

FACULTY OF SCIENCE
– POSTGRADUATE
HANDBOOK 2015

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Welcome



Welcome to your postgraduate study in the sciences. Whether you choose postgraduate coursework or research, you will be taking your next step towards becoming one of the next generation of global leaders who are working in Australia and around the world, conducting diverse work in scientific research, business, industry and more.

You can choose postgraduate research and coursework programs that are clinical, theoretical or applied, or a combination of these. Our articulated programs allow you to start your study with a short qualification, with the flexibility to extend into a more advanced research degree if you choose.

Take advantage of our global reputation for scientific research excellence, top international rankings and award winning research staff who are the best in their fields. As a postgraduate student you will work alongside world leaders in scientific research, have the opportunity to conduct studies overseas and develop a comprehensive perspective of the applications of science in the real world.

By choosing postgraduate research, you will have an incredible opportunity to extend your knowledge, build practical skills and pursue your passion in a specialist subject. In today's workplace, postgraduate research graduates are valued for their analytical talents, time management, problem-solving skills, independence and acumen. Our graduates' career destinations are incredibly diverse, from research, policy, industry, management, government, business and international development to name a few.

By choosing postgraduate coursework, you will prepare to make your mark in the important health-related fields of psychology, nutrition and dietetics, and medical physics, or become equipped to play a vital role in the sustainable development of our society and our planet in the areas of environmental science, marine science and sustainability.

Your training in the sciences involves not only acquiring new knowledge, but also applying findings to improve our world, and developing the critical reasoning and problem-solving required to use scientific knowledge wisely. Your studies will stretch your talent and develop leadership skills. As a postgraduate science student, you will have access to a wide range of opportunities to cultivate professional skills through workshops, seminars, career development opportunities, international research symposia and networking events. You will become a well-rounded confident leader with the ability to contribute to new, as yet unknown fields in the future.

Trevor Hambley
Dean



Resolutions of the Senate

Resolutions of the Senate

1 Degrees, diplomas and certificates of the Faculty of Science

- (1) With the exception of the Doctor of Science 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 Faculty of Science. The Doctor of Science 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, 2015. Degrees, diplomas and certificates no longer open for admission will be conferred by the Senate according to the rules specified by the Faculty at the time.

2 Degrees

Code	Course title & stream	Abbreviation	Credit points
RHSCIENC-01	Doctor of Science	DSc	Published Work
RPPHDSCI-01	Doctor of Philosophy	PhD	Research
MASCIENC-01	Master of Science	MSc	Research
MASCPCO-01	Master of Science in Coaching Psychology	MSc(CoachPsyc)	48
MAMASCMG-02	Master of Marine Science and Management	MMarSciMgt	72
MAENVSCI-01	Master of Environmental Science	MEnviSci	72
MAENSCLA-02	Master of Environmental Science and Law	MEnviSciLaw	72
MAMEDPHY-01	Master of Medical Physics	MMedPhys	72
MANUTDIE-01	Master of Nutrition and Dietetics	MNutrDiet	96
MASUSTAI-01	Master of Sustainability	MSust	72
MACLIPSY-01	Master of Clinical Psychology	MCP	96
BPLIARSC-01	Bachelor of Liberal Arts and Science*	BLAS	144
BPMEDSCI-02	Bachelor of Medical Science*	BMedSc	144
BPPSYCHO-02	Bachelor of Psychology*	BPsych	192
BPSCIENC-02	Bachelor of Science*	BSc	144
	Advanced*	BSc(Advanced)	144
	Advanced Mathematics*	BSc(Advanced Mathematics)	144

*may be awarded with honours following a further year of study.

3 Combined degrees

Code	Course title & stream	Abbreviation	Credit points
BPCOMSCI-02	Bachelor of Commerce* and Bachelor of Science*	BCom/BSc	240
BPESMSCI-02	Bachelor of Education (Secondary: Mathematics)^ and Bachelor of Science*	BEd(Sec:Maths)/BSc	240
BPESISCI-02	Bachelor of Education (Secondary: Science)^ and Bachelor of Science*	BEd(Sec:Science)/BSc	240
BPENGMSC-01	Bachelor of Engineering^ and Bachelor of Medical Science*	BE/BMedSc	240
BPENGSCI-01	Bachelor of Engineering^ and Bachelor of Science*	BE/BSc	240
BPSCIART-02	Bachelor of Science* and Bachelor of Arts*	BSc/BA	192
BPSCILAW-01	Bachelor of Science* and Bachelor of Laws^	BSc/LLB	240
BUSCINUR-02	Bachelor of Science* and Master of Nursing	BSc/MN	192

*may be awarded with honours following a further year of study.

^may be awarded with honours in an integrated program.

4 Double degrees

Code	Course title & stream	Abbreviation	Credit points
MACLPPHD-01 / RPPHDSCI-04	Master of Clinical Psychology and Doctor of Philosophy	MCP/PhD	96/Research
BPSCAMED-01	Bachelor of Science (Advanced)* and Doctor of Medicine	BSc(Adv)/MD	336



Code	Course title & stream	Abbreviation	Credit points
BPMSMED-01	Bachelor of Medical Science* and Doctor of Medicine	BMedSc/MD	336
BPSCINUD-01	Bachelor of Science* and Master of Nutrition and Dietetics	BSc/MND	240

**may be awarded with honours following a further year of study.*

5 Graduate diplomas

Code	Course title & stream	Abbreviation	Credit points
GNPSYCOA-01	Graduate Diploma in Coaching Psychology	GradDip(CoachPsyc)	36
GNMASCMD-02	Graduate Diploma in Marine Science and Management	GradDipMarSciMgt	48
GNENVSCI-02	Graduate Diploma in Environmental Science	GradDipEnviSci	48
GNMEDPHY-01	Graduate Diploma in Medical Physics	GradDipMedPhys	48
GNPSYCHO-02	Graduate Diploma in Psychology	GradDipPsych	48
GNSCIENC-01	Graduate Diploma in Science	GradDipSc	48
GNSUSTAI-01	Graduate Diploma in Sustainability	GradDipSust	48

6 Graduate certificates

Code	Course title & stream	Abbreviation	Credit points
GCPSYCOA-01	Graduate Certificate in Coaching Psychology	GradCert(CoachPsyc)	24
GCMASCMD-01	Graduate Certificate in Marine Science and Management	GradCertMarSciMgt	24
GCENVSCI-01	Graduate Certificate in Environmental Science	GradCertEnviSci	24
GCSCHIPS-01	Graduate Certificate in Science (History and Philosophy of Science)	GradCertSc(HPS)	24
GCSUSTAI-01	Graduate Certificate in Sustainability	GradCertSust	24

Resolutions of the faculty

Resolutions of the Faculty of Science for coursework awards

These resolutions apply to all undergraduate and postgraduate coursework award courses in the Faculty, 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 2000 (the 'Coursework Rule'), the resolutions for the course of enrolment, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended) and the Academic Board policies on Academic Dishonesty and Plagiarism.

Part 1: Course enrolment

1 Enrolment restrictions

- (1) Except with the permission of the Dean an undergraduate student may not enrol in units of study with a total value of more than 30 credit points in either semester one or two, 12 credit points in the summer session and 6 credit points in the winter session.
- (2) Except with the permission of the Dean a postgraduate coursework student may not enrol in units of study with a total value of more than 24 credit points in either semester one or two, 12 credit points in the summer session and 6 credit points in the winter session.
- (3) Except with the permission of the Dean, both undergraduate and postgraduate coursework students are prohibited from:
 - (a) re-enrolling in a unit of study that they have previously completed within the last 10 calendar years, regardless of whether the unit of study was completed in their current or previous award course; and
 - (b) enrolling in any unit of study:
 - (i) that overlaps substantially in content with a unit of study already completed in their current or previous award course within the last 10 calendar years; and/or
 - (ii) for which credit equivalence or exemption has been granted within the last 10 calendar years.

2 Time Limits

- (1) A student must complete all the requirements for a bachelor's degree (including combined degrees) or undergraduate advanced diploma within ten calendar years of first enrolment.
- (2) Unless stated otherwise in the course resolutions:
 - (a) a student must complete all the requirements for a graduate certificate within four consecutive semesters of first enrolment.
 - (b) a student must complete all the requirements for a graduate diploma within eight consecutive semesters of first enrolment.
 - (c) a student must complete all the requirements for a master's degree within twelve consecutive semesters of first enrolment.
- (3) Credit will not be granted for prior study older than ten years at the time of first enrolment for undergraduate courses or five years for postgraduate coursework.
- (4) If a student is readmitted with credit, the Faculty will determine a reduced time limit for completion of the degree.

3 Credit for previous study

- (1) Unless otherwise stated within the course resolutions, the provisions of the Coursework Rule apply to the granting of credit, except that, in undergraduate courses, all students must complete at least the senior Science units of study required for a major at the University of Sydney.
- (2) The maximum allowable credit granted toward an undergraduate degree is 96 credit points and the maximum allowable credit from a completed degree toward an undergraduate degree is 48 credit points. At the discretion of the Dean, the maximum allowable credit for an undergraduate degree may be varied for credit transfer within the University of Sydney.
- (3) Credit is available in the articulated postgraduate courses for postgraduate study as long as it has been undertaken in these award courses within the previous ten semesters. Unless otherwise stated, external credit is not available to students enrolled in postgraduate programs.

4 Course transfer

- (1) Where the course resolutions allow students may apply direct to the Faculty. For all other applications students must apply through either UAC or the International office.
- (2) Providing students satisfy the admission requirements for each stage of an articulated postgraduate coursework program, a student may apply to progress to the award of any of the courses within that sequence. Only the highest award completed will be conferred.
- (3) A student enrolled in a postgraduate coursework masters may, with the approval of the Dean, elect to discontinue study and graduate with the graduate diploma from the embedded sequence provided the requirements of the graduate diploma have been met within the Faculty specified time limits of the Faculty.
- (4) A student enrolled in a postgraduate coursework graduate diploma may, with the approval of the Dean, elect to discontinue study and graduate with the graduate certificate from the embedded sequence provided the requirements of the graduate certificate have been met within the Faculty specified time limits.
- (5) All applications for transfer in a postgraduate coursework program must satisfy the Faculty specified time limits for application and transfer requests

5 Re-enrolment after an absence

Unless otherwise stated within the course resolutions, the provisions of the Coursework Rule apply. A student who plans to re-enrol after a period of suspension must advise the Faculty in writing of their intention by the end of October for first semester of the following year or the end of May for second semester of the same year.

6 Suspension of candidature

- (1) Unless otherwise stated within the course resolutions, the provisions of the Coursework Rule apply to all undergraduate courses.
- (2) Suspension may be granted in a postgraduate coursework program for a maximum of two semesters.

7 Special permission

The Dean may, in certain circumstances permit exceptions to the requirements for a Faculty award. Applications must be made in writing.



Part 2: Unit of study enrolment

8 Details on Units of Study

- (1) A candidate for a course shall proceed by completing units of study as prescribed by the Faculty.
- (2) A unit of study shall consist of such lectures, seminars, tutorial instruction, essays, exercises, practical work, or project work as may be prescribed.
- (3) In these resolutions, 'to complete a unit of study' or any derivative expression means:
 - (a) to satisfy all requirements for that unit of study as determined by the School concerned, and
 - (b) to achieve a final mark of 50 or more in the unit of study.
- (4) Not all units of study for a particular subject area may be available every semester.
- (5) Where appropriate a table of units of study will be listed under each degree on offer.

9 Cross institutional study

- (1) Provided the Dean's permission has been obtained in advance, a student may be permitted to complete a unit of study offered by 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.
- (2) Cross-institutional study is regarded as another form of credit.
- (3) Unless otherwise stated, cross-institutional study is not available to students enrolled in postgraduate programs.

10 International exchange

The Faculty encourages students to participate in international exchange programs, unless the resolutions for a particular course preclude this. For more information refer to the International Office.

Part 3: Studying and Assessment

11 Attendance

- (1) Students are expected to attend a minimum of 80% of timetabled activities for a unit of study, unless granted exemption by the Dean or the Head of School concerned. The Dean or the Head of School most concerned may determine that a student has failed a unit of study because of inadequate attendance. Alternatively, at their discretion, they may set additional assessment items where attendance is lower than 80%.
- (2) In some units of study, the minimum attendance requirement is greater than 80%. Students should read carefully the degree resolutions and the table of units of study listed under each degree.
- (3) Students are required to be in attendance at the correct time and place of any formal or informal examinations. Non attendance on any grounds insufficient to claim special consideration 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.

12 Late submission policy

- (1) It is expected that, unless an application for special consideration has been approved, students will submit all assessments for a unit of study on the due date specified. If the assessment is completed or submitted within the period of extension, no academic penalty will be applied to that piece of assessment.
- (2) If an extension is either not sought, not granted, or is granted but work is submitted after the extended due date, the late submission of assessment may result in an academic penalty.

13 Further examination

The Faculty does not offer opportunities for further examination or replacement assessment other than on the grounds of approved Special Consideration or Special Arrangements.

Part 4: Progression, Results, and Graduation

14 Satisfactory progress

- (1) The Faculty will monitor students for satisfactory academic progress.
- (2) In this Faculty a student shall not have made satisfactory progress in any semester if the student:
 - (a) fails to complete successfully 50% or more of the credit points in which the student was enrolled for that semester; and /or
 - (b) fails to complete successfully on the second or later attempt the same unit of study; and/or
 - (c) fails to complete successfully any compulsory or barrier unit(s) of study, field or clinical work, practicum, or professional experience; and/or
 - (d) is consequently unable to complete the degree within the maximum permitted time while carrying a normal student load.
- (3) Students must also meet all progression requirements listed in specific course resolutions.
- (4) A student in an undergraduate course who has not made satisfactory progress in any semester will be placed on the Faculty's Academic Register. Such students will be required to take action as outlined in the University Academic Progression Policy or as otherwise directed by the Faculty.
- (5) Students who fail any unit of study in a postgraduate coursework program will be identified as not meeting academic progression requirements and become subject to the progression provisions of the Coursework Rule. Students who subsequently fail any unit of study will be excluded from the course if they cannot show good cause.
- (6) These conditions for satisfactory progress will apply from 1 October 2010 and cannot be applied retrospectively.

15 Award of the bachelor degree with honours

- (1) To qualify for admission to the bachelor degree with honours, an applicant must:
- (2) have qualified for the award of a bachelor's degree from the Faculty of Science or equivalent qualification from another institution; and
 - (a) have completed a minimum of 24 credit points of senior units of study relevant to the intended honours course (or equivalent at another institution); and
 - (b) have achieved either:
 - (I) a SCIWAM of at least 65 (or equivalent at another institution); or
 - (II) a credit average in 48 credit points in relevant intermediate and senior Science units of study as determined by the School concerned; or
 - (c) satisfy any additional criteria set by the Head of School concerned.
- (3) General conditions of candidature include:
 - (a) Students must complete the requirements for the honours course full-time over two consecutive semesters. If the School is satisfied that a student is unable to attempt the honours course on a full-time basis and if the Dean so recommends, permission may be granted to undertake honours half-time over four consecutive semesters.

- (b) An applicant who is qualified to enrol in two honours courses may either:
- (I) complete the honours courses in the two subject areas separately and in succession; or
- (II) complete a joint honours course, equivalent to an honours course in a single subject area, in the two subject areas as agreed by the Dean and both Schools. A joint honours course shall comprise such parts of the two honours courses as may be decided by the Dean.
- (c) A student may not re-attempt an honours course.
- (4) To qualify for the award of honours, a student must complete 48 credit points of honours undergraduate units of study, as described in Table VI.
- (5) The grade of honours and the honours mark are determined by performance in the honours course.
- (6) Honours is awarded in the following classes:

Description	Mark Range
Honours Class I	Mark \geq 80
Honours Class II (Division 1)	75 \leq Mark $<$ 80
Honours Class II (Division 2)	70 \leq Mark $<$ 75
Honours Class III	65 \leq Mark $<$ 70
Honours not awarded	Mark $<$ 65

16 University Medal

A student with an honours mark of 90 or above and a minimum SCIWAM of 80 will be considered for the award of a University medal. The medal is awarded at the discretion of the Faculty to the highest achieving students who in the opinion of the Faculty have an outstanding academic record, in accordance with the Coursework Rule.

17 Weighted Average Mark (WAM) and Science Weighted Average Mark (SCIWAM)

- (1) The University WAM is calculated using the following formula:

$$\text{WAM} = \frac{\text{sum}(Wc \times Mc)}{\text{sum}(Wc)}$$

where Wc is the unit of study credit points, x the unit weighting, and Mc is the mark achieved for the unit. Discontinued - Fail (DF) and Discontinued - Not to count as failure (DC) grades do not contribute to the WAM. Pass/Fail units also do not contribute to WAM.

- (2) The weight of a unit of study is assigned by the owning faculty. In this Faculty, junior units are weighted one, intermediate units are weighted two and senior units are weighted three.
- (3) In this Faculty:
- (a) A junior unit of study is a 1xxx or first-year stage unit.
- (b) An intermediate unit of study is a 2xxx or second-year stage unit.
- (c) A senior unit of study is a 3xxx or third-year stage unit.
- (4) A SCIWAM is a Weighted Average Mark used by the Faculty of Science, calculated from the results of all intermediate and senior units of study with a weighting of two for intermediate units and three for senior units. Discontinued - Fail (DF) grades will contribute to the SCIWAM. The mark used for units of study with a grade of DF is zero. Discontinued - Not to count as failure (DC) grades do not contribute to the SCIWAM. Pass/Fail units do not contribute to the SCIWAM, with the exception of Exchange units.

Part 5: Other

18 Talented Student Program

- (1) The Talented Student Program (TSP) is a special program of study for students of exceptional merit who are enrolled in undergraduate degrees administered by the Faculty of Science or for the Science component of combined degrees.
- (2) Entry to the TSP is by invitation from the Dean. Invitations are made each year, for that year. The following guidelines apply generally, although schools and departments may have additional (and more stringent) requirements for entry to the activities they offer in the program:
- (a) To be considered for the program in their first year, students should ordinarily have an ATAR (or equivalent) of 99.00 or higher and a result in band 6 in at least one HSC science subject area or a mark of 95 or better in HSC Mathematics Extension 2. The Dean may consider slight variations to these requirements where a student has demonstrated exceptional performance in scientific study (eg, at the level of membership of a team which represents Australia in an International Science or Mathematics Olympiad). At the discretion of the Dean, these requirements may be varied on a year-to-year basis.
- (b) To be considered for entry into the program in their second and third years, students should normally have AAMs of 85 or over and a high distinction grade in an appropriate Science subject area. Subsequent entry to TSP is available only to students who have been enrolled full-time in units of study totalling at least 48 credit points.
- (3) Students who feel that they satisfy these criteria, but who have not received an invitation to participate in the TSP that year, should contact the Dean.

19 Transitional provisions

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2015, and persons who commenced their candidature prior to 1 January, 2015 who elect to proceed under these resolutions.
- (2) Students 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 requirements are completed by 1 January, 2020, or later date as the Faculty may, in special circumstances, approve.

Faculty policies

Important policies relating to undergraduate candidature

Results

For all postgraduate coursework units of study, the following mark ranges apply within the Faculty of Science:

HD	High Distinction	85 – 100
DI	Distinction	75 – 84
CR	Credit	65 – 74
PS	Pass	50 – 64
FA	Fail	0 – 49
AF	Absent Fail	0 – 49
DF	Discontinued – Fail	No mark
DC	Discontinued – not to count as failure	No mark

Special Arrangements

Students who are experiencing difficulty in meeting their assessment requirements due to competing essential community commitments may apply for Special Arrangements for examination and assessment.

More information can be found at:
sydney.edu.au/science/cstudent/pg/forms.shtml

Special Consideration

Students who have a serious illness or who have experienced misadventure which may affect their academic performance in a course or unit of study may request that they be given Special Consideration in relation to the determination of their results.

More information can be found at:
sydney.edu.au/science/cstudent/pg/forms.shtml

Code of Conduct for Students

The University has clear expectations of students in respect of academic matters and personal behaviour.

For more information see Code of Conduct for Students

Academic Dishonesty and Plagiarism in Coursework

The University of Sydney expects high standards of academic honesty in all student work. In particular, the University is opposed to and will not tolerate academic dishonesty and plagiarism in coursework.

For more information see Academic Dishonesty and Plagiarism in Coursework Policy 2012

Research Code of Conduct

The University of Sydney expects high standards of academic honesty in all student work. In particular, the University is opposed to and will not tolerate research misconduct.

For more information see Research Code of Conduct 2013

Faculty of Science intervention and support strategies

The Faculty of Science has always been concerned to develop policies that promote the welfare and well-being of its students. A number of University and faculty rules and policies require the faculty to intervene and support students who may be at risk of not meeting progression requirements. These policies are:

- any Satisfactory Progress requirements that are found in the resolutions for particular degrees.
- the Student Academic Progression Policy
- for international students, the National Code of Practice for Registration Authorities and Providers of Education and Training to Overseas Students 2007.

An *intervention* is an action taken in relation to an individual student by the faculty in applying policies that deal with satisfactory progress. An intervention can take a number of forms, but is typically a referral to particular student support services or a direction in relation to a student's studies.

A *support strategy* is a plan or process to assist an individual student or group of students within the faculty to better achieve academic success.

All students should take advantage of the Faculty's support strategies and the University's student support services. Do not wait until you are in severe difficulties to seek assistance!

The Faculty has a number of strategies and intervention possibilities in place. These include, but are not limited to, the following:

Making available information on degree requirements in the Faculty of Science

The faculty handbook is published annually at sydney.edu.au/handbooks.

Handbook archives are available at sydney.edu.au/handbooks/archive.

Provision of specialist administrative staff

Administrative staff are available at the Faculty of Science office counter and by email and by telephone to assist with queries relating to degree requirements and other administrative matters. For opening times and contact details, see sydney.edu.au/science/contact.shtml.

Faculty of Science transition workshop

To enable new first year undergraduate students to study effectively and enjoy a positive student experience, the Faculty of Science offers a transition workshop each year. Workshops are held prior to the commencement of the academic year. Details on registration are available at enrolment sites or on the faculty web page at enrolment periods.

Faculty of Science website

The faculty's website is specifically for students enrolled in the Faculty of Science, and contains relevant information on degree requirements and many other things.

Implementing progression requirements

- The faculty administers progression requirements for undergraduate specialist degrees on an annual basis in accordance with degree resolutions. Students who do not meet the progression requirements will be notified after second semester results become available that they have not fulfilled satisfactory progression requirements. Students will be notified of the intervention to be implemented.
- The faculty administers progression requirements for postgraduate coursework degrees on a semester basis. Students who do not



meet the progression requirements will be notified after semester results become available that they have not fulfilled satisfactory progression requirements. Students will be notified of the intervention to be implemented.

- The faculty administers the University's Progression Policy on a semester by semester basis. Students are notified in accordance with the progression policy.
- The faculty has a staff member dedicated to administration for international student candidatures. The International Student Adviser works closely with the International Student Office to facilitate compliance with the ESOS code.

Interventions

Interventions are made with regard to the particular policy or rule being applied. Interventions include:

- completion of a back on track survey by students in accordance with the Progression Policy
- requirement to attend at an information session to raise awareness of student services
- a referral to attend particular student services
- an interview with the Associate Dean or other course adviser
- recommendations on study patterns
- recommendation on suspension or withdrawal from study

Where a student has failed to make satisfactory progress as required, subsequent interventions include:

- transfer to a more appropriate degree program as provided in degree resolutions or as recommended by an Associate Dean
- transfer to a more appropriate stream in a degree as provided in degree resolutions or as recommended by an Associate Dean
- direction to move from full-time to part-time enrolment
- direction to suspend studies for a period
- mandatory attendance at specified Learning Centre courses
- case management on an individual student basis
- exclusion for a specified period from a degree.

Support Strategies

The faculty supports students by:

- making information on degree requirements easily available
- making information on University student support services easily available
- offering a Transition Workshop
- offering the Talented Student Program to support the development of talented Science students
- providing specialist administrative staff to advise on faculty policy and procedures
- providing individual consultations, by appointment, with Associate Deans

The Schools within the Faculty of Science support students through:

- issuing unit of study outlines detailing requirements and learning outcomes
- making available specialist administrative staff to advise on School policy and procedures
- making available specialist academic advisers to advise on academic matters within the School

Faculty information

Faculty and Student Information Office
Level 2, Carlaw Building, F07
University of Sydney NSW 2006

Counter hours

Monday to Thursday 10am to 4pm

Friday 10am to 1pm

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Postgraduate (Coursework) Degree Coordinators	
GDP	Dr Marianna Szabo
Clinical Psychology	Dr Maree Abbott
Coaching Psychology	Dr Anthony Grant
Environmental Science	Dr Jeffrey Neilson
Environmental Science and Law	Dr Jeffrey Neilson
History and Philosophy of Science	Dr Daniela Helbig
Marine Science and Management	Dr Eleanor Bruce
Medical Physics	Associate Professor Joerg Lehmann
Nutrition and Dietetics	Dr Anna Rangan
Sustainability	Professor Manfred Lenzen

Associate Deans for Postgraduate Matters	
Coursework	Dr Jenny Saleeba
Research	Associate Professor Ross Coleman

Executive	
Dean	Professor Trevor Hambley
Pro-Dean	Mrs Helen Agus
Deputy Pro-Dean	Associate Professor Thomas Hubble
Associate Dean (Academic Studies)	Dr Jenny Saleeba



Graduate Diploma in Science

Graduate Diploma in 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 2000 (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
GNSCIENC-01	Graduate Diploma in Science

2 Attendance pattern

The attendance pattern for this course is full time or part time according to candidate choice.

