); presentation poster (5%); dissertation of between

15,000 and 25,000 words (90%); regular meetings with supervisor (pass/fail). Students who do not meet with their supervisor may not have their report examined. All assessment tasks need to be passed to pass the unit. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment. Note: The dissertation is suitable for students with a grade average at Distinction level or above or who wish to pursue a research career. The dissertation should be undertaken towards the end of the degree. This unit is for Master of Urban and Regional Planning students only. It MUST be undertaken in conjunction with PLAN9011 Planning Dissertation 2, either in the same or following semester.*

The planning dissertation is a substantial piece of research, conducted full-time over one semester (by enrolment in PLAN9010 and PLAN9011), or part-time over two semesters (by consecutive enrolment in these units). It takes the form of a document (between 15,000 and 25,000 words) on an approved urban and regional planning subject of your choice. There is also an option for students to prepare a shorter document suitable for publication in a refereed journal. The planning dissertation is an opportunity to advance your knowledge and skills in a particular area. For those intending to undertake further academic study, the dissertation also provides an opportunity for you to develop your research and inquiry skills. The objective of the dissertation is to allow you to develop higher order research and analytic skills by undertaking an in-depth study of your own selection. The expected learning outcomes of the dissertation include the ability to: think critically about a planning problem and develop an appropriate research methodology or analytical approach to address it; identify and access appropriate sources of information, research and literature relevant to urban and regional planning issues; undertake primary and secondary research; present your findings in a way that demonstrates academic and professional competence. A dissertation generally includes: a strong literature review to delineate a problem or gap in knowledge; a statement of research aims or objectives, as well as research questions and/or hypotheses; explanation of research methods; presentation and analysis of data; discussion of conclusions; an abstract. Permission to continue the Planning Dissertation is subject to a satisfactory research proposal which must be approved by your supervisor by week 3 of semester. The dissertation will be marked by two examiners and may include an oral presentation. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled in Planning Dissertation 2. Note that only one submission is required for both Planning Dissertation 1 and 2. It is not possible to complete Dissertation 1 independently of Dissertation 2. Students who intend a shorter project should enrol in PLAN9018 Planning Report.

**PLAN9011**
**Planning Dissertation 2**

**Credit points:** 12 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 1, Semester 2 **Classes:** Independent Study + Seminars **Corequisites:** PLAN9010 **Assumed knowledge:** PLAN9068, PLAN9061, PLAN9063, PLAN9045, PLAN9064, ARCH9100 **Assessment:** Final presentation (5%); presentation poster (5%); dissertation of 15,000 to 25,000 words (90%); regular meetings with supervisor (pass/fail). Students who do not meet with their supervisor may not have their report examined. All assessment tasks need to be passed to pass the unit. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit is for Master of Urban and Regional Planning students only. It MUST be taken in conjunction with PLAN9010 Planning Dissertation 1, either in the same or preceding semester.*

The planning dissertation is a substantial piece of research, conducted full time over one semester (by enrolment in PLAN9010 and PLAN9011), or part time over two semesters (by consecutive enrolment in these units). It takes the form of a document (between 15,000 and 25,000 words) on an approved urban and regional planning subject of your choice. There is also an option for students to prepare a shorter document suitable for publication in a refereed journal. The planning dissertation is an opportunity to advance your knowledge and skills in a particular area. For those intending to undertake further academic study, the dissertation also provides an opportunity for you to develop your research and inquiry skills. The objective of the dissertation is to allow you to develop higher order research and analytic skills by undertaking an in depth study of your own selection. The expected learning outcomes of the dissertation include the ability to: think critically about a planning problem and develop an appropriate research methodology or analytical approach to address it; identify and access appropriate sources of information, research and literature relevant to urban and regional planning issues; undertake primary and secondary research; present your findings in a way that demonstrates academic and professional competence. A dissertation generally includes: a strong literature review to delineate a problem or gap in knowledge; a statement of research aims or objectives, as well as research questions and / or hypotheses; explanation of research methods; presentation and analysis of data; discussion of conclusions; an abstract. Permission to continue the Planning Dissertation is subject to a satisfactory research proposal which must be approved by your supervisor by week 3 of semester. The dissertation will be marked by two examiners and may include an oral presentation. Dissertations are due at the end of the first week of exams for the semester in which you are enrolled in Planning Dissertation 2. Note that only one submission is required for both Planning Dissertation 1 and 2. It is not possible to complete Dissertation 1 independently of Dissertation 2. Students who intend a shorter project should enrol in PLAN9018 Planning Report.

## Elective units

**PLAN9049**
**International Urban Development Planning**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Paul Jones **Session:** Semester 1a **Classes:** Overseas Intensive Mode Â¿ lectures, seminars and group work discussions, International Field Trip. **Assessment:** Three major assignments: (1) group presentations overseas (20%); (2) group portfoilios and posters (45%); (3) individual reflection piece on the nature of informal urbanism as learned and experienced in the field (35%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment. Note: In 2018, this unit will be run as an overseas 8-10 day intensive and combined with the ITB Plancosmo Conference to be held in Bandung, April 2018. There is a cap of 20 students maximum in this unit.*

This unit is designed to fill a significant gap in the evolution of the urban and regional planning syllabus by focusing on urban issues in a developing country context. This unit is designed for planners and urban designers who may work in the field of international development and/or who have an interest in better understanding urbanisation, especially in the Asia and Pacific Region. The unit is run as an international field trip with the highly esteemed Insititute of Technology Bandung (ITB), Indonesia, and is based around the theme of `informal urbanism'. By the end of this unit of study you should have an understanding of (i) the key policy themes of poverty, spatial justice, and environmental sustainability, (ii) tools to explore the nature of informal urbanism, including understanding patterns and types of urban form and structure at the local level, and (iii) cross cultural considerations in planning and urban design. The unit reflects the increasing internationalisation of Australian planning practice in better managing urbanisation, especially within the Asia and Pacific Region. It caters to the needs of local and international students intending to work on urban and regional planning projects internationally and wishing to better understand how the city is made and shaped incuding understanding dimensions of urban complexity.

*Textbooks*
Jones, P. (2016). Unpacking Informal Urbanism - Planning and Urban Design Education in Practice. Institute of Technology Bandung (ITB) University Press (Penerbit); Indonesia

**PLAN9071**
**Housing and Urban and Regional Development**

**Credit points:** 6 **Teacher/Coordinator:** Prof Nicole Gurran **Session:** Semester 1 **Classes:** 4-day intensive **Assessment:** Two assignments (2 x 50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces the key policy and planning issues associated with the "production" and "consumption" of housing. These range from the physical location and sustainable design of new housing, through to the dynamics of the housing market, and the contribution of housing strategies to urban and regional revitalisation. The unit focuses on emerging themes in housing and urban development, and develops practical skills in designing strategic planning, policy, and project

based responses to encourage more affordable, appropriate and environmentally sustainable housing outcomes for urban and regional Australia. By the end of this unit of study you should understand the basic structure and operation of housing markets; be familiar with important policy objectives for housing within the broader context of sustainable urban or regional development, such as sustainability, affordability and appropriateness of design; and understand the relationships between these policy objectives and the land use planning framework. You will also learn the basic skills associated with the housing development process, from financial feasibility through to the design and approval of a particular project.

**PLAN9073**
**GIS Based Planning Policy and Analysis**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Intensive June, Intensive November **Classes:** 4-day intensive (9am-5pm) **Assessment:** Two smaller analytical assessments (2 x 25%) and a larger report (50%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit is concerned with using GIS to analyse planning problems and undertake policy analyses. The unit will include a comprehensive introduction to mapping and the use of GIS: data structures, topology, projections, spatial and non-spatial queries. Australian census products will be described and students will be expected to analyse census statistics using GIS maps. The role of GIS in coordinating various forms of information for policy analyses, preparing master plans, in presenting information for development control, impact analyses and wider management purposes will also be covered. The use of GIS to support visualisation will be covered, using examples about designing development projects and planning instruments. Finally, the various forms of distributing maps to the public and policy-makers will be discussed. The unit integrates the hands-on learning of GIS software with a `research-based` approach. Teaching will involve short lectures, studios and workshops. Assessment will be on a series of smaller assignments and a larger report prepared by each student that integrates GIS-based (and other) graphics into a coherent policy analysis. In addition, each student will make oral presentations on their work in studio sessions.

**ARCH9063**
**Urban Form and Design**

**Credit points:** 6 **Teacher/Coordinator:** Senior Lecturer Deena Ridenour **Session:** Semester 2 **Classes:** Weekly lectures and tutorials **Prerequisites:** ARCH9100 **Prohibitions:** ARCH9021 **Assumed knowledge:** Some prior study of architectural, urban or planning history. **Assessment:** Formative Assessment (40%) and Summative Assessment (60%). Assessments comprise both group and individual components. Peer review of group work will be required. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit explores the complexity and evolution of city form and the influences of planning and design processes and practice.

Using Australian and international case studies, the unit will investigate how urban functions, cultural values; technological, socio-economic and political circumstances; and design theory and practice shape the form of specific cities over time. The morphological elements of the city including: ecological systems; settlement and landownership patterns; transport, open space and street networks; urban infrastucture; open space, street and building typologies Â¿ are investigated to reveal often distinct local characteristics and the forces that shaped them.

The ability to recognize, investigate and respond to the forces that shape the city lies at the heart of good urban design. On completion, a student will be better able to: recognize structures and patterns, and key building and spatial typologies that contribute to overall city morphology; record and describe these, investigate and explain their origins, and discuss informatively their place in the evolving city and contemporary design.

It complements the History and Theory Planning and Design (PLAN9068) which emphasises the theories and models underpinning the forms that are covered in this unit. It is a core unit that supports the Urban Design Studios in the Urban Design program and the Integrated Urbanism Studio in the Urbanism program and an informative elective for students enrolled in or intending to enrol in the Urban Architecture Research Studio.

**ARCH9080**
**Urban Ecology, Design and Planning**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 2 **Classes:** 3 hrs lectures/tutorials/wk **Prohibitions:** PLAN9048 **Assessment:** Two assessments, each 50%; both assessments may comprise group and individual work. Peer assessment of group tasks may be required. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce the conceptual bases for sustainable development and explore how principles of sustainability can be introduced into land use planning and urban design, including environmental management and multi-criteria evaluation methodologies in three modules. The unit will examine the evolution of urban areas in relation to their biophysical setting. This will lead to an understanding and appreciation of the urban ecology of a city in terms of the flows of materials, resources and energy, and the challenges presented by climate change and peak oil. The principles of sustainability and the history and development of concepts of urban sustainability will be demonstrated through case studies. Assessments will explore a student's learning of the methods and frameworks for evaluating and measuring sustainability that are introduced in this unit.

**ARCH9090**
**Dialogue, Deliberation and Engagement**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dallas Rogers **Session:** Intensive November **Classes:** Intensive workshop over 3 days (8:30am to 6:00pm); 28.5 direct contact hours; 6 hours follow-up tutorials **Assessment:** Assessment 1 Learning Journal (30%); Assessment 2 Comparative Critical Analysis of Two Journal Articles (30%); Assessment 3 Deliberative Design (40%) **Mode of delivery:** Block mode, Normal (lecture/lab/tutorial) day

This elective unit will help build the skills and knowledge to design and implement forms of dialogue, deliberation and engagement that are most effective. In the context of major changes to the way planning and design is carried out in NSW and more widely, this is an opportunity to develop independent study skills and perspectives on engagement and collaboration in planning and urban design. The unit allows for a visiting academic to teach a subject related to their speciality. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. Students will develop an understanding of a special topic through reports, projects, and/or tutorial exercises. The workshop format is a stimulating combination of practical experience and scholarly learning, involving people working in the field of community engagement and public participation - planners, urban designers, consultants, change agents, community development practitioners, policy makers, government staff - who have an interest or a requirement to engage citizens or communities.

*Textbooks*

Readings will be distributed prior to and during the Master Class. Students will also be referred to online publications for assessment purposes.

**PLAN9075**
**Urban Data and Science of Cities**

**Credit points:** 6 **Teacher/Coordinator:** Dr Somwrita Sarkar **Session:** Semester 1 **Classes:** lecture 1 hr/week; tutorial 2 hrs/week **Assumed knowledge:** Undergraduate-level mathematics and statistics, some experience with programming preferred **Assessment:** assessment 1 (individual) (25%), major project (group) (20%), major project (individual) (50%), tutorial exercises and class participation (individual) (5%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The discipline of Science of Cities examines relationships between the physical form of cities and the social, cultural, economic, technological and spatial processes that give rise to this form. As technology evolves and changes, so do the ways in which we make and think about our cities. In this era of unprecedented and fast-accelerating changes, digital technologies are reshaping the ways in which we measure, sense, conceive of, design and plan for our cities. As a result, we collect and store large amounts of data on every aspect of the urban environment, but it is as yet unclear how this data can be used to inform evidence based planning and urban

management. This unit of study will introduce the principles of science of cities and the tools, methods, algorithms and techniques on big urban data that enable transformative ways of thinking about, designing and planning for a fast urbanizing world. Emphasis will be placed on developing understanding of urban structure and fast and slow dynamics shaping this structure. This transdisciplinary unit of study will be relevant for designers, planners, geographers, economists, physicists and data scientists interested in modelling urban systems.

*Textbooks*

Batty, M. (2015). The New Science of Cities. Cambridge, MA: MIT Press Townsend, A.M. (2013). Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia. New York: W.W. Norton Krugman, P. (1996). Confronting the mystery of urban hierarchy. Journal of the Japanese and International Economies, 10, pp. 399-418 Gabaix, X. (1999). Zipf's Law for Cities: An Explanation. The Quarterly Journal of Economics, 114(3), pp.739-767 Bettencourt, L., Lobo, J., Helbing, D., Kuhnert, C., and West, G.B. (2007). Growth, innovation, scaling and the pace of life in cities. PNAS, 104 (17), pp.7301-7306 Research and data reports, The Australian Bureau of Statistics (specific references provided through the unit)

**GOVT6163**
**Critical Challenges of Governing Cities**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x1hr lecture/ week, 1x1hr seminar/ week **Assessment:** 1x1500wd issue analysis (20%), 1x1500wd research proposal (20%), 1x3000wd research report (50%), seminar participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

In an urban society, cities form the locus for critical public policy challenges. This unit considers the multi-level, co-governance of cities in the comparative context of Western democracies. It considers the validity of contending theories of urban governance and explores the systemic tensions between public policy goals, such as subsidiarity and solidarity. It seeks to equip students with a critical understanding of the complexities and challenges of urban politics and policymaking in real world application.

**ITLS5100**
**Transport and Infrastructure Foundations**

**Credit points:** 6 **Session:** Semester 1, Semester 2 **Classes:** 12 x 3hr lectures, 1 x 2hr field trip **Prohibitions:** TPTM6241 **Assessment:** report 1 (20%), report 2 (20%), presentation (20%), final exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) evening

*Note: This is the foundation unit for all transport and infrastructure management programs and should be completed in the first period of study.*

Transport and infrastructure plays an important role both in terms of personal mobility as well as accessibility of businesses and their transportation needs. This unit provides a comprehensive introduction to the role of transportation and infrastructure within the economy. The key concepts and theories needed for management of transport and infrastructure are introduced along with the analysis and problem solving skills needed for confident decision making. In providing the foundational knowledge for students in transport and infrastructure, the unit also introduces students to the professional communication skills needed. Examples and case studies are drawn from all modes of transport and infrastructure.