3 Admission to candidature

- (1) With approval from the Dean available places will be offered to qualified applicants, according to the following admissions criteria.
- (2) Admission to this course requires a Bachelor's degree from the Faculty of Science or equivalent qualification, containing a minimum of 24 credit points of senior units of study (or equivalent at another institution) relating to the nominated science subject area of study. The nominated science subject area must be one listed in Table VI, the honours units of study table, except that Psychology is not available in the Graduate Diploma in Science.

4 Requirements for award

- (1) To qualify for the Graduate Diploma in Science a candidate must complete 48 credit points of honours level units of study in a single science subject area, or, in the case of joint courses, across two science subject areas.
- (2) An applicant who is qualified to enrol in two science subject areas may complete a course joining the two areas, equivalent to a course in a single subject area. A joint course shall comprise such parts of the two subject areas as may be decided by the Dean.

5 Award of the diploma/ advanced diploma/ degree

The Graduate Diploma in Science is awarded as a Pass degree only.

6 Transitional provisions

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2011 and persons who commenced their candidature prior to 1 January, 2011 who elect to proceed under these resolutions.
- (2) Candidates who commenced prior to 1 January, 2011 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, 2016, or later date as the faculty may, in special circumstances, approve.

Relationship of Graduate Diploma to research degrees

The Graduate Diploma in Science serves as an entry qualification for the degrees of Master of Science or Doctor of Philosophy. It consists of equivalent work to that carried out by candidates enrolled in the fourth year honours courses, and is normally available to candidates who may not be eligible to enrol in those courses. The normal duration of the degree is one year full-time or two years part-time.

Course requirements

Intending students should consult the table of honours units of study for the range of disciplines offered. After discussion of your interests with a relevant member of academic staff, an application should be lodged with the Faculty of Science. Entry to the Graduate Diploma is subject to approval by the relevant Head of Department, the faculty, and confirmation that requirements for the award of a relevant bachelor's degree have been met.



Graduate Diploma of Psychology

Graduate Diploma in Psychology

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 2000 (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 title
GNPSYCHO-01	Graduate Diploma in Psychology

2 Attendance pattern

The attendance pattern for this course is part-time only but full-time enrolment may be permitted after the first semester of candidature.

3 Admission to candidature

- (1) With approval from the Dean, available places will be offered to qualified applicants based on merit according to the following admissions criteria:
- (2) Admission to the course requires:
 - (a) a Bachelor of Science, Bachelor of Arts, Bachelor of Economic & Social Sciences, Bachelor of Arts and Sciences, or Bachelor of Liberal Studies from the University of Sydney or equivalent qualification, provided the applicant has not previously completed a major in Psychology; and
 - (b) completion of 12 credit points of junior units of study in Psychology or equivalent within the last ten years.

4 Requirements for award

- (1) The units of study that may be taken for these awards are set out in the Graduate Diploma in Psychology table.
- (2) To qualify for the Graduate Diploma in Psychology a candidate must complete 48 credit points, including:
 - (a) 24 credit points of intermediate units of study in Psychology; and
 - (b) 24 credit points of senior units of study in Psychology which must include PSYC3018.

5 Credit for previous study

Credit for up to 24 credit points may be granted for units of study deemed to be equivalent to units in the Graduate Diploma in Psychology offered by the Faculty of Science.

6 Transitional provisions

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2014 and persons who commenced their candidature prior to 1 January, 2014 who elect to proceed under these resolutions.
- (2) Candidates who commenced prior to 1 January, 2014 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, or later date as the faculty may, in special circumstances, approve.

Course outcomes

Upon completion of the course, the graduate will have a Psychology major, accredited by the Australian Psychology Accreditation Council, equivalent to that available in the Bachelor of Arts, Bachelor of Science, Bachelor of Science (Advanced), Bachelor of Commerce (Liberal Studies), Bachelor of Liberal Arts and Science, Bachelor of Health Science or the Bachelor of Medical Science. They will have

studied all basic areas of experimental psychology, abnormal psychology, statistical methods in psychology, and a range of optional topics. If they have PSYC3010 as part of their senior units, they will be eligible to apply to continue to a fourth year in Psychology (Honours) and from there to a higher degree in psychology.

Eligibility for admission

Applicants holding relevant degrees

The Faculty of Science may admit to candidature applicants who hold the award course of Bachelor of Science, Bachelor of Arts, Bachelor of Science (Advanced), Bachelor of Commerce (Liberal Studies), Bachelor of Liberal Arts and Science, Bachelor of Health Science or the Bachelor of Medical Science from the University of Sydney, or equivalent degree as deemed by the faculty, who have not previously completed a major in Psychology. Applicants must have already successfully completed 12 credit points of junior Psychology units of study (currently PSYC1001 and PSYC1002) or equivalent within the last 10 years. When assessing an applicant, both undergraduate record and ATAR (or equivalent) may be taken into account.

Method of progression

Students are required to study 48 credit points of intermediate and senior Psychology units of study. This shall consist of 24 credit points of intermediate Psychology units of study (PSYC2011/2911, PSYC2012, PSYC2013 and PSYC2014) and 24 credit points of senior Psychology units of study (including PSYC3018). PSYC3010 is required for Psychology (Honours) entry. Students must complete the necessary qualifying units of study for entry into later units of study. Normally, progression will be over a minimum of three semesters. Students may study additional senior Psychology units of study with the permission of the Pro-Dean of the Faculty of Science.

Study in Psychology beyond the Graduate Diploma

Students may apply for a place in fourth year Psychology (Honours). Successful completion of HPSC3023 History and Philosophy of Psychology and Psychiatry is essential for students intending to take the theoretical thesis option in Psychology (Honours).

Exemptions and Advanced Standing

Students may apply for exemptions if they have already completed studies which the faculty deems equivalent to those in the program. Such units of study must have been completed within the previous 10 years. The number of exemptions allowed will not exceed Faculty of Science regulations or will not exceed 24 credit points, whichever is the lower.



Graduate Diploma of Psychology

Units of study table

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
Intermediate Units			
Students must complete 24 credit points from the following:			
PSYC2011 Brain and Behaviour	6	P PSYC1001 and PSYC1002. N PSYC2911, PSYC2111	Semester 1
PSYC2911 Brain and Behaviour (Advanced)	6	P A distinction average in PSYC1001 and PSYC1002 N PSYC2111, PSYC2011	Semester 1
PSYC2012 Statistics & Research Methods for Psych	6	A Recommended: HSC Mathematics, any level P PSYC1001 and PSYC1002 N PSYC2112	Semester 1
PSYC2013 Cognitive and Social Psychology	6	P PSYC1001 and PSYC1002. N PSYC2113	Semester 2
PSYC2014 Personality and Intelligence 1	6	P PSYC1001 and PSYC1002 N PSYC2114	Semester 2
Senior Units			
Students must complete 24 credit points from the following:			
NB: These 24 credit points must include PSYC3018. Students who want to be eligible for entry to the Honours program must also include PSYC3010.			
NB: For those intending to take the theoretical thesis option in Psychology Honours: HPSC3023 is needed as a prerequisite.			
PSYC3010 Advanced Statistics for Psychology	6	P (PSYC2012 or PSYC2112) plus at least one other Intermediate Psychology Unit of Study from PSYC2011, PSYC2911, PSYC2111, PSYC2013, PSYC2113, PSYC2014 and PSYC2114. N PSYC3201	Semester 2
PSYC3011 Learning and Behaviour	6	A PSYC2012 or PSYC2112 P (PSYC2011 or PSYC2911 or PSYC2111) and at least one other Intermediate Psychology Unit from PSYC2012, PSYC2112, PSYC2013, PSYC2113, PSYC2014 or PSYC2114. N PSYC3209	Semester 1
PSYC3012 Cognition, Language and Thought	6	A PSYC2012 or PSYC2112 P (PSYC2013 or PSYC2113) and at least one other Intermediate Psychology unit from PSYC2011, PSYC2911, PSYC2111, PSYC2012, PSYC2112, PSYC2014 or PSYC2114. N PSYC3205	Semester 1
PSYC3013 Perceptual Systems	6	A PSYC2012 P (PSYC2011 or PSYC2911 or PSYC2111) and at least one other Intermediate Psychology Unit from PSYC2012, PSYC2112, PSYC2013, PSYC2113, PSYC2014, PSYC2114 or ANAT2010 N PSYC3210	Semester 2
PSYC3014 Behavioural and Cognitive Neuroscience	6	A PSYC2113 or PSYC2013 P Either ((PSYC2011 or PSYC2911 or PSYC2111) and at least one other Intermediate Psychology Unit from (PSYC2012 or PSYC2112), (PSYC2013 or PSYC2113), (PSYC2014 or PSYC2114)) OR ((PSYC2011 or PSYC2911 or PSYC2111 or PSYC2012) and ANAT2010 and PCOL2011) N PSYC3215, PSYC3204, PSYC3914	Semester 2
PSYC3914 Behavioural & Cognitive Neuroscience Adv	6	A PSYC2113 or PSYC2013 P Distinction or above across (PSYC2011 or PSYC2911 or PSYC2111) N PSYC3215, PSYC3014, PSYC3204	Semester 2
PSYC3015 Personality and Intelligence 2	6	A (PSYC2012 or PSYC2112); (PSYC2013 or PSYC2113) P (PSYC2014 or PSYC2114) and (PSYC2011 or PSYC2911 or PSYC2111 or PSYC2012 or PSYC2112 or PSYC2013 or PSYC2113)	Semester 1
PSYC3016 Developmental Psychology	6	P PSYC2013 or PSYC2113 and at least one other Intermediate Psychology unit from PSYC2011, PSYC2911, PSYC2111, PSYC2012, PSYC2112, PSYC2014 and PSYC2114. N PSYC3206	Semester 2
PSYC3017 Social Psychology	6	A PSYC2012 or PSYC2112. P PSYC2013 or PSYC2113 and at least one other Intermediate Psychology Unit of Study from PSYC2011, PSYC2911, PSYC2111, PSYC2012, PSYC2112, PSYC2014 and PSYC2114. N PSYC3212	Semester 1
PSYC3018 Abnormal Psychology	6	A (PSYC2012 or PSYC2112) and (PSYC2014 or PSYC2114) P At least two intermediate Psychology units of study from PSYC2011, PSYC2911, PSYC2111, PSYC2012, PSYC2112, PSYC2013, PSYC2113, PSYC2014 and PSYC2114 N PSYC3203	Semester 1
PSYC3020 Applications of Psychological Science	6	P 12 credit points of junior psychology and 12 credit points in Intermediate Psychology N PSYC3019	Semester 2
HPSC3023 Psychology & Psychiatry: History & Phil	6	A Basic knowledge about the history of modern science as taught in HPSC2100 AND the principles of philosophy of science as taught in HPSC2101 OR knowledge of the various sub-disciplines within Psychology. P (at least 12 credit points of intermediate HPSC Units of study) OR (a CR or above in one HPSC intermediate Unit of Study) OR (12 intermediate credit points in psychology). N PSYC3202	Semester 1



Graduate Diploma of Psychology

Unit of study descriptions 2015

PSYC2011

Brain and Behaviour Science

Credit points: 6 **Teacher/Coordinator:** Dr Ian Johnston **Session:** Semester 1 **Classes:** Three 1 hour lectures and one 1 hour tutorial per week. **Prerequisites:** PSYC1001 and PSYC1002. **Prohibitions:** PSYC2911, PSYC2111 **Assessment:** One 2 hour exam, major assignment (1500-2000 word essay/report), minor assignment (short written practical exercise and/or tutorial quizzes (100%)) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This Unit of Study examines a range of phenomena and principles in behaviour, learning and perception, and their relations to underlying neural substrates. The emphasis in learning is on instrumental conditioning and the principle of reinforcement, ranging from applications of this principle to its neural substrates. Also covered are motivational aspects of behaviour, such as punishment and avoidance, anxiety and depression, addiction, sex and appetite, together with related neurochemical mechanisms and the effects of various psychopharmacological agents on these processes. A number of perceptual phenomena will be studied, such as motion detection, recognition of faces, identification of emotion, hearing and hearing loss, taste discrimination, and chronic pain. The practical classes are designed for students with an interest in clinical and therapeutic Psychology, and will allow students to design and implement a behaviour modification programme.

PSYC2911

Brain and Behaviour (Advanced) Science

Credit points: 6 **Teacher/Coordinator:** Dr Ian Johnston **Session:** Semester 1 **Classes:** Three 1 hour lectures and one 1 hour tutorial per week. **Prerequisites:** A distinction average in PSYC1001 and PSYC1002 **Prohibitions:** PSYC2111, PSYC2011 **Assessment:** 1 x 2 hour examination, 1 x 1500 word report, 1 x quiz, 1 x oral presentation/debate (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This Unit of Study focuses on the Behavioural Sciences, Neurosciences, and the study of perception. The lecture content is the same as PSYC2011, and examines a range of phenomena and principles in behaviour, learning and perception, and their relations to underlying neural substrates. The emphasis in learning is on instrumental conditioning and the principle of reinforcement, ranging from applications of this principle to its neural substrates. Also covered are motivational aspects of behaviour, such as punishment and avoidance, anxiety and depression, addiction, sex and appetite, together with related neurochemical mechanisms and the effects of various psychopharmacological agents on these processes. A number of perceptual phenomena will be studied, such as motion detection, recognition of faces, identification of emotion, hearing and hearing loss, taste discrimination, and chronic pain. The practical classes differ from PSYC2011, as it is targeted for those who would like to learn more about the experimental study of behaviour and the neurosciences. Students will gain hands-on laboratory experience in how the principles and phenomena of behavioural neuroscience may be studied experimentally.

PSYC2012

Statistics & Research Methods for Psych Science

Credit points: 6 **Teacher/Coordinator:** Dr Ben Colagiuri **Session:** Semester 1 **Classes:** Two 1 hour lectures and one 1 hour tutorial per week, plus one 1 hour lecture and one 1 hour tutorial per fortnight. **Prerequisites:** PSYC1001

and PSYC1002 **Prohibitions:** PSYC2112 **Assumed knowledge:** Recommended: HSC Mathematics, any level **Assessment:** One 2 hour final exam, class tests, one 1500 word written assignment, one 45 minute mid-semester exam (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim is to introduce students to fundamental concepts in statistics as applied to psychological research. These include summary descriptive statistics, an introduction to the principles and practice of research design, and the use of inferential statistics. Building upon this framework, the unit of study aims to develop each student's expertise in understanding the rationale for, and application of, a variety of statistical tests to the sorts of data typically obtained in psychological research.

PSYC2013

Cognitive and Social Psychology Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Fiona White **Session:** Semester 2 **Classes:** Three 1 hour lectures and one 1 hour tutorial per week. **Prerequisites:** PSYC1001 and PSYC1002. **Prohibitions:** PSYC2113 **Assessment:** One 2 hour exam, major assignment (1500-2000 word essay/report), minor assignment (short written practical exercise and/or tutorial quiz) (100%) **Campus:** Camperdown/Darlington, Sydney **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, Developmental Psychology and Social Psychology. The section on Cognitive Processes focuses on current theories of memory, attention, problem solving and decision making and discusses the methods and issues involved in investigating these processes in both healthy individuals and people with cognitive disorders. The section on Developmental Psychology discusses early social and cognitive development. The section on Social Psychology examines salient topics in social psychology, such as impression management, social cognition, and prejudice.

PSYC2014

Personality and Intelligence 1 Science

Credit points: 6 **Teacher/Coordinator:** Dr Niko Tiliopoulos **Session:** Semester 2 **Classes:** Three 1 hour lectures and one 1 hour tutorial per week. **Prerequisites:** PSYC1001 and PSYC1002 **Prohibitions:** PSYC2114 **Assessment:** One 2 hour exam, major assignment (1500-2000 word essay/report), minor assignment (short written practical exercise and/or tutorial quizzes (100%)) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The main aim of this course is to introduce students to a number of influential theories in personality and intelligence. Students will be exposed to some conceptual analysis and will be expected to gain an understanding and be able to examine critically the various theories covered. Furthermore, students will be introduced to key topics in the scientific study and assessment of individual differences (Psychometrics) in personality and intelligence. The course will cover both conceptual (e.g. validity and reliability) and applied (e.g. Factor Analysis) elements of statistical psychometric inference.

PSYC3010

Advanced Statistics for Psychology Science

Credit points: 6 **Teacher/Coordinator:** Dr Sabina Kleitman, Dr Damian Birney **Session:** Semester 2 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** (PSYC2012 or PSYC2112) plus at least one other Intermediate Psychology Unit of Study from PSYC2011, PSYC2911, PSYC2111, PSYC2013, PSYC2113, PSYC2014 and PSYC2114. **Prohibitions:** PSYC3201 **Assessment:** One 2 hour exam, class tests, 1500 word assignment, practical



exercises (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study expands upon students' knowledge of the general linear model and its applications in the analysis of data from psychological research. The first half of the course introduces students to contrast analysis as an extension of ANOVA, which allows for more focused analysis of data where group comparisons are the primary interest. The second half focuses on multiple regression and its extensions, which are used when the primary interest is to predict or explain a particular variable based on a set of other variables.

Textbooks

Keith, Z. T. (2006). *Multiple Regression and Beyond*. New York: Pearson Education, Inc.

PSYC3011
Learning and Behaviour
Science

Credit points: 6 **Teacher/Coordinator:** Dr Evan Livesey **Session:** Semester 1 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** (PSYC2011 or PSYC2911 or PSYC2111) and at least one other Intermediate Psychology Unit from PSYC2012, PSYC2112, PSYC2013, PSYC2113, PSYC2014 or PSYC2114. **Prohibitions:** PSYC3209 **Assumed knowledge:** PSYC2012 or PSYC2112 **Assessment:** One 2 hour exam, one 2000 word prac report, tutorial quizzes (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit addresses the fundamental concepts and more important research findings related to contemporary theories of associative learning in animals and humans. It examines the application of such fundamental research to issues such as drug use and food choice. It is designed to foster skills in reading primary sources in this area, and provide the opportunity for hands-on experience in carrying out a research project.

Textbooks

Bouton, M. E. (2007). *Learning and Behavior: A contemporary synthesis*. Sunderland, MA: Sinauer.

PSYC3012
Cognition, Language and Thought
Science

Credit points: 6 **Teacher/Coordinator:** Prof Sally Andrews **Session:** Semester 1 **Classes:** Two 1 hour lectures and one 2 hour practical per week. **Prerequisites:** (PSYC2013 or PSYC2113) and at least one other Intermediate Psychology unit from PSYC2011, PSYC2911, PSYC2111, PSYC2012, PSYC2112, PSYC2014 or PSYC2114. **Prohibitions:** PSYC3205 **Assumed knowledge:** PSYC2012 or PSYC2112 **Assessment:** One 2 hour exam, 2000 word prac report, practical exercise(s) (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit extends the theories and methods of investigating memory and attentional processes discussed in PSYC2013 to consider a number of domains of higher cognitive processing. One strand of the course will focus on the cognitive processes involved in speech perception, language comprehension, language production, and reading. The remainder of the course will deal with the cognitive processes involved in reasoning and skill acquisition. The practical program will expose students to a variety of the research methods used to investigate higher cognitive processes, develop their understanding of how these methods can be used to investigate hypotheses about mental processes and consider applications of cognitive research to real-world problems and issues.

PSYC3013
Perceptual Systems
Science

Credit points: 6 **Teacher/Coordinator:** Prof David Alais **Session:** Semester 2 **Classes:** Two 1-hour lectures and one 2-hour tutorial per week. **Prerequisites:** (PSYC2011 or PSYC2911 or PSYC2111) and at least one other Intermediate Psychology Unit from PSYC2012, PSYC2112, PSYC2013, PSYC2113, PSYC2014, PSYC2114 or ANAT2010 **Prohibitions:** PSYC3210 **Assumed knowledge:** PSYC2012 **Assessment:** One 2-hour exam, one 2000 word report, tutorial quiz, group presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Perception poses many challenges: how do we see colour and movement? How do we perceive surfaces and materials? How does combining information from multiple senses improve our perception? This unit draws on behavioural and neurophysiological perspectives to deepen understanding of current research topics in perception. The emphasis is on how visual information is processed to accomplish functions such as perceiving a single edge, extracting the contours that form a face, or the spatial relations needed to call offside on the sports field. Students also gain conceptual tools for evaluating the empirical and theoretical worth of recent research in perception. During the tutorial component of the course students will develop a practical experiment in which they formulate and test a hypothesis. In this way students gain important research experience that gives them valuable insight into the scientific process as it exists both in professional work and in the empirical research project required for the Honours degree.

Textbooks

Sensation & Perception, Third Edition
Jeremy M. Wolfe, Keith R. Kluender, Dennis M. Levi, Linda M. Bartoshuk, Rachel S. Herz, Roberta L. Klatzky, Susan J. Lederman, and Daniel M. Merfeld

PSYC3014
Behavioural and Cognitive Neuroscience
Science

Credit points: 6 **Teacher/Coordinator:** Dr Laura Corbit **Session:** Semester 2 **Classes:** Two 1 hour lectures and one 2 hour practical per week. **Prerequisites:** Either ((PSYC2011 or PSYC2911 or PSYC2111) and at least one other Intermediate Psychology Unit from (PSYC2012 or PSYC2112), (PSYC2013 or PSYC2113), (PSYC2014 or PSYC2114)) OR ((PSYC2011 or PSYC2911 or PSYC2111 or PSYC2013) and ANAT2010 and PCOL2011) **Prohibitions:** PSYC3215, PSYC3204, PSYC3914 **Assumed knowledge:** PSYC2113 or PSYC2013 **Assessment:** One 2 hour exam, one major essay/report 2000-2500 words, tutorial quiz and participation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will focus on approaches to studying neurosciences incorporating molecular, pre-clinical and clinical models of brain function. These biological models of brain function will be linked with behavioural, affective and cognitive function and dysfunction. The implications of focal cognitive deficits in neurological patients for models of normal cognitive function will also be explored. Specific topics to be covered will be selected from the following areas: sensorimotor integration, and the neural and molecular basis of learning and memory, attention, language, visual cognition and praxis. In addition to lectures, a practical component will cover basic neuroanatomy, histology and neuropharmacology, and will introduce students to experimental and case-study approaches to studying neurosciences.

PSYC3914
Behavioural & Cognitive Neuroscience Adv
Science

Credit points: 6 **Teacher/Coordinator:** Dr Laura Corbit **Session:** Semester 2 **Classes:** Two lectures, one 1 hour tutorial and one 2 hour practical per week. **Prerequisites:** Distinction or above across (PSYC2011 or PSYC2911 or PSYC2111) **Prohibitions:** PSYC3215, PSYC3014, PSYC3204 **Assumed knowledge:** PSYC2113 or PSYC2013 **Assessment:** 1 x 2 hour exam (end of semester), 1 x 1 hour quiz (mid-semester), 1 x presentation, 1 written assignment (lab report), attendance and participation in tutorial/practical exercises (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will focus on approaches to studying neurosciences incorporating molecular, pre-clinical and clinical models of brain function. These biological models of brain function will be linked with behavioural, affective and cognitive function and dysfunction. The implications of focal cognitive deficits in neurological patients for models of normal cognitive function will also be explored. Specific topics to be covered will be selected from the following areas: sensorimotor integration, and the neural and molecular basis of learning and memory, attention, language, visual cognition and praxis. The lecture material will be the same as for PSYC3014, however, the practical class is targeted for those who would like to learn more about the experimental study of behaviour and the neurosciences. The practical component of the advanced stream will cover basic

neuroanatomy, histology and neuropharmacology and will introduce students to experimental approaches to studying brain-behaviour relationships in a group-run, in-class experiment that will be conducted over the course of the semester.

PSYC3015 Personality and Intelligence 2 Science

Credit points: 6 **Teacher/Coordinator:** Dr Carolyn MacCann **Session:** Semester 1 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** (PSYC2014 or PSYC2114) and (PSYC2011 or PSYC2911 or PSYC2111 or PSYC2012 or PSYC2112 or PSYC2013 or PSYC2113) **Assumed knowledge:** (PSYC2012 or PSYC2112); (PSYC2013 or PSYC2113) **Assessment:** One 2 hour exam; one major written assignment (1500 words), one minor written assignment (750 words), and tutorial activities (in-class quizzes and/or presentations) (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of this unit of study is to provide an overview of the different areas of research and practice in personality, intelligence, and individual differences. Students will be exposed to a wide variety of different theoretical models of personality, intelligence, and metacognition and encouraged to critically evaluate these theories based on the supporting research evidence. The methods of conducting and evaluating individual differences research will also be a focus of the course. Students will be encouraged to take multiple perspectives, evaluating theories of personality and intelligence in terms of their empirical and theoretical support as well as their potential applications.

PSYC3016 Developmental Psychology Science

Credit points: 6 **Teacher/Coordinator:** Dr Micah Goldwater **Session:** Semester 2 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** PSYC2013 or PSYC2113 and at least one other Intermediate Psychology unit from PSYC2011, PSYC2911, PSYC2111, PSYC2012, PSYC2112, PSYC2014 and PSYC2114. **Prohibitions:** PSYC3206 **Assessment:** One 2 hour exam, two short (600 & 750 words) essays, one extended (1200 word) essay (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit examines our understanding of human psychological development, focusing on selected issues and empirical traditions within the discipline of Developmental Psychology. Students are expected to gain an understanding of the theoretical influences that have come to dominate developmental research, and students will also be introduced to a range of theoretical and research approaches in contemporary Developmental Science. These include: attachment, gender role and identity, conceptual development, children's thinking, social cognition, moral reasoning and behaviour, self-understanding and self-worth, and the role of genetic and environmental influences on development. The course will also consider applications of developmental research and theory in developmental psychopathology and in educational contexts, as well as exploring children's experience of art, literature and drama. Students are expected to gain knowledge of, and develop a critical approach to, the analysis of current research and theoretical issues in these areas.

PSYC3017 Social Psychology Science

Credit points: 6 **Teacher/Coordinator:** Dr Ilan Dar-Nimrod **Session:** Semester 1 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** PSYC2013 or PSYC2113 and at least one other Intermediate Psychology Unit of Study from PSYC2011, PSYC2911, PSYC2111, PSYC2012, PSYC2112, PSYC2014 and PSYC2114. **Prohibitions:** PSYC3212 **Assumed knowledge:** PSYC2012 or PSYC2112. **Assessment:** One 2 hour exam, one 2500 word research report, and tutorial presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit continues the coverage of topics in Social Psychology begun in PSYC1001 and PSYC2013. The unit is divided into topic areas, where the emphasis is on evaluating theories and the relevant evidence. Topics areas include: antisocial behaviours, discrimination,

the self, emotion, ostracism, and interpersonal attraction. Tutorials provide first-hand experience of research by involving students in a small group research project based on topics covered in the lectures. The tutorials also provide an opportunity to discuss issues pertaining to each step of the research process (e.g., ethical issues that underlie social psychological research, proper practice when collecting and handling data, how to communicate research findings in written and verbal form).

PSYC3018 Abnormal Psychology Science

Credit points: 6 **Teacher/Coordinator:** Dr Ilona Juraskova **Session:** Semester 1 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** At least two intermediate Psychology units of study from PSYC2011, PSYC2911, PSYC2111, PSYC2012, PSYC2112, PSYC2013, PSYC2113, PSYC2014 and PSYC2114. **Prohibitions:** PSYC3203 **Assumed knowledge:** (PSYC2012 or PSYC2112) and (PSYC2014 or PSYC2114) **Assessment:** One 2 hour exam, one 2000 or 2500 word essay, quiz, participation and tutorial presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study critically examines core issues in Abnormal Psychology, concerning the description, explanation and treatment of psychological disorders. The unit of study will include topics such as:

- Adult abnormal psychology: Anxiety disorders (specific phobias, panic disorder, generalised anxiety disorder, OCD); Addictive disorders (drug, alcohol, gambling); Eating disorders (anorexia nervosa, bulimia nervosa); Mood disorders (dysthymia, major depressive disorder, cyclothymia, bipolar disorder); Schizophrenia, Personality disorders.
- Child abnormal psychology: Attention Deficit Hyperactivity disorder; Conduct disorder; Anxiety disorders, Depression.

Textbooks

Rieger, E. (Ed.) (2008) *Abnormal Psychology: Leading researcher perspectives*. Sydney: McGraw-Hill Education. (2nd Ed).

PSYC3020 Applications of Psychological Science Science

Credit points: 6 **Teacher/Coordinator:** Dr Catalina Lawsins **Session:** Semester 2 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week **Prerequisites:** 12 credit points of junior psychology and 12 credit points in Intermediate Psychology **Prohibitions:** PSYC3019 **Assessment:** One 2 hour examination (50%), one 2500 word written assignment (30%), class quizzes (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of this unit is to introduce students to various ways in which psychological theory and research can be applied in the real world. In particular, this unit will focus on Health Psychology, Forensic Psychology, and Organisational Psychology. The Health Psychology component of this course may include investigation into why we engage in risky health behaviours including smoking, overeating and alcohol use; inequalities in health including Aboriginal and Torres Strait Island health; dealing with chronic illness including death & dying, and survivorship. The Forensic Psychology component of the course may include investigation into lie detection, criminal offenders, victims of crime, and eyewitness memory. The Organisational Psychology component of the course may focus on personnel selection, training in organisations, performance measurement, workplace motivation, and leadership.

HPSC3023 Psychology & Psychiatry: History & Phil Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Hans Pols and Dr Fiona Hibberd **Session:** Semester 1 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** (at least 12 credit points of intermediate HPSC Units of study) OR (a CR or above in one HPSC intermediate Unit of Study) OR (12 intermediate credit points in psychology). **Prohibitions:** PSYC3202 **Assumed knowledge:** Basic knowledge about the history of modern science as taught in HPSC2100 AND the principles of philosophy of science as taught in HPSC2101 OR knowledge of the various sub-disciplines within Psychology. **Assessment:** 1x 2500wd essay (45%) and 1x2hr exam (45%) class participation

(10%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Across the unit we examine one of the most interesting aspects of the history and philosophy of science. viz., the scientific practices and assumptions involved in making human beings an object of study. We will examine the ways in which psychologists and psychiatrists have investigated human nature, the kinds of experimental approaches they have developed to that end, the major controversies in this field, and the basic philosophical assumptions that have been made in the sciences of human nature. We investigate the developments of psychological theories and investigative methods as well as the development of psychiatric theory, treatment methods, and institutions.

Textbooks

Leahey, TH (2004). A History of Psychology: Main currents in Psychological Thought. Pearson. Upper Saddle River, N.J. Course reader.

Clinical Psychology

Master of Clinical Psychology

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 2000, the Resolutions of the Faculty of Science, 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
MACLIPSY-01	Master of Clinical Psychology

2 Attendance pattern

The attendance pattern for this course is full-time or part-time. Both full-time and part-time students must follow a fixed timetable.

3 Admission to candidature

Available places will be offered to qualified applicants based on merit and interview, according to the following admissions criteria.

- (1) To be eligible to be admitted to candidature by the Dean or Associate Dean, an applicant must:
 - (a) hold or have completed the requirements for the degree of Bachelor of Psychology, Bachelor of Science (Honours), Bachelor of Arts (Honours), Bachelor of Economics (Social Sciences)(Honours) or Bachelor of Liberal Studies (Honours) from the University of Sydney with First Class Honours or Second Class Honours Division 1 in Psychology; and
 - (b) satisfy the Head of the School of Psychology of his or her personal suitability for the practice of clinical psychology, as determined by interview.
- (2) The Dean or Associate Dean may admit to candidature an applicant who does not meet the requirements of sub-clause (1), provided that the applicant holds a qualification or qualifications that, in the opinion of the Dean or Associate Dean, are equivalent to those prescribed in sub-clause (1).
- (3) An applicant for admission to candidature must submit to the Faculty:
 - (a) satisfactory evidence of the applicant's eligibility for admission; and
 - (b) two referees' reports (one academic, the other work experience related), as required by the Head of the School of Psychology.

4 Requirements for award

- (1) The units of study that may be taken for the Master of Clinical Psychology are set out in the table of units of study for the Master of Clinical Psychology course.
- (2) To qualify for the award of the degree of Master of Clinical Psychology, a candidate must:
 - (a) complete 96 credit points of units of study as set out in the table of units of study; and
 - (b) complete clinical placements as prescribed by the Head of School; and
 - (c) conduct a research project on an approved topic.

5 Cross-institutional study

Cross-institutional study is not available in this course.

6 Course transfer

The Master of Clinical Psychology is completed as a stand-alone course. No transfer from the Master of Clinical Psychology to the Master of Clinical Psychology / Doctor of Philosophy is allowed.

7 Credit for previous study

- (1) Credit transfer for the Master of Clinical Psychology component is subject to the provisions of the Coursework

Rule and the Resolutions of the Faculty of Science, except that:

- (a) no more than 48 credit points may be credited; and
- (b) the coursework must have been completed no more than three years prior to first enrolment in this course and not have been counted towards another award.

8 Time limits

Except with the permission of the Dean or Associate Dean, a candidate will complete the requirements for the Master of Clinical Psychology degree:

- (a) within a minimum period of four semesters and a maximum period of twelve semesters for full-time study; or
- (b) within a minimum period of eight semesters and a maximum period of twelve semesters for part-time study; and
- (c) within six calendar years of admission to candidature.

10 Transitional provisions

These resolutions apply to students who commenced their candidature after 1 January, 2015.

Course overview

The Master of Clinical Psychology (MCP) trains psychology graduates in the professional specialisation of clinical psychology. The MCP program is based on a Scientist-Practitioner model with an emphasis on a cognitive behavioural therapeutic approach, providing students with expertise, both practical and academic, to enable them to work as professional Clinical Psychologists in a variety of clinical settings. Advanced units of study and external placements allow students to develop a breadth of clinical experience as they are introduced to additional therapeutic approaches such as Schema therapy, DBT, Systems and Child and Family therapy.

Course outcomes

Our graduates will have a highly developed knowledge base and strong clinical skills necessary for both the practice of professional psychology on the one hand and conducting psychological research on the other.



Clinical Psychology

Units of study table

<i>Unit of study</i>	<i>Credit points</i>	<i>A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition</i>	<i>Session</i>
First Year			
Semester 1			
PSYC6078 Clinical Skills and Placement 1A	6	<i>Note: Department permission required for enrolment Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 1 Semester 2
PSYC6082 Treatment Across the Lifespan	6	<i>Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 1
PSYC6083 Assessment Across the Lifespan	6	<i>Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 1
PSYC6089 Research, Ethics and Professional Practice	6	<i>Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney</i>	Semester 1
Semester 2			
PSYC6072 Case and Research Seminars 1	6	<i>Degree Association: MCP</i>	Semester 2
PSYC6079 Placement 1B	6	P PSYC6078 <i>Note: Department permission required for enrolment Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 1 Semester 2
PSYC6084 Health and Neuropsychology	6	P PSYC6083 <i>Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 2
PSYC6085 Specialised Areas of Practice	6	<i>Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney</i>	Semester 2
Second Year			
Semester 1			
PSYC6073 Case and Research Seminars 2	6	<i>Degree Association: MCP</i>	Semester 1
PSYC6076 Research Project 1	6	P PSYC6089 <i>Note: Department permission required for enrolment Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 1 Semester 2
PSYC6080 External Placement 1	6	P PSYC6079 <i>Note: Department permission required for enrolment Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 1 Semester 2
PSYC6086 Reflective Practice and Placement 2	6	P PSYC6079 <i>Note: Department permission required for enrolment Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 1 Semester 2
Semester 2			
PSYC6075 Case and Research Seminars 3	6	<i>Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 2
PSYC6077 Research Project 2	6	P PSYC6089 <i>Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 1 Semester 2
PSYC6081 External Placement 2	6	<i>Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 1 Semester 2
PSYC6087 Advanced Models and Seminars	6	P PSYC6082 <i>Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney</i>	Semester 2



Clinical Psychology

Unit of study descriptions 2015

PSYC6072

Case and Research Seminars 1 Science

Credit points: 6 **Teacher/Coordinator:** Prof Stephen Touyz **Session:** Semester 2 **Classes:** 13 two-hour case and research seminars **Assessment:** Research proposal; Attendance at case and research seminars; Attendance at the School of Psychology Colloquium (100%). Students must demonstrate satisfactory performance on all assessments to satisfy requirements for this unit of study. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Degree Association: MCP

This unit of study will continue the case and research seminars introduced in PSYC6069 Ethics and Professional Practice. The unit of study will comprise attendance at formal weekly presentations, where Year 2 students will present a clinical case for discussion and Year 3 students will present their research findings. All students are required to attend throughout the semester, and are expected to attend the School Colloquium. It is expected that students will spend one day per week during this semester researching their chosen topic. Students are expected to be meeting with their supervisors during this semester to finalise aspects of their study design and methodology. If the research involves the recruitment of clinical samples off-site, students should expect to meet with their key individuals who will be involved with their research off-campus to negotiate the details of their project, the recruitment of subjects and to ensure its feasibility. Students are required to submit a formal written research proposal, which will form the basis of the research proposal presentation in the following semester.

PSYC6073

Case and Research Seminars 2 Science

Credit points: 6 **Teacher/Coordinator:** Prof Stephen Touyz **Session:** Semester 1 **Classes:** 13 two-hour case and research seminars **Assessment:** Research presentation; Case report; Attendance at case and research seminars; Attendance at the School of Psychology Colloquium (100%). Students must demonstrate satisfactory performance on both assessments to satisfy requirements for this unit of study. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Degree Association: MCP

This unit of study will continue the case and research seminars introduced in PSYC6072 Case and Research Seminars 1. The unit of study will comprise attendance at formal weekly presentations, where Year 2 students will present a clinical case for discussion and Year 3 students will present their research findings. All students are required to attend throughout the semester and are expected to attend the School Colloquium. Students are to prepare a written case report.

PSYC6075

Case and Research Seminars 3 Science

Credit points: 6 **Teacher/Coordinator:** Professor Stephen Touyz **Session:** Semester 2 **Classes:** Seminars 1hr/wk **Assessment:** Case presentation; case report; brief research presentation (all requirements must be satisfied; 100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

Students will attend a research seminar where they will listen to first year students present their final research proposals (early in semester) and will also present their own research study (late in semester). The

format will be poster/mini presentations to allow all students to showcase their research. Students will also present a clinical case in this seminar series.

Textbooks

None

PSYC6076

Research Project 1 Science

Credit points: 6 **Teacher/Coordinator:** Caroline Hunt **Session:** Semester 1, Semester 2 **Classes:** Practical work **Prerequisites:** PSYC6089 **Assessment:** Research plan and progress report (50%); literature review (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

During this unit students will be involved in data collection for their studies, with the expectation that at least a day a week will be involved in data collection and will write their literature review. Students will write a progress report that contains sections including an overview of the research question and design, the start and estimated completion date of recruitment, target recruitment numbers and the total recruited to date, obstacles encountered, plans to overcome obstacles.

Textbooks

None

PSYC6077

Research Project 2 Science

Credit points: 6 **Teacher/Coordinator:** Caroline Hunt **Session:** Semester 1, Semester 2 **Classes:** Practical work **Prerequisites:** PSYC6089 **Assessment:** Empirical paper (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

Students will conduct analysis and interpretation of the data they have collected in their empirical research project. They will write a draft of an empirical paper that is in the form of a manuscript ready for submission to a peer reviewed journal. If appropriate, following feedback, the student and their supervisor will submit the paper for publication.

Textbooks

None

PSYC6078

Clinical Skills and Placement 1A Science

Credit points: 6 **Teacher/Coordinator:** Dr Maree Abbott **Session:** Semester 1, Semester 2 **Classes:** 7 skills training seminars; 12 days clinical placement **Assessment:** Clinical vivas in assessment; treatment; ethical practice (students must demonstrate competency in all assessment components) Clinical Placement competency (students must demonstrate competency in all assessment components) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

The unit of study allows students to develop the practical skills of clinical psychology practice and put these into practice during their introductory placement in the Psychology Clinic. Clinical skills will be developed through observation of demonstration of model clinical



skills, and role play practice with staff feedback. The placement will encompass adult psychometric assessment and therapy practice.

**PSYC6079
Placement 1B
Science**

Credit points: 6 **Teacher/Coordinator:** Caroline Hunt **Session:** Semester 1, Semester 2 **Classes:** Clinical placement, 24 wks, 2 days/week (includes face-to-face patient contact, reading/preparation, clinic administration tasks such as notes and reports) **Prerequisites:** PSYC6078 **Assessment:** Contract, mid-placement review, clinical log (compulsory requirements for accreditation) end-of-placement review (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

The unit is designed to provide students with intensely supervised practice in conducting the fundamentals of clinical assessment, diagnosis, formulation, treatment planning, and treatment implementation for adult patients, psychometric assessments for adults and children/adolescents and child, adolescent and family work. A cognitive-behavioural approach is predominant in this placement for adult work. It will also provide an introduction to the practice of conducting psychometric assessments with the aim of achieving competency in the administration, scoring, interpretation and report writing for these assessments. It is expected that three to four cases will be undertaken, but additional cases may be prescribed until a student reaches competency. All students will also conduct child, adolescent or family therapy under the supervision of clinical psychologists with expertise in this area. Students may be offered the opportunity to run a group, subject to availability. Students will be allocated to specific supervisors for adult and child, adolescent and family therapy. While supervisors vary in the format in which they offer supervision, with a mixture of individual, group and observation formats being offered, supervision is intense and with a high level of observation by supervisors throughout the placement.

Textbooks

None prescribed. A wide range of clinical texts are available for consultation in the School of Psychology Test Library.

**PSYC6080
External Placement 1
Science**

Credit points: 6 **Teacher/Coordinator:** Caroline Hunt **Session:** Semester 1, Semester 2 **Classes:** Clinical placement, 24 wks, 2 days/week (includes face-to-face patient contact, reading/preparation, patient-related administration tasks such as notes and reports) **Prerequisites:** PSYC6079 **Assessment:** Contract, mid-placement review, clinical log (compulsory requirements for accreditation) end of placement review (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit of study involves students completing a placement in a setting external to the University Psychology Clinic. The placement will expose students to a range of presentations in one of the following settings, including hospitals and community health settings.

Textbooks

None prescribed. A wide range of clinical texts are available for consultation in the School of Psychology Test Library.

**PSYC6081
External Placement 2
Science**

Credit points: 6 **Teacher/Coordinator:** Caroline Hunt **Session:** Semester 1, Semester 2 **Classes:** Clinical placement, 24 wks, 2 days/week **Assessment:** Contract, mid-placement review, clinical log (compulsory requirements for accreditation) end of placement review (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit of study involves students completing a placement in a setting external to the University Psychology Clinic. The placement will expose students to a range of presentations in one of the following settings, including hospitals and community health settings. As the final clinical placement, this unit represents a capstone experience in bringing together learning from prior coursework and clinical placements.

Textbooks

None prescribed. A wide range of clinical texts are available for consultation in the School of Psychology Test Library.

**PSYC6082
Treatment Across the Lifespan
Science**

Credit points: 6 **Teacher/Coordinator:** Dr David Hawes **Session:** Semester 1 **Classes:** 1 lec/wk **Assessment:** One 2hr exam, one 500w assignment and 40 minute video, clinical viva, weekly readings (students must pass all assessment components). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit introduces current perspectives and on the conceptualisation and treatment of child and adult psychopathology. Core theories and models are presented within a developmental-ecological framework, and examined in relation to the aetiology, course, and maintenance of common psychological problems. Theoretical and practical skills-based training addresses core consultation processes (e.g., relational skills, engaging families) as well as key formats for intervention (e.g., individual, group, parent/family, school-based). Emphasis is placed on the learning of strong practical skills that can be applied to treatment targets in the context of evidence-based, formulation-driven practice. Attention is given to the clinical issues of unique importance to intervention in distinct periods across the lifespan, with respect to case formulation, treatment planning, therapeutic process, and evaluation of outcomes.

Textbooks

Barlow, D. (2007). *Clinical Handbook of Psychological Disorders* (4th Edition). New York: Guilford Press. Dadds, M. R., & Hawes, D. J. (2006). *Integrated family intervention for child conduct problems*. Brisbane, Queensland: Australian Academic Press. Dishion, T. J., & Stormshak, E. A. (2007). *Intervening in children's lives: An ecological, family-centered approach to mental health care*. Washington, DC: American Psychological Association. Kendall, P.C. (2006). *Child and adolescent therapy: Cognitive-behavioral procedures* (3rd ed.). NY: Guilford. Leahy, R.L. (2003). *Cognitive Therapy Techniques: A practitioner's guide*. New York: Guilford Press. Mash, E. J., & Barkley, R. A. (2002). *Child psychopathology*, 2nd ed. NY: Guilford Press. Mash, E. J., & Barkley, R. A. (2007). *Assessment of Childhood Disorders*, 4th ed. NY: Guilford Press. Page, A., & Stritzke, W. (2006). *Clinical Psychology for Trainees: Foundations of Science-Informed Practice*. Cambridge: Cambridge University Press. Wells, A. (1997). *Cognitive Therapy of Anxiety Disorders: A practice manual and conceptual guide*. Chichester, UK: Wiley & Sons.

**PSYC6083
Assessment Across the Lifespan
Science**

Credit points: 6 **Teacher/Coordinator:** Dr Suncica Sunny Lah **Session:** Semester 1 **Classes:** 1 lec/wk **Assessment:** WAIS-IV pass out, WISC-IV pass out, adult report writing assignment, child case assignment (students must achieve competency for each course component), preparation for pass outs, scoring exercises **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

In this unit students will develop expert understanding of theories and acquire advanced clinical skills that are important for psychological assessment of children and adults. The unit is based on the scientist-practitioner model which highlights the importance of critical thinking and utilisation of up to date research in selection of instruments and techniques to be used in assessments. The unit will promote a clinical approach that integrates clinical history, presentation and results obtained from psychometric testing (when appropriate) to form an opinion. Assessment and management of suicide risk will also be covered. It will develop a conceptual framework for understanding core psychological and developmental disorders, and assessment of these disorders. The unit will focus on assessment of behaviour, affect and cognition across the lifespan. Students will be

taught how to undertake psychological assessments and how to communicate these complex findings to a range of audiences.

PSYC6084

Health and Neuropsychology Science

Credit points: 6 **Teacher/Coordinator:** Dr Catalina Lawsin **Session:** Semester 2 **Classes:** 13 x 4 lectures **Prerequisites:** PSYC6083 **Assessment:** 2 research reports each worth (40%) weekly assessments totally (20%), readings **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit aims to integrate neuropsychology and health psychology to understand the psychological implications of health disorders/disabilities across the lifespan. The health psychology component will examine the relationships between psychological and physical functioning across a range of medical disorders and the way in which cognitive and behavioural factors influence psychological and physical functioning of those with health related problems. This component of the course will be concerned with theories and interventions that improve quality of life for people with medical problems. The course will aim to investigate theories and practice in the areas of adjustment to illness, working with patients and their families with chronic illness and dealing with death and dying. The neuropsychology component of this unit of study will introduce students to core neuropsychological syndromes and rehabilitation. Lectures will include theoretical components, case presentations and discussions.

Textbooks

Feinberg T. M.J (2003). Behavioural neurology & neuropsychology. Second Edition. USA: McGraw-Hill. Hunter, S.J., Donders, J (2007). Pediatric neuropsychological intervention. UK: Cambridge University Press. Morgan, J.E., Ricker, J.H. (2008). Textbook of clinical neuropsychology. New York: Taylor & Francis.E., Farah.

PSYC6085

Specialised Areas of Practice Science

Credit points: 6 **Teacher/Coordinator:** Paul Rhodes **Session:** Semester 2 **Classes:** 12 4hr lectures **Assessment:** 3x2000w essays **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney

The aim of this unit is to introduce students to specialised modes of assessment and treatment beyond the core models and diagnoses they have learned about to date. This includes both complex presentations in individuals and complex dynamics and interventions in couples and families.

Textbooks

Rhodes, P. & Wallis, A. (2011) A Practical Approach to Family Therapy: Structured Guidelines and Key Skills

PSYC6086

Reflective Practice and Placement 2 Science

Credit points: 6 **Teacher/Coordinator:** Dr Paul Rhodes **Session:** Semester 1, Semester 2 **Classes:** Placement 1 day x 16 wks, 8 x 3-hr lecture **Prerequisites:** PSYC6079 **Assessment:** 3 x 3000w essays, contract; end-of-placement-review; weekly clinic log, weekly reflective log **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit is designed to extend clinical assessment, formulation, treatment planning, and treatment implementation skills and knowledge for adult and child patients. It also extends trainees' knowledge and experience conducting and interpreting psychometric assessments. Trainees will be allocated to new supervisors for this placement and supervision methods will become less intense, more individual and begin to reflect formats available in external placements. A secondary

aim of this unit is to develop students' awareness of complex processes in the therapy room, both those presented by the client, in the therapeutic relationship and in the internal dialogue of the clinician. Units include a focus on complex psychodynamic phenomenon, as conceptualised in contemporary evidence-based practice and support the development of mature reflective children who are able to focus on both professional and personal development across their careers.