Students may complete up to 18 credit points of related units of study from within the School or the University if they can substantiate that a unit undertaken elsewhere strengthens and complements their professional interest area in urban and regional planning.

# Heritage Conservation Stream

## Optional units

**ARCH9082**
**Conservation of Traditional Buildings**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Intensive March **Classes:** 5-day intensive (9am-5pm) **Assessment:** 1 x Building Condition Assessment in Groups (50%); 1 x Individual Conservation Analysis (50%) **Practical field work:** 2 hours of site visits each week for 2 weeks. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit of study is offered in even-numbered years only.*

The aims of the course are to introduce students to broad range of specialists from the related fields of architectural conservation and related disciplines who specialize in the conservation of traditional building fabric; to introduce students to the appropriate and accepted methods traditional construction and of the conservation traditional architectural materials; and to familiarise students with the relevant literature pertaining to the domain. The objectives of the course are to allow the student to develop a broad understanding of excellent contemporary conservation practice in the conservation of traditional materials; to develop a broad understanding of traditional building methods; to develop an understanding of good and bad practice in the conservation of traditional materials. Students will be expected to demonstrate the ability to research and prepare an academic paper related to the domain.

Class preparation: 1 hour/week; assessment preparation: 15-20 hours/semester

**ARCH9074**
**Principles of Heritage Conservation**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 1 **Classes:** Lectures 1.5 hrs/wk; tutorials 1 hr/wk **Prohibitions:** ARCH9003 **Assessment:** Weekly Discussion Forum/In-class Test (50%), Research Paper (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit will introduce students to key controversies, theoretical propositions and practical innovations that have driven the historical development of heritage conservation. The unit covers ideas and examples from the ancient world until the present, with the main focus being on the period from 1850 until today.

The aim of the unit is to help students to arrive at a clear understanding of the concepts and practices that define heritage conservation and to promote a strong historical perspective on the field. Students will consider, for example, the meaning of, and differences between, conservation, restoration and reconstruction; the different forms of historical value that inform our place protection efforts; the function of conservation protocols such as the Venice Charter, Burra Charter and Hoi An Protocols; the importance of advocacy and activism; the growth of world heritage and its relationship to human rights and cultural rights; and the ideas of cultural landscape and historic urban landscape. The unit also challenges students to think about areas of practice and theory that challenge traditional approaches and knowledge such as indigenous heritage and the conservation of modernism.

**ARCH9075**
**New Design in Old Settings**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 1 **Classes:** 3 hrs/week combination of lectures, tutorials, seminars, site visits. **Assessment:** Group work (30%); individual assignments (70%). Total of 4000-5000 words. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

New Design in Old Settings explores the architectural approaches, conservation methodologies and planning issues relevant to situations when new meets old in the built environment. The unit highlights architecturally innovative reuse projects, exemplary additions and alterations to historic places, and architecturally distinguished new buildings in historic precincts and landscapes. We also examine historic theming, façadism and some of the design ideas and planning compromises that have blighted historic places.

The aims of the unit are to develop an understanding of the history of designing and building new buildings in old settings; to develop an understanding of the major theoretical and practical issues of designing new buildings in old settings; and to develop an ability to assess critically the appropriateness of new development in culturally significant places. Students will develop analytical skills in assessing design strategies and develop confidence in making critical judgements about design propositions in historically significant settings.

**ARCH9083**
**Conservation of Modern Buildings**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Intensive March **Classes:** Lectures/seminars 4 hrs/day (5 days), demonstrations and site visits 4 hrs/day (5 days) **Assessment:** 1 x condition assessment (group) (50%), 1 x conservation approach (individual) (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment. Note: This unit of study is offered in odd-numbered years only.*

This intensive unit is a practically focused introduction to the techniques and bodies of knowledge essential to conserving modern buildings and their materials. Expert conservation architects and tradespeople will describe and lead practical demonstrations of techniques in conservation. Students will be challenged to assess and understand forms of decay and to prescribe appropriate interventions to mitigate and prevent such decay. They will have the opportunity to work with materials and inspect work underway on real conservation projects at culturally significant buildings.

This unit provides an overview of key issues in building conservation as well as a close-up view of the conservation of modern buildings. The unit explores the distinctive materials used in Twentieth Century architecture, such as reinforced concrete, as well as modern building systems such as glazed curtain walls and stone cladding systems. The unit will assist students to recognise different uses of these materials, understand the basic tools and techniques required to assess their condition as well as the best practice approaches to their conservation.

Upon successful completion of the unit of study, students will be able to:

Understand the behavior of a range of modern building materials;

Recognise threats to building materials from moisture, wind, biological and chemical attack and other forces that lead to deterioration;

Record a building in drawings and photographs;

Document and assess the condition of the fabric of a building;

Develop an approach to conserving the fabric of a building.

# Overseas exchange

## Exchange in Urban and Regional Planning

The school may approve international exchange for qualified students in graduate coursework master degrees.

Exchanges may be for one semester only. Students must apply through the Study Abroad and Exchange Office. Each student's program must be approved in consultation with the program director of the degree.

No program will be approved that involves the completion of more than 50 percent of the core requirements of the degree on exchange.

Exchange units should be taken as part of the degree, satisfying the requirements that would normally be covered at this university during the same period. Exchange should not be in addition to the degree requirements.

Exchange students are required to enrol in a full-time load at the University of Sydney and will incur the tuition costs associated with that load. No tuition costs will be incurred with the partner university.

Specially designated units of study will be recorded on the transcript. A result of 'SR' for 'Satisfied Requirements' will be recorded by the University against each successfully completed unit. The transcript of the exchange university will be the official detailed record of exactly what was completed during the exchange. Exchange results will not count towards a student's Weighted Average Mark.

For more information please contact the Study Abroad and Exchange Office.

The exchange units for enrolment at the University of Sydney, to be approved with the program director, shall be selected from the following table.

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Graduate exchange units** | | | |
| **Core units of study** | | | |
| **DESC9660**<br>**Graduate Exchange Core A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9661**<br>**Graduate Exchange Core B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9662**<br>**Graduate Exchange Core C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9663**<br>**Graduate Exchange Core D** | 6 | | Semester 1<br>Semester 2 |
| **DESC9672**<br>**Graduate Exchange Core E** | 12 | | Semester 1<br>Semester 2 |
| **Optional units of study** | | | |
| **DESC9664**<br>**Graduate Exchange Optional A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9665**<br>**Graduate Exchange Optional B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9666**<br>**Graduate Exchange Optional C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9667**<br>**Graduate Exchange Optional D** | 6 | | Semester 1<br>Semester 2 |
| **Elective units of study** | | | |
| **DESC9668**<br>**Graduate Exchange Elective A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9669**<br>**Graduate Exchange Elective B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9670**<br>**Graduate Exchange Elective C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9671**<br>**Graduate Exchange Elective D** | 6 | | Semester 1<br>Semester 2 |

# Master of Urbanism

The core content will provide all students with basic urban design and drawing skills, a sophisticated understanding of the history theory, and key concepts in urban design, planning and heritage conservation and the relationship between these areas.

Students may gain additional expertise in either heritage conservation, planning or urban design.

The Urban and Regional Planning specialisation is accredited by the Planning Institute of Australia.

In the capstone integrated urban studio students will apply their knowledge to a complex real world project requiring all their skills as well as developing the competancies and theoretical understanding for successful teamwork. All students will have the opportunity to take an international field studio and select electives to deepen or broaden their studies in area of particular interest. The course will make use of industry experts to provide direct professional input and contact for the best learning opportunities.

Depending on their background and specialisation, students will be trained to work in a range of built environment professions.

## Admission requirements

To apply, you should hold a bachelor's degree in design, human geography or a related field from the University of Sydney, or equivalent qualification.

# Course rules

## Graduate Diploma in Urbanism

## Master of Urbanism

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended) and the Academic Board policies on Academic Dishonesty and Plagiarism.*

### Course Resolutions

#### 1 Course codes

| Code | Course and stream title |
|---|---|
| MAURBNSM-01 | Graduate Diploma in Urbanism |
| GNURBNSM-01 | Master of Urbanism |

#### 2 Attendance pattern

1. The attendance pattern for this course is full time or part time according to candidate choice.

#### 3 Master's type

This master's degree is a professional master's course, as defined by the Coursework Rule.

#### 4 Embedded courses in this sequence

(1) The embedded courses in this sequence are:
(b) the Graduate Diploma in Urbanism
(c) the Master of Urbanism
(2) Only the highest award completed will be conferred.

#### 5 Admission to candidature

(1) Available places will be offered to qualified applicants in the order in which complete applications are received, according to the following admissions criteria.
(2) Offers of admission will be made to the Master of Urbanism only.
(3) Admission to the Master of Urbanism requires:
(a) a bachelor's degree in design, human geography or related field from the University of Sydney, or an equivalent qualification.
(4) In exceptional circumstances the Dean may admit applicants without these qualifications but whose evidence of experience and achievement is deemed by the Dean to be equivalent.

#### 6 Requirements for award

(1) The units of study that may be taken for the course/s are set out in Table G.
(2) To qualify for the award of the Graduate Diploma in Urbanism, a candidate must complete 48 credit points, including:
(a) 42 credit points of core units of study; and
(b) 6 credit points of elective units of study.
(3) To qualify for the award of the Master of Urbanism, a candidate must complete 96 credit points, including:
(a) 42 credit points of core units of study; and
(b) 18 credit points of capstone units; and
(c) minimum 24 credit points of specialisation units of study; and
(d) maximum 12 credit points of elective units of study.

#### 7 Specialisations

(1) Completion of one specialisation is a requirement of the course. A specialisation requires the completion of at least 24 credit points chosen from units of study listed in the table for thatspecialisation. The specialisations available are:
(a) Heritage conservation;
(b) Urban design
(c) Urban and regional planning

#### 8 Course transfer

A candidate for the master's degree may elect to discontinue study and graduate with a shorter award from this embedded sequence, with the approval of the Dean, and provided the requirements of the shorter award have been met.

#### 9 Credit transfer

(1) Students who have completed study in postgraduate programs in Heritage Conservation, Urban Design or Urban and Regional Planning in this Faculty, and have not had an award conferred, may transfer all relevant credit to the Master of Urbanism, in accordance with the provisions of the Coursework Rule.
(2) Candidates enrolled in the Master of Urban and Regional Planning, Master of Urban Design (Urban Design and Planning) and Master of Heritage Conservation may apply to transfer to the Master of Urbanism subject to meeting the requirements for admission as set out in part 5 (2) of the admission to candidature section.
(3) Candidates of the Master of Urban and Regional Planning, Master of Urban Design (Urban Design and Planning) and Master of Heritage Conservation applying for admission to the Master of Urbanism, upon acceptance, apply for credit for equivalent units completed towards the Master of Urbanism, noting they still need to meet or have met the core unit and elective requirements for the Master of Urbanism.
(4) Only the longest award completed will be awarded.

# Master of Urbanism

## Graduate Diploma in Urbanism

## Master of Urbanism

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the School, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

### Course Resolutions

### 1 Course codes

| Code | Course and stream title |
|---|---|
| MAURBNSM-01 | Graduate Diploma in Urbanism |
| GNURBNSM-01 | Master of Urbanism |

### 2 Attendance pattern

1. The attendance pattern for this course is full time or part time according to candidate choice.

### 3 Master's type

This master's degree is a professional master's course, as defined by the Coursework Rule.

### 4 Embedded courses in this sequence

(1) The embedded courses in this sequence are:
(a) the Graduate Diploma in Urbanism
(b) the Master of Urbanism
(2) Only the highest award completed will be conferred.

### 5 Admission to candidature

(1) Available places will be offered to qualified applicants in the order in which complete applications are received, according to the following admissions criteria.
(2) Offers of admission will be made to the Master of Urbanism only.
(3) Admission to the Master of Urbanism requires:
(a) a bachelor's degree in design, human geography or related field from the University of Sydney, or an equivalent qualification.
(4) In exceptional circumstances the Head of School and Dean may admit applicants without these qualifications but whose evidence of experience and achievement is deemed by the Head of School and Dean to be equivalent.

### 6 Requirements for award

(1) The units of study that may be taken for the course/s are set out in the relevant degree Table.
(2) To qualify for the award of the Graduate Diploma in Urbanism, a candidate must complete 48 credit points, including:
(a) 42 credit points of core units of study; and
(b) 6 credit points of elective units of study.
(3) To qualify for the award of the Master of Urbanism, a candidate must complete 96 credit points, including:
(a) 42 credit points of core units of study; and
(b) 18 credit points of capstone units; and
(c) minimum 24 credit points of specialisation units of study; and
(d) maximum 12 credit points of elective units of study.

### 7 Specialisations

(1) Completion of one specialisation is a requirement of the course. A specialisation requires the completion of at least 24 credit points chosen from units of study listed in the table for thatspecialisation. The specialisations available are:
(a) Heritage conservation;
(b) Urban design
(c) Urban and regional planning

### 8 Course transfer

A candidate for the master's degree may elect to discontinue study and graduate with a shorter award from this embedded sequence, with the approval of the Head of School and Dean, and provided the requirements of the shorter award have been met.

### 9 Credit transfer

(1) Students who have completed study in postgraduate programs in Heritage Conservation, Urban Design or Urban and Regional Planning in this School, and have not had an award conferred, may transfer all relevant credit to the Master of Urbanism, in accordance with the provisions of the Coursework Rule.
(2) Candidates enrolled in the Master of Urban and Regional Planning, Master of Urban Design (Urban Design and Planning) and Master of Heritage Conservation may apply to transfer to the Master of Urbanism subject to meeting the requirements for admission as set out in part 5 (2) of the admission to candidature section.
(3) Candidates of the Master of Urban and Regional Planning, Master of Urban Design (Urban Design and Planning) and Master of Heritage Conservation applying for admission to the Master of Urbanism, upon acceptance, apply for credit for equivalent units completed towards the Master of Urbanism, noting they still need to meet or have met the core unit and elective requirements for the Master of Urbanism.
(4) Only the longest award completed will be awarded.

## 10 Transitional Provisions

(1) These resolutions apply to students who commence their candidature after 1 January 2017 and students who commenced their candidature prior to 1 January 2017 who elect to proceed under these resolutions.