Textbooks

McWilliams, N. (2011). Psychoanalytic Formulation: Understanding Personality Structure in the Clinical Process. Guildford: NY. Stedmon & Dallos (2009). Reflective Practice in Psychotherapy and Counselling. OUP: NY. Kenny, D. (2012). Bringing Up Baby: The Psychoanalytic Infant Comes of Age. Karnac: London. White, M. (1997). Narratives of Therapists' lives. Adelaide, South Australia: Dulwich Centre Publications.

PSYC6087

Advanced Models and Seminars Science

Credit points: 6 **Teacher/Coordinator:** Prof Stephen Touyz **Session:** Semester 2 **Classes:** 12 4hr lectures **Prerequisites:** PSYC6082 **Assessment:** 3 x 2500w essays **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney

This unit is designed to provide students with advanced level training in psychotherapeutic approaches. For example, the unit will cover responses to complex human problems, including personality disorders, from a wider variety of clinical orientations. It focuses on a range of advanced models of therapy, including from time to time, seminars by visiting clinical academics or practitioners with expertise in specific therapeutic approaches.

PSYC6089

Research, Ethics and Professional Practice Science

Credit points: 6 **Teacher/Coordinator:** Prof Stephen Touyz **Session:** Semester 1 **Classes:** 11 lec, 1 1hr seminar/wk, practical work on research planning **Assessment:** Ethical viva 0.5hr; research proposal 1000w **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney

This unit will introduce students to current standards of ethical and professional practice in clinical psychology and promote life-long learning and understanding. The unit will also strengthen theory-practice links by exposing students to a range of topics that are relevant to ethical and professional issues that present in the Psychology Clinic and later in professional life, including cultural competence. Students will attend lectures on research methods and evaluation in clinical research, and a series of seminars where they will listen to second year students who will present clinical cases and brief research presentations. Within this unit of study, students will also begin to plan their own research project and submit a preliminary research proposal.

Textbooks

Psychiatric Ethics: Third Edition. Edited by Sidney Bloch, Paul Chodoff and Stephen Green, Oxford University Press, 1999. Page, A, Stritzke, W (2006). Clinical Psychology for trainees. Foundations of Science - Informed Practice, Cambridge University Press

Coaching Psychology

Graduate Certificate in Coaching Psychology

Graduate Diploma in Coaching Psychology

Master of Science in Coaching Psychology

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 2000 (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
GCPSYCOA-01	Graduate Certificate in Coaching Psychology
GNPSYCOA-01	Graduate Diploma in Coaching Psychology
MASCPSCO-01	Master of Science in Coaching Psychology

2 Attendance pattern

The attendance pattern for these courses is full time or part time according to candidate choice, except the graduate certificate which is available part time only:

3 Master's type

The master's degree in these resolutions is an advanced learning master's course.

4 Embedded courses in this sequence

- (1) The embedded courses in this sequence are:
 - (a) Graduate Certificate in Coaching Psychology
 - (b) Graduate Diploma in Coaching Psychology
 - (c) Master of Science in Coaching Psychology
- (2) Providing candidates satisfy the admission requirements for each stage, a candidate may progress to the award of any course in this sequence. Only the highest award completed will be conferred.

5 Admission to candidature

- (1) With approval from the Dean, available places will be offered to qualified applicants according to the following admissions criteria:
- (2) Admission to the Graduate Certificate in Coaching Psychology requires:
 - (a) a three-year Psychology degree or a three-year degree in a cognate discipline from the University of Sydney or equivalent institution; and
 - (b) a minimum of three years relevant employment experience.
- (3) Admission to the Graduate Diploma in Coaching Psychology requires:
 - (a) a three-year Psychology degree or a three-year degree in a cognate discipline from the University of Sydney or equivalent institution; and
 - (b) a minimum of three years relevant employment experience; or
 - (c) completion of the embedded graduate certificate in this discipline, from the University of Sydney, or equivalent qualification.
- (4) Admission to the Master of Science in Coaching Psychology requires:

- (a) a three-year Psychology degree with a credit average or a three-year degree in a cognate discipline from the University of Sydney or equivalent institution; and
- (b) a minimum of three years relevant employment experience; or
- (c) completion of the embedded graduate diploma in this discipline.
- (5) Relevant work experience may include counselling, experience in organisational learning and development, management experience, employment in applied psychology settings, professional coaching or other areas directly related to coaching.

6 Requirements for award

- (1) The units of study that may be taken for these awards are set out in the table for Coaching Psychology postgraduate courses. With the approval of the Dean and the program coordinator, candidates for the graduate diploma or master's degree, with special aims or interests, may be allowed to substitute up to 12 credit points with relevant postgraduate units from outside the table.
- (2) To qualify for the Graduate Certificate in Coaching Psychology a candidate must complete 24 credit points, including:
 - (a) 18 credit points of core units of study; and
 - (b) 6 credit point elective unit of study.
- (3) To qualify for the Graduate Diploma in Coaching Psychology a candidate must complete 36 credit points, including:
 - (a) 18 credit points of core units of study; and
 - (b) 18 credit points of elective units of study.
- (4) To qualify for the Master of Science in Coaching Psychology coursework pathway a candidate must complete 48 credit points, including:
 - (a) 18 credit points of core units of study;
 - (b) 30 credit points of elective units of study.
- (5) Subject to the availability of supervision and suitable projects, candidates with a credit average in 24 credit points of study from the degree may be admitted to the research pathway.
- (6) To qualify for the Master of Science in Coaching Psychology research pathway a candidate must complete 48 credit points, including:
 - (a) 30 credit points of core units of study; and
 - (b) 18 credit points of elective units of study.

7 Transitional provisions

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2015 and persons 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 requirements are completed by 1 January, 2018, or later date as the faculty may, in special circumstances, approve.



Course overview

The Master of Coaching Psychology is an articulated postgraduate program which teaches the applied science of human performance enhancement and coaching. Coaching psychology sits at the intersection of counselling, clinical and organisational psychology and focuses on working with non-clinical populations. This program provides students with a sound grounding in the theoretical and methodological aspects of coaching and coaching psychology and teaches fundamental applied coaching skills.

Study for the Graduate Diploma in Coaching Psychology and the Master of Coaching Psychology may be undertaken in either part-time or full-time mode.

Students enrolled in the Graduate Certificate in Coaching Psychology may only enrol part-time.

Course outcomes

This program is designed to provide graduates with the key theoretical understandings and the core skills necessary to work as a coach in a wide range of settings. Graduates of this course will be equipped to work in the scientist-practitioner or scholar-practitioner model, and can expect to find employment as human performance consultants and personal, workplace or executive coaches in industry, in the human resources field or in private practice.

Graduates of the Master of Coaching Psychology who have completed PSYC5016 and PSYC5017 Research Project in Applied Psychology A and B are eligible to apply for admission to a research degree (Master of Science or Doctor of Philosophy).

Full-time and Part-time Progression

The attendance pattern for these courses is full-time or part-time according to candidate choice, except the graduate certificate which is available part-time only. However, it is strongly recommended that where possible students enrolled in the Master of Science in Coaching Psychology follow the part-time sequence to maximise the learning process.

Part-time students: the progression sequence is: first semester of enrolment, PSYC4721 and PSYC4722; second semester of enrolment and following semesters, PSYC4724 and remaining elective units to suit individual students' needs and interests and to meet degree requirements.

Full-time students: the progression sequence is: first semester of enrolment, PSYC4721, PSYC4722 and other elective units; second semester of enrolment, PSYC4724 and remaining elective units to suit the individual students' needs and interests and to meet degree requirements. PSYC4721 and PSYC4722 must be completed before enrolling in PSYC4724. If PSYC4721 and PSYC4722 are taken in separate semesters, students should enrol in PSYC4721 before PSYC4722.

Recommended enrolment sequences can be found under Coaching Psychology - Sample Enrolment.

Coaching Psychology

Units of study table

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
Core Units			
All students must complete 18 credit points of the following.			
PSYC4721 Theories & Techniques of Coaching Psych	6	<i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2
PSYC4722 Fundamentals of Coaching Practice	6	<i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2
PSYC4724 Coaching Practice	6	P PSYC4721 and PSYC4722 <i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2
Elective Units			
Graduate Certificate students must complete 6 credit points from the following.			
Graduate Diploma students must complete 18 credit points from the following.			
Master's students in the coursework pathway must complete 30 credit points from the following.			
Master's students in the research pathway must complete 18 credit points from the following.			
PSYC4723 Socio-cognitive Issues in Coaching Psych	6	<i>Note: Department permission required for enrolment</i>	Semester 1
PSYC4725 Assessment and Selection <i>This unit of study is not available in 2015</i>	6		Winter Main
PSYC4727 Positive Organisational Coaching	6	P PSYC4721, PSYC4722 <i>Note: Department permission required for enrolment</i>	Semester 2a
PSYC4729 Groups, Teams and Systems	6	P PSYC4721 and PSYC4722 and either PSYC4724 or PSYC4728	Semester 2
PSYC4730 Applied Positive Psychology	6	<i>Note: Department permission required for enrolment</i>	Semester 1
PSYC4731 Psychology of Peak Performance	6		Semester 2
Master's students in the research pathway must complete 12 credit points from the following.			
Special permission is required.			
PSYC5016 Research Project in Applied Psychology A	6	P Distinction average in 24 credit points from (PSYC5010, PSYC5011, PUBH5018, BACH5341 and 12 credit points of electives). C PSYC5017 <i>Students enrolled in Coaching Psychology require special permission from the Coaching Psychology Unit to enrol into this unit of study in lieu of satisfying the listed prerequisites.</i>	Semester 1 Semester 2
PSYC5017 Research Project in Applied Psychology B	6	P Distinction average in 24 credit points from (PSYC5010, PSYC5011, PUBH5018, BACH5341 and 12 credit points of electives) C PSYC5016 <i>Students enrolled in Coaching Psychology require special permission from the Coaching Psychology Unit to enrol into this unit of study in lieu of satisfying the listed prerequisites.</i>	Semester 1 Semester 2



Coaching Psychology

Unit of study descriptions 2015

PSYC4721

Theories & Techniques of Coaching Psych Science

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** One 3 hour lecture per week. **Assessment:** In-semester assessment(s) (80%), Exam (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit details the core theories and techniques of coaching psychology and evidence-based coaching, and the use of coaching as an applied positive psychology. Theories and techniques will be evaluated by reference to empirical research and conceptual analysis. An integrated goal-focused approach to coaching draws on a broad base of established Behavioural Science. Within this framework, primary attention will be paid to cognitive-behavioural and solution-focused theories and techniques of behaviour change and self-regulation, and their application to coaching clients. Each weekly seminar has a lecture component and an experiential learning component. The experiential learning component requires students to evaluate each week's topic in relation to their own personal life experience and to participate in group discussion and coaching practice.

PSYC4722

Fundamentals of Coaching Practice Science

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** Five day-long seminars (Block Teaching). **Assessment:** In-semester assessment(s) (80%), Exam (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: Department permission required for enrolment.

This unit teaches the fundamentals of coaching, and lays the foundations for sound contemporary practice. It outlines the emergence of contemporary coaching from its roots in the Human Potential Movement, sports coaching, management consulting, clinical and counseling psychology, through to the establishment of the positive psychology movement. Drawing on established approaches students will be trained in the core micro skills of coaching. Core issues relating to mental illness and mental health and ethical professional coaching practice are addressed. Each seminar has a lecture component and an experiential learning component. The experiential learning component requires students to evaluate each topic in relation to their own personal life/work experience and to participate in group discussion. Practical experience of self-coaching and co-coaching are central aspects of this unit. This unit will be taught in block intensive mode over five days.

PSYC4723

Socio-cognitive Issues in Coaching Psych Science

Credit points: 6 **Session:** Semester 1 **Classes:** Four day-long seminars with some evening tutorials (Block Teaching). **Assessment:** In-semester assessment(s) (80%), Exam (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: Department permission required for enrolment.

The aim of this unit is to give students an understanding of key socio-cognitive issues related to coaching and behaviour change. The focus of the unit is on critical appraisal of theory and the relation of theory to practice and research. Topics covered in this unit include models of self-regulated behaviour, personality type, the relationships

between emotion, cognition and behaviour, and the roles of learnt resourcefulness, learned optimism, psychological mindedness, self-reflection and insight in behaviour change. The unit also critically evaluates contemporary understandings and assessments of emotional intelligence. Current topics and research methods in coaching psychology are also examined. Each weekly seminar has a lecture component and an experiential learning component. The experiential learning component requires students to evaluate each topic in relation to their own personal life/work experience and to participate in group discussion. This unit is run in a block teaching format.

PSYC4724

Coaching Practice Science

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** One 3 hour lecture per week. **Prerequisites:** PSYC4721 and PSYC4722 **Assessment:** In-semester assessment(s) (80%), Exam (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

Students will consolidate the theory and skills acquired in PSYC4721 and PSYC4722 through a semester-long coaching practicum. Using real-life issues in a supportive and confidential environment, students will coach each other in a structured solution-focused personal coaching program based on the material taught in previous units of study. This unit gives students experience in being both a coach and a client. A key component of this course will be feedback from the lecturer on students' coaching styles, skills and other relevant issues. As such this unit provides students with the opportunity to embed and develop their coaching skills. Case studies and case presentations will form part of the unit.

PSYC4725

Assessment and Selection Science

This unit of study is not available in 2015

Credit points: 6 **Session:** Winter Main **Classes:** One 2 hour lecture per week. **Assessment:** In-semester assessment(s) 80%, Exam 20% **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce students to some of the major assessment instruments used in coaching psychology. This unit does not accredit students to administer any of the instruments examined in this unit of study. Rather the unit focuses both on critical evaluation of assessment instruments and on fostering an understanding of where each may be best utilised. Assessment instruments include: NEO 4; 16PF5; Myers Briggs Type Inventory; the DISK; Human Synergistics; BarOn EQI; WAIS; MMPI; Self-directed Search; Strong Interest Inventory; Multi-factor Leadership Questionnaire.

PSYC4727

Positive Organisational Coaching Science

Credit points: 6 **Session:** Semester 2a **Classes:** Five day-long seminars (Block Teaching). **Prerequisites:** PSYC4721, PSYC4722 **Assessment:** In-semester assessment(s) (80%), Exam (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: Department permission required for enrolment.

How can psychology help create 'healthy' workplaces? Executive and management coaching have emerged as important factors in the enhancement of performance, engagement and well-being in the workplace. This unit examines key issues in contemporary executive



and workplace coaching and equips students with the knowledge and skills to provide world-class executive and management coaching. The emphasis is on critical evaluation of theory and application to practice. Although primarily focused on positive psychology, solution-focused and cognitive-behavioural approaches to coaching in organisations, the application of psychodynamic (eg Kilburg) and systems (eg O'Neil) approaches to the enhancement of performance and well-being are also considered. The unit covers issues in senior executive coaching, coaching middle management, establishing manager-as-coach programs, and the use of positive psychology in the workplace.

PSYC4729 **Groups, Teams and Systems** **Science**

Credit points: 6 **Session:** Semester 2 **Classes:** One 3 hour lecture per week. **Prerequisites:** PSYC4721 and PSYC4722 and either PSYC4724 or PSYC4728 **Assessment:** In-semester assessment(s) (80%), Exam (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Coaching always takes place within the context of human systems, be they family, social networks, or workplace organisations. This unit of study considers both the theory and practice of working in human systems. At the theoretical level, students undertaking this unit will consider the major theoretical advances which aid our understanding of groups and complex human systems. These will include systems theory and complexity theory as well as major research findings in group and team dynamics. Students will also consider the practical implications of these theoretical approaches to coaching within organisations. Issues surrounding self organisation, leadership and control, and the management of change in complex adaptive systems will also be discussed. Students will design and facilitate a small group coaching program.

PSYC4730 **Applied Positive Psychology** **Science**

Credit points: 6 **Session:** Semester 1 **Classes:** Five day-long seminars (Block Teaching). **Assessment:** In-semester assessment(s) 80%, Exam 20% **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode
Note: Department permission required for enrolment.

This unit of study teaches the application of positive psychology to coaching in work and personal life contexts. We consider the core principles of positive psychology and how these can be applied in coaching interventions. Topics covered in this unit include; coaching as an applied positive psychology; goals, meaning and well-being; subjective and psychological well-being: happiness; gratitude; the languishing vs. flourishing dichotomy; broaden and build theory; self-concordance; well-being in the workplace; career coaching through the life span; and the use of positive psychology in health coaching. There is emphasis on both theoretical understanding and personal practice. The experiential learning component requires students to evaluate each week's topic in relation to their own personal life experience and to participate in group discussion and coaching practice.

PSYC4731 **Psychology of Peak Performance** **Science**

Credit points: 6 **Session:** Semester 2 **Classes:** Five day-long seminars (Block Teaching). **Assessment:** In-semester assessment(s) (80%), Exam (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

The Psychology of Peak Performance draws on theories and models of sport, performance and positive psychology and applies these to use in executive, workplace and personal coaching practice. Topics covered include flow, mental toughness, mental readiness, concentration enhancement strategies and techniques, rehearsal and debrief strategies, thriving under pressure, self-coaching, overcoming setbacks, performance protocols, focusing, and surviving success. In addition the unit covers issues related to high performing teams and

groups. Issues of work/life balance are also addressed, particularly in relation to the management of optimal energy levels (avoiding burnout). There is emphasis on both theoretical understanding and personal practice. The experiential learning component requires students to evaluate each week's topic in relation to their own personal life experience and to participate in group discussion and coaching practice.

Textbooks

No set text book: A reading pack can be obtained from the University Copy Centre

PSYC5016 **Research Project in Applied Psychology A** **Science**

Credit points: 6 **Teacher/Coordinator:** Associate Professor Anthony Grant **Session:** Semester 1, Semester 2 **Classes:** Contact will be mainly tutorials with students arranging the appropriate level of supervision needed. Some lectures will also be provided. **Prerequisites:** Distinction average in 24 credit points from (PSYC5010, PSYC5011, PUBH5018, BACH5341 and 12 credit points of electives). **Corequisites:** PSYC5017 **Assessment:** Combined with PSYC5017. Project assignment 7000 to 9000 words (100%). In this unit of study the student will use as many of the identified sessions as s/he wishes for collection of data, preparation of the project etc. under the supervision of his/her research supervisor. Lectures are voluntary and are designed to cover common problems. The majority of support will be one-on-one tutorial sessions with the students' supervisors. Students will prepare the ethics application (if applicable), the literature review, collect the data and write up the project with supervision. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Students enrolled in Coaching Psychology require special permission from the Coaching Psychology Unit to enrol into this unit of study in lieu of satisfying the listed prerequisites.

In combination with PSYC5017 in this unit of study the student will be given the opportunity to carry out a substantial piece of research in applied psychology. The research process can be followed from start to finish allowing the individual to utilise knowledge and skills gained in the other unit of study. The aim of this unit of study is to allow students to identify a research issue, review existing literature on the topic, formulate novel research questions, and test these questions through the application of contemporary psychological methodologies and appropriate data-analytic procedures. Lectures are voluntary, and are designed to cover common problems. The majority of support will be one-on-one tutorial sessions with the student's supervisor.

PSYC5017 **Research Project in Applied Psychology B** **Science**

Credit points: 6 **Teacher/Coordinator:** Associate Professor Anthony Grant **Session:** Semester 1, Semester 2 **Classes:** Contact will be mainly tutorials with students arranging the appropriate level of supervision needed. Some lectures will also be provided. **Prerequisites:** Distinction average in 24 credit points from (PSYC5010, PSYC5011, PUBH5018, BACH5341 and 12 credit points of electives) **Corequisites:** PSYC5016 **Assessment:** Combined with PSYC5016. Project assignment 7000 to 9000 words (100%). In this unit of study the student will use as many of the identified sessions as s/he wishes for collection of data, preparation of the project etc. under the supervision of his/her research supervisor. Lectures are voluntary and are designed to cover common problems. The majority of support will be one-on-one tutorial sessions with the students' supervisors. Students will prepare the ethics application (if applicable), the literature review, collect the data and write up the project with supervision. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Students enrolled in Coaching Psychology require special permission from the Coaching Psychology Unit to enrol into this unit of study in lieu of satisfying the listed prerequisites.

In combination with PSYC5016 in this unit of study the student will be given the opportunity to carry out a substantial piece of research in psychology. The research process can be followed from start to finish allowing the individual to utilise knowledge and skills gained in the other unit of study. The aim of this unit of study is to allow students to identify a research issue, review existing literature on the topic, formulate novel research questions, and test these questions through the application of contemporary psychological methodologies and appropriate data-analytic procedures. Lectures are voluntary, and are designed to cover common problems. The majority of support will be one-on-one tutorial sessions with the student's supervisor.

Environmental Science

Graduate Certificate in Environmental Science

Graduate Diploma in Environmental Science

Master of Environmental 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 2000 (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
GCENVSCI-01	Graduate Certificate in Environmental Science
GNEVSCI-02	Graduate Diploma in Environmental Science
MAENVSCI-01	Master of Environmental Science

2 Attendance pattern

The attendance pattern for these courses is full time or part time according to candidate choice.

3 Master's type

The master's degree in these resolutions is an advanced learning master's course.

4 Embedded courses in this sequence

- (1) The embedded courses in this sequence are:
- Graduate Certificate in Environmental Science
 - Graduate Diploma in Environmental Science
 - Master of Environmental Science
- (2) Providing candidates satisfy the admission requirements for each stage, a candidate may progress to the award of any course in this sequence. Only the highest award completed will be conferred.

5 Admission to candidature

- With approval from the Dean available places will be offered to qualified applicants, according to the following admissions criteria.
- In exceptional circumstances the Dean may admit to the Graduate Certificate or Graduate Diploma, applicants without the following qualifications but whose evidence of experience and achievement is deemed by the Dean to be equivalent.
- Admission to the Graduate Certificate in Environmental Science requires:
 - a Bachelor of Science from the University of Sydney in the discipline of biology, chemistry, physics, mathematics, ecology, climate and atmospheric sciences, marine science, geology, geography, environmental studies, environmental engineering, agriculture and/or natural resource management, or equivalent qualification; or
 - a Bachelors degree in any discipline, in addition to successfully completing 18 credit points of undergraduate science at the University of Sydney, including:
 - 6 credit points in biology; and
 - 6 credit points in chemistry; and
 - 6 credit points in geography.
- Admission to the Graduate Diploma in Environmental Science requires:

- a Bachelor of Science from the University of Sydney in one or more of the disciplines listed under subsection (3)(a), or equivalent qualification; or
 - completion of the embedded graduate certificate in this discipline, from the University of Sydney, or equivalent qualification; or
 - a Bachelors degree in any discipline, in addition to successfully completing 18 credit points of undergraduate science at the University of Sydney, as listed under subsection (3)(b).
- (5) Admission to the Master of Environmental Science requires:
- a Bachelor of Science, with a credit average, from the University of Sydney in one or more of the disciplines listed under subsection (3)(a), or equivalent qualification; or
 - a Bachelor of Science with Honours from the University of Sydney in one or more of the disciplines listed under subsection (3)(a), or equivalent qualification; or
 - completion of the embedded graduate diploma in this discipline, from the University of Sydney, or equivalent qualification; or
 - a Bachelors degree in any discipline, in addition to successfully completing 18 credit points of undergraduate science at the University of Sydney with a credit average, as listed under subsection (3)(b).

6 Requirements for award

- The units of study that may be taken for these awards are set out in the table for Environmental Science postgraduate courses. With the approval of the Dean and the program coordinator, candidates for the graduate diploma or master's degree, who have special aims or interests, may be allowed to substitute up to 12 credit points with relevant postgraduate units from outside the table.
- To qualify for the Graduate Certificate in Environmental Science a candidate must complete 24 credit points, including:
 - 18 credit points of core unit of study; and
 - 6 credit points of elective units of study.
- To qualify for the Graduate Diploma in Environmental Science a candidate must complete 48 credit points, including:
 - 24 credit points of core units of study, and
 - 24 credit points of elective units of study.
- To qualify for the Master of Environmental Science a candidate must complete 72 credit points, including:
 - 30 credit points of core units of study; and
 - 42 credit points of elective units of study.

7 Recognition of prior learning

Candidates offered admission to the Master of Environmental Science may be eligible for a reduction in the volume of learning of up to 24 credit points where the candidate has completed a qualification at level 8 of the Australian Qualifications Framework in one or more of the disciplines listed under section 5(3)(a).

8 Transitional arrangements

- These resolutions apply to persons who commenced their candidature after 1 January, 2015 and persons who commenced their candidature prior to 1 January, 2015 who elect to proceed under these resolutions.
- 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 requirements are completed by 1 January, 2019, or later date as the faculty may, in special circumstances, approve.

Course overview

The Graduate Certificate in Environmental Science, Graduate Diploma in Environmental Science and Master of Environmental Science are articulated coursework programs that allow a large degree of flexibility in the depth at which studies are undertaken and the choice of subjects



studied. Some of the major themes addressed include environmental chemistry, ecology, climate change, renewable energy production and environmental policy.

Course outcomes

The articulated award program in Environmental Science is designed for both recent graduates wishing to obtain employment in the environmental field and for graduates already working in an environmental sphere who are interested in gaining either a formal qualification in environmental science or additional information about related areas of environmental science.

Environmental managers and scientists are increasingly finding that they need to have a broad interdisciplinary knowledge base and the ability to be flexible and innovative in their application of such knowledge. Thus the aim of this award program is to provide students with the ability to solve environmental problems that require the integration of knowledge from diverse disciplines. Emphasis is placed on studies which span several disciplines, adaptive problem solving, and the development of new skills and expertise.

Upon completion of the graduate certificate, graduates will possess a practical and theoretical background in some of the basic aspects of environmental science. This can be supplemented and extended upon completion of the graduate diploma, and extended further to include research and practical skills upon completion of the master's program. Students completing the full postgraduate program will have a solid grounding in all basic areas of environmental science, enabling them to understand the environmental problems that can arise and the disparate solutions that can be applied to solve such problems, and to comprehend all aspects of environmental assessment.

Environmental Science

Units of study table

Errata

Item	Change	Section	Date
2.	WILD5004 Vertebrate Pest Management Remove status "This unit of study is not Data Audit Committee Approved"	Environmental Science - Unit of Study Table	11/12/2014

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
Core Units			
Students in the graduate certificate must complete at least 18 credit points of the following core units.			
Students in the graduate diploma must complete at least 24 credit points of the following core units.			
Students in the master's degree must complete at least 30 credit points of the following core units, including RESP5001.			
Students in the master's degree must complete RESP5001.			
RESP5001 is only available to students in the master's degree.			
AFNR5801 Climate Change: Process, History, Issues	6	A A basic understanding of climate change processes and issues.	Semester 2
ENVI5705 Ecological Principles	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 1
ENVI5707 Energy - Sources, Uses and Alternatives	6		Semester 2
ENVI5708 Introduction to Environmental Chemistry	6		Semester 1
ENVI5801 Social Science of Environment	6		Semester 1
ENVI5904 Methods in Applied Ecology	6		Semester 2
RESP5001 Integrated Environmental Practice	6		Semester 1 Semester 2
Elective Units			
AFNR5511 Soil Processes, Assessment & Management	6		Semester 1
AFNR5512 Water Management and Variable Climate	6	A UG Maths or Physics or Hydrology.	Semester 2
AFNR5705 Australian Forest Systems	6		Semester 2
ENVI5502 Environmental Research Project A	6	P Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study N ENVI5501 <i>Note: Department permission required for enrolment</i> <i>Students taking ENVI5502 must take ENVI5503 and ENVI5504</i>	Semester 1 Semester 2
ENVI5503 Environmental Research Project B	6	P Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study N ENVI5501 <i>Note: Department permission required for enrolment</i> <i>Students taking ENVI5502 must take ENVI5503 and ENVI5504</i>	Semester 1 Semester 2
ENVI5504 Environmental Research Project C	6	P Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study N ENVI5501 <i>Note: Department permission required for enrolment</i> <i>Students taking ENVI5502 must take ENVI5503 and ENVI5504</i>	Semester 1 Semester 2
ENVI5809 Environmental Simulation Modelling	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 2a
ENVI5903 Sustainable Development	6	<i>Note: Department permission required for enrolment</i>	Intensive July
GEOG5001 Geographic Information Science A	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 1
GEOG5004 Environmental Mapping and Monitoring	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 2



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
GEOS5501 Human Rights and the Environment	6		Semester 2
GOVT6135 Global Environmental Politics <i>This unit of study is not available in 2015</i>	6		Semester 1
MARS5004 Coastal Management Field School	6		Intensive October
MARS5006 Coral Reefs, Science and Management	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. <i>Note: Department permission required for enrolment</i>	Semester 1
MARS5007 Coral Reefs and Climate Change	6		Semester 1a
PHYS5031 Ecological Econ & Sustainable Analysis	6		Semester 1
PHYS5032 Techniques for Sustainability Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 1 Semester 2
PHYS5033 Environmental Footprints and IO Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 1 Semester 2
PHYS5034 Life Cycle Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 2
RSEC5432 Environmental Economics <i>This unit of study is not available in 2015</i>	6		Semester 2
SUST5002 Food and Water Security	6	C SUST5001	Semester 2
SUST5005 Policy and Sustainability	6	C SUST5001	Intensive September
WILD5001 Australasian Wildlife: Introduction	6		Intensive August
WILD5002 Australasian Wildlife: Field Studies	6		Intensive September
WILD5004 Vertebrate Pest Management <i>This unit of study is not Data Audit Committee Approved</i>	6		Intensive August

Environmental Science

Unit of study descriptions 2015

AFNR5511

Soil Processes, Assessment & Management Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** Dr Damien Field **Session:** Semester 1 **Classes:** 1 Lec, 2 tutorials/wk, case study & oral presentations. **Assessment:** Essay (30%), Group discussions (20%), Case study report (30%), Group presentation (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Soils support agricultural and natural ecosystems and regulate environmental interactions between the hydrosphere and atmosphere. It is the quality of our soils that affect productivity, the environment, health and ultimately sustainability. However, challenges such as those presented by lack of plant nutrient supply, soil acidification, physical degradation, soil contamination, and loss of soil biodiversity are problems at a global scale that threaten the sustainability of the environment and society. As well as the threats the importance of maintaining a quality soil that regulates environmental interactions will be explored, such as soil as a sink for carbon affecting climate interactions or understanding how a rich soil biodiversity can contribute to food production affecting food security. To do this, this unit of study is concerned with exploring the key pedology, soil chemistry, soil physical and soil biological processes that drive these challenges to soil quality. Time will be spent investigating how the quality of the soil can be assessed, using the indicators of the mentioned soil processes, and how the resulting data can be aggregated and communicated in a meaningful way. Working with case studies, the students will identify problems that are assessed using soil quality or function analysis with the aim of identifying management options. The management options will be evaluated to determine their adoptability and implement ability. By investigating the case studies using soil quality or function analysis students will develop their research and enquiry skills. Assessing and developing adoptable management strategies the students will develop their skills in synthesising material from multiple sources and enhance their intellectual autonomy. By producing reports and presenting seminars the students will develop their communication skills.

Textbooks

Textbooks: D. Hillel, 2004. Introduction to Environmental Soil Physics, Elsevier Science, San Diego, CA USA.

AFNR5512

Water Management and Variable Climate Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** A/Prof Willem Vervoort **Session:** Semester 2 **Classes:** 3 hr workshop/week, practical work, project work **Assumed knowledge:** UG Maths or Physics or Hydrology. **Assessment:** Assignments (30%), project report (20%), 2 hr exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on knowledge gained in undergraduate soil science and crop science units to develop an understanding of catchment water management. Particular focus will be on the effect of climate variability and change on water management decisions on output and externalities (Salinity, landscape losses). At the completion of this unit student would be able to: Identify which climate variables will be most affected by climate change and variability; Evaluate which field and farm scale outputs will be most affected by climate change and variability; Develop scenarios based on distributions of climate variability; and Calculate the likely impacts of climate variability and change on streamflow, water availability and irrigation water demand using Monte Carlo techniques.

The open source software package SWAT will be used for most analysis and other open source software will be used if needed.

Textbooks

Rees W.G. 2001. Physical principles of remote sensing. 2nd ed. Cambridge University Press, Cambridge, United Kingdom.

AFNR5705

Australian Forest Systems Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** Dr Andrew Merchant **Session:** Semester 2 **Classes:** 28.5 hrs lecture/tutorial, 30 hrs fieldwork **Assessment:** One 2hr exam (20%), two reports (2x25%), two oral presentations (2x10%) and one field report (10%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is designed to enable students to participate in and improve the management of Australian forest ecosystems. Beginning with an introduction to the unique chemical, physical and ecological characteristics of Australian forests, this unit focuses on policy development and management prescriptions driven by fundamental processes of ecosystem function. Topics will encompass both tropical and temperate ecosystems with students given the opportunity to gain first hand observation of subtropical forest management practices by participating in a 4 day field exercise. At the end of this unit, students will be able to articulate strengths, weaknesses and improvements to the management of Australian forests for the purposes of production, conservation and climate change adaptation. Students will gain first-hand experience of land management practices as they pertain to Australian forest systems and communicate with industry and governmental groups.

Textbooks

Reading material will be drawn upon from current literature in the field

AFNR5801

Climate Change: Process, History, Issues Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Franks, Dr Dan Penny **Session:** Semester 2 **Classes:** 18 hrs lecture/tutorial, 12 hrs practical/field classes, 9 hrs field trip preparation **Prerequisites:** Assumed knowledge: A basic understanding of climate change processes and issues. **Assumed knowledge:** A basic understanding of climate change processes and issues. **Assessment:** 2hr exam (40%), tutorials (20%), practical report from field exercise (manuscript format) (40%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides students with an overview of current debates and approaches to understanding and quantifying interactions between the biosphere, oceans and atmosphere, as used around the world, and the consequences of those interactions for climate. The unit considers climate change on a variety of timescales. This unit will include a weekend field trip to Snowy Mountains field sites managed by the University of Sydney where students will be introduced to cutting edge, ongoing climate change research.

Textbooks

A reading list will be provided consisting of selected book chapters, journal articles and other publications

ENVI5502

Environmental Research Project A Science

Credit points: 6 **Teacher/Coordinator:** Dr Eleanor Bruce **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study **Prohibitions:** ENVI5501 **Assessment:** Written report and continuous assessment (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day



Note: Department permission required for enrolment. Note: Students taking ENVI5502 must take ENVI5503 and ENVI5504

A valuable opportunity to apply some of the knowledge gained from earlier coursework, ENVI5502, ENVI5503 and ENVI5504 consist of a research project as arranged between you (the student) and an appropriate supervisor. The project topic may contain a field or laboratory component, or may be entirely literature-based, but it must include an integrated analysis of an identified environmental problem. Potential topics range from ecotourism to pollution detection and monitoring, erosion to solar power, environmental law to conservation biology. The topic must be able to be completed within the timeframe of 16 weeks (one semester) of investigation, including the literature survey, sample and data collection, analysis of data and results, and write up of the report. This unit is not conducted by way of a number of contact hours per week for a semester. Instead, the student will work on the project full-time (aside from other study commitments) in a continuous manner. This unit of study is only available to students in the Master programs who have completed 24 credit points of study with a distinction average or better.

ENVI5503 Environmental Research Project B Science

Credit points: 6 **Teacher/Coordinator:** Dr Eleanor Bruce **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study **Prohibitions:** ENVI5501 **Assessment:** Written report and continuous assessment (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Students taking ENVI5502 must take ENVI5503 and ENVI5504

A valuable opportunity to apply some of the knowledge gained from earlier coursework, ENVI5502, ENVI5503 and ENVI5504 consist of a research project as arranged between you (the student) and an appropriate supervisor. The project topic may contain a field or laboratory component, or may be entirely literature-based, but it must include an integrated analysis of an identified environmental problem. Potential topics range from ecotourism to pollution detection and monitoring, erosion to solar power, environmental law to conservation biology. The topic must be able to be completed within the timeframe of 16 weeks (one semester) of investigation, including the literature survey, sample and data collection, analysis of data and results, and write up of the report. This unit is not conducted by way of a number of contact hours per week for a semester. Instead, the student will work on the project full-time (aside from other study commitments) in a continuous manner. This unit of study is only available to students in the Master programs who have completed 24 credit points of study with a distinction average or better.

ENVI5504 Environmental Research Project C Science

Credit points: 6 **Teacher/Coordinator:** Dr Eleanor Bruce **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study **Prohibitions:** ENVI5501 **Assessment:** Written report and continuous assessment (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Students taking ENVI5502 must take ENVI5503 and ENVI5504

A valuable opportunity to apply some of the knowledge gained from earlier coursework, ENVI5502, ENVI5503 and ENVI5504 consist of a research project as arranged between you (the student) and an appropriate supervisor. The project topic may contain a field or laboratory component, or may be entirely literature-based, but it must include an integrated analysis of an identified environmental problem. Potential topics range from ecotourism to pollution detection and monitoring, erosion to solar power, environmental law to conservation biology. The topic must be able to be completed within the timeframe of 16 weeks (one semester) of investigation, including the literature survey, sample and data collection, analysis of data and results, and write up of the report. This unit is not conducted by way of a number

of contact hours per week for a semester. Instead, the student will work on the project full-time (aside from other study commitments) in a continuous manner. This unit of study is only available to students in the Master programs who have completed 24 credit points of study with a distinction average or better.

ENVI5705 Ecological Principles Science

Credit points: 6 **Teacher/Coordinator:** Dr Charlotte Taylor **Session:** Semester 1 **Classes:** One 3-hour lecture per week. **Prerequisites:** Assumed knowledge: This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Case study, assignment, critical review, presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces fundamental concepts of modern ecology for environmental scientists through a series of modules focussing on applied questions. Using case studies from Australia, students are exposed to the challenges of doing ecology and how cutting edge research is being applied to environmental management using evidence-based approaches. Meetings and discussions with people working in the field give students an insight into the ways that ecologists address ecological problems and how way they generate an understanding of natural systems. Students have the opportunity to consider different ways of doing science and ways of dealing with different kinds of data, including qualitative, quantitative, anecdotal and experimental approaches

ENVI5707 Energy - Sources, Uses and Alternatives Science

Credit points: 6 **Teacher/Coordinator:** Dr Chris Dey **Session:** Semester 2 **Classes:** 2-hour lecture, 1-hour seminar per week and field trips. **Assessment:** Major essay, assignments, tutorial paper and presentation (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The environmental impacts and physical principles of energy generation and use are addressed in this unit of study. Major topics include discussion of the various energy sources, global energy resources, the economics associated with energy conversion, the politics and culture that surround energy conversion and use, and renewable energy technologies. A key aspect of the unit is the fostering of skills for performing simple but useful energy and greenhouse calculations. This unit of study includes several field trips to energy utilities and associated energy sites.

ENVI5708 Introduction to Environmental Chemistry Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** Dr Feike Dijkstra **Session:** Semester 1 **Classes:** 1x 2-hour lecture and 1x practical per week; 1x field trip (weekend) **Assessment:** Presentation (15%), Laboratory Report (40%), Assignment (40%), Class Participation (5%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of the course is to introduce students to the major physical and chemical processes that control the concentration and dispersion of chemical pollutants in natural and impacted environments. The course will demonstrate how to use contaminant data effectively and how to judge the quality of chemical data. This knowledge will be used to design and to assess environmental projects, and to judge the magnitude of impact by human activity on environments and the risk posed by contaminants to ecosystem functioning. The course aims to provide present and future managers employed in environmental professions with the skills to use data with confidence and to make management decisions knowing the risks inherent in variable data quality. A field trip will be undertaken early in the semester.

ENVI5801 Social Science of Environment

Science

Credit points: 6 **Teacher/Coordinator:** Dr Josephine Gillespie **Session:** Semester 1 **Classes:** One hour lecture and one hour seminar per week plus directed reading. **Assessment:** Essays and seminar participation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides both a conceptual and an empirical foundation for the analysis of relationships between society, the environment and natural resources. In our recent past the rapid rate of global environmental change has necessitated a breakdown of traditional disciplinary boundaries in research and social scientists are increasingly called upon to work alongside natural scientists in unraveling the complexities of the human-environmental nexus. Students will examine a number of environmental issues and consider a variety of social science academic perspectives about environmental management.

ENVI5809

Environmental Simulation Modelling Science

Credit points: 6 **Teacher/Coordinator:** Dr David Chapman **Session:** Semester 2a **Classes:** Six all day sessions **Prerequisites:** Assumed knowledge: This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Project plus report (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces participants to the power of simulation modelling in understanding and predicting behaviour of natural systems. It covers fundamental concepts, logic, and techniques (including sensitivity analysis), and develops skills in application to environmental problems such as catchment management and population dynamics.

ENVI5903

Sustainable Development Science

Credit points: 6 **Teacher/Coordinator:** Dr Jeff Neilson and Prof Phil Hirsch **Session:** Intensive July **Classes:** Two pre-departure lectures, 14-day field intensive. **Assessment:** Essay (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Field experience

Note: Department permission required for enrolment.

This unit of study constitutes an international field-based experience held in Indonesia during the July semester break. It explores the contested notions of sustainable development and sustainability through exposure to real world development dilemmas in one of Asia's most dynamic countries. We explore fundamental issues such as urbanization, resource scarcity and economic globalization. The unit of study involves lectures, in-situ readings and discussion groups, introduction to field methods, stakeholder meetings and experiential learning. Students interested in this unit should confirm their interest to the Unit Coordinator by the end of March of the year the field school will be held. There will be additional costs associated with this unit to cover food, accommodation, local transport and field assistance of about \$1200. Students will also be required to arrange their own international travel to the starting point (either Bangkok or Jakarta).

ENVI5904

Methods in Applied Ecology Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Ross Coleman **Session:** Semester 2 **Classes:** One 3-hour lecture per week for 8 weeks. **Assessment:** Tutorials, oral presentations and written reports (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

No assessment of potential environmental impacts is possible without relevant information about the ecological consequences. This unit is for those without a quantitative ecology background, to explain the need to quantify and what are relevant measures. Describing and understanding uncertainty will be explained in the context of precautionary principles. Issues about measuring biodiversity and the

spatial and temporal problems of ecological systems will be introduced. Field experience will also be available (up to two of six hour sessions) subject to weather, tides and available staffing; please note that these sessions are voluntary.

GEOG5001

Geographic Information Science A Science

Credit points: 6 **Teacher/Coordinator:** Dr David Chapman **Session:** Semester 1 **Classes:** Six lectures plus six workshops. **Prerequisites:** Assumed knowledge: This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Report (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study gives an overview of basic spatial data models, and enables students to understand the use of data from a variety of sources within a geographical information system (GIS). The analysis of spatial data, and its manipulation to address questions appropriate to planning or locational applications, will be addressed, as will the development of thematic maps from diverse data layers.

GEOG5004

Environmental Mapping and Monitoring Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Cowell **Session:** Semester 2 **Classes:** 2 hours of lectures and one three hour practical per week. **Prerequisites:** Assumed knowledge: This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit introduces methods associated with acquiring data in the field and examines issues associated with application of spatial data to environmental monitoring, terrain mapping and geocomputing. Students will learn both theoretically and practically how environmental data is collected using different remote sensing techniques, (pre)processing methods of integrating data in a GIS environment and the role of spatial data in understanding landscape processes and quantifying environmental change.

GEOG5501

Human Rights and the Environment Science

Credit points: 6 **Teacher/Coordinator:** Dr Josephine Gillespie **Session:** Semester 2 **Classes:** Two hours of class contact per week plus self-directed study **Assessment:** Major essay (50%), minor essay (30%) and seminars (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The global community is faced with the collision between obligations to protect human rights and the environment. Environmental degradation is on the increase while, simultaneously, we are witnessing a growing demand to meet human rights obligations. Both these phenomena necessitate a re-think of the way human / environment nexus. This unit of study addresses the diverse and complex interaction between human rights and the environment. We examine whether human rights can be secured in degraded or polluted environments. We consider whether the aims of human rights and environmental protection complement or contradict one another. The course deals with the human rights and the environment through a series of lectures seminars.

GOVT6135

Global Environmental Politics Arts and Social Sciences

This unit of study is not available in 2015

Credit points: 6 **Session:** Semester 1 **Classes:** 1x2hr seminar/week **Assessment:** 1x2000wd Essay (30%), 1x4000wd Essay (50%), Seminar participation (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit examines the environment as a political and policy issue. Although relatively recent, the environment has become a full-fledged public policy issue exerting influence in local, national and international arenas. The unit will first focus on the specific features of the policy that influences the capability of contemporary societies to enhance the management of environmental resources and of public goods in general. Second, it discusses the development of environmental policy in Western countries, with a particular emphasis on the European Union. Third, a grid for the analysis of environmental policy will be presented, with a discussion of the main actors (political, institutional and socio-economic) involved in it and of the factors (interests and ideas) influencing their positions. Fourth, the unit briefly discusses environmental conflicts and consensual approaches used for tackling them.

MARS5004

Coastal Management Field School

Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Cowell **Session:** Intensive October **Classes:** Fieldwork 80 hours block mode **Assessment:** Assignment and report (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

The field school will be based around visits to a series of coastal sites along the NSW coast. The unit will include a series of introductory lectures followed by visits to the sites where both unit staff and local coastal managers and stakeholders will address the students on the nature of the site, its historical development and contemporary coastal management issues and solutions. Sites will be selected to be representative of both the range of coastal systems present along the NSW coast, as well as the range of management issues presented by the sites.

MARS5006

Coral Reefs, Science and Management

Science

Credit points: 6 **Teacher/Coordinator:** Prof Maria Byrne **Session:** Semester 1 **Classes:** University base delivery: prefield trip tutorial (1-hour), twelve lectures (1-hour each). Field based delivery: two seminars (1-hour each), two tutorials - individual consultations to develop concepts in research (1-hour each), independent research and oral presentation. **Prerequisites:** Assumed knowledge: This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Written assignments: essay and project report; oral presentations; seminar and lecture participation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Field experience

Note: Department permission required for enrolment.

This unit provides an in - depth overview of the key biological and non-biological processes that make up coral reef ecosystems. There is a focus on the biogeographic, oceanographic and physiological processes underlying the integrity of global tropical reef systems. The Great Barrier Reef is used as a case study to explore emerging concepts on the influence of natural and anthropogenic processes on the integrity of global coral reef ecosystems. Learning activities will include a series of background lectures and research seminars and tutorials in the development of a major research project. A major aspect of this unit is an independent research project conducted under the supervision of the course instructors. The unit concludes with a series of oral presentations based on student research. Assessment tasks will consist of one essay, essay topic presentation and a research project report and presentation. The curriculum in this unit is based on current research and course notes will be provided. This is a field intensive course held at One Tree Island Research Station. The course is ex-Gladstone Queensland and students are expected to make their own way there. The field component of the unit will be run over 4-6 days and there will be an additional course fee for transport, food and accommodation, expected to be \$700.

MARS5007

Coral Reefs and Climate Change

Science

Credit points: 6 **Teacher/Coordinator:** Dr Jody Webster **Session:** Semester 1a **Classes:** University based delivery: Prefield trip tutorials and lectures. Field based delivery: Lectures, seminars and tutorials. Individual consultations to develop concepts in research, independent research and oral presentation. **Assessment:** Written assignments: essay and project report; oral presentations; seminar and lecture participation (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit provides an in - depth understanding of the key geological, oceanographic, biological and economic factors effecting global climate change and coral reef response, with specific reference to the Great Barrier Reef. Predictions of worst and best case scenarios for the future of coral reef systems are discussed in the context of the latest science, and in light of how this science should underpin future management strategies and policy. Learning activities will include a series of background lectures and research seminars, and tutorials on the development of a major research project. A major aspect of this unit is an independent research project conducted under the supervision of the course instructors. The unit concludes with a series of oral presentations based on student research. Assessment tasks will consist of an essay, a research seminar, and a research project report and presentation. This is a field intensive course held at either One Tree Island or Heron Island or Orpheus Island Research Stations. This unit will be run over 6-8 days and there will be an additional course fee for transport, food and accommodation, expected to be about \$700 (ex. travel to and from Gladstone/Townsville).

PHYS5031

Ecological Econ & Sustainable Analysis

Science

Credit points: 6 **Teacher/Coordinator:** Dr Christopher Dey **Session:** Semester 1 **Classes:** 2-hour lecture and 1-hour tutorial per week. **Assessment:** Major essay, tutorial summary, and course compilation diary (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce selected recent topics from Ecological Economics, such as concepts of sustainability (definitions); comparisons with environmental economics, intergenerational discounting; time and equity in the climate change debate; valuing the environment; links between theories of well-being, consumerism and environmental impact; and cost benefit analysis. The unit sets the scene for the more detailed and specific units PHYS 5032, PHYS 5033, and PHYS 5034.