(2) Candidates who commenced prior to 1 January 2017 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January 2019. The School may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

# Master of Urbanism

## Unit of study table

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Master of Urbanism** | | | |
| **Core units** | | | |
| **ARCH9075**<br>**New Design in Old Settings** | 6 | *Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9100**<br>**Introduction to Urban Design** | 6 | *Students may be granted advanced standing based on portfolio.* | Semester 1a<br>Semester 2a |
| **PLAN9061**<br>**Planning Principles, Systems and Practice** | 6 | **N** PLAN9020 or PLAN9044<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2a |
| **PLAN9068**<br>**History and Theory of Planning and Design** | 6 | **N** PLAN9031 or ARCH9062 or ARCH9031 or MARC4201<br>*Note: Department permission required for enrolment* | Semester 1<br>Semester 2 |
| **ARCH9074**<br>**Principles of Heritage Conservation** | 6 | **N** ARCH9003<br>*Note: Department permission required for enrolment* | Semester 1 |
| **ARCH9063**<br>**Urban Form and Design** | 6 | **A** Some prior study of architectural, urban or planning history.<br>**P** ARCH9100<br>**N** ARCH9021 | Semester 2 |
| **ARCH9080**<br>**Urban Ecology, Design and Planning** | 6 | **N** PLAN9048 | Semester 2 |
| **Capstone** | | | |
| **ARCH9093**<br>**Integrated Urbanism Studio** | 12 | **A** ARCH9080 and PLAN9063 and PLAN9073<br>**P** Students should have completed 48 credit points in their degrees including ARCH9100, PLAN9061 and PLAN9068 | Semester 1 |
| **ARCH9092**<br>**Urban Report** | 6 | **P** 48 credit points including- ARCH9100, ARCH9063, ARCH9074, ARCH9080, ARCH9075, PLAN9068, PLAN9061<br>**N** ARCH9060 or PLAN9018 or PLAN9010 or PLAN9011 | Semester 1<br>Semester 2 |
| **Heritage Specialisation** | | | |
| **ARCH9028**<br>**Conservation Methods and Practices** | 12 | *Note: Department permission required for enrolment* | Semester 2 |
| And at least 12 credit points from the following units: domestic students should include ARCH9081 Heritage Law and Policy. | | | |
| **ARCH9081**<br>**Heritage Law and Policy** | 6 | | Semester 2 |
| **ARCH9082**<br>**Conservation of Traditional Buildings** | 6 | *This unit of study is offered in even-numbered years only.* | Intensive March |
| **ARCH9084**<br>**Conservation Studio** | 6 | **C** Recommended Co-requisites: ARCH9075 (for student with non-design undergraduate degree)<br>*Note: Department permission required for enrolment*<br>*First preference to Master of Heritage Conservation Students.* | Semester 2 |
| **Urban Design Specialisation** | | | |
| **ARCH9001**<br>**Urban Design Studio: Urban Precinct** | 12 | **P** ARCH9100 | Semester 2 |
| And at least 12 credit points from the following: | | | |
| **ARCH9002**<br>**Urban Design Studio: Urban Project** | 12 | **P** ARCH9100 | Semester 1 |
| **ARCH9090**<br>**Dialogue, Deliberation and Engagement** | 6 | | Intensive November |
| **ARCH9101**<br>**Future Cities**<br>*This unit of study is not available in 2018* | 6 | **A** Students to have completed a minimum of 12 credit points in the Urban and Regional Planning or Urban Design programs.<br>*Note: Department permission required for enrolment* | Intensive July |
| **PLAN9073**<br>**GIS Based Planning Policy and Analysis** | 6 | *Note: Department permission required for enrolment* | Intensive June<br>Intensive November |
| **Urban and Regional Planning Specialisation** | | | |
| **PLAN9063**<br>**Strategic Planning and Design** | 6 | **N** PLAN9027 | Semester 1 |
| **PLAN9045**<br>**Economics for the Built Environment** | 6 | | Semester 2 |

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **PLAN9064**<br>**Land Use and Infrastructure Planning** | 6 | **A** ARCH9100<br>*Note: Department permission required for enrolment* | Semester 2 |
| And at least 6 credit points | | | |
| **PLAN9049**<br>**International Urban Development Planning** | 6 | *Note: Department permission required for enrolment*<br>*In 2018, this unit will be run as an overseas 8-10 day intensive and combined with the ITB Plancosmo Conference to be held in Bandung, April 2018. There is a cap of 20 students maximum in this unit.* | Semester 1a |
| **PLAN9073**<br>**GIS Based Planning Policy and Analysis** | 6 | *Note: Department permission required for enrolment* | Intensive June<br>Intensive November |
| **ARCH9090**<br>**Dialogue, Deliberation and Engagement** | 6 | | Intensive November |

## Electives

Electives may be selected from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University.

| | | | |
|---|---|---|---|
| **PLAN9075**<br>**Urban Data and Science of Cities** | 6 | **A** Undergraduate-level mathematics and statistics, some experience with programming preferred | Semester 1 |
| **ARCH9091**<br>**International Field Trip** | 6 | **A** One or more of the following - MARC4201; MARC4102; PLAN9068; ARCH9064; PLAN9063; PLAN9073 (completion of one or more of these units will be a selection criterion if applications exceed places)<br>**P** Successful completion of 24 credit points of study in current graduate program.<br>*The studio is international, interdisciplinary and will involve collaboration with international universities and a quota on places is necessary given the practicalities of travel, collaboration and discipline balance between participants. A selection process will be necessary should application exceed place. Students will be required to pay for their participation in this unit including tuition fee, travel, accommodation, living expenses and a contribution towards the costs of delivering the unit in the field.* | Intensive December |
| **DESC9153**<br>**Graduate Internship** | 6 | *Note: Department permission required for enrolment*<br>*Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.* | Intensive December<br>Intensive July<br>Intensive November<br>Semester 1<br>Semester 2 |
| **GOVT6163**<br>**Critical Challenges of Governing Cities** | 6 | | Semester 2 |

# Master of Urbanism

## Unit of study descriptions

## Master of Urbanism

### Core units

**ARCH9075**
**New Design in Old Settings**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 1 **Classes:** 3 hrs/week combination of lectures, tutorials, seminars, site visits. **Assessment:** Group work (30%); individual assignments (70%). Total of 4000-5000 words. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

New Design in Old Settings explores the architectural approaches, conservation methodologies and planning issues relevant to situations when new meets old in the built environment. The unit highlights architecturally innovative reuse projects, exemplary additions and alterations to historic places, and architecturally distinguished new buildings in historic precincts and landscapes. We also examine historic theming, façadism and some of the design ideas and planning compromises that have blighted historic places.

The aims of the unit are to develop an understanding of the history of designing and building new buildings in old settings; to develop an understanding of the major theoretical and practical issues of designing new buildings in old settings; and to develop an ability to assess critically the appropriateness of new development in culturally significant places. Students will develop analytical skills in assessing design strategies and develop confidence in making critical judgements about design propositions in historically significant settings.

**ARCH9100**
**Introduction to Urban Design**

**Credit points:** 6 **Teacher/Coordinator:** Dr. Non Arkaraprasertkul **Session:** Semester 1a, Semester 2a **Classes:** Intensive delivery (lectures and tutorials) for total of 38 hours over 7 weeks **Assessment:** (60%) Formative assessment, (40%) summative assessment. Assessments comprise both group and individual components. Peer review of group work will be required. **Mode of delivery:** Block mode

*Note: Students may be granted advanced standing based on portfolio.*

This introductory unit of study will provide students with the necessary skills to participate effectively in the urban design studios and integrated urbanism studio. The unit will include site, spatial and public domain analysis, map and plan reading, visual, verbal and written communication techniques, and basic computer-based 3 dimensional modelling and numerical analysis. It will introduce students to the objectives and principles of urban design by analysing a number of public spaces, the spaces between buildings and the public domain and urban conditions in Sydney.

*Textbooks*

Glaeser, Edward. Triumph of the city: How our greatest invention makes us richer, smarter, greener, healthier, and happier. Penguin, 2011.
Montgomery, Charles. Happy city: transforming our lives through urban design. Macmillan, 2013. APA

**PLAN9061**
**Planning Principles, Systems and Practice**

**Credit points:** 6 **Teacher/Coordinator:** Professor Nicole Gurran **Session:** Semester 1, Semester 2a **Classes:** 4-day intensive **Prohibitions:** PLAN9020 or PLAN9044 **Assessment:** Assignment 1 (50%); Assignment 2 (50%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit aims to prepare you for professional practice as a strategic or development assessment planner. It focuses on social, economic and environmental principles for contemporary planning practice; the systems for land use planning and environmental management in Australia, and the practice of statutory planning and development assessment in NSW.

By the end of this unit of study you will: understand the social, economic, and environmental principles underpinning contemporary planning practice; appreciate key legal and institutional processes for environmental planning in Australia and internationally; be familiar with the various planning state, regional, and local planning instruments in NSW, and understand when and how they apply to planning proposals. You will also be able to assess the social, economic, and environmental impacts of basic planning proposals, and justify these recommendations in professional planning reports. In preparing for professional practice you will gain an understanding of the principles, techniques and requirements for public participation in environmental planning and assessment; and the ethical responsibilities of land use planners, including respect for diversity and the importance of social equity, in guiding decision making processes and assessing planning proposals.

**PLAN9068**
**History and Theory of Planning and Design**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Paul Jones **Session:** Semester 1, Semester 2 **Classes:** Lecture 2hrs/wk (and may include some tutorials and group discussions) **Prohibitions:** PLAN9031 or ARCH9062 or ARCH9031 or MARC4201 **Assessment:** Assignment 1: short questions including local field work/observation (40%); Assignment 2 is an analytical portfolio of inqury into 3-4 papers with a strong emphasis on understanding key concepts in the modern planning era via clarity of text and strong visual/image support (50%).Group work (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit is in two overlapping modules, each of which is assessed.

Module one enables students to understand how the main concepts and practices of urban planning and development have evolved; appreciate different perspectives about the roles and purposes of planning; undertake basic historical research about Australian urban planning and development issues, and prepare basic stories and arguments about practical planning issues and current theories. There is a strong emphasis on enriching the ability of students to better appreciate urban form, structure and planning practice generally by analysing such form, structure and process through the lens of history (as 'snapshots' in time), and the understanding of planning theory as drivers that shape and express such urban change such as Garden City values. Interpreting planning practice, places and spaces at different scales and what this reflects (such as underlying theory, values, norms attitudes, public interest, etc.) is a key element of this module.

Concurrent with module one, module two familiarises students with the main ideas and methods that have influenced urban design practice from the late nineteenth century to the present. It covers the dominant urban design theories, principles, conceptual and physical models, analytical methods and drawings from key contributing authors over the period, and explores critically how and why these arose, their interrelationships, spheres of influence, and continuing validity. In this module, the work of key urban planning and design idealists and visionaries are discussed such as Ebenezer Howard and Le Corbusier.

Students will be able to: critically review and interpret key planning and urban design texts/papers; construct and present basic arguments orally and in conjunction with graphics/images in illustrated documents; access and engage with key literature and other sources of knowledge; and use basic conceptual frameworks about planning arguments and stories for both the overlapping fields of urban planning and urban design. Interpreting the built form around you from an historical lens is an important learning outcome.

*Textbooks*
"City Reader" (Fifth Edition) by Richard Le Gates and Frederic Stout (Routledge)

**ARCH9074**
**Principles of Heritage Conservation**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 1 **Classes:** Lectures 1.5 hrs/wk; tutorials 1 hr/wk **Prohibitions:** ARCH9003 **Assessment:** Weekly Discussion Forum/In-class Test (50%), Research Paper (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit will introduce students to key controversies, theoretical propositions and practical innovations that have driven the historical development of heritage conservation. The unit covers ideas and examples from the ancient world until the present, with the main focus being on the period from 1850 until today.

The aim of the unit is to help students to arrive at a clear understanding of the concepts and practices that define heritage conservation and to promote a strong historical perspective on the field. Students will consider, for example, the meaning of, and differences between, conservation, restoration and reconstruction; the different forms of historical value that inform our place protection efforts; the function of conservation protocols such as the Venice Charter, Burra Charter and Hoi An Protocols; the importance of advocacy and activism; the growth of world heritage and its relationship to human rights and cultural rights; and the ideas of cultural landscape and historic urban landscape. The unit also challenges students to think about areas of practice and theory that challenge traditional approaches and knowledge such as indigenous heritage and the conservation of modernism.

**ARCH9063**
**Urban Form and Design**

**Credit points:** 6 **Teacher/Coordinator:** Senior Lecturer Deena Ridenour **Session:** Semester 2 **Classes:** Weekly lectures and tutorials **Prerequisites:** ARCH9100 **Prohibitions:** ARCH9021 **Assumed knowledge:** Some prior study of architectural, urban or planning history. **Assessment:** Formative Assessment (40%) and Summative Assessment (60%). Assessments comprise both group and individual components. Peer review of group work will be required. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit explores the complexity and evolution of city form and the influences of planning and design processes and practice.

Using Australian and international case studies, the unit will investigate how urban functions, cultural values; technological, socio-economic and political circumstances; and design theory and practice shape the form of specific cities over time. The morphological elements of the city including: ecological systems; settlement and landownership patterns; transport, open space and street networks; urban infrastucture; open space, street and building typologies Â¿ are investigated to reveal often distinct local characteristics and the forces that shaped them.

The ability to recognize, investigate and respond to the forces that shape the city lies at the heart of good urban design. On completion, a student will be better able to: recognize structures and patterns, and key building and spatial typologies that contribute to overall city morphology; record and describe these, investigate and explain their origins, and discuss informatively their place in the evolving city and contemporary design.

It complements the History and Theory Planning and Design (PLAN9068) which emphasises the theories and models underpinning the forms that are covered in this unit. It is a core unit that supports the Urban Design Studios in the Urban Design program and the Integrated Urbanism Studio in the Urbanism program and an informative elective for students enrolled in or intending to enrol in the Urban Architecture Research Studio.

**ARCH9080**
**Urban Ecology, Design and Planning**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 2 **Classes:** 3 hrs lectures/tutorials/wk **Prohibitions:** PLAN9048 **Assessment:** Two assessments, each 50%; both assessments may comprise group and individual work. Peer assessment of group tasks may be required. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce the conceptual bases for sustainable development and explore how principles of sustainability can be introduced into land use planning and urban design, including environmental management and multi-criteria evaluation methodologies in three modules. The unit will examine the evolution of urban areas in relation to their biophysical setting. This will lead to an understanding and appreciation of the urban ecology of a city in terms of the flows of materials, resources and energy, and the challenges presented by climate change and peak oil. The principles of sustainability and the history and development of concepts of urban sustainability will be demonstrated through case studies. Assessments will explore a student's learning of the methods and frameworks for evaluating and measuring sustainability that are introduced in this unit.

## Capstone

**ARCH9093**
**Integrated Urbanism Studio**

**Credit points:** 12 **Teacher/Coordinator:** Dr Tooran Alizadeh **Session:** Semester 1 **Classes:** Lectures; Seminars; Studio - 4 hrs/wk **Prerequisites:** Students should have completed 48 credit points in their degrees including ARCH9100, PLAN9061 and PLAN9068 **Assumed knowledge:** ARCH9080 and PLAN9063 and PLAN9073 **Assessment:** Mid-term presentation and submission (50%). Final presentation and submission (50%). Assessments will include both group and individual work. Group work is peer reviewed. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Integrated Urbanism Studio is a capstone unit for the Master of Urbanism. The studio will be focussed on "real world" strategic urban issues and the need for urbanists to formulate a compelling 'urban proposition' to convince the public, stakeholders, politicians and investors of the benefits of a particular approach or scheme. The studio will emulate practice by working with or being exposed to community groups, developers, politicians and practitioners to develop an appreciation of the strategic, economic, social and environmental context in which urban design and planning occurs. The specific intention will be to recognise and overcome the limitations imposed by professional 'silos' and give regard to, and reconcile the multitude of perspectives that are characteristic of the urban condition. Students will be working to develop abilities and skills (investigation, analysis and interpretation, design development and presentation) that enables them to prepare strategies, frameworks, concepts and master plans in a professional and visionary manner. Familiarity with economic, social and environmental factors, analytic and communication techniques will be assumed from previous units.