PHYS5032

Techniques for Sustainability Analysis

Science

Credit points: 6 **Teacher/Coordinator:** Dr Arne Geschke 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 (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study offers an introduction to quantitative analysis techniques including multivariate regression, uncertainty analysis, climate modelling, structural decomposition, and dynamic systems modelling, with a strong emphasis on demonstrating their usefulness for environmental problem-solving. This unit will show how mathematics can be brought to life when utilised in powerful applications to deal with environmental issues. Throughout the unit of study, example applications will be described, including studies on ecosystem trophic chains, mapping of household consumption and environmental impact, wind turbine assessment, and the effect of land use patterns on threats to species.

PHYS5033

Environmental Footprints and IO Analysis

Science

Credit points: 6 **Teacher/Coordinator:** Dr Arne Geschke 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%) **Campus:**

Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study will provide an introduction to economic input-output theory and input-output analysis, with a focus on environmental applications such as carbon footprints and life-cycle analysis. The unit first explores national and global economic and environmental accounting systems and their relationships to organisational accounting. Second, it will present variants of the basic accounts, such as global multi-regional input-output systems and social accounting systems. Third, it will introduce the basic input-output calculus conceived by Nobel Prize Laureate Wassily Leontief, and provide concrete examples for how to apply this calculus to data published by statistical offices. The unit will then show how to integrate economic and environmental accounts, and generate boundary-free environmental footprint assessments. 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.

PHYS5034

Life Cycle Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Christopher Dey **Session:** Semester 2 **Classes:** 2-hour lecture and 1-hour tutorial per week **Assessment:** Major essay, seminar presentation and course diary compilation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study will cover the areas of the philosophy, techniques, applications and standards of Life-Cycle Assessment (LCA). It will include Process Analysis, Input-Output Analysis and Hybrid Analysis. Current LCA tools will be discussed. Case 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 will provide a context. Students will also benefit from also enrolling in PHYS5033 for a sound understanding of input-output based Hybrid LCA methods.

RESP5001

Integrated Environmental Practice Science

Credit points: 6 **Teacher/Coordinator:** A/Prof D Dragovich **Session:** Semester 1, Semester 2 **Classes:** Four 4-hour lectures and two 4-hour laboratory classes per semester **Assessment:** One research proposal, One literature review and one oral presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will provide an opportunity for students to synthesise and draw conclusions from their coursework experience and learning, and to enable them to revise and/or develop the necessary skills for engaging with environmental research as part of their intellectual and/or professional growth. The unit focuses on skills in cross-disciplinary problem identification and the use of integrated analysis to address environmental challenges. Other skills include critical reading and critical writing, undertaking a literature review, understanding how research is conducted and published, library search techniques, use of referencing systems like EndNote, and matters relating to intellectual property and authorship.

RSEC5432

Environmental Economics Agriculture and Environment

This unit of study is not available in 2015

Credit points: 6 **Teacher/Coordinator:** Dr Tihomir Ancev **Session:** Semester 2 **Classes:** 2x1-hr lectures/week commencing week 1, 1x1-hr tutorial/week commencing week 2 **Assessment:** Report and presentation from the practical experience in environmental economics (20%), one (1 hr.) mid-term exam (30%), and two hour (2 hr.) final exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit provides theoretical and empirical background necessary for a resource economist to be able to successfully function when faced with various environmental problems. The unit investigates economic aspects of a range of environmental issues. The studied concepts are exemplified with environmental problems related to agriculture (soil salinity, algal blooms, overgrazing etc.) as well as with environmental problems typical to Australia. The guiding economic themes are: competing uses of the environment / externalities, market failure, the importance of property rights, optimal allocation of pollution abatement, and the processes for making choices relating to non-market goods. Some social issues with environmental impacts are studied through exploration of the problems of population size and distribution, economic growth, and environmental regulation.

Textbooks

Perman, R., Y. Ma, J. McGilvray and M. Common. *Natural Resource and Environmental Economics*. Pearson, 3rd Ed. 2003
Tom Tietenberg.,2008. *Environmental and Natural Resource Economics*
Endres. 2011. *Environmental Economics: Theory and Policy*

SUST5002

Food and Water Security Science

Credit points: 6 **Teacher/Coordinator:** Professor Michael D'Occhio **Session:** Semester 2 **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, short written assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit explores the imperatives and challenges of ensuring an adequate supply of water and nutritious food in the face of changes in global markets, the environment and human population. These challenges will be examined in the context of access and potential trends in supply and demand. Factors influencing trends in supply include environmental degradation, climate change, energy scarcity, technology, changes in population and the patterns of global prosperity, growing urbanisation, and increased consumption. The unit will consider the underlying policy, economic and market-driven forces that play an important role in affecting both supply and demand. The needs of both developing and developed nations will be compared and the role of international, national and regional mechanisms will be discussed. Placing some emphasis on the relevance to Australia, the unit will explore available actions across a range of organisational levels such as communities, governments and NGOs.

SUST5005

Policy and Sustainability Science

Credit points: 6 **Teacher/Coordinator:** Professor Rosemary Lyster **Session:** Intensive September **Classes:** Intensive classes for 4 full days in September 2015 **Corequisites:** SUST5001 **Assessment:** Essays, short written assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Climate change, ecological sustainability, food security, resource scarcity, green technology and innovation, rising ocean levels, climate refugees, drought and 'water wars', are just some of the complex topics that now confront policy makers at all levels of government. This unit of study aims to provide students with an understanding of the issues surrounding the development and implementation of policies for sustainability. At all levels there are a range of stakeholders- policy makers, regulators, non-government organisations, industry, citizens and community groups- confronted by a complex ethical environment in their pursuit of different and sometimes competing agendas. As a result, policy and particular policy instruments may reflect conflict and compromise rather than consensus. Students will be introduced to: the role of analysis (scientific, economic, social and political etc) in providing an evidence base; the variety of instruments and institutions available for policy delivery; the lobbying process in influencing policy determination; and effectiveness of policy design and implementation including identification of 'winners' and 'losers'.

WILD5001

Australasian Wildlife: Introduction

Veterinary Science

Credit points: 6 **Teacher/Coordinator:** Dr Mathew Crowther **Session:** Intensive August **Classes:** Intensively taught unit, the remainder of the unit will involve personal study and project activity. See the Wildlife Health and Population Management website for dates. **Assessment:** Assessments for each unit may include practical work, field studies, student presentations and written reports (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit of study provides an introduction to the wildlife of Australasia, an overview of the present status of that wildlife, and an understanding of both conservation problems and management solutions. Issues in wildlife management are exemplified using a broad range of vertebrate species occupying different environments. Emphasis is placed on providing students with a coordinated and interdisciplinary approach to wildlife health and management, and on developing expertise in recognising and solving a broad range of problems in field populations. The unit integrates lectures, practical work and supervised study, and offers students the opportunity to work through real-world wildlife conservation problems relevant to their individual backgrounds.

WILD5002

Australasian Wildlife: Field Studies

Veterinary Science

Credit points: 6 **Teacher/Coordinator:** Dr Mathew Crowther **Session:** Intensive September **Classes:** Intensively taught unit. See the Wildlife Health and Population Management website for dates. **Assessment:** Assessments for each unit may include practical work, field studies, student presentations and written reports (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit of study provides a first-hand introduction to the wildlife of Australasia, a practical overview of the present status of that wildlife, and an understanding of both conservation problems and management solutions. Issues in wildlife management are exemplified using sampling and diagnostic methods on a broad range of vertebrate species occupying different environments. The unit follows on from WILD5001 and provides practical experience via a five day field trip at the university farm "Arthursleigh" near Marulan NSW.

WILD5004

Vertebrate Pest Management

Science

This unit of study does not have Data Audit Committee approval

Credit points: 6 **Teacher/Coordinator:** Mr Tony Buckmaster **Session:** Intensive August **Classes:** The Unit is taught in a full-time week at the university farm "Arthursleigh" near Marulan NSW. There are lectures, tutorials, and a variety of practical classes. **Assessment:** The assessment of this unit occurs both in the full-time week and in individual written assignments done in the student's own time. The full-time week contributes (40%) of the total mark through a number of individual and syndicate tasks, with presentations to the group. The remaining 60% comes from two written assignments of 3000 words (20%) and 5000 words (40%) respectively. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Vertebrate pests occur in many parts of the world, and can pose significant problems for management of habitat, agricultural productivity, human and wildlife health. This unit focuses on vertebrates that have been introduced to new environments, and considers in detail the impacts and management of pest vertebrates in Australia. Steps in pest management are reviewed, from problem analysis to acceptable levels of control, using case studies of cane toads, rabbits, house mice and red foxes. Traditional mortality methods of management are reviewed, and emphasis placed on developing methods based on fertility control. The Unit is taught in a full-time week at the university farm "Arthursleigh" near Marulan NSW. There are lectures, tutorials, and a variety of practical classes.

Textbooks

Unit of Study Handbook is the primary reference.

Environmental Science and Law

Master of Environmental Science and Law

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 2000 (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 title
MAENSCLA-02	Master of Environmental Science and Law

2 Attendance pattern

The attendance pattern for this course is full time or part time according to candidate choice.

3 Master's type

The master's degree in these resolutions is an advanced learning master's course.

4 Cross faculty management

The Deans of Science and Law shall jointly exercise authority in any matter concerning the course not otherwise dealt with in these resolutions.

5 Admission to candidature

- (1) With approval from the Dean, available places will be offered to qualified applicants according to the following admissions criteria.
- (2) Admission to the degree requires a Bachelor of Science in the discipline of biology, chemistry, physics, mathematics, ecology, climate and atmospheric sciences, marine science, geology, geography, environmental studies, environmental engineering, agriculture or natural resource management with credit average from the University of Sydney, or equivalent qualification.

6 Requirements for award

- (1) The units of study that may be taken for the course are set out in the Environmental Science and Law postgraduate coursework degree table. With the approval of the Dean and the program coordinator, candidates with special aims or interests may be allowed to substitute up to 12 credit points with relevant postgraduate units from outside the table.
- (2) To qualify for the award of the Master of Environmental Science and Law, a candidate must complete 72 credit points, including:
 - (a) 18 credit points of core units of study; and
 - (b) 18 credit points of Environmental Science core units of study; and
 - (c) 18 credit points of Environmental Law core units of study; and
 - (d) 18 credit points of units of study selected from the remaining core units of study or elective units of study.

7 Transitional provisions

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2015 and persons 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 requirements are completed by 1 January, 2020, or later date as the faculty may, in special circumstances, approve.

Course overview

The Master of Environmental Science and Law program is a novel concept of undertaking dual courses in the fields of both Science and Law. The program is unique and is not available elsewhere. It provides science graduates with the opportunity of extending their scientific knowledge into the area of the environment, as well as acquiring new skills in the field of environmental law. For law graduates, the opportunity is to extend their knowledge into environmental aspects of law, as well as to gain an understanding of some of the concepts underpinning environmental science.

Course outcomes

Upon completion of the Master of Environmental Science and Law graduates will possess a practical and theoretical background in aspects of Environmental Science and Environmental Law. This knowledge includes research and practical skills in these areas. The program is designed to integrate disciplines which are normally considered separately and which would be difficult to study outside of the Master of Environmental Science and Law program.



Environmental Science and Law

Units of study table

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
Core units of study			
All students must complete LAWS6044, LAWS6252, and either RESP5001 or ENVI5502.			
LAWS6044 Environmental Law and Policy	6	A LAWS6252 or law degree from a common law jurisdiction N : LAWS3430, LAWS5130 <i>Environmental Law students must complete LAWS6252 and this core unit prior to enrolling in other law elective units.</i>	Intensive April Intensive August
LAWS6252 Legal Reasoning & the Common Law System	6	N LAWS6881 <i>International students who are required to enrol in this unit must undertake classes during the first week of their study. Health Law and Public Health students should enrol in LAWS6881 Introduction to Law for Health Professionals in lieu of LAWS6252, if available. This unit is not available to MLaw/IntDev students who have been granted a reduced volume of learning. Students must attend all classes on the timetabled dates as prescribed for their enrolled session/group. An Absent Fail grade may be granted to students who fail to attend the correct session/group.</i>	Intensive April Intensive August Intensive March Intensive September
RESP5001 Integrated Environmental Practice	6		Semester 1 Semester 2
ENVI5502 Environmental Research Project A	6	P Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study N ENVI5501 <i>Note: Department permission required for enrolment Students taking ENVI5502 must take ENVI5503 and ENVI5504</i>	Semester 1 Semester 2
Environmental Science Core units of study			
All students must complete at least 18 credit points from this collection.			
AFNR5801 Climate Change: Process, History, Issues	6	A A basic understanding of climate change processes and issues.	Semester 2
ENVI5705 Ecological Principles	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 1
ENVI5707 Energy - Sources, Uses and Alternatives	6		Semester 2
ENVI5708 Introduction to Environmental Chemistry	6		Semester 1
ENVI5801 Social Science of Environment	6		Semester 1
ENVI5904 Methods in Applied Ecology	6		Semester 2
Environmental Law Core units of study			
All students must complete at least 18 credit points from this collection.			
LAWS6043 Environmental Impact Assessment Law	6		Intensive June
LAWS6045 Environmental Planning Law	6	N : LAWS3430, LAWS5130	Intensive October
LAWS6047 Law of the Sea	6		Intensive May
LAWS6055 Heritage Law	6		Intensive October
LAWS6061 International Environmental Law	6	<i>Students seeking further study in international environmental law may undertake LAWS6922 Advanced International Environmental Law.</i>	Intensive May
LAWS6065 Pollution and Contaminated Land	6		Intensive May
LAWS6163 Energy and Climate Law	6	N LAWS6863 <i>The unit replaced LAWS6163 International & Australian Climate Law (formerly Energy Law).</i>	Intensive September
LAWS6165 Biodiversity Law <i>This unit of study is not available in 2015</i>	6		Intensive April
LAWS6191 Water Law and Climate Change	6	<i>This unit replaced LAWS6191 Water Law</i>	Intensive November
LAWS6314 Coastal and Marine Law <i>This unit of study is not available in 2015</i>	6		Intensive October
LAWS6320 Climate Disaster Law	6		Intensive September



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
LAWS6936 Carbon Trading, Derivatives and Taxation <i>This unit of study is not available in 2015</i>	6		Intensive May
Elective units of study			
AFNR5511 Soil Processes, Assessment & Management	6		Semester 1
AFNR5512 Water Management and Variable Climate	6	A UG Maths or Physics or Hydrology.	Semester 2
AFNR5705 Australian Forest Systems	6		Semester 2
GEOG5001 Geographic Information Science A	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 1
GEOG5004 Environmental Mapping and Monitoring	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 2
GEOS5501 Human Rights and the Environment	6		Semester 2
ENVI5502 Environmental Research Project A	6	P Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study N ENVI5501 <i>Note: Department permission required for enrolment</i> <i>Students taking ENVI5502 must take ENVI5503 and ENVI5504</i>	Semester 1 Semester 2
ENVI5503 Environmental Research Project B	6	P Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study N ENVI5501 <i>Note: Department permission required for enrolment</i> <i>Students taking ENVI5502 must take ENVI5503 and ENVI5504</i>	Semester 1 Semester 2
ENVI5504 Environmental Research Project C	6	P Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study N ENVI5501 <i>Note: Department permission required for enrolment</i> <i>Students taking ENVI5502 must take ENVI5503 and ENVI5504</i>	Semester 1 Semester 2
ENVI5809 Environmental Simulation Modelling	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 2a
ENVI5903 Sustainable Development	6	<i>Note: Department permission required for enrolment</i>	Intensive July
MARS5004 Coastal Management Field School	6		Intensive October
MARS5006 Coral Reefs, Science and Management	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. <i>Note: Department permission required for enrolment</i>	Semester 1
MARS5007 Coral Reefs and Climate Change	6		Semester 1a
PHYS5031 Ecological Econ & Sustainable Analysis	6		Semester 1
PHYS5034 Life Cycle Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 2
RSEC5432 Environmental Economics <i>This unit of study is not available in 2015</i>	6		Semester 2
WILD5001 Australasian Wildlife: Introduction	6		Intensive August
WILD5002 Australasian Wildlife: Field Studies	6		Intensive September

Environmental Science and Law

Unit of study descriptions 2015

AFNR5511

Soil Processes, Assessment & Management Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** Dr Damien Field **Session:** Semester 1 **Classes:** 1 Lec, 2 tutorials/wk, case study & oral presentations. **Assessment:** Essay (30%), Group discussions (20%), Case study report (30%), Group presentation (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Soils support agricultural and natural ecosystems and regulate environmental interactions between the hydrosphere and atmosphere. It is the quality of our soils that affect productivity, the environment, health and ultimately sustainability. However, challenges such as those presented by lack of plant nutrient supply, soil acidification, physical degradation, soil contamination, and loss of soil biodiversity are problems at a global scale that threaten the sustainability of the environment and society. As well as the threats the importance of maintaining a quality soil that regulates environmental interactions will be explored, such as soil as a sink for carbon affecting climate interactions or understanding how a rich soil biodiversity can contribute to food production affecting food security. To do this, this unit of study is concerned with exploring the key pedology, soil chemistry, soil physical and soil biological processes that drive these challenges to soil quality. Time will be spent investigating how the quality of the soil can be assessed, using the indicators of the mentioned soil processes, and how the resulting data can be aggregated and communicated in a meaningful way. Working with case studies, the students will identify problems that are assessed using soil quality or function analysis with the aim of identifying management options. The management options will be evaluated to determine their adoptability and implement ability. By investigating the case studies using soil quality or function analysis students will develop their research and enquiry skills. Assessing and developing adoptable management strategies the students will develop their skills in synthesising material from multiple sources and enhance their intellectual autonomy. By producing reports and presenting seminars the students will develop their communication skills.

Textbooks

Textbooks: D. Hillel, 2004. Introduction to Environmental Soil Physics, Elsevier Science, San Diego, CA USA.

AFNR5512

Water Management and Variable Climate Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** A/Prof Willem Vervoort **Session:** Semester 2 **Classes:** 3 hr workshop/week, practical work, project work **Assumed knowledge:** UG Maths or Physics or Hydrology. **Assessment:** Assignments (30%), project report (20%), 2 hr exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on knowledge gained in undergraduate soil science and crop science units to develop an understanding of catchment water management. Particular focus will be on the effect of climate variability and change on water management decisions on output and externalities (Salinity, landscape losses). At the completion of this unit student would be able to: Identify which climate variables will be most affected by climate change and variability; Evaluate which field and farm scale outputs will be most affected by climate change and variability; Develop scenarios based on distributions of climate variability; and Calculate the likely impacts of climate variability and change on streamflow, water availability and irrigation water demand using Monte Carlo techniques.

The open source software package SWAT will be used for most analysis and other open source software will be used if needed.

Textbooks

Rees W.G. 2001. Physical principles of remote sensing. 2nd ed. Cambridge University Press, Cambridge, United Kingdom.

AFNR5705

Australian Forest Systems Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** Dr Andrew Merchant **Session:** Semester 2 **Classes:** 28.5 hrs lecture/tutorial, 30 hrs fieldwork **Assessment:** One 2hr exam (20%), two reports (2x25%), two oral presentations (2x10%) and one field report (10%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is designed to enable students to participate in and improve the management of Australian forest ecosystems. Beginning with an introduction to the unique chemical, physical and ecological characteristics of Australian forests, this unit focuses on policy development and management prescriptions driven by fundamental processes of ecosystem function. Topics will encompass both tropical and temperate ecosystems with students given the opportunity to gain first hand observation of subtropical forest management practices by participating in a 4 day field exercise. At the end of this unit, students will be able to articulate strengths, weaknesses and improvements to the management of Australian forests for the purposes of production, conservation and climate change adaptation. Students will gain first-hand experience of land management practices as they pertain to Australian forest systems and communicate with industry and governmental groups.

Textbooks

Reading material will be drawn upon from current literature in the field

AFNR5801

Climate Change: Process, History, Issues Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Franks, Dr Dan Penny **Session:** Semester 2 **Classes:** 18 hrs lecture/tutorial, 12 hrs practical/field classes, 9 hrs field trip preparation **Prerequisites:** Assumed knowledge: A basic understanding of climate change processes and issues. **Assumed knowledge:** A basic understanding of climate change processes and issues. **Assessment:** 2hr exam (40%), tutorials (20%), practical report from field exercise (manuscript format) (40%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides students with an overview of current debates and approaches to understanding and quantifying interactions between the biosphere, oceans and atmosphere, as used around the world, and the consequences of those interactions for climate. The unit considers climate change on a variety of timescales. This unit will include a weekend field trip to Snowy Mountains field sites managed by the University of Sydney where students will be introduced to cutting edge, ongoing climate change research.

Textbooks

A reading list will be provided consisting of selected book chapters, journal articles and other publications

GEOG5001

Geographic Information Science A Science

Credit points: 6 **Teacher/Coordinator:** Dr David Chapman **Session:** Semester 1 **Classes:** Six lectures plus six workshops. **Prerequisites:** Assumed knowledge: This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Report (100%)



Campus: Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study gives an overview of basic spatial data models, and enables students to understand the use of data from a variety of sources within a geographical information system (GIS). The analysis of spatial data, and its manipulation to address questions appropriate to planning or locational applications, will be addressed, as will the development of thematic maps from diverse data layers.

GEOG5004

Environmental Mapping and Monitoring Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Cowell **Session:** Semester 2 **Classes:** 2 hours of lectures and one three hour practical per week. **Prerequisites:** Assumed knowledge: This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit introduces methods associated with acquiring data in the field and examines issues associated with application of spatial data to environmental monitoring, terrain mapping and geocomputing. Students will learn both theoretically and practically how environmental data is collected using different remote sensing techniques, (pre)processing methods of integrating data in a GIS environment and the role of spatial data in understanding landscape processes and quantifying environmental change.

GEOS5501

Human Rights and the Environment Science

Credit points: 6 **Teacher/Coordinator:** Dr Josephine Gillespie **Session:** Semester 2 **Classes:** Two hours of class contact per week plus self-directed study **Assessment:** Major essay (50%), minor essay (30%) and seminars (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The global community is faced with the collision between obligations to protect human rights and the environment. Environmental degradation is on the increase while, simultaneously, we are witnessing a growing demand to meet human rights obligations. Both these phenomena necessitate a re-think of the way human / environment nexus. This unit of study addresses the diverse and complex interaction between human rights and the environment. We examine whether human rights can be secured in degraded or polluted environments. We consider whether the aims of human rights and environmental protection complement or contradict one another. The course deals with the human rights and the environment through a series of lectures seminars.

ENVI5502

Environmental Research Project A Science

Credit points: 6 **Teacher/Coordinator:** Dr Eleanor Bruce **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study **Prohibitions:** ENVI5501 **Assessment:** Written report and continuous assessment (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Students taking ENVI5502 must take ENVI5503 and ENVI5504

A valuable opportunity to apply some of the knowledge gained from earlier coursework, ENVI5502, ENVI5503 and ENVI5504 consist of a research project as arranged between you (the student) and an appropriate supervisor. The project topic may contain a field or laboratory component, or may be entirely literature-based, but it must include an integrated analysis of an identified environmental problem. Potential topics range from ecotourism to pollution detection and monitoring, erosion to solar power, environmental law to conservation biology. The topic must be able to be completed within the timeframe of 16 weeks (one semester) of investigation, including the literature survey, sample and data collection, analysis of data and results, and

write up of the report. This unit is not conducted by way of a number of contact hours per week for a semester. Instead, the student will work on the project full-time (aside from other study commitments) in a continuous manner. This unit of study is only available to students in the Master programs who have completed 24 credit points of study with a distinction average or better.

ENVI5503

Environmental Research Project B Science

Credit points: 6 **Teacher/Coordinator:** Dr Eleanor Bruce **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study **Prohibitions:** ENVI5501 **Assessment:** Written report and continuous assessment (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Students taking ENVI5502 must take ENVI5503 and ENVI5504

A valuable opportunity to apply some of the knowledge gained from earlier coursework, ENVI5502, ENVI5503 and ENVI5504 consist of a research project as arranged between you (the student) and an appropriate supervisor. The project topic may contain a field or laboratory component, or may be entirely literature-based, but it must include an integrated analysis of an identified environmental problem. Potential topics range from ecotourism to pollution detection and monitoring, erosion to solar power, environmental law to conservation biology. The topic must be able to be completed within the timeframe of 16 weeks (one semester) of investigation, including the literature survey, sample and data collection, analysis of data and results, and write up of the report. This unit is not conducted by way of a number of contact hours per week for a semester. Instead, the student will work on the project full-time (aside from other study commitments) in a continuous manner. This unit of study is only available to students in the Master programs who have completed 24 credit points of study with a distinction average or better.

ENVI5504

Environmental Research Project C Science

Credit points: 6 **Teacher/Coordinator:** Dr Eleanor Bruce **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or above in 24cp of Environmental Science/Environmental Science and Law core units of study **Prohibitions:** ENVI5501 **Assessment:** Written report and continuous assessment (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Students taking ENVI5502 must take ENVI5503 and ENVI5504

A valuable opportunity to apply some of the knowledge gained from earlier coursework, ENVI5502, ENVI5503 and ENVI5504 consist of a research project as arranged between you (the student) and an appropriate supervisor. The project topic may contain a field or laboratory component, or may be entirely literature-based, but it must include an integrated analysis of an identified environmental problem. Potential topics range from ecotourism to pollution detection and monitoring, erosion to solar power, environmental law to conservation biology. The topic must be able to be completed within the timeframe of 16 weeks (one semester) of investigation, including the literature survey, sample and data collection, analysis of data and results, and write up of the report. This unit is not conducted by way of a number of contact hours per week for a semester. Instead, the student will work on the project full-time (aside from other study commitments) in a continuous manner. This unit of study is only available to students in the Master programs who have completed 24 credit points of study with a distinction average or better.

ENVI5705

Ecological Principles Science

Credit points: 6 **Teacher/Coordinator:** Dr Charlotte Taylor **Session:** Semester 1 **Classes:** One 3-hour lecture per week. **Prerequisites:** Assumed knowledge: This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level

mathematics and understanding of basic statistics. **Assessment:** Case study, assignment, critical review, presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces fundamental concepts of modern ecology for environmental scientists through a series of modules focussing on applied questions. Using case studies from Australia, students are exposed to the challenges of doing ecology and how cutting edge research is being applied to environmental management using evidence-based approaches. Meetings and discussions with people working in the field give students an insight into the ways that ecologists address ecological problems and how way they generate an understanding of natural systems. Students have the opportunity to consider different ways of doing science and ways of dealing with different kinds of data, including qualitative, quantitative, anecdotal and experimental approaches

ENVI5707

Energy - Sources, Uses and Alternatives Science

Credit points: 6 **Teacher/Coordinator:** Dr Chris Dey **Session:** Semester 2 **Classes:** 2-hour lecture, 1-hour seminar per week and field trips. **Assessment:** Major essay, assignments, tutorial paper and presentation (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The environmental impacts and physical principles of energy generation and use are addressed in this unit of study. Major topics include discussion of the various energy sources, global energy resources, the economics associated with energy conversion, the politics and culture that surround energy conversion and use, and renewable energy technologies. A key aspect of the unit is the fostering of skills for performing simple but useful energy and greenhouse calculations. This unit of study includes several field trips to energy utilities and associated energy sites.

ENVI5708

Introduction to Environmental Chemistry Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** Dr Feike Dijkstra **Session:** Semester 1 **Classes:** 1x 2-hour lecture and 1x practical per week; 1x field trip (weekend) **Assessment:** Presentation (15%), Laboratory Report (40%), Assignment (40%), Class Participation (5%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of the course is to introduce students to the major physical and chemical processes that control the concentration and dispersion of chemical pollutants in natural and impacted environments. The course will demonstrate how to use contaminant data effectively and how to judge the quality of chemical data. This knowledge will be used to design and to assess environmental projects, and to judge the magnitude of impact by human activity on environments and the risk posed by contaminants to ecosystem functioning. The course aims to provide present and future managers employed in environmental professions with the skills to use data with confidence and to make management decisions knowing the risks inherent in variable data quality. A field trip will be undertaken early in the semester.

ENVI5801

Social Science of Environment Science

Credit points: 6 **Teacher/Coordinator:** Dr Josephine Gillespie **Session:** Semester 1 **Classes:** One hour lecture and one hour seminar per week plus directed reading. **Assessment:** Essays and seminar participation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides both a conceptual and an empirical foundation for the analysis of relationships between society, the environment and natural resources. In our recent past the rapid rate of global environmental change has necessitated a breakdown of traditional disciplinary boundaries in research and social scientists are increasingly called upon to work alongside natural scientists in unraveling the complexities of the human-environmental nexus.

Students will examine a number of environmental issues and consider a variety of social science academic perspectives about environmental management.

ENVI5809

Environmental Simulation Modelling Science

Credit points: 6 **Teacher/Coordinator:** Dr David Chapman **Session:** Semester 2a **Classes:** Six all day sessions **Prerequisites:** Assumed knowledge: This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Project plus report (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces participants to the power of simulation modelling in understanding and predicting behaviour of natural systems. It covers fundamental concepts, logic, and techniques (including sensitivity analysis), and develops skills in application to environmental problems such as catchment management and population dynamics.

ENVI5903

Sustainable Development Science

Credit points: 6 **Teacher/Coordinator:** Dr Jeff Neilson and Prof Phil Hirsch **Session:** Intensive July **Classes:** Two pre-departure lectures, 14-day field intensive. **Assessment:** Essay (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Field experience

Note: Department permission required for enrolment.

This unit of study constitutes an international field-based experience held in Indonesia during the July semester break. It explores the contested notions of sustainable development and sustainability through exposure to real world development dilemmas in one of Asia's most dynamic countries. We explore fundamental issues such as urbanization, resource scarcity and economic globalization. The unit of study involves lectures, in-situ readings and discussion groups, introduction to field methods, stakeholder meetings and experiential learning. Students interested in this unit should confirm their interest to the Unit Coordinator by the end of March of the year the field school will be held. There will be additional costs associated with this unit to cover food, accommodation, local transport and field assistance of about \$1200 Students will also be required to arrange their own international travel to the starting point (either Bangkok or Jakarta).

ENVI5904

Methods in Applied Ecology Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Ross Coleman **Session:** Semester 2 **Classes:** One 3-hour lecture per week for 8 weeks. **Assessment:** Tutorials, oral presentations and written reports (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

No assessment of potential environmental impacts is possible without relevant information about the ecological consequences. This unit is for those without a quantitative ecology background, to explain the need to quantify and what are relevant measures. Describing and understanding uncertainty will be explained in the context of precautionary principles. Issues about measuring biodiversity and the spatial and temporal problems of ecological systems will be introduced. Field experience will also be available (up to two of six hour sessions) subject to weather, tides and available staffing; please note that these sessions are voluntary.

LAWS6043

Environmental Impact Assessment Law Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Assoc Prof Ed Couzens, Ms Nicola Franklin **Session:** Intensive June **Classes:** May 22, 23 & 29, 30 **Assessment:** 4000wd essay (50%) and take-home exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit has three fundamental aims. The first is to provide a sound analysis of Environmental Impact Assessment (EIA) procedures in NSW and at the Commonwealth level. The second aim is to develop a critical understanding of EIA as a distinctive regulatory device by examining its historical, ethical and political dimensions as well as relevant aspects of legal theory. The third and ultimate aim is to combine these doctrinal and theoretical forms of knowledge so we can suggest possible improvements to the current practice of EIA in Australia.

LAWS6044

Environmental Law and Policy Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Group A (S1CIAP): Adj Prof Gerry Bates Group B (S2CIAU): Assoc Prof Ed Couzens **Session:** Intensive April, Intensive August **Classes:** Group A (S1CIAP): Mar 12-14 and 16 (9-5) Group B (S2CIAU): Aug 7, 8 and 14, 15 (9-5) **Prohibitions:** LAWS3430, LAWS5130 **Assumed knowledge:** LAWS6252 or law degree from a common law jurisdiction **Assessment:** 5000wd essay (60%) and take-home exam (40%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: Environmental Law students must complete LAWS6252 and this core unit prior to enrolling in other law elective units.

The aim of the unit is to introduce students to overarching themes in environmental law and policy as a foundation to their more detailed studies for the Environmental Law Program. This is an overview unit addressing a number of environmental issues at various levels of analysis; such as policy making, implementation of policy and dispute resolution. The concept of ecologically sustainable development and its implications for environmental law and policy is a continuing theme. The unit is designed to develop multi-dimensional thinking about environmental issues and the strategies needed to address them. The unit provides a broad background of the political and economic issues in so far as they are related to the legal issues involved.

LAWS6045

Environmental Planning Law Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Dr Andrew Edgar **Session:** Intensive October **Classes:** Sep 11, 12 & 15, 16 (9-5) **Prohibitions:** LAWS3430, LAWS5130 **Assessment:** class participation (20%) and 7000wd essay (80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit examines the legal and institutional structures for land-use regulation and the resolution of land-use conflicts. The focus is on environmental planning, development control and environmental impact assessment. The unit will examine the design of environmental planning systems, the various types of development assessment systems, the opportunities for public involvement in decision-making processes, and the role of courts and tribunals in resolving land-use disputes.

LAWS6047

Law of the Sea Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Assoc Prof Tim Stephens **Session:** Intensive May **Classes:** Apr 30, May 1 & 7, 8 (9-5) **Assessment:** 5000wd essay (60%) and take-home exam (40%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

The oceans cover two-thirds of the world's surface, and are vital to international commerce, are a store of important living and non-living resources, and provide indispensable environmental services including stabilising the global climate system. This unit reviews the major areas of the law of the sea as it has developed over the centuries. The unit takes as its focus the 'constitution' of the oceans, the 1982 UN Convention on the Law of the Sea and also considers a range of other international conventions and agreements, and current state practice. Each of the major maritime zones is assessed, and there is also a detailed review of several sectoral issues, including the protection of the marine environment, fisheries, navigational rights and freedoms, and military uses of the oceans. Where appropriate, reference will be made throughout the unit to relevant Australian law and practice, and to other state practice in the Asia Pacific Region.

LAWS6055

Heritage Law Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Mr Jeff Smith **Session:** Intensive October **Classes:** Sep 23-26 (9-5) **Assessment:** 8000wd essay (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit focuses on the conservation of natural and cultural heritage, including intangible heritage, underwater heritage, movable heritage and Australian Aboriginal heritage. International, national, state and local regimes for heritage conservation are examined and considered in the context of broader environmental decision making. An important theme of the unit is the relationship between human rights and heritage protection as an intrinsic part of the human rights framework. Through the use of case studies, the unit aims to bring together a range of interdisciplinary strands in archaeology, anthropology, cultural and natural history, art, architecture and urban planning, and to weave them into a framework for the legal protection of world, national, state and local heritage.

LAWS6061

International Environmental Law Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster, Ms Kate Owens **Session:** Intensive May **Classes:** Apr 17, 18 & 20, 21 (9-5) **Assessment:** 2500wd problem-based assignment (30%) and 5500wd essay (70%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: Students seeking further study in international environmental law may undertake LAWS6922 Advanced International Environmental Law.

This unit aims to provide students with an overview of the development of international environmental law throughout the twentieth century. Attention will primarily be devoted to the international law and policy responses to global and regional environmental and resource management issues. Basic principles will be discussed prior to taking a sectoral approach in looking at the application of international environmental law in specific issue areas. The unit includes material on implementation of international environmental law in the Asia Pacific region. Relevant Australian laws and initiatives will be referred to from time to time. The focus is on law and policy that has been applied to deal with environmental problems in an international and transboundary context.

LAWS6065

Pollution and Contaminated Land Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Assoc Prof Ed Couzens, Ms Kate Owens **Session:** Intensive May **Classes:** May 13-16 (9-5) **Assessment:** class participation (10%) and 8000-9000wd assignment (90%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

The aim of this unit is to examine the policy and legislative approaches to pollution control and the wide range of management tools employed to prevent harm and promote ecologically sustainable development. The unit will cover topics such as environmental management; economic instruments; criminal liability; corporate and director's liability; due diligence; waste management; hazardous substances; contaminated land and marine pollution.

Textbooks

R Lyster, Z Lipman, N Franklin, G Wiffen, L Pearson, 'Environmental and Planning Law in NSW', 3rd ed Fed Press 2012

LAWS6163

Energy and Climate Law Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster **Session:** Intensive September **Classes:** Aug 21, 22 & 28, 29 (9-5) **Prohibitions:** LAWS6863 **Assessment:** class participation (20%), 8000wd essay (80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: The unit replaced LAWS6163 International & Australian Climate Law (formerly Energy Law).

This unit adopts an inter-disciplinary and integrative approach to understanding the dynamics of one of the most pressing global environmental concerns ecologically sustainable energy use. Working

loosely within the framework of the Climate Change Convention, the unit relies on the perspectives of scientists, lawyers and economists to develop an integrated approach to sustainable energy use. The unit identifies current patterns of energy use in Australia and examines Australia's response to the Climate Change Convention. It also analyses the strengths and weaknesses of various political, legal and economic mechanisms for influencing the choice of energy use. The initiatives of the Commonwealth and New South Wales governments, as well as local councils, to promote sustainable energy use and to combat global warming are scrutinised.

LAWS6165

Biodiversity Law Law (Sydney Law School)

This unit of study is not available in 2015

Credit points: 6 **Teacher/Coordinator:** Adj Prof Hon Brian Preston, Ms Judith Preston **Session:** Intensive April **Assessment:** 8000wd essay (100%) **Practical field work:** field trip **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

The unit takes an interdisciplinary approach to the conservation of biodiversity. Key concepts in ecology are explained to provide a foundation for the legal framework. This framework is examined at international, national, and state levels, in terms of conventions and legislation, as well as policy and organisations. The legal framework is explored both by analysing the proper purpose, scope and effect of the laws, as well as how they work in practice. The latter is achieved by lectures and field exercises assisted by officers of government agencies, including State Forests, the National Parks and Wildlife Service and the Department of Infrastructure, Planning and Natural Resources. An integral component of the unit is a field trip to areas of relevance to biodiversity conservation, focusing on northern New South Wales. Areas to be studied include habitats of threatened species and ecological communities and World Heritage areas listed under the relevant Commonwealth and State legislation. Field studies provide a unique opportunity to understand how principles of international and domestic law are implemented locally. The field trip component will be arranged in conjunction with the field trip for LAWS6055 Heritage Law (if offered). Students are encouraged to take both units of study; they are designed to complement each other closely.

Textbooks

field trip manual will be prepared and distributed

LAWS6191

Water Law and Climate Change Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster **Session:** Intensive November **Classes:** Oct 24, 25 & Dec 5, 6 (9-5) **Assessment:** class participation (20%) and 7000wd essay (80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: This unit replaced LAWS6191 Water Law

This unit of study situates the management of Australia's water resources within an International Law context including the United Nations Framework Convention on Climate Change, International Water Law principles and an internationally recognised human right to water. The unit examines the ecologically sustainable management of water resources in the context of climate change, with Australia being the driest inhabited continent. According to the Garnaut Climate Change Review, climate change could halve the productive capacity of the Murray Darling Basin, which produces one third of Australia's food supply, by 2050. In May 2012, the Murray Darling Basin Authority released the controversial Draft Basin Plan which proposes to allocate more water for the environment. At the same time, the Council of Australian Governments is pursuing a decade long process of water reform to establish a national water trading market by 2014. Consequently, the unit examines water resource management from the interdisciplinary perspectives of law, science and within the context of broader economic reform and the National Competition Policy framework. The corporatisation of water utilities and competition in the water service market is also discussed. Key legislation covered

are the Water Act 2007 (Cth) and the Water Management Act 2000 (NSW).

LAWS6252

Legal Reasoning & the Common Law System Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** S1CIMR (Group A) & S1CIAP (Group B): Assoc Prof Belinda Smith and S2CIAU (Group C) & S2CISE (Group D): Mr Michael Skinner **Session:** Intensive April, Intensive August, Intensive March, Intensive September **Classes:** Group A: Mar 3 to 6 (9-5) Group B: Mar 20, 21 & Apr 10, 11 (9-5) Group C: Jul 28 to 31 (9-5) Group D: Sep 4, 5 & 18, 19 (9-5) **Prohibitions:** LAWS6881 **Assessment:** in-class test (25%) and take-home exam (75%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: International students who are required to enrol in this unit must undertake classes during the first week of their study. Health Law and Public Health students should enrol in LAWS6881 Introduction to Law for Health Professionals in lieu of LAWS6252, if available. This unit is not available to MLawIntDev students who have been granted a reduced volume of learning. Students must attend all classes on the timetabled dates as prescribed for their enrolled session/group. An Absent Fail grade may be granted to students who fail to attend the correct session/group.

This is a compulsory unit for all postgraduate students who do not hold a law degree or equivalent from a common law jurisdiction entering the: Master of Administrative Law and Policy; Master of Business Law; Master of Environmental Law; Master of Environmental Science and Law; Master of Global Law; Master of Health Law; Master of International Business and Law; Master of Labour Law and Relations; Master of Law & International Development as well as Graduate Diplomas offered in these programs. The unit has been designed to equip students with the necessary legal skills and legal knowledge to competently apply themselves in their chosen area of law. Instruction will cover the legislative process; the judiciary and specialist tribunals; precedent; court hierarchies; legal reasoning; constitutional law; administrative law; contracts; and torts. Some elements of the unit will be tailored in accordance with the requirements of the particular specialist programs.

LAWS6314

Coastal and Marine Law Law (Sydney Law School)

This unit of study is not available in 2015

Credit points: 6 **Teacher/Coordinator:** Assoc Prof Tim Stephens **Session:** Intensive October **Assessment:** 4000wd essay (40%) and take-home exam (60%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit examines legal and policy frameworks for the management of coastal and marine areas in Australia. Topics addressed include the characteristics of Australian coastal and marine environments, the constitutional framework for the management of offshore areas, the regulation of marine pollution, marine parks and reserves, fisheries management, the regulation of offshore oil and gas resource extraction, and the management of climate change impacts on coastal and marine areas.

Textbooks

Rachel Baird and Donald R Rothwell (eds), Australian Coastal and Marine Law (Federation Press, 2011)

LAWS6320

Climate Disaster Law Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster **Session:** Intensive September **Classes:** Sep 2-5 (9-5) **Assessment:** class participation (20%), 8000wd essay (80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Recent extreme weather events and disasters around the world have resulted in loss of life, property, infrastructure and livelihoods and have severely disrupted the normal functioning of the societies which they have impacted. Worldwide insured losses alone from weather-related disasters have risen from US\$5.1 billion per year between 1970-1989 to US\$27 billion annually over the past two decades. International climate change negotiations have, over the past five years, delivered outcomes that are entirely inadequate to

meet the goal set by the Parties to the United Nations Framework Convention on Climate Change of keeping the rise in average global temperatures below 2 degrees C above pre-industrial temperatures. This unit of study adopts a climate justice approach to assess the respective roles and responsibilities of government and insurers to avoid, prepare for, respond to, recover from, and compensate for, the risks of climate disasters. The questions of avoidance and recovery will rely heavily on traditional Environmental Law mechanisms such as environmental planning and assessment and pollution and waste regimes, as well as the protection of biodiversity. The unit will also assess the viability of tort law and strict liability regimes for hazardous activities to compensate those who are impacted by climate disasters. The strict liability regimes include: global oil pollution spills, hazardous chemicals, asbestos and nuclear disasters. The unit will be taught by an esteemed international team of climate lawyers and individuals with experience in the insurance industry.

The objectives of this unit of study are to: Understand the science presented in two recent scientific reports, the Intergovernmental Panel on Climate Change's 2012 Special Report Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX), published in 2012, and the Australian Climate Commission's (CCC) 2013 The Critical Decade: Extreme Weather, (Extreme Weather Report, Understand the foundations of climate justice in the context of climate disasters, Understand the relevance of the United Nations Framework Convention on Climate Change, including the loss and damage mechanism, and the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters, The role of governments in enacting climate disaster risk reduction laws including: The role of Environmental and Planning Assessment Law and Building Codes in attempting to prevent climate disasters, Pollution, waste and contamination laws in the post-disaster phases, Biodiversity Law that is expected to protect species from the impacts of climate change and disasters, as well as promote ecosystems as disaster prevention measures, Governance arrangements between levels of government during and post the disaster, Compensatory regimes including those provided by government and the private sector through ex-post disaster relief, insurance and the capital markets; and The strengths and weaknesses of tort and strict liability regimes for compensating the victims of disaster.

LAWS6936

Carbon Trading, Derivatives and Taxation Law (Sydney Law School)

This unit of study is not available in 2015

Credit points: 6 **Teacher/Coordinator:** Prof R Lyster (Coordinator), Ms Celeste Black, Assoc Prof Tim Stephens **Session:** Intensive May **Assessment:** take-home exam (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit of study is designed to appeal to students across a broad range of postgraduate programs and expands on existing offerings in the area of Climate Law. The unit will cover four discrete topics on each day of the four day intensive: International Climate Law (UN Framework Convention on Climate Change, Kyoto Protocol, post-2012 negotiations) and domestic Climate Law (measures effecting a price on carbon and other relevant environmental markets); understanding how to trade carbon and other certificates on a variety of environmental markets; understanding the relevant carbon and other derivative markets; and understanding the taxation implications of participating in carbon and other environmental markets. The unit assumes a basic knowledge of environmental law. The unit brings together experts within the Sydney Law School, including environmental and taxation lawyers, and experts in carbon trading and derivative markets in private practice.

MARS5004

Coastal Management Field School Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Cowell **Session:** Intensive October **Classes:** Fieldwork 80 hours block mode **Assessment:** Assignment and report (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

The field school will be based around visits to a series of coastal sites along the NSW coast. The unit will include a series of introductory lectures followed by visits to the sites where both unit staff and local coastal managers and stakeholders will address the students on the nature of the site, its historical development and contemporary coastal management issues and solutions. Sites will be selected to the representative of both the range of coastal systems present along the NSW coast, as well as the range of management issues presented by the sites.

MARS5006

Coral Reefs, Science and Management Science

Credit points: 6 **Teacher/Coordinator:** Prof Maria Byrne **Session:** Semester 1 **Classes:** University base delivery: prefield trip tutorial (1-hour), twelve lectures (1-hour each). Field based delivery: two seminars (1-hour each), two tutorials - individual consultations to develop concepts in research (1-hour each), independent research and oral presentation. **Prerequisites:** Assumed knowledge: This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Written assignments: essay and project report; oral presentations; seminar and lecture participation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Field experience

Note: Department permission required for enrolment.

This unit provides an in - depth overview of the key biological and non-biological processes that make up coral reef ecosystems. There is a focus on the biogeographic, oceanographic and physiological processes underlying the integrity of global tropical reef systems. The Great Barrier Reef is used as a case study to explore emerging concepts on the influence of natural and anthropogenic processes on the integrity of global coral reef ecosystems. Learning activities will include a series of background lectures and research seminars and tutorials in the development of a major research project. A major aspect of this unit is an independent research project conducted under the supervision of the course instructors. The unit concludes with a series of oral presentations based on student research. Assessment tasks will consist of one essay, essay topic presentation and a research project report and presentation. The curriculum in this unit is based on current research and course notes will be provided. This is a field intensive course held at One Tree Island Research Station. The course is ex-Gladstone Queensland and students are expected to make their own way there. The field component of the unit will be run over 4-6 days and there will be an additional course fee for transport, food and accommodation, expected to be \$700.

MARS5007

Coral Reefs and Climate Change Science

Credit points: 6 **Teacher/Coordinator:** Dr Jody Webster **Session:** Semester 1a **Classes:** University based delivery: Prefield trip tutorials and lectures. Field based delivery: Lectures, seminars and tutorials. Individual consultations to develop concepts in research, independent research and oral presentation. **Assessment:** Written assignments: essay and project report; oral presentations; seminar and lecture participation (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit provides an in - depth understanding of the key geological, oceanographic, biological and economic factors effecting global climate change and coral reef response, with specific reference to the Great Barrier Reef. Predictions of worst and best case scenarios for the future of coral reef systems are discussed in the context of the latest science, and in light of how this science should underpin future management strategies and policy. Learning activities will include a series of background lectures and research seminars, and tutorials on the development of a major research project. A major aspect of this unit is an independent research project conducted under the supervision of the course instructors. The unit concludes with a series of oral presentations based on student research. Assessment tasks will consist of an essay, a research seminar, and a research project report and presentation. This is a field intensive course held at either One Tree Island or Heron Island or Orpheus Island Research Stations. This unit will be run over 6-8 days and there will be an additional

course fee for transport, food and accommodation, expected to be about \$700 (ex. travel to and from Gladstone/Townsville).

PHYS5031

Ecological Econ & Sustainable Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Christopher Dey **Session:** Semester 1 **Classes:** 2-hour lecture and 1-hour tutorial per week. **Assessment:** Major essay, tutorial summary, and course compilation diary (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce selected recent topics from Ecological Economics, such as concepts of sustainability (definitions); comparisons with environmental economics, intergenerational discounting; time and equity in the climate change debate; valuing the environment; links between theories of well-being, consumerism and environmental impact; and cost benefit analysis. The unit sets the scene for the more detailed and specific units PHYS 5032, PHYS 5033, and PHYS 5034.

PHYS5034

Life Cycle Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Christopher Dey **Session:** Semester 2 **Classes:** 2-hour lecture and 1-hour tutorial per week **Assessment:** Major essay, seminar presentation and course diary compilation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study will cover the areas of the philosophy, techniques, applications and standards of Life-Cycle Assessment (LCA). It will include Process Analysis, Input-Output Analysis and Hybrid Analysis. Current LCA tools will be discussed. Case 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 will provide a context. Students will also benefit from also enrolling in PHYS5033 for a sound understanding of input-output based Hybrid LCA methods.