*Textbooks*
Exemplary planning documents, development strategies prepared by local government and state government agencies from NSW, other states and overseas will be used as reference material. A range of papers, articles and chapters of books related to planning theory will be used to provide a basis for a critique of the process. Readings will be distributed prior to and during the workshop.

**ARCH9092**
**Urban Report**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 1, Semester 2 **Classes:** Introductory Seminar - 2 hours; Presentation of Draft Outline - 3-hour Seminar; Presentation of Final Content - 3-hour Seminar; 10 weekly 1-hour meetings with Supervisor **Prerequisites:** 48 credit points including- ARCH9100, ARCH9063, ARCH9074, ARCH9080, ARCH9075, PLAN9068, PLAN9061 **Prohibitions:** ARCH9060 or PLAN9018 or PLAN9010 or PLAN9011 **Assessment:** Preliminary Report (5%); First Draft Report (20%); Final Presentation (5%); Report (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The Urbanism Report is a substantial project involving research conducted over one semester. It will usually take the form of an illustrated report (between 5,000 and 10,000 words) on an approved subject of the student's choice. The aim of the unit is to allow students to deepen their understanding, and methodological approach in relation to an aspect of urbanism of the student's choice and with the approval of the program director. The subject may be of a practical bent (e.g. review or preparation of an urban design, or urban development project) or more theoretical (e.g. review of a conceptual viewpoint), or it may occupy the middle ground (e.g. exploration of a contemporary issue or review/testing of a method). If of a more practical nature, its theoretical underpinning should be explicit. If more theoretical, it should refer to its practical implications. The report is an opportunity to advance knowledge and skills in a particular area of urbanism and so develop a 'professional edge'. The aim of the report is to enhance abilities and knowledge essential to the practice of urbanism.

*Textbooks*

N/A: the supervisor will provide advice in regards to appropriate text to assist in the preparation of the Report.

## Heritage Specialisation

**ARCH9028**

**Conservation Methods and Practices**

**Credit points:** 12 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 2 **Classes:** Lecture 4 hrs/wk + site visits **Assessment:** Two assignments (2 x 50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

The aims of this unit are to develop skills in the methods and practices of conservation at an accepted professional level, and to interpret and apply the theory taught in the mandatory core of the course in practical, on-site projects. The unit focuses on culturally significant structures and cultural landscapes and includes: methods of survey and documentation (locating, describing and recording components with possible heritage value; identifying and reading historic fabric; historic and archival research methods; thematic history methods; pattern recognition; natural systems; settlements; cultural mapping; aesthetic analysis; material and stylistic analysis); evaluation methodology (assigning heritage significance); assessment methodology (establishing conservation priorities); and appropriate conservation actions (conservation and management plans, policies and strategies). At the end of the unit the student will successfully demonstrate: an understanding of the Australia ICOMOS Burra Charter and the ability to prepare, in accordance with current accepted professional practice, a conservation plan of a place or places of cultural significance; skill in methods and techniques of analysis, assessment and documentation of cultural significance; and the ability to develop relevant policies and strategies for the conservation of a variety places of cultural significance. The intended outcomes are achieved through inquiry, individual study and research and are demonstrated by each student upon the successful completion of set assignments. The assignments are constructed to allow each student to demonstrate his or her level of understanding of the accepted professional methodology and practice in the preparation and presentation of a conservation plan. Assessment criteria based on unit outcomes are used for the examination of the assignments.

And at least 12 credit points from the following units: domestic students should include ARCH9081 Heritage Law and Policy.

**ARCH9081**

**Heritage Law and Policy**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 2 **Classes:** Lectures 2 hrs/wk **Assessment:** Class Exercise/Test (30%) and Paper (70%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this unit students will become familiar with the system of legal protections and policy instruments that underpin heritage conservation activity. They will explore the idea of cultural property and of shared environmental resources and the ways in which these are balanced with private property rights in heritage policy and law. Classes will address the varying levels at which heritage protections operate, from international protocols down to local planning schemes. Students will become familiar with legislation, regulations, planning instruments and policies as well as the use of registers, inventories and other records of significant items. The unit will also address the roles of various government agencies involved in heritage conservation and develop an understanding of how such agencies utilize heritage studies and assessments, and how they develop heritage law and policy. Students in this unit will consider how different instruments and heritage protections relate to different scales and types of place including landscapes, streetscapes, archaeological resources, gardens and individual buildings. They will also consider how different sanctions and incentives achieve policy aims and support statutory obligations. Finally, together, staff and students will explore innovative legal and policy mechanisms for preventing or redressing the destruction of historically significant places and encouraging the meaningful protection of culturally significant places.

**ARCH9082**

**Conservation of Traditional Buildings**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Intensive March **Classes:** 5-day intensive (9am-5pm) **Assessment:** 1 x Building Condition Assessment in Groups (50%); 1 x Individual Conservation Analysis (50%) **Practical field work:** 2 hours of site visits each week for 2 weeks. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: This unit of study is offered in even-numbered years only.*

The aims of the course are to introduce students to broad range of specialists from the related fields of architectural conservation and related disciplines who specialize in the conservation of traditional building fabric; to introduce students to the appropriate and accepted methods traditional construction and of the conservation traditional architectural materials; and to familiarise students with the relevant literature pertaining to the domain. The objectives of the course are to allow the student to develop a broad understanding of excellent contemporary conservation practice in the conservation of traditional materials; to develop a broad understanding of traditional building methods; to develop an understanding of good and bad practice in the conservation of traditional materials. Students will be expected to demonstrate the ability to research and prepare an academic paper related to the domain.

Class preparation: 1 hour/week; assessment preparation: 15-20 hours/semester

**ARCH9084**

**Conservation Studio**

**Credit points:** 6 **Teacher/Coordinator:** Dr Cameron Logan **Session:** Semester 2 **Classes:** Lecture 1 hr/wk (10 wks), studio 3 hrs/wk (11 wks), Site Visit 6 hrs/wk (1 wk) **Corequisites:** Recommended Co-requisites: ARCH9075 (for student with non-design undergraduate degree) **Assessment:** Site analysis and design strategy (Group 50%), Statement of Heritage Impact (Individual 50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment. Note: First preference to Master of Heritage Conservation Students.*

The aim of the unit is to engage in an interdisciplinary collaboration to realise an innovative and culturally senstive new design project in a way that mirrors professional teamwork and meets best practice heritage and conservation standards. Students from the Heritage Conservation program will work together in teams with students from the Master of Architecture degree to realise the project. Each group will develop a sustainable strategy for the place that protects and enhances its heritage value. Heritage conservation students will then act as advisors on the design project considering possible impacts to significant buildings and historic landscapes. At the end of the semester heritage students will complete a Statement of Heritage Impact at professional level that accords with the guidelines established by the NSW Office of Environment and Heritage.

The unit objective is to analyse a given site with an existing building of identified heritage value and for the design-based students to prepare, with a given brief, a contemporary addition that is both a credible work of contemporary architecture whilst at the same time a sensitive and appropriate addition that respects the cultural significance of the existing building. The non-design based students

will act as heritage consultants, in accordance with best professional practice and concurrently prepare for the proposed design a Heritage Impact Statement that conforms with the NSW Heritage Branch guidelines and standards of practice.

Class preparation: 2 hours/week

## Urban Design Specialisation

**ARCH9001**
**Urban Design Studio: Urban Precinct**

**Credit points:** 12 **Teacher/Coordinator:** Senior Lecturer Deena Ridenour **Session:** Semester 2 **Classes:** Half-day weekly lectures and studio based tutorials **Prerequisites:** ARCH9100 **Assessment:** Mid-term Presentation and Submission (50%); Final Presenation and Submission (50%); Assessments will include both group and individaul work. Group work is peer reviewed. An individual Design Journal is a requirement. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Design studios are the heart of the urban design program. Values, knowledge and skills acquired in other units and from previous experience are supplemented and enhanced, and applied creatively to both the investigation and development phases of design projects at an urban scale.

Urban Design Studio: Urban Precinct is concerned with developing design propositions that respond to the changing environmental, economic and social context of the city and that challenge `business as usualÂ¿ practice. Projects are carefully chosen to explore large complex urban areas, such as urban centres, waterfront precincts, renewal precincts, institutional campuses or major infrastructure interventions. The studio will generate proposals for major urban structures, spaces and forms which are rigourously informed by design methodologies.

Inter-disciplinary group work is an essential part of the studio and integrates the broad range of backgrounds and skills of the students while mimicing the reality of practice.

The central aim of this unit is to develop illustrative, writing and verbal skills which will enable students to carry out urban design projects such as the preparation of strategies, frameworks, master plans and public domain concepts in a professional and visionary manner. Students will be expected to demonstrate appropriate problem recognition, investigative, analytical, interpretative, design and presentation skills and abilities on projects of major urban scale. Assessment may also embrace abilities to prepare and interpret project briefs, program proposals and work in groups.

And at least 12 credit points from the following:

**ARCH9002**
**Urban Design Studio: Urban Project**

**Credit points:** 12 **Teacher/Coordinator:** Senior Lecturer Deena Ridenour **Session:** Semester 1 **Classes:** Half-day weekly lectures and studio based tutorials **Prerequisites:** ARCH9100 **Assessment:** Mid-term Presentation and Submission (50%); Final Presenation and Submission (50%); Assessments will include both group and individaul work. Group work is peer reviewed. An individual Design Journal is a requirement. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Design studios are the heart of the urban design program. Values, knowledge and skills acquired in other units and from previous experience are supplemented and enhanced, and applied creatively to both the investigation and development phases of design projects at an urban scale.

Urban Design Studio: Urban Project is concerned with the design development for a local urban project that explores how a specific design intervention can be a catalyst to broader urban change. Projects are carefully chosen to explore complex local urban sites or groups of sites and to generate proposals for public and private building types, streets, spaces and transport infrastructure that are rigourously informed by design methodologies. Implementation through staging, development controls and guidelines will also be addressed.

Inter-disciplinary group work is an essential part of the studio and integrates the broad range of backgrounds and skills of the students while mimicing the reality of practice.

The central aim of this unit is to develop illustrative, writing and verbal skills which will enable students to carry out urban design projects such as the preparation of frameworks, master plans and public domain concepts in a professional manner. Students will be expected to demonstrate appropriate problem recognition, investigative, analytical, interpretative, design and presentation skills and abilities on projects of local urban scale. Assessment may also embrace abilities to prepare and interpret project briefs, program proposals and work in groups.

**ARCH9090**
**Dialogue, Deliberation and Engagement**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dallas Rogers **Session:** Intensive November **Classes:** Intensive workshop over 3 days (8:30am to 6:00pm); 28.5 direct contact hours; 6 hours follow-up tutorials **Assessment:** Assessment 1 Learning Journal (30%); Assessment 2 Comparative Critical Analysis of Two Journal Articles (30%); Assessment 3 Deliberative Design (40%) **Mode of delivery:** Block mode, Normal (lecture/lab/tutorial) day

This elective unit will help build the skills and knowledge to design and implement forms of dialogue, deliberation and engagement that are most effective. In the context of major changes to the way planning and design is carried out in NSW and more widely, this is an opportunity to develop independent study skills and perspectives on engagement and collaboration in planning and urban design. The unit allows for a visiting academic to teach a subject related to their speciality. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. Students will develop an understanding of a special topic through reports, projects, and/or tutorial exercises. The workshop format is a stimulating combination of practical experience and scholarly learning, involving people working in the field of community engagement and public participation - planners, urban designers, consultants, change agents, community development practitioners, policy makers, government staff - who have an interest or a requirement to engage citizens or communities.

*Textbooks*
Readings will be distributed prior to and during the Master Class. Students will also be referred to online publications for assessment purposes.

**ARCH9101**
**Future Cities**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Intensive July **Classes:** 1 x 3 hr seminar, 20 hrs workshop (2.5 days) 1 x 6hr tutorial, 1 x 6 hr studio **Assumed knowledge:** Students to have completed a minimum of 12 credit points in the Urban and Regional Planning or Urban Design programs. **Assessment:** Assignments (1 x 10%, 1 x 20%), written report (70%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

The unit of study will provide students with the opportunity to work with practicing planners and urban designers in local government to formulate 'urban projects' for their respective areas that will then be the subject of interdisciplinary and inter-council critique in a workshop format over three days. Planning has been usually seen as a linear process where high level strategic objectives 'cascade' down through the various levels; from state, to regional, to subregional, to local to neighbourhood, to detailed public domain plans and individual controls for individual development proposals. Urban design and consideration of built form and quality of place only occur at the end of the process. But these end results of the process are arguably what matters to the public most. So the challenge is to find a way to engage with the detail and represent it early in the planning process. 'Strategic urban design' is about bringing these different aspects of planning and design together at the same time: long term and next steps, strategic and design-focused, visualised and quantified to enable the results to inform corporate plans and provide an evidence base for decision making while at the same time being able to answer the question 'what will it look like?'

**PLAN9073**
**GIS Based Planning Policy and Analysis**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Intensive June, Intensive November **Classes:** 4-day intensive (9am-5pm) **Assessment:**

Two smaller analytical assessments (2 x 25%) and a larger report (50%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit is concerned with using GIS to analyse planning problems and undertake policy analyses. The unit will include a comprehensive introduction to mapping and the use of GIS: data structures, topology, projections, spatial and non-spatial queries. Australian census products will be described and students will be expected to analyse census statistics using GIS maps. The role of GIS in coordinating various forms of information for policy analyses, preparing master plans, in presenting information for development control, impact analyses and wider management purposes will also be covered. The use of GIS to support visualisation will be covered, using examples about designing development projects and planning instruments. Finally, the various forms of distributing maps to the public and policy-makers will be discussed. The unit integrates the hands-on learning of GIS software with a `research-based` approach. Teaching will involve short lectures, studios and workshops. Assessment will be on a series of smaller assignments and a larger report prepared by each student that integrates GIS-based (and other) graphics into a coherent policy analysis. In addition, each student will make oral presentations on their work in studio sessions.

## Urban and Regional Planning Specialisation

**PLAN9063**
**Strategic Planning and Design**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 1 **Classes:** Lectures 2 hrs/wk; site visits and workshops may be organised outside of timetabled hours **Prohibitions:** PLAN9027 **Assessment:** There are two assessments, each worth 50%. The assessments may include group work. Group work will be peer assessed. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of PLAN9063 Strategic Planning and Design is to provide students with grounding in the core knowledge and skills needed to practice as a contemporary planner. A key emphasis in the unit is understanding the skills needed to undertake strategic planning at a range of levels (both process and content). Strategic planning in one form or other is a generic process that underpins much of the work that planners and urban designers are involved in at varying spatial levels. This course will provide students with the basic skills required to function as a planner and it will also act as an introduction to a number of other units in the program by highlighting the connection between the work of a planner and the need to understand a range of different knowledge and skill areas. Basic skills may include basic demographic analysis, graphic presentation, governance audits, consultation strategies and survey tools, economic analysis, and GIS. In addition, this Unit of Study will enable students to develop generic skills such as group discussion, productive group work and organisation, negotiation skills and information literacy skills. This is an introductory core unit for the Urban Planning degree, a specialisation unit for the Master of Urbanism and an elective for the Urban Design degree.

**PLAN9045**
**Economics for the Built Environment**

**Credit points:** 6 **Teacher/Coordinator:** Prof Peter Phibbs **Session:** Semester 2 **Classes:** 4-day intensive (9am-5pm) **Assessment:** 2 x individual written reports of 2,000 words (70%); 1 x group presentation and report (30%). Peer assessment may occur for group work. **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of PLAN9045 Economics for the Built Environment is to introduce the key economic theories, processes and techniques used by contemporary urban planners. This unit of study has two parts. In the first part of the unit, students are introduced to the economic drivers shaping city and regional development outcomes, and the location and form of different land uses and how they evolve. The second part of the unit equips students with core technical skills, including project evaluation, economic impact analysis, development feasibility, and introductory aspects of public finance. A key focus of the course is to equip students with a very good working knowledge of property feasibility analysis.

**PLAN9064**
**Land Use and Infrastructure Planning**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dallas Rogers **Session:** Semester 2 **Classes:** Lecture 2 hrs/wk. Additional tuition time may be assigned for introduction to graphic plan making. **Assumed knowledge:** ARCH9100 **Assessment:** Two illustrated reports, each equivalent to 2,000 to 2,500 words, consisting of: 1 x individual report of short questions on key metropolitan concepts such as density and land use relationships (50%); 1 x group work on a local government Masterplan project where land use change is being leveraged from a major infrastructure project (50%). Peer assessment may apply to group work presentations.Practical field work:Second part of the semester involves group work in the field and in class. **Practical field work:** Second part of the semester involves group work in the field and in class. **Mode of delivery:** Normal (lecture/lab/tutorial) day

*Note: Department permission required for enrolment.*

This unit is concerned with planning, land use and infrastructure within the built environments. It emphasises conceptual knowledge with examples and case studies to demonstrate the application of concepts in practice. Students are encouraged to think independently, creatively and critically in developing understanding and practical knowledge about environmental planning at the metropolitan and local level. This unit is in two modules, each of which is assessed.

1. Land use, infrastructure planning and urban development: different forms of infrastructure and the role of infrastructure in creating good environments and urban development; transport and the space economy; accessibility, the emergence of transport technologies and their influence on urban form; the impacts of car travel on densities, dispersion, congestion, etc.; orthodox transport planning; transport systems management; mobility and accessibility; networks, centres, and development corridors; transit-oriented development and implications on urban form and structure. The Sydney Metropolitan Strategy and concepts and ideas associated with the current work of the Greater Sydney Commission are used as a main focus for this module.

2. Land use planning, development control and plan making: within the context of more effective land use planning, this module examines the process of assessing a local area (such as structure, form and understanding character), developing local vision and neighbourhood strategies and structure plan, translating the strategy and structure plan into basic land use and planning controls (such as building height, floor space ratio, heritage, and other local area provisions) and producing a basic plan for development control purposes. A case study is used for group work so as to understand how the plan making process evolves and is constructed for both the private and public realms. In 2015 and 2016, this involved working with an inner city local government on priority urban renewal issues. Questioning the assumptions and values that underpin planning controls and guidelines is a key skill emphasised in the unit via the group work.

And at least 6 credit points

**PLAN9049**
**International Urban Development Planning**

**Credit points:** 6 **Teacher/Coordinator:** Assoc Prof Paul Jones **Session:** Semester 1a **Classes:** Overseas Intensive Mode Â¿ lectures, seminars and group work discussions, International Field Trip. **Assessment:** Three major assignments: (1) group presentations overseas (20%); (2) group portfoilios and posters (45%); (3) individual reflection piece on the nature of informal urbanism as learned and experienced in the field (35%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment. Note: In 2018, this unit will be run as an overseas 8-10 day intensive and combined with the ITB Plancosmo Conference to be held in Bandung, April 2018. There is a cap of 20 students maximum in this unit.*

This unit is designed to fill a significant gap in the evolution of the urban and regional planning syllabus by focusing on urban issues in a developing country context. This unit is designed for planners and urban designers who may work in the field of international development and/or who have an interest in better understanding urbanisation, especially in the Asia and Pacific Region. The unit is run as an international field trip with the highly esteemed Insititute of Technology Bandung (ITB), Indonesia, and is based around the theme of `informal

urbanism'. By the end of this unit of study you should have an understanding of (i) the key policy themes of poverty, spatial justice, and environmental sustainability, (ii) tools to explore the nature of informal urbanism, including understanding patterns and types of urban form and structure at the local level, and (iii) cross cultural considerations in planning and urban design. The unit reflects the increasing internationalisation of Australian planning practice in better managing urbanisation, especially within the Asia and Pacific Region. It caters to the needs of local and international students intending to work on urban and regional planning projects internationally and wishing to better understand how the city is made and shaped incuding understanding dimensions of urban complexity.

*Textbooks*

Jones, P. (2016). Unpacking Informal Urbanism - Planning and Urban Design Education in Practice. Institute of Technology Bandung (ITB) University Press (Penerbit); Indonesia

**PLAN9073**

**GIS Based Planning Policy and Analysis**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Intensive June, Intensive November **Classes:** 4-day intensive (9am-5pm) **Assessment:** Two smaller analytical assessments (2 x 25%) and a larger report (50%) **Mode of delivery:** Block mode

*Note: Department permission required for enrolment.*

This unit is concerned with using GIS to analyse planning problems and undertake policy analyses. The unit will include a comprehensive introduction to mapping and the use of GIS: data structures, topology, projections, spatial and non-spatial queries. Australian census products will be described and students will be expected to analyse census statistics using GIS maps. The role of GIS in coordinating various forms of information for policy analyses, preparing master plans, in presenting information for development control, impact analyses and wider management purposes will also be covered. The use of GIS to support visualisation will be covered, using examples about designing development projects and planning instruments. Finally, the various forms of distributing maps to the public and policy-makers will be discussed. The unit integrates the hands-on learning of GIS software with a `research-based` approach. Teaching will involve short lectures, studios and workshops. Assessment will be on a series of smaller assignments and a larger report prepared by each student that integrates GIS-based (and other) graphics into a coherent policy analysis. In addition, each student will make oral presentations on their work in studio sessions.

**ARCH9090**

**Dialogue, Deliberation and Engagement**

**Credit points:** 6 **Teacher/Coordinator:** Dr Dallas Rogers **Session:** Intensive November **Classes:** Intensive workshop over 3 days (8:30am to 6:00pm); 28.5 direct contact hours; 6 hours follow-up tutorials **Assessment:** Assessment 1 Learning Journal (30%); Assessment 2 Comparative Critical Analysis of Two Journal Articles (30%); Assessment 3 Deliberative Design (40%) **Mode of delivery:** Block mode, Normal (lecture/lab/tutorial) day

This elective unit will help build the skills and knowledge to design and implement forms of dialogue, deliberation and engagement that are most effective. In the context of major changes to the way planning and design is carried out in NSW and more widely, this is an opportunity to develop independent study skills and perspectives on engagement and collaboration in planning and urban design. The unit allows for a visiting academic to teach a subject related to their speciality. Students will participate in lectures, tutorials, or other activities as needed to pursue the elective topic. Students will develop an understanding of a special topic through reports, projects, and/or tutorial exercises. The workshop format is a stimulating combination of practical experience and scholarly learning, involving people working in the field of community engagement and public participation - planners, urban designers, consultants, change agents, community development practitioners, policy makers, government staff - who have an interest or a requirement to engage citizens or communities.

*Textbooks*

Readings will be distributed prior to and during the Master Class. Students will also be referred to online publications for assessment purposes.

## Electives

Electives may be selected from any postgraduate units in the School of Architecture, Design and Planning, or, with the permission of the Program Director, from any other postgraduate course in the University.

**PLAN9075**

**Urban Data and Science of Cities**

**Credit points:** 6 **Teacher/Coordinator:** Dr Somwrita Sarkar **Session:** Semester 1 **Classes:** lecture 1 hr/week; tutorial 2 hrs/week **Assumed knowledge:** Undergraduate-level mathematics and statistics, some experience with programming preferred **Assessment:** assessment 1 (individual) (25%), major project (group) (20%), major project (individual) (50%), tutorial exercises and class participation (individual) (5%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The discipline of Science of Cities examines relationships between the physical form of cities and the social, cultural, economic, technological and spatial processes that give rise to this form. As technology evolves and changes, so do the ways in which we make and think about our cities. In this era of unprecedented and fast-accelerating changes, digital technologies are reshaping the ways in which we measure, sense, conceive of, design and plan for our cities. As a result, we collect and store large amounts of data on every aspect of the urban environment, but it is as yet unclear how this data can be used to inform evidence based planning and urban management. This unit of study will introduce the principles of science of cities and the tools, methods, algorithms and techniques on big urban data that enable transformative ways of thinking about, designing and planning for a fast urbanizing world. Emphasis will be placed on developing understanding of urban structure and fast and slow dynamics shaping this structure. This transdisciplinary unit of study will be relevant for designers, planners, geographers, economists, physicists and data scientists interested in modelling urban systems.

*Textbooks*

Batty, M. (2015). The New Science of Cities. Cambridge, MA: MIT Press Townsend, A.M. (2013). Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia. New York: W.W. Norton Krugman, P. (1996). Confronting the mystery of urban hierarchy. Journal of the Japanese and International Economies, 10, pp. 399-418 Gabaix, X. (1999). Zipf's Law for Cities: An Explanation. The Quarterly Journal of Economics, 114(3), pp.739-767 Bettencourt, L., Lobo, J., Helbing, D., Kuhnert, C., and West, G.B. (2007). Growth, innovation, scaling and the pace of life in cities. PNAS, 104 (17), pp.7301-7306 Research and data reports, The Australian Bureau of Statistics (specific references provided through the unit)

**ARCH9091**

**International Field Trip**

**Credit points:** 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Intensive December **Classes:** Pre-trip lectures and 5 to 8 days (depending upon location) intensive studio **Prerequisites:** Successful completion of 24 credit points of study in current graduate program. **Assumed knowledge:** One or more of the following - MARC4201; MARC4102; PLAN9068; ARCH9064; PLAN9063; PLAN9073 (completion of one or more of these units will be a selection criterion if applications exceed places) **Assessment:** Two assessments, each 50%; both assessments may comprise group and individual work. Peer assessment of group tasks may be required. **Practical field work:** 5 to 8 days intensive overseas studio **Mode of delivery:** Block mode

*Note: The studio is international, interdisciplinary and will involve collaboration with international universities and a quota on places is necessary given the practicalities of travel, collaboration and discipline balance between participants. A selection process will be necessary should application exceed place. Students will be required to pay for their participation in this unit including tuition fee, travel, accommodation, living expenses and a contribution towards the costs of delivering the unit in the field.*

The unit's primary aim is to develop international and intercultural perspectives on design and planning practices affecting spatial organisation across multiple scales (from building to city), and the transferability of these between different cultures. The studio will introduce aspects (culture, values, beliefs, history and geography) of a case country and may be undertaken in collaboration with a university of that country that have influenced spatial predispositions and practices. The urban structures, patterns and building types, and design and planning approaches, including regulatory principles arising from a different cultural setting will be explored. Theories and analytical

approaches concerned with interactions between form, use and movement at urban and architectural scales particular to the country will provide an inherent critique of many of Australia's ideas and methods. The unit will offer the challenge of developing architectural, urban design and urban planning proposals in a different context.

*Textbooks*
Readings will be made available with the Unit of Study outline.

**DESC9153**
**Graduate Internship**

**Credit points:** 6 **Teacher/Coordinator:** Associate Dean (Education) **Session:** Intensive December, Intensive July, Intensive November, Semester 1, Semester 2 **Classes:** Fieldwork **Assessment:** Log book signed by practice supervisor and report on the benefits of the internship (100); pass/fail only **Mode of delivery:** Professional practice

*Note: Department permission required for enrolment. Note: Masters students only. Graduate Diploma students with permission of the Program Coordinator. Advanced Standing will not be granted for this unit of study.*

The aims of the internship are to provide a direct link between the academic core of the course and the disciplines and methods of practice; to enable candidates to experience aspects of practice and provide the opportunity for them to work in areas of the field outside their specific expertise; to enable candidates to observe, analyse and comment on the interaction between theoretical and practical issues of their Program as it is practiced, and to establish connections between practice and the development of relevant research programs. The internship is intended to provide the opportunity for students to work in various situations in their Program's area. A secondary intention is that students use the opportunities of placement to broaden their own experience beyond the limitations of their chosen discipline. Candidates must find a suitable professional placement. Permission to enrol is given after the proposed placement has been approved by the Program Director. The host organisation will nominate a supervisor for the student for the internship. The student must complete at least 120 hours of full or part-time experience, supervised by a practicing designer (or other professional depending upon the field). A log-book of each day's work, signed by the supervisor must be submitted on completion. A 2000-word report on the benefits of the internship must also be produced. At the end of the internship the student will: demonstrate that they have completed a program of work (through a log-book); present a report; analyse their experiences and compare these to the theoretical content of the units they have completed, and suggest appropriate research directions so as to improve the complementarity of theory to practice.

**GOVT6163**
**Critical Challenges of Governing Cities**

**Credit points:** 6 **Session:** Semester 2 **Classes:** 1x1hr lecture/ week, 1x1hr seminar/ week **Assessment:** 1x1500wd issue analysis (20%), 1x1500wd research proposal (20%), 1x3000wd research report (50%), seminar participation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

In an urban society, cities form the locus for critical public policy challenges. This unit considers the multi-level, co-governance of cities in the comparative context of Western democracies. It considers the validity of contending theories of urban governance and explores the systemic tensions between public policy goals, such as subsidiarity and solidarity. It seeks to equip students with a critical understanding of the complexities and challenges of urban politics and policymaking in real world application.

# Overseas exchange

## Exchange in Urbanism

The school may approve international exchange for qualified students in graduate coursework master degrees.

Exchanges may be for one semester only. Students must apply through the Study Abroad and Exchange Office. Each student's program must be approved in consultation with the program director of the degree.

No program will be approved that involves the completion of more than 50 percent of the core requirements of the degree on exchange.

Exchange units should be taken as part of the degree, satisfying the requirements that would normally be covered at this university during the same period. Exchange should not be in addition to the degree requirements.

Exchange students are required to enrol in a full-time load at the University of Sydney and will incur the tuition costs associated with that load. No tuition costs will be incurred with the partner university.

Specially designated units of study will be recorded on the transcript. A result of 'SR' for 'Satisfied Requirements' will be recorded by the University against each successfully completed unit. The transcript of the exchange university will be the official detailed record of exactly what was completed during the exchange. Exchange results will not count towards a student's Weighted Average Mark.

For more information please contact the Study Abroad and Exchange Office.

The exchange units for enrolment at the University of Sydney, to be approved with the program director, shall be selected from the following table.

| *Unit of study* | *Credit points* | *A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition* | *Session* |
|---|---|---|---|
| **Graduate exchange units** | | | |
| **Core units of study** | | | |
| **DESC9660**<br>**Graduate Exchange Core A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9661**<br>**Graduate Exchange Core B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9662**<br>**Graduate Exchange Core C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9663**<br>**Graduate Exchange Core D** | 6 | | Semester 1<br>Semester 2 |
| **DESC9672**<br>**Graduate Exchange Core E** | 12 | | Semester 1<br>Semester 2 |
| **Optional units of study** | | | |
| **DESC9664**<br>**Graduate Exchange Optional A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9665**<br>**Graduate Exchange Optional B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9666**<br>**Graduate Exchange Optional C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9667**<br>**Graduate Exchange Optional D** | 6 | | Semester 1<br>Semester 2 |
| **Elective units of study** | | | |
| **DESC9668**<br>**Graduate Exchange Elective A** | 6 | | Semester 1<br>Semester 2 |
| **DESC9669**<br>**Graduate Exchange Elective B** | 6 | | Semester 1<br>Semester 2 |
| **DESC9670**<br>**Graduate Exchange Elective C** | 6 | | Semester 1<br>Semester 2 |
| **DESC9671**<br>**Graduate Exchange Elective D** | 6 | | Semester 1<br>Semester 2 |

# Postgraduate research

## Research degrees

The Sydney School of Architecture, Design and Planning offers three research degrees: the Master of Philosophy (Architecture), the Doctor of Philosophy and the Doctor of Science in Architecture.

**Master of Philosophy (Architecture) (MPhil(Arch))**
The research master's program allows a candidate to undertake research and advanced specialisation in any of the five research groups established in the School. Entry requirements for the MPhil(Arch) include a bachelor's degree with first or second class honours in a relevant discipline. The program is generally completed in four research periods of full time or eight research periods of part time study. The final thesis for the conventional Master of Philosophy (Architecture), including those completing a thesis with publications, is expected to be in the range of 30,000 – 60,000 words.

However, there are variations to the above. Where a student has been formally admitted to the MPhil option based on completing an approved creative works mode (as referred to in the Thesis and Examination of Higher Degrees by Research Policy 2015), candidates will produce an exhibition-type presentation of their work (openly available to the academic community) that is accompanied by text no more than 15,000 words in length, except by permission of the relevant Head of Discipline.

Where a student has been formally admitted into a design based MPhil option (previously referred to as Studio-based MPhil option in the School MPhil resolutions of this Handbook), students may produce an agreed design work accompanied by text no more than 15,000 words in length. Alternatively, they may produce a thesis in the normal 30,000-60,000 word range.

For all MPhil options, the thesis type and submission requirements, including word length, will be confirmed with the student, supervisor, the Design PhD Director (if applicable if the student is enrolled in that mode) and the Associate (Research Education) at the students Confirmation of Candidature hearing. After discussion with their supervisor or Design PhD Director (if applicable), students need to clearly identify the type of MPhil submission option they are applying for at the time of application.

**Doctor of Philosophy (PhD)**
This research degree is awarded for a thesis considered to be a substantial, original contribution to knowledge in one of the five research groups in the School. Entry requirements include a research master's degree or a bachelor's degree with first- or second-class honours in a relevant discipline. Alternatively students may be admitted having passed a qualifying examination at an equivalent standard. This examination could be completion of a period of relevant advanced study and research towards a master's degree at the University of Sydney. The PhD is normally completed within eight research periods of full time or 16 research periods of part time study. Students will be eligible for assessment through either the conventional submission of a written thesis of 60,000 to 80,000 words, which may include a thesis with publications. However, there are variations to the above. Where a student has been formally admitted into a PhD option based on completing an approved creative works mode (as defined in the University Higher Degree Research and Procedures Policies 2015), students will produce an exhibition-type presentation of their work (openly available to the academic community) that is accompanied by a text of 30,000 to 50,000 words that frames their creative works.

Where a student has been formally admitted into a Design based PhD option (previously referred to as Studio-based PhD option in the School PhD resolutions of this Handbook), students may produce agreed design work accompanied by a text no more than 30,000 to 50,000 words in length. Alternatively, they may produce a thesis in the normal 60,000 - 80,000 word range.

For all PhD options, the thesis type and submission requirements, including word length, will be confirmed with the student, supervisor, the Design PhD Director (if applicable if the student is enrolled in that mode) and Associate (Research Education) at the students Confirmation of Candidature hearing. After discussion with their supervisor or Design PhD Director (if applicable), students need to clearly identify the type of PhD submission option they are applying for at the time of application.

**Doctor of Science in Architecture (DScArch)**
This degree is awarded for published work that, in the opinion of the examiners, has generally been recognised by scholars in the field concerned as a distinguished contribution to knowledge or creative achievement. The candidate shall be a graduate of at least five years standing. If the candidate is not a graduate of the University of Sydney he or she must have been a full-time member of academic staff of the University for at least three years or have had similar significant involvement in the teaching and research of the University.

## Research Groups

The Sydney School of Architecture, Design and Planning is a multidisciplinary school. To assist research students to maintain a close relationship with other students and academics of similar academic interest to them, a range of Research Groups has been established. These are:

- Architecture Theory and History
- Architectural Design
- Architecture Science
- Design
- Urban and Regional Planning and Policy

Each Research Group is under the leadership of a senior academic staff member, and usually closely involves research students, postdoctoral fellows and visiting scholars as well as academic staff of that discipline. Their purpose is to promote a stimulating and productive atmosphere for research and research students and to promote discussion among like-minded research students and academics about their own research and other contemporary topics. This is usually done through a regular research seminar.

As part of their probationary requirements, research students are expected to make a public presentation of their research topic before the end of the first 12 months of candidature. The primary audience, apart from the supervisor, auxilary supervisor, and other academic staff and researchers with close interest in the subject, is students in the Research Group. It is anticipated, however, that such presentations will be made known to the entire school staff and research student body, and that at least one academic staff member from outside the research student's indicated Research Group, along with the candidate's supervisory committee, will be invited to serve on the panel assessing the presentation of the proposed research.

Note that Research Groups have no official status for students and are not recorded on academic transcripts. Students are directed to a Research Group on the basis of the academic interests of the intended supervisor. However, it is up to the student to take an interest in that group or any other group.

# Requirements of your candidature

All students are required to make timely progress with their research and to submit their theses on time. Students commencing from 2005 have the following maximum time limits:

- PhD full-time candidature: 16 research periods (equivalent to 4 calendar years)
- PhD part-time candidature: 32 research periods (equivalent to 8 calendar years)
- MPhil full-time candidature: 8 research periods (equivalent to 2 calendar years)
- MPhil part-time candidature: 16 research periods (equivalent to 4 calendar years)

It is important that you keep in regular contact with your supervisor, ideally meeting once a week especially during crucial periods of your candidature. Students are required to submit to their supervisor a brief written summary documenting the results of each supervisory meeting. To ensure that students progress satisfactorily, all research students are placed on probation for 2 research periods and are required to fulfil certain criteria. These are listed below. Once the service requirements have been completed satisfactorily, candidature will proceed on a permanent basis.

Any change in candidature (such as suspension or change in supervisor) must be agreed with your supervisor and notified in writing via Sydney Student to the Higher Degree Student Administration Centre.

## Probationary requirements

The requirements for satisfactory completion of the probationary period include:

- the submission of a satisfactory Research Proposal to the candidate's supervision committee
- the presentation of the Research Proposal to the candidate's committee at a public seminar
- demonstration of adequate English language competency to the candidate's committee
- completion of the unit of study ARCF 9001 Modes of Inquiry: Research and Scholarship in the first semester of enrolment
- satisfactory completion of a structured first year as determined by the Associate Dean (Research Education) in consultation with supervisors in disciplinary areas
- a recommendation from the candidate's supervisor, on the advice of the candidate's committee, that the probationary requirements have been met.

## Supervision committee

A supervision committee is established for each candidate during their probationary year and consists of your supervisor and one or more other members of the academic staff selected by your supervisor in consultation with you.

The role of the committee is to act both as a resource concerning candidature and as an assessment committee for your probationary requirements. As part of the committee you need to select an auxillary supervisor, if one has not already been appointed.

## Guidelines for your research proposal

The first year of the MPhil and PhD is probationary. You need to demonstrate that you are capable of carrying out doctoral or master's-level research at the University of Sydney and to satisfy the probationary requirements listed in the school resolutions and set by your supervisor. The demonstration of your capacity to undertake research at a doctoral or master's degree level is done through the development, submission, presentation and assessment of a formal research proposal. The thesis research proposal is presented to your supervision committee. It is on the basis of your research proposal that your committee makes a recommendation concerning your continuing candidature.

The research proposal should be 7000 to 12000 words long (15-25 pages) and include the following:

- the area and focus of the proposed research, along with a set of aims and objectives and the importance of the research;
- a critical literature review that establishes the background of the proposed research and identifies gaps that this research proposal will address;
- an indication of ability to make progress with the research;
- a research plan including research design, details of methods, management plan and time lines tied to the objectives; and
- potential outcomes if the research is successful.

Your formal research proposal should demonstrate adequate English language skills and your ability to successfully complete such a program. Research proposals will be presented at a public research seminar.

## Criteria used to evaluate research proposals

The general criteria used to evaluate student research proposals are as follows:

- Are the aims and objectives clearly stated, feasible and consistent with the school's research interests?
- Does the student demonstrate knowledge of the key areas of the research literature?
- Is the research plan viable?
- Is the proposed methodology sound and feasible?
- Do the potential outcomes merit the research proposal?
- Are there adequate resources available to enable the candidate to complete the proposed research?
- Do the proposal and its written and oral presentation indicate a satisfactory command of English, sufficient to enable the applicant to undertake MPhil or PhD research at the University of Sydney?

The major part of the research must be completed within the University, although a period of six months leave may be granted by the Associate Dean (Research Education) to enable fieldwork to be completed.

## Annual progress report and interview

You are required to submit a progress report annually (usually either May or October- based on your commencement date), regardless of when you commenced your candidature. This is reviewed by your supervisor, an academic panel and the Associate Dean (Research Education) and you will be notified of the result of this review, when any problem areas or training needs are identified. As part of your first annual progress review, you will be interviewed by the academic panel to discuss your general progress, facilities, resources and supervision.

## Suspension of candidature

If you need to suspend your candidature, you should first consult with your supervisor and then enter your request (stating the reasons) via Sydney Student. This request will be forwarded for review and approval. You will receive written confirmation of the suspension by the Higher Degree Student Administration Centre. Suspension of candidature is by research period, and except with the approval of the Associate Dean (Research Education) you may suspend your candidature for a maximum total of one full academic year only. For domestic students, during suspension your Research Training Scheme entitlement will be suspended, as will any scholarship payments. You will be granted an extension to your candidature equivalent to the length of the suspension. International students may be required to leave the country while their candidature is suspended and should seek advice from the International Office before taking any action.

## Leave of absence

If you need to take a break from your research for less than a research period, a leave of absence may be granted. You should follow the same procedure as for suspension (see above). You will not be granted an extension to your candidature for a leave of absence but you may, if not quite finished by the due date, apply for an extension equivalent to the length of absence.

## Extension of time

If, as your latest submission date approaches, it becomes obvious that you need more time, you are urged to discuss this with your supervisor or the Associate Dean (Research Education) at the first available opportunity. Late submission of theses is a serious concern for the school and the earlier we know about it the easier it will be to take action to help you and us.

# Coursework for research students

Students in research degrees may include up to 24 credit points of coursework in their studies, including Modes of Inquiry.

Students who require some background in a particular area that is of relevance to their research may, with the approval of their supervisor, request to enrol in other undergraduate or postgraduate units of study offered by this school or other faculties.

There will also be additional modules that will be required for completion, these may change from time to time. You will be advised upon enrolment of which modules will need to be completed during yor probationary period.

The unit of study listed below is a probationary requirement for all MPhil and PhD students in the school.

**ARCF9001**
**Modes of Inquiry: Research and Scholarship**

**Credit points:** 6 **Teacher/Coordinator:** Prof Robyn Dowling **Session:** Semester 1, Semester 2 **Classes:** Intensive; activities comprise lectures, seminars, workshops and tutorials **Assessment:** Written research proposal (50%), oral research proposal (50%) **Mode of delivery:** Block mode

*Note: Permission required unless enrolled in a research degree. This unit is a probationary requirement for all MPhil and PhD students in the Faculty of Architecture, Design and Planning.*

This unit is a seminar with mini-lectures, presentations by members of the academic staff about research and scholarship methods in which they are most expert, critical review of readings, discussions based on the seminar material, and research pre-proposals. Objectives and Learning Outcomes: To provide newly admitted research students with a fundamental understanding of the nature of inquiry through research, the philosophy of scientific research and interpretive scholarship and a range of fundamentally different epistemologies or 'modes of inquiry.' The modes of inquiry explored include (1) empirical, field-based epistemology used heavily in architectural science, urban planning and other field-based research, including experimental, quasi-experimental, survey, naturalistic, ethnographic and case study methods; (2) text-based, interpretive epistemology used heavily in architecture and the allied arts and other humanities, including archival, historical, theoretical, interpretative, discourse analysis and other text based methods; (3) computationally-based epistemology used heavily in design computing and other IT-based disciplines, including axiom and conjecture based, simulation, virtual reality, and prototype development methods; and (4) policy-oriented, communication-contingency and modelling epistemologies used heavily in urban and regional planning and other policy-based disciplines, including archival, strategic and evidence-based policy research, communications and morphological analyses and quantitative modelling; as well as (5) interdisciplinary combinations, triangulations and mixed modes.

# Master of Philosophy (Architecture)

## Master of Philosophy

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the School, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

### Course resolutions

### Part 1: Preliminary

#### 1 Course codes

| Code | Course title |
|---|---|
| RMPHLARC-01 | Master of Philosophy |

### Part 2: Admission requirements

#### 2 Eligibility for admission to candidature

(1) To be eligible to be admitted to candidature by the Head of School and Dean or Associate Dean, an applicant must hold or have completed the requirements for:
(a) a bachelor's degree with first or second class honours from the University of Sydney in a relevant discipline; or
(b) a master's degree from the University of Sydney in a relevant discipline.
(2) The Head of School and Dean or Associate Dean may admit to candidature an applicant who does not meet the requirements of sub-clause (1), provided that the applicant:
(a) holds a qualification or qualifications that, in the opinion of the School Research Graduate Studies (RGS) Committee, are equivalent to those prescribed in sub-clause (1); or
(b) a portfolio of work demonstrating innovative practice, that in the opinion of the Associate Dean (Graduate Studies) or Head of School and Dean, is equivalent to the above awards.

#### 3 Application for admission to candidature

(1) An applicant for admission to candidature must submit to the School:
(a) satisfactory evidence of the applicant's eligibility for admission;
(b) the proposed method of candidature, being that of either:
(I) conventional research and thesis; or
(II) studio-based research and an exhibition-type presentation of their work (openly available to the academic community) and an exegesis;
(c) a proposed course of research and advanced study including;
(I) for applicants wishing to pursue their candidature by research and thesis, provide a 500 word summary of their proposed area of research; and
(II) for applicants wishing to pursue their candidature by studio-based research and research paper, a portfolio providing evidence of the applicant's knowledge and capability and a 500 word summary of their proposed area of research.
(d) a statement certifying the applicant's understanding that, subject to the HDR Rule, if the candidature is successful, his or her thesis, or exegesis and record of studio-based work, will be lodged with the University Librarian and made available for immediate public use;
(e) evidence of minimum English language requirements, where not demonstrated by academic qualifications; and
(f) the contact details of two academic or practitioner referees.
(2) In addition, an applicant for admission to part-time candidature must submit a statement that he or she will have sufficient time available to complete the requirements of the degree in accordance with these resolutions.

#### 4 Credit transfer

The HDR Rule specifies the conditions for the granting of credit for previous studies, including the effect on completion times, except that for coursework no more than 6 credit points may be credited

### Part 3: Candidature

#### 5 Appointment of supervisor

The Head of Department will recommend a supervisor and associate supervisor for each candidate in accordance with the HDR Rule and Academic Board policies for postgraduate research higher degree supervision, which recommendation will be submitted for approval by the Research Graduate Studies (RGS) Committee.

#### 6 Control of candidature

The HDR Rule specifies the conditions for the control of candidature by the University.

#### 7 Location of candidature and attendance

The HDR Rule specifies the conditions for the location of candidature and attendance by candidates at the University.

## Part 4: Requirements

### 8 Degree requirements

(1) To satisfy the requirements of the degree candidates must:
(a) complete any specified probationary requirements;
(b) complete any prescribed units of study; and
(c) conduct research on the approved topic.
(2) In addition,
(a) candidates proceeding by research and thesis must submit for examination a thesis embodying the results of the research.
(b) candidates proceeding by studio-based research and exegesis must submit for examination:
(I) a permanent record of the studio-based work (must be in the form of durable, portable visual, audio-visual, or other digital media); and
(II) a research paper on the creative work or exegesis.
(c) all items submitted must pass examination.

### 9 The thesis and research paper

(1) A candidate proceeding by research and thesis shall produce a thesis that:
(a) meets the requirements specified in the HDR Rule; and
(b) is in the range of 30,000 to 60,000 words
(2) A candidate proceeding by studio-based research and research paper shall produce an exegesis that:
(a) meets the requirements specified in the HDR Rule: and
(b) is no more than 15,000 words in length, except by permission of the relevant Head of Discipline.

## Part 5: Enrolment and progression

### 10 Probation

(1) A candidate is normally accepted for candidature on a probationary basis for a period not exceeding one year according to the provisions of the HDR Rule.
(2) In the probationary period each candidate must:
(a) complete the 6 credit point core unit of study;
(b) complete any structured program specified by the Head of School and Dean or Associate Dean;
(c) develop and present a refined research proposal at a public seminar, to the satisfaction of the candidate's supervision committee; and
(d) demonstrate adequate English language competency for the completion of the degree to the candidate's supervision committee.

### 11 Time limits, earliest and latest submission dates

The HDR Rule specifies the allowable completion times and submission dates available for full- and part-time candidates in this course.

### 12 Mode of attendance

The attendance pattern for this course is full-time or part-time in agreement with the School;

### 13 Discontinuation of candidature

A candidate may discontinue enrolment in a unit of study or the degree subject to the conditions specified by the HDR Rule.

### 14 Suspension of candidature

Subject to the other conditions of the HDR Rule, a candidate may suspend candidature for a maximum of two semesters.

### 15 Leave of absence

A candidate may take leave of absence from the degree subject to the conditions specified by the HDR Rule.

### 16 Progress

A candidate is required to maintain satisfactory progress towards the timely completion of the degree. Progress will be reviewed annually according to the provisions of the HDR Rule.

## Part 6: Examination

### 17 Examination of the thesis

(1) Examination of both the thesis and the studio-based work (which has been exhibited in some venue or in some manner approved by the RGS Committee) and exegesis will be conducted in general accordance with standards prescribed by Academic Board for the Doctor of Philosophy, except that:
(a) three months prior to the anticipated submission of the thesis, when a candidate is advising the School of approaching completion, the candidate must also submit three copies of a summary of the thesis or research paper, of not more than 300 words, for distribution to potential examiners;
(b) three copies of the thesis, or exegesis and record of the studio-based work, shall be submitted by the candidate;
(c) two examiners will be appointed by the School, at least one of whom shall be external to the University; and
(d) the examiners shall provide a written report to the Head of Department detailing the outcome.

### 18 Award of the degree

The degree is awarded at the Pass level only.

## Part 7: Other

### 19 Transitional provisions

(1) These course resolutions apply to students who commenced their candidature after 1 January, 2016 and students who commenced their candidature prior to 1 January, 2016 who elect to proceed under these resolutions.
(2) Candidates who commenced prior to 1 January, 2016 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed within the time limits specified in those resolutions. The Head of School and Dean or Associate Dean may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

# Doctor of Philosophy

The degree of Doctor of Philosophy is a University degree governed by Resolutions set down by the Academic Board. Candidates should be familiar with the Academic Board documents Thesis and Examination of Higher Degree by Research Policy 2015 and University of Sydney (Higher Degree by Research) Rule 2011.

See the Policy Register sydney.edu.au/policies for the most up-to-date versions of these resolutions.

Candidates in The Sydney School of Architecture, Design and Planning are also governed by the following resolutions:

## Doctor of Philosophy

*These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the School, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

### Course resolutions

#### 1 Course Codes

| Code | Course title |
|---|---|
| RPPHDARC-01 | Doctor of Philosophy |

#### 2 Course structure and requirements

(1) For the Doctor of Philosophy (PhD) in the University of Sydney School of Architecture, Design and Planning, candidates undertake an approved program of supervised, advanced research, which constitutes an original contribution to knowledge. Students will be examined for the degree by completing a body of work presented in one of two forms:

(a) a substantial written thesis of 60,000-80,000 words that, through a sustained investigation, demonstrates an original contribution to knowledge; or

(b) a thesis comprising a substantial body of creative work for exhibition plus a written text of 30,000-50,000 words examining the histories and theoretical underpinnings of the creative work, both of which demonstrate an original contribution to knowledge.

(2) For the dual mode (b) above, the length of the written thesis will be agreed through consultation between the candidate, the supervisory team and the Head of Discipline during the probationary period and any changes will need to be approved by the supervisor and Head of Discipline.

#### 3 Application for admission to candidature

(1) Applicants for a proposed course of research and advanced study must include:

(a) for applicants wishing to pursue their candidature by research and thesis, a 500 word summary of their proposed area of research; and

(b) for applicants wishing to pursue their candidature by studio-based research and text, a portfolio providing evidence of the applicant's knowledge and capability and a 500 word summary of their proposed area of research.

#### 4 Degree requirements

(1) Candidates proceeding by studio-based research and text must submit for examination:

(a) a permanent record of the studio-based work (must be in the form of durable, portable visual, audio-visual, or other digital media); and

(b) a research paper or text on the creative work.

# RESEARCH

## Areas of research interest

### Architectural Theory and History

The Architectural Theory and History Research Group at the University of Sydney advances scholarship in the architectural humanities. With strength in the architectural uptake of continental philosophy, studies in the architectural consequences of postmodern culture, and in the agency of historical knowledge in architecture, the Group provides a platform for the work of approximately fifty academic staff and PhD students.

Each of the Group's four units maintain a programme of seminars, workshops and other opportunities for discussion and research training. These units focus on architectural theory, Asian architecture and urbanism, civic and sacred modernism, and postmodern culture. All events are open to members of the University community and to members of the general public.

For further information contact Professor Andrew Leach (andrew.leach@sydney.edu.au) or any member of the research group.

*Architectural Design*

*Architectural computing and digital media*

- digital architecture
- generative architectural design
- parametric modelling
- digital design generation
- building information management
- architectural animation.

*Advanced Manufacturing and Prefabrication - Innovation in Applied Design*

The Innovation in Applied Design Lab (IAD Lab) is a collaborative cross-disciplinary research Laboratory within The Sydney School of Architecture, Planning and Design.

The IAD Lab's strategic focus on "applied design" is broadly conceived to include a wide range of R&D projects and problems spanning a range of scales and disciplines involved in the design, study and construction of the built environment. The IAD Lab provides a hub for researchers within the school, and creates opportunities for its Industry Partners to build Research and Development capacity.

For further information contact Associate Professor Mathew Aitchison (mathew.aitchison@sydney.edu.au) or any member of the research group.

### Architectural and Building Science and Technologies

The Architectural and Building Science and Technologies research group seeks to understand and manage the phenomena affecting building performance, and also the effects of buildings on external and internal environments, and their occupants. Our research activities are organised into three labs: Indoor Environmental Quality, Spacial Audio and Acoustics Lab, and the Lighting Lab.

Architectural science research undertaken in the Sydney School of Architecture, Design and Planning is world class. We combine cutting edge research infrastructure, a critical mass of world-leading research personnel, and research environment conductive to the development of creative solutions for the significant research challenges facing the built environment.

It is possible to undertake some advanced coursework within higher degree research programs.

For further information contact Professor Richard de Dear (richard.dedear@sydney.edu.au) or any member of the research group.

#### Areas of research

*Indoor Environmental Quality Lab*

The mission of the IEQ Lab is to quantify and improve the quality of internal environments in buildings where we spend over 90%of our day-to-day lives. The lab applies rigorous scientific methods to identify and quantify the impacts of indoor environments on comfort, health, wellbeing and productivity of their occupants. From that analysis comes occupant-centred, evidence-based design guidance that is relevant to both the design-stage and operational-phase of a building's life-cycle.

- Adaptive thermal comfort
- Climate chamber and field studies of thermal comfort
- Non-steady-state thermal comfort and alliesthesia
- Indoor air quality and ventilation rates
- interactions between IEQ elements of thermal, lighting, acoustics and indoor air quality
- Building rating tools for IEQ
- Post occupancy evaluation of built environments by their occupants
- Impacts of IEQ on productivity and performance

*Spatial Audio and Acoustics Lab*

The Spatial Audio and Acoustics Laboratories in the School of Architecture, Design and Planning at the University of Sydney support research and teaching concerned with sound in the built environment. They are among Australia's most capable research facilities for acoustics and audio.

Acoustics is one of the main contributors to the quality of the built environment, but poses many challenges because sound cannot be seen and it behaves in complex ways. It has a profound effect on human communication, comfort, productivity and enjoyment. audio systems are a part of almost every building, and play a substantial role in supporting human activity. The Spatial Audio and Acoustics Labs provide a context for advanced research on problems of acoustics and audio applications, contributing to improving the sound environment in which we live.

- Room acoustics
- Psychoacoustics, including loudness and spatial hearing
- Audio reproduction quality and signal processing
- Simulation and auralisation of acoustical environments
- Acoustic aspects of Indoor Environmental Quality
- Advanced measurement techniques
- Auditory display and sonification.

### *Lighting Lab*

The lighting research program at the University of Sydney concentrates on forward-looking applications of light, to provide leading ideas on how the characteristics of future technologies can be leveraged to maximize benefit to human users of light. The researchers in the lab question the status quo of lighting design practice to develop innovative, sometimes fundamentally new, ways of using lighting in architectural spaces. Experiments investigate the impacts of these applications on both the experience of human users of architecture and energy consumption.

A variety of projects revolve around three research focus areas: the spectrum of illumination, the spatial distribution of light, and user control of lighting.

- Applications of emerging and next-generation lighting technologies
- Visual perception, particularly colour vision
- Novel light source spectra for improved efficacy
- Colorimetry and development of colour standards
- Innovative modes of lighting control and human interaction.

### *Sustainable design*

- Cultural sustainability through integration of architectural science, archeological and heritage conservation knowledge
- Form and space making potential of sustainable design
- History of climatic design in Australia
- Simulation of building environmental performance
- Comfort analysis of urban outdoor and semi-outdoor microclimates
- Building integration of renewable energy sources.

## Design Lab

The Design Lab is committed to interdisciplinary, design-led research that leads to improved interactions and experiences through and with digital technology.

Research in the Design Lab focuses on three core aspects of design: the process and theory of human-centred design; the design of innovative solutions; and the use of digital products.

Research projects in the Design Lab span the two broad areas of interaction design and creative technologies. These areas are combined and extended through collaborations across and beyond the Design Lab into more specialised research areas including design thinking, experience design, interactive media, media architecture, urban informatics, urban data design, human-robot interaction, computational creativity, and wearable technology. The members of the Design Lab apply their research to a diverse range of applications including architecture, urban and regional planning, transport, healthcare, education, and the creative industries.

The Design Lab provides the environmental and resources to facilitate collaborations with industry and communities, providing opportunities for enhancing current practice, environments, and systems through design.

For further information contact Associate Professor Martin Tomitsch (martin.tomitsch@sydney.edu.au) or any member of the discipline.

### Areas of research

#### *Creative Systems and Robotics*

Research on creative systems in the Design Lab includes the development and evaluation of computational models of individual and social creativity. Computational models of individual creativity involve an agent and some environment that the agent can change; design is fundamentally about how an agent changes their environment. The aim of these models of social creativity is to provide frameworks for investigating the nature of creativity without the additional complexities inherent in human societies. Research in this stream includes the exploration of social robotics with a focus on the interaction between humans and social robots.

#### *Data Analytics and Visualisation*

Research in this stream focuses on two areas: using data analytics to drive design and design decisions, and the human-centric, aesthetic visualisation of digital information. These areas are applied across a range of application areas and scales, from urban planning to health informatics, and from online visualisation tools to large-scale dashboard visualisations.

#### *Designing for Health and Wellbeing*

Research on health and wellbeing in the Design Lab combines design-led research practice with creative technologies to investigate how computing technologies can help to support healthy living and life styles in home environments, at work, and in cities.

#### *Media Architecture and Smart Cities*

The Design Lab's research on media architecture focuses on design issues, technological challenges and social aspects around the integration of digital technologies into the urban space. It uses a research-through-design approach to conceptualise, develop, and evaluate interventions

that link digital and physical spaces with the aim to improve urban liveability. This research stream includes the investigation of design-led approaches to smart city solutions, that focus on empowering citizens and civic leaders through targeted interventions

*Performance, Body and Technology*

Research in this stream focuses on the development of methods for working with the creative potential of the moving body, drawn from movement improvisation, dance and somatic practices, which can be appropriated by designers. This includes research on wearable technologies across a range of applications areas, including physical activity and health.

*Urban Data Science*

The Design Lab's research on urban data science is pushing the interface between traditional urban studies, economics, design, and planning and new multi-disciplinary regimes brought in by research in complex systems, sensor technologies, network science, physics, machine learning and data science. This includes research on city science and urban computing, and the application of novel data mining and computational methods for solving problems in urban design and planning research. Research in this stream especially focuses on the social and economic dynamics of housing and transportation in the city.

# Urbanism

Urban and regional planning research has been established in the school since the late 1940s, covering a wide range of subject areas, including international studies with a focus on Southeast Asia and the Pacific; metropolitan planning; housing studies; regional policy and many other fields of policy and development. A recently established urban design program provides additional opportunities to conduct research into the design dimensions of urban form. The School is also home to the Cities Network http://sydney.edu.au/architecture/citiesnetwork/ and Urban Housing Lab http://sydney.edu.au/urban-housing-lab, and has strong links with the Festival of Urbanism http://www.festivalofurbanism.com, Henry Halloran Trust http://sydney.edu.au/halloran.

For further information contact Professor Nicole Gurran (nicole.gurran@sydney.edu.au) or any member of the research group.

## Areas of research

- urban planning and regional comparative planning systems
- collaborative environmental planning and management
- planning for environmental sustainability
- planning for housing accessibility, diversity and affordability
- coastal protection and growth
- informal urbanism
- social and environmental justice
- community forestry
- political ecology
- natural resource management
- sustainable development and climate change
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- poverty and inequality
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- community development and sustainable planning
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- gated communities
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- community forestry
- political ecology
- natural resource management
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- urban policy and planning locally and internationally
- suburban economic development
- poverty and inequality
- rural communities
- community development and sustainable planning
- urban planning research and education
- gated communities
- tourism development in Pacific urban planning
  development aid policy
- environmental impact assessments
- housing policy in developing countries
- Indigenous settlement and land tenure issues
- geographic information systems
- economic development
- planning support systems
- visualisation
- commuting behaviour
- spatial decision making.

# Resolutions of the Senate

## Resolutions of the Senate

### 1 Degrees, diplomas and certificates of the University of Sydney School of Architecture, Design and Planning

(1) With the exception of the Doctor of Science in Architecture and the Doctor of Philosophy, the Senate, by authority of the University of Sydney Act 1989 (as amended), provides and confers the following degrees, diplomas and certificates, according to the rules specified by the University of Sydney School of Architecture, Design and Planning. The Doctor of Science in Architecture and the Doctor of Philosophy are provided and conferred according to the rules specified by the Senate and the Academic Board.

(2) This list is amended with effect from 1 January, 2018. Degrees, diplomas and certificates no longer open for admission will be conferred by the Senate according to the rules previously specified by the School.

### 2 Degrees

| Code | Course title & stream | Abbreviation | Credit points |
|---|---|---|---|
| RHSARCHI-01 | Doctor of Science in Architecture | DScArch | Published Work |
| RPPHDARC-01 | Doctor of Philosophy | PhD | Research |
| RMPHLARC-01 | Master of Philosophy (Architecture) | MPhil(Arch) | Research |
| CC050 | Master of Architectural Science (single specialisation) | MArchSci | 72 |
| CC150 | Master of Architectural Science (double specialisation) | MArchSci | 96 |
| MAARCHIT-02 | Master of Architecture | MArch~~Sci~~ | 96 |
| MAHERICO-03 | Master of Heritage Conservation | MHeritCons | 72 |
| MAINDEAR-01 | Master of Interaction Design and Electronic Arts | MIDEA | 72 |
| MAINDEAR-02 | Master of Interaction Design and Electronic Arts (Specialisation) | MIDEA | 96 |
| MAURREPL-04 | Master of Urban and Regional Planning | MURP | 72 |
| MAURREPL-04 | Heritage Conservation | MURP(HeritCons) | 72 |
| MAURBDES-04 | Master of Urban Design | MUrbDes | 72 |
| MAURBNSM-01 | Master of Urbanism | MUrbanism | 96 |
| BUDARCHI-01 | Bachelor of Design in Architecture* | BDesArch | 144 |
| | Allied Arts in Architecture | BDesArch(AlliedArtsArch) | 144 |
| | Digital Architecture | BDesArch(DigitalArch) | 144 |
| | Urban Design and Planning | BDesArch(UrbDesPlan) | 144 |
| BPARCENV-01 | Bachelor of Architecture and Environments* | BArchEnv | 144 |
| BPDESCMP-02 | Bachelor of Design Computing* | BDesComp | 144 |

**may be awarded with honours following a further year of study.*

### 3 Combined degrees

| Code | Course title | Abbreviation | Credit points |
|---|---|---|---|
| BPENGDAR-01 | Bachelor of Engineering^ / Bachelor of Design in Architecture* | BE(Civil)/BDesArch | 240 |
| BHDARARC1000 | Bachelor of Design in Architecture (Honours) / Master of Architecture | BDesArchHons/MArch | 240 |
| | Bachelor of Design Computing/Bachelor of Advanced Studies | BDesComp/BAdvStudies | |
| | Dalyell | | |

**may be awarded with honours following a further year of study.*
*^may be awarded with honours in an integrated program.*

### 4 Graduate diplomas

| Code | Course title & stream | Abbreviation | Credit points |
|---|---|---|---|
| CF050 | Graduate Diploma in Architectural Science | GradDipArchSci | 48 |
| GNHERICO-03 | Graduate Diploma in Heritage Conservation | GradDipHeritCons | 48 |
| GNINDEAR-01 | Graduate Diploma in Interaction Design and Electronic Arts | GradDipIDEA | 48 |
| GNURREPL-04 | Graduate Diploma in Urban and Regional Planning | GradDipURP | 48 |

| Code | Course title & stream | Abbreviation | Credit points |
|---|---|---|---|
| GNURBDES-04 | Graduate Diploma in Urban Design | GradDipUrbDes | 48 |
| GNURBNSM-01 | Graduate Diploma in Urbanism | GradDipUrb | 48 |

## 5 Graduate certificates

| Code | Course title & stream | Abbreviation | Credit points |
|---|---|---|---|
| GCARCHSC-01 | Graduate Cerificate in Architectural Science | GradCertArchSci | 24 |
| GCHERICO-01 | Graduate Certificate in Heritage Conservation | GradCertHeritCons | 24 |
| GCINDEAR-01 | Graduate Certificate in Interaction Design and Electronic Arts | GradCertIDEA | 24 |
| GCURREPL-01 | Graduate Certificate in Urban and Regional Planning | GradCertURP | 24 |
| GCURBDES-01 | Graduate Certificate in Urban Design | GradCertUrbDes | 24 |

# Resolutions of the University School

## Resolutions of the University of Sydney School of Architecture, Design and Planning for coursework awards

*These resolutions apply to all undergraduate and postgraduate coursework award courses in the School, unless specifically indicated otherwise. Students enrolled in postgraduate research awards should consult the resolutions for their course. These resolutions must be read in conjunction with applicable University By-laws, Rules and policies including (but not limited to) the University of Sydney (Coursework) Rule 2014 (the 'Coursework Rule'), the resolutions for the course of enrolment, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: http://sydney.edu.au/policies.*

### Part 1: Course enrolment

#### 1 Enrolment restrictions

The Coursework Policy specifies the maximum number of credit points that students may take in any given semester without further approval. The School does not encourage full-time students to exceed the recommended enrolment patterns for its courses.

#### 2 Time limits

The Coursework Rule limits the time that students may take to complete their course. Part-time students should ensure that their enrolment pattern allows completion within the maximum time.

#### 3 Suspension, discontinuation and lapse of candidature

The Coursework Policy specifies the conditions for suspending or discontinuing enrolment, and for returning after these events. The Policy also defines the circumstances in which candidature is deemed to have lapsed. Students should pay careful attention to the relevant dates and their effect on results and financial liability.

#### 4 Credit for previous study

(1) Unless these resolutions or the relevant course resolutions specify otherwise, credit for previous study will be awarded in accordance with the provisions of the Coursework Policy. Credit shall not be granted for units of study gained with a Concessional Pass toward any course in the School.

(2) In postgraduate courses in the School, except the Master of Architecture,

(a) Full credit transfer will be allowed between postgraduate courses or streams in the same embedded sequence.

(b) Credit shall not be granted toward any internship unit.

(c) Credit limits are defined by the following table.

| Award course level | Maximum credit points |
|---|---|
| Masters Degree | 18* |
| Graduate Diploma | 18* |
| Graduate Certificate | 12** |

*Not more than 12 credit points of which can be credited towards the core unit requirements. **Credit will be granted only for units from the School's table of graduate units of study completed as non-degree study, prior to commencement of candidature.

### Part 2: Unit of study enrolment

#### 5 Undergraduates enrolling in postgraduate units of study

(1) Undergraduate students who have completed at least 96 credit points with a WAM of at least 70 may, with the permission of the Unit Coordinator concerned, enrol in postgraduate units of study to count toward elective requirements.

#### 6 Cross institutional study

The Head of School and Dean or Associate Dean Education may permit a student to complete a unit of study at another institution and have that unit credited to the student's course requirements, provided that:

(a) The unit of study content is not taught in any corresponding unit of study at the University; or

(b) The student is unable, for good reason, to attend a corresponding unit of study at the University.

(c) Cross institutional study is regarded as another form of credit and will be counted toward any relevant credit limit.

#### 7 International Exchange

(1) The School encourages students to participate in international exchange programs.

(2) The following conditions and limitations apply:

(a) Candidates for the Bachelor of Design Computing, Bachelor of Design Computing/Bachelor of Advanced Studies, Bachelor of Design in Architecture, Bachelor of Architecture and Environments, Bachelor of Design in Architecture (Honours)/Master of Architecture combined degree, and postgraduate coursework master degrees are allowed to participate in international exchange programs.

(b) For postgraduate coursework master degrees, the duration of exchange program is limited to one semester and no more than 50% of the core requirements of the degree can be taken during the exchange.

(c) For the Bachelor of Design Computing, Bachelor of Design in Architecture, Bachelor of Architecture and Environments, Bachelor of Design in Architecture (Honours)/Master of Architecture combined degree, exchange programs are available after successful completion of at least one year of full-time study.

(d) Exchange programs will not be approved in the last semester of study.

(3) For more information on international exchange, refer to the Sydney Global Mobility Office.

## Part 3: Studying and Assessment

### 8 Attendance

(1) Students are required to be in attendance at the correct time and place of any formal or informal examinations. Non-attendance on any grounds that is insufficient to claim special consideration or disability adjustment will result in the forfeiture of marks associated with the assessment. Participation in a minimum number of assessment items may be included in the requirements specified for a unit of study.

(2) Students are expected to attend a minimum of 90% of timetabled activities for each unit of study, unless granted exemption by the Head of School and Dean, Associate Dean Education or relevant Unit Coordinator. The Head of School and Dean, Associate Dean Education or relevant Unit Coordinator may determine that a student fails a unit of study because of inadequate attendance. Alternatively, at their discretion, they may set additional assessment items when attendance is lower than 90%.

### 9 Late submission of work

(1) It is expected that unless a simple extension, special consideration or disability adjustment has been granted, students will submit all assessment items for a unit of study on the due dates specified. If an assessment is submitted or otherwise completed within a period of extension granted by successful application for simple extension, special consideration or an assessment adjustment determined by Disabilty Services, no academic penalty will be applied to that piece of assessment.

(2) If an extension is not sought, not granted, or is granted but work is submitted after the extended due date, the late submission of assessment will result in an academic penalty as follows:

(a) For non-public assessments, work submitted after the deadline will incur a penalty of 5% of the total marks earned for the assessment per calendar day. Work submitted 20 calendar days or more after the deadline will not be assessed and will receive a mark of zero.

(b) For assessments involving public, oral, and/or visual presentations completed after the deadline, a penalty of 10% of the total marks earned for the assessment will be imposed per calendar day. Work completed 10 calendar days or more after the deadline will not be assessed and will receive a mark of zero.

### 10 Special consideration for illness, injury or misadventure

Special consideration is a process that affords equal opportunity to students who have experienced circumstances that adversely impact their ability to adequately complete an assessment task in a unit of study, as determined by the Coursework Policy. The procedures for applying for special consideration are described in each unit of study outline.

### 11 Re-assessment

(1) In this School, an opportunity for re-assessment may be offered to students whose final mark for a unit of study is within the range 45-49. Re-assessment will be offered on one date only and it is a student's responsibility to be available to attend on that date. The maximum mark and grade awarded for a unit of study in these circumstances will be 50 Pass.

(2) Students who have been granted special consideration may be allowed to sit the exam or submit the required work at a negotiated date that should not be longer than the period of incapacitation and, in any case, not longer than three months after the original examination or submission date.

## Part 4: Progression, Results and Graduation

### 12 Satisfactory progress

The School will monitor students for satisfactory progress towards the completion of their award course. In addition to the common triggers used to identify students not meeting academic progression requirements (as defined by the progression requirements of the Coursework Policy, students must pass any unit of study identified in the course resolutions as being critical to progression through the course.

### 13 Award of the bachelor degree with honours

(1) Honours is available to meritorious students as either appended honours or embedded honours in the combined degree Bachelor of Design Computing/Bachelor of Advanced Studies and the double degree Bachelor of Design in Architecture (Honours)/Master of Architecture program.

(2) Admission, requirements and award of the Bachelor of Design in Architecture (Honours)/Master of Architecture are in accordance with the relevant course resolutions.

(3) To qualify for admission to the appended honours degree, a student must:

(a) Have completed the requirements for the relevant pass degree or be a graduate of no more than four years' standing; and

(b) Have a WAM of at least 70 (in exceptional cases the Head of School and Dean may admit a student with a WAM of 65 or higher); and

(c) Have an approved thesis topic and supervisor.

(4) To qualify for the award of appended honours a candidate must successfully complete 48 credit points of honours units of study listed in the table for the degree over two consecutive semesters.

(5) The grade of honours will be determined by the honours mark achieved. The honours mark will be derived from weighting the mark for the honours thesis at 70% and the WAM of the pass degree at 30%.

(6) Honours is awarded in the following classes:

| Description | Honours Mark Range |
|---|---|
| Honours Class I | Mark>=80 |
| Honours Class II (Division 1) | 75<=Mark<80 |
| Honours Class II (Division 2) | 70<=Mark<75 |
| Honours not awarded | Mark<70 |

(7) A candidate for honours who does not meet the requirements for award of honours shall be awarded the pass degree.

(8) A candidate may not graduate with the pass degree while enrolled in the honours program.

### 14 University Medal

Honours candidates with an outstanding academic record throughout the degree and who have achieved Honours Class I may be eligible for the award of a University Medal, in accordance with the Coursework Policy and on nomination by the Associate Dean Education to the Head of School and Dean.

### 15 Weighted Average Mark (WAM)

(1) The University WAM is calculated using the following formula:

| | |
|---|---|
| WAM = | sum(Wc x Mc) |
| | sum(Wc) |

Where Wc is the unit of study credit points multiplied by the unit weighting and Mc is the mark achieved for the unit. All attempted units of study are included except for units of study assessed on a pass/fail basis, units of study with a grade of DC or DF, and credited units of study from other institutions.

(2) The weight of a unit of study is assigned by the owning Faculty or School. In this School, units are weighted as one.

## Part 5: Other

### 16 Transitional provisions

(1) These resolutions apply to students who commenced their candidature after 1 January, 2017 and students who commenced their candidature prior to 1 January, 2017 and who elect to proceed under these resolutions.

(2) Students who commenced prior to 1 January, 2017 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2022. The School may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

# Index by alpha code

# Index by name