RESP5001

Integrated Environmental Practice Science

Credit points: 6 **Teacher/Coordinator:** A/Prof D Dragovich **Session:** Semester 1, Semester 2 **Classes:** Four 4-hour lectures and two 4-hour laboratory classes per semester **Assessment:** One research proposal, One literature review and one oral presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will provide an opportunity for students to synthesize and draw conclusions from their coursework experience and learning, and to enable them to revise and/or develop the necessary skills for engaging with environmental research as part of their intellectual and/or professional growth. The unit focuses on skills in cross-disciplinary problem identification and the use of integrated analysis to address environmental challenges. Other skills include critical reading and critical writing, undertaking a literature review, understanding how research is conducted and published, library search techniques, use of referencing systems like EndNote, and matters relating to intellectual property and authorship.

RSEC5432

Environmental Economics Agriculture and Environment

This unit of study is not available in 2015

Credit points: 6 **Teacher/Coordinator:** Dr Tihomir Anceev **Session:** Semester 2 **Classes:** 2x1-hr lectures/week commencing week 1, 1x1-hr tutorial/week commencing week 2 **Assessment:** Report and presentation from the practical experience in environmental economics (20%), one (1 hr.) mid-term exam (30%), and two hour (2 hr.) final exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit provides theoretical and empirical background necessary for a resource economist to be able to successfully function when faced with various environmental problems. The unit investigates economic

aspects of a range of environmental issues. The studied concepts are exemplified with environmental problems related to agriculture (soil salinity, algal blooms, overgrazing etc.) as well as with environmental problems typical to Australia. The guiding economic themes are: competing uses of the environment / externalities, market failure, the importance of property rights, optimal allocation of pollution abatement, and the processes for making choices relating to non-market goods. Some social issues with environmental impacts are studied through exploration of the problems of population size and distribution, economic growth, and environmental regulation.

Textbooks

Perman, R., Y. Ma, J. McGilvray and M. Common. Natural Resource and Environmental Economics. Pearson, 3rd Ed. 2003
Tom Tietenberg.,2008. Environmental and Natural Resource Economics
Endres. 2011. Environmental Economics: Theory and Policy

WILD5001

Australasian Wildlife: Introduction Veterinary Science

Credit points: 6 **Teacher/Coordinator:** Dr Mathew Crowther **Session:** Intensive August **Classes:** Intensively taught unit, the remainder of the unit will involve personal study and project activity. See the Wildlife Health and Population Management website for dates. **Assessment:** Assessments for each unit may include practical work, field studies, student presentations and written reports (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit of study provides an introduction to the wildlife of Australasia, an overview of the present status of that wildlife, and an understanding of both conservation problems and management solutions. Issues in wildlife management are exemplified using a broad range of vertebrate species occupying different environments. Emphasis is placed on providing students with a coordinated and interdisciplinary approach to wildlife health and management, and on developing expertise in recognising and solving a broad range of problems in field populations. The unit integrates lectures, practical work and supervised study, and offers students the opportunity to work through real-world wildlife conservation problems relevant to their individual backgrounds.

WILD5002

Australasian Wildlife: Field Studies Veterinary Science

Credit points: 6 **Teacher/Coordinator:** Dr Mathew Crowther **Session:** Intensive September **Classes:** Intensively taught unit. See the Wildlife Health and Population Management website for dates. **Assessment:** Assessments for each unit may include practical work, field studies, student presentations and written reports (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit of study provides a first-hand introduction to the wildlife of Australasia, a practical overview of the present status of that wildlife, and an understanding of both conservation problems and management solutions. Issues in wildlife management are exemplified using sampling and diagnostic methods on a broad range of vertebrate species occupying different environments. The unit follows on from WILD5001 and provides practical experience via a five day field trip at the university farm "Arthursleigh" near Marulan NSW.

History and Philosophy of Science

Graduate Certificate in Science (History and Philosophy of 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 2000 (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.

Students who wish to write a thesis in addition to completing the requirements for the Grad Certificate in Science (HPS) can undertake a Graduate Diploma in Science.

Course resolutions

1 Course codes

Code	Course and stream title
GCSCHIPS-01	Graduate Certificate in Science (History and Philosophy of Science)

2 Attendance pattern

The attendance pattern for this course is full time or part time according to candidate choice.

3 Admission to candidature

- (1) With approval from the Dean, available places will be offered to qualified applicants according to the following admissions criteria:
- (2) Admission to the Graduate Certificate in Science (History and Philosophy of Science) requires a Bachelor of Science or Bachelor of Medical Science or Bachelor of Arts or Bachelor of Liberal Studies, or any bachelor's degree from the University of Sydney, or equivalent qualification.

4 Requirements for award

- (1) The units of study that may be taken for the course are set out in the table for the History and Philosophy of Science postgraduate coursework table.
- (2) To qualify for the award of the Graduate Certificate in Science (History and Philosophy of Science), a candidate must complete 24 credit points of elective units of study.
- (3) All candidates must complete HSPC4105 as part of their course requirements.

5 Transitional provisions

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2015 and persons 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 requirements are completed by 1 January, 2018, or later date as the faculty may, in special circumstances, approve.

Course overview

The Graduate Certificate in Science (HPS) provides an introduction to the historical, philosophical, and sociological analysis of science. Candidates will be introduced to the main accounts of the nature of science and the methodologies underlying those interpretations.

Course outcomes

Upon completion of the graduate certificate candidates will understand the nature of the discipline of History and Philosophy of Science and will have acquired either basic research skills in history of science or basic skills in the sociological study of science or the basic skills of philosophical argument or some combination of the above, depending on their choice of options.



History and Philosophy of Science

Units of study table

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
<i>Students must complete 24 credit points from the following:</i>			
HPSC4105 is compulsory for all students irrespective of background.			
HPSC4101 Philosophy of Science	6	<i>Note: Department permission required for enrolment</i>	Semester 1
HPSC4102 History of Science	6	<i>Note: Department permission required for enrolment</i>	Semester 2
HPSC4103 Sociology of Science	6	<i>Note: Department permission required for enrolment</i>	Semester 2
HPSC4104 Recent Topics in HPS	6	<i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2
HPSC4105 HPS Research Methods	6	<i>Note: Department permission required for enrolment</i>	Semester 1
HPSC4108 Core topics: History & Philosophy of Sci	6	<i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2



History and Philosophy of Science

Unit of study descriptions 2015

HPSC4101 Philosophy of Science Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Dean Rickles **Session:** Semester 1 **Classes:** One 2 hour seminar per week, individual consultation. **Assessment:** 5000 wd essay (50%) Seminar presentation (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

In this course we explore a range of issues from within the philosophy of physics. We focus on the interpretation of the theories physics provides, examining how these theories might describe our world. The course will assume some basic mathematical literacy, but most technical matters will be introduced in class.

Textbooks
Weekly readings

HPSC4102 History of Science Science

Credit points: 6 **Teacher/Coordinator:** Prof Stephen Gaukroger. Taught by HPS staff and guest lecturers. **Session:** Semester 2 **Classes:** One 2 hour seminar per week. **Assessment:** 10xquestions (50%) and 1x5000 wd essay (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit explores major episodes in the history of science from the 18th century until the present as well as introducing students to historiographic methods. Special attention is paid to developing practical skills in the history and philosophy of science.

Textbooks
Weekly Readings

HPSC4103 Sociology of Science Science

Credit points: 6 **Teacher/Coordinator:** Dr Daniela Helbig **Session:** Semester 2 **Classes:** One 2 hour seminar per week, individual consultation. **Assessment:** 5000wd essay (50%) Seminar presentation (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This seminar discusses a range of approaches to the social theory of modern science. We will read key texts on questions such as: what makes science part of Western modernity? What is the role of science in the social transformations of the industrial era? In what sense, if at

all, can science be said to offer privileged access to reality? What is the relationship between scientific knowledge and social reality?

Textbooks
Weekly Readings

HPSC4104 Recent Topics in HPS Science

Credit points: 6 **Teacher/Coordinator:** HPS Staff **Session:** Semester 1, Semester 2 **Classes:** One 2 hour seminar per week, individual consultation. **Assessment:** 5000wd essay (50%) Seminar presentation (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

An examination of one area of the contemporary literature in the history and philosophy of science. Special attention will be paid to development of research skills in the history and philosophy of science.

HPSC4105 HPS Research Methods Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Hans Pols **Session:** Semester 1 **Classes:** One 2 hour seminar per week, individual consultation. **Assessment:** 5 x 1000 wd essays (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

Adopting a seminar style, this unit provides students with an advanced knowledge of the skills necessary to conduct their own original research in the sociology, history and philosophy of science. Participants will be given a weekly set of core readings, and specialists both from within the Unit and from outside will present their views on the topic in question. This presentation will form the basis for a discussion involving the students, the academic members of the Unit, and invited speakers. Topics will include: the use of case studies in the philosophy of science, how to conduct oral history projects, institutional history, and sociological methodology.

HPSC4108 Core topics: History & Philosophy of Sci Science

Credit points: 6 **Teacher/Coordinator:** HPS staff **Session:** Semester 1, Semester 2 **Classes:** One 2 hour seminar per week. **Assessment:** 10xquestions (50%) and 1x5000 wd essay (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

An intensive reading course, supported by discussion seminars, into core topics in HPS.



Marine Science and Management

Graduate Certificate in Marine Science and Management

Graduate Diploma in Marine Science and Management

Master of Marine Science and Management

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 (2000) (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 title
GCMASCMG-01	Graduate Certificate in Marine Science and Management
GNMASCMG-02	Graduate Diploma in Marine Science and Management
MAMASCMG-02	Master of Marine Science and Management

2 Attendance pattern

The attendance pattern for these courses is full time or part time according to candidate choice.

3 Master's type

The master's degree in these resolutions is an advanced learning master's course.

4 Embedded courses in this sequence

- (1) The embedded courses in this sequence are:
 - (a) Graduate Certificate in Marine Science and Management
 - (b) Graduate Diploma in Marine Science and Management
 - (c) Master of Marine Science and Management
- (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 highest award completed will be conferred.

5 Admission to candidature

- (1) With approval from the Dean, available places will be offered to qualified applicants according to the following admissions criteria.
- (2) In exceptional circumstances, the Dean may admit applicants to the Graduate Certificate or Graduate Diploma without the following qualifications but whose evidence of experience and achievement is deemed by the Dean to be equivalent.
- (3) Admission to the Graduate Certificate in Marine Science and Management requires a Bachelor of Science from the University of Sydney in the discipline of biology, chemistry, physics, mathematics, ecology, climate and atmospheric sciences, marine science, geosciences, geography, geology environmental studies, environmental engineering, civil engineering, aquaculture, agriculture or natural resource management, or equivalent qualification.
- (4) Admission to the Graduate Diploma in Marine Science and Management requires:
 - (a) a Bachelor of Science from the University of Sydney in one or more of the disciplines listed under subsection (3), or equivalent qualification; or

- (b) completion of the embedded graduate certificate in this discipline, from the University of Sydney, or equivalent qualification.
- (5) Admission to the Master of Marine Science and Management requires:
 - (a) a Bachelor of Science from the University of Sydney in one or more of the disciplines listed under subsection (3), with a credit average, or equivalent qualification; or
 - (b) a Bachelor of Science with Honours from the University of Sydney in one or more of the disciplines listed under subsection (3), or equivalent qualification; or
 - (c) completion of the embedded graduate diploma in this discipline, from the University of Sydney, or equivalent qualification.

6 Requirements for award

- (1) The units of study that may be taken for these awards are set out in the Marine Science and Management degree table. With the approval of the Dean and the program coordinator, candidates for the graduate diploma or master's degree, with special aims or interests, may be allowed to substitute up to 12 credit points with relevant postgraduate units from outside the table.
- (2) It is a requirement of the master's degree that students undertake units of study in a minimum of three of the four available areas of knowledge:
 - (a) Marine biology/Biological oceanography
 - (b) Marine geosciences/Coastal engineering
 - (c) Physical oceanography/Marine engineering
 - (d) Environmental Management/sustainability
- (3) To qualify for the Graduate Certificate in Marine Science and Management, a candidate must complete 24 credit points, including:
 - (a) 12 credit points of core unit of study; and
 - (b) 12 credit points of elective units of study.
- (4) To qualify for the Graduate Diploma in Marine Science and Management, a candidate must complete 48 credit points across at least two of the defined areas of knowledge, including:
 - (a) 24 credit points of core units of study; and
 - (b) 12 credit points of elective units of study taken at the University of Sydney; and
 - (c) 12 credit points of elective units of study which may be taken from the other partner universities under the equivalent program (University of NSW, University of Technology Sydney, Macquarie University) via Cross Institutional Study.
- (5) To qualify for the Master of Marine Science and Management coursework pathway, a candidate must complete 72 credit points across at least three of the defined areas of knowledge, including:
 - (a) 24 credit points of core units of study; and
 - (b) 36 credit points of elective units of study taken at the University of Sydney; and
 - (c) 12 credit points of elective units of study which may be taken from the other partner universities under the equivalent program (University of NSW, University of Technology Sydney, Macquarie University) via Cross Institutional Study.
- (6) Subject to the availability of supervision and suitable projects, candidates with a distinction average in 24 credit points of study from the degree may be admitted to the research pathway.
- (7) To qualify for the Master of Marine Science and Management research pathway, a candidate must complete 72 credit points across at least three of the defined areas of knowledge, including:
 - (a) 48 credit points of core units of study; and
 - (b) 12 credit points of elective units of study taken at the University of Sydney; and



- (c) 12 credit points of elective units of study which may be taken from the other partner universities under the equivalent program (University of NSW, University of Technology Sydney, Macquarie University) via Cross Institutional Study.

7 Recognition of prior learning

Candidates offered admission to the Master of Marine Science and Management may be eligible for a reduction in the volume of learning of up to 24 credit points where the candidate has completed a qualification at level 8 of the Australian Qualifications Framework in one or more of the disciplines listed under section 5(3).

8 Transitional arrangements

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2015 and persons 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 requirements are completed by 1 January, 2019, or later date as the faculty may, in special circumstances, approve.

Course overview

The University of Sydney, in collaboration with the Sydney Institute of Marine Science, the University of Technology Sydney, the University of New South Wales and Macquarie University, has developed a new and innovative Master program in Marine Science and Management. This interdisciplinary and cross-institutional program is unique in Australia. It has been designed to give students the opportunity to gain in-depth knowledge in a range of disciplines in marine science and management. The program includes units in marine ecology and conservation, coastal management and engineering, climate change, biological and physical oceanography, and modelling.

The program is ideal for recent graduates who wish to extend their knowledge and gain new skills in different disciplines of marine science, and for marine and coastal practitioners who require additional training and knowledge in current marine science and management issues, applications and policies.

Marine Science and Management

Units of study table

<i>Unit of study</i>	<i>Credit points</i>	<i>A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition</i>	<i>Session</i>
Core Units			
Students in the Graduate Certificate must complete 12 credit points of core units of study, i.e. MARS5001 and MARS5004.			
Students in the Graduate Diploma and Master's degree must complete 24 credit points of core units of study, i.e. ENVI5904, MARS5001, MARS5004 and MARS5009.			
Students in the Master's degree research pathway must complete an additional 24 credit points of core units of study, i.e. MARS5505 and MARS5506.			
MARS5009 Topics in Australian Marine Science	6		Semester 1
<i>Marine Geosciences / Coastal Engineering</i>			
MARS5001 Coastal Processes and Systems	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 1
<i>Environmental Management / Sustainability</i>			
ENVI5904 Methods in Applied Ecology	6		Semester 2
MARS5004 Coastal Management Field School	6		Intensive October
Additional Core Units: Master's Research Pathway Only			
MARS5505 Marine Research Project A	6	P 24 credit points of Marine Science and Management core units with a 75% average or above. N MARS5005 <i>Note: Department permission required for enrolment</i> <i>Students taking MARS5505 must take MARS5506</i>	Semester 1 Semester 2
MARS5506 Marine Research Project B	6	P 24 credit points of Marine Science and Management core units with a 75% average or above. N MARS5005 <i>Note: Department permission required for enrolment</i> <i>Students taking MARS5505 must take MARS5506</i>	Semester 1 Semester 2
Electives			
<i>Marine Biology / Biological Oceanography</i>			
ENVI5705 Ecological Principles	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 1
MARS5006 Coral Reefs, Science and Management	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. <i>Note: Department permission required for enrolment</i>	Semester 1
WILD5001 Australasian Wildlife: Introduction	6		Intensive August
WILD5002 Australasian Wildlife: Field Studies	6		Intensive September
<i>Marine Geosciences / Coastal Engineering</i>			
GEOG5001 Geographic Information Science A	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 1
GEOG5004 Environmental Mapping and Monitoring	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 2
MARS5007 Coral Reefs and Climate Change	6		Semester 1a
<i>Physical Oceanography / Marine Engineering</i>			
CIVL5511 Foundations of Fluid Mechanics <i>This unit of study is not available in 2015</i>	6	A CIVL2201 AND CIVL2611 AND ENGG1802 AND MATH2061. This unit of study follows on from Fluid Mechanics CIVL2611, which provides the essential fundamental fluid mechanics background and theory, and is assumed to be known and fully understood.	Semester 1
CIVL5670 Reservoir Stream & Coastal Eng	6	A CIVL3612 and MATH2061.	Semester 1
<i>Environmental Management / Sustainability</i>			
AFNR5801 Climate Change: Process, History, Issues	6	A A basic understanding of climate change processes and issues.	Semester 2
ENVI5809 Environmental Simulation Modelling	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 2a
ENVI5903 Sustainable Development	6	<i>Note: Department permission required for enrolment</i>	Intensive July
PHYS5032 Techniques for Sustainability Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 1 Semester 2



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
PHYS5033 Environmental Footprints and IO Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 1 Semester 2
SUST5005 Policy and Sustainability	6	C SUST5001	Intensive September

Important Note:

- It is a requirement of the master's program that students undertake units of study in a minimum of three of the four available areas of knowledge.
- It is a requirement of the Graduate Diploma that students undertake units of study in a minimum of two of the four available areas of knowledge.

Marine Science and Management

Unit of study descriptions 2015

AFNR5801

Climate Change: Process, History, Issues Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Franks, Dr Dan Penny
Session: Semester 2 **Classes:** 18 hrs lecture/tutorial, 12 hrs practical/field classes, 9 hrs field trip preparation **Assumed knowledge:** A basic understanding of climate change processes and issues. **Assessment:** 2hr exam (40%), tutorials (20%), practical report from field exercise (manuscript format) (40%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides students with an overview of current debates and approaches to understanding and quantifying interactions between the biosphere, oceans and atmosphere, as used around the world, and the consequences of those interactions for climate. The unit considers climate change on a variety of timescales. This unit will include a weekend field trip to Snowy Mountains field sites managed by the University of Sydney where students will be introduced to cutting edge, ongoing climate change research.

Textbooks

A reading list will be provided consisting of selected book chapters, journal articles and other publications

CIVL5511

Foundations of Fluid Mechanics Engineering and Information Technologies

This unit of study is not available in 2015

Credit points: 6 **Session:** Semester 1 **Classes:** Lecture 2hrs per week, Tutorial 2hrs per week, Laboratory 2hrs per week. **Assumed knowledge:** CIVL2201 AND CIVL2611 AND ENGG1802 AND MATH2061. This unit of study follows on from Fluid Mechanics CIVL2611, which provides the essential fundamental fluid mechanics background and theory, and is assumed to be known and fully understood. **Assessment:** Through semester assessment (60%), Final Exam (40%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study aims to provide an understanding of the conservation of mass and momentum in differential forms for viscous fluid flows. It provides the foundation for advanced study of turbulence, flow around immersed bodies, open channel flow, and turbo-machinery.

CIVL5670

Reservoir Stream & Coastal Eng Engineering and Information Technologies

Credit points: 6 **Session:** Semester 1 **Classes:** Lectures 2 hrs/week; Tutorials 2 hrs/week. **Assumed knowledge:** CIVL3612 and MATH2061. **Assessment:** Through semester assessment (40%) Final Exam (60%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The objectives of this Unit of Study are to develop an understanding of the processes occurring in lakes, reservoirs, streams and coastal seas, and an introduction to transport and mixing in inland waters, and to the design the design of marine structures. The unit will cover the mass and heat budget in stored water bodies, mixing, and the implications for water quality. In streams, simple transport models will be introduced, and simple models for dissolved oxygen transport discussed. The basic equations for linear and non linear wave theories in coastal seas will be introduced, and wave forces on structures and an introduction to design of offshore structures will be discussed.

(Students who have previously studied CIVL3613 will only be permitted to enrol in this unit by approval of the Director of Undergraduate Studies.)

ENVI5705

Ecological Principles Science

Credit points: 6 **Teacher/Coordinator:** Dr Charlotte Taylor **Session:** Semester 1 **Classes:** One 3-hour lecture per week. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Case study, assignment, critical review, presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces fundamental concepts of modern ecology for environmental scientists through a series of modules focussing on applied questions. Using case studies from Australia, students are exposed to the challenges of doing ecology and how cutting edge research is being applied to environmental management using evidence-based approaches. Meetings and discussions with people working in the field give students an insight into the ways that ecologists address ecological problems and how way they generate an understanding of natural systems. Students have the opportunity to consider different ways of doing science and ways of dealing with different kinds of data, including qualitative, quantitative, anecdotal and experimental approaches

ENVI5809

Environmental Simulation Modelling Science

Credit points: 6 **Teacher/Coordinator:** Dr David Chapman **Session:** Semester 2a **Classes:** Six all day sessions **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Project plus report (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces participants to the power of simulation modelling in understanding and predicting behaviour of natural systems. It covers fundamental concepts, logic, and techniques (including sensitivity analysis), and develops skills in application to environmental problems such as catchment management and population dynamics.

ENVI5903

Sustainable Development Science

Credit points: 6 **Teacher/Coordinator:** Dr Jeff Neilson and Prof Phil Hirsch **Session:** Intensive July **Classes:** Two pre-departure lectures, 14-day field intensive. **Assessment:** Essay (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Field experience

Note: Department permission required for enrolment.

This unit of study constitutes an international field-based experience held in Indonesia during the July semester break. It explores the contested notions of sustainable development and sustainability through exposure to real world development dilemmas in one of Asia's most dynamic countries. We explore fundamental issues such as urbanization, resource scarcity and economic globalization. The unit of study involves lectures, in-situ readings and discussion groups, introduction to field methods, stakeholder meetings and experiential learning. Students interested in this unit should confirm their interest to the Unit Coordinator by the end of March of the year the field school will be held. There will be additional costs associated with this unit to cover food, accommodation, local transport and field assistance of about \$1200 Students will also be required to arrange their own international travel to the starting point (either Bangkok or Jakarta).

ENVI5904

Methods in Applied Ecology



Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Ross Coleman **Session:** Semester 2 **Classes:** One 3-hour lecture per week for 8 weeks. **Assessment:** Tutorials, oral presentations and written reports (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

No assessment of potential environmental impacts is possible without relevant information about the ecological consequences. This unit is for those without a quantitative ecology background, to explain the need to quantify and what are relevant measures. Describing and understanding uncertainty will be explained in the context of precautionary principles. Issues about measuring biodiversity and the spatial and temporal problems of ecological systems will be introduced. Field experience will also be available (up to two of six hour sessions) subject to weather, tides and available staffing; please note that these sessions are voluntary.

GEOG5001

Geographic Information Science A Science

Credit points: 6 **Teacher/Coordinator:** Dr David Chapman **Session:** Semester 1 **Classes:** Six lectures plus six workshops. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Report (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study gives an overview of basic spatial data models, and enables students to understand the use of data from a variety of sources within a geographical information system (GIS). The analysis of spatial data, and its manipulation to address questions appropriate to planning or locational applications, will be addressed, as will the development of thematic maps from diverse data layers.

GEOG5004

Environmental Mapping and Monitoring Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Cowell **Session:** Semester 2 **Classes:** 2 hours of lectures and one three hour practical per week. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit introduces methods associated with acquiring data in the field and examines issues associated with application of spatial data to environmental monitoring, terrain mapping and geocomputing. Students will learn both theoretically and practically how environmental data is collected using different remote sensing techniques, (pre)processing methods of integrating data in a GIS environment and the role of spatial data in understanding landscape processes and quantifying environmental change.

MARS5001

Coastal Processes and Systems Science

Credit points: 6 **Teacher/Coordinator:** Dr Ana Vila-Concejo **Session:** Semester 1 **Classes:** One 2 hour lecture, one 1 hour tutorial, one 3 hour practical per week for 6 weeks **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Assignment, presentation and quiz (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study explains the major coastal processes and systems of relevance to coastal zone management. These include rocky coasts and bluffs; beaches, barriers and dunes; and estuaries and inlets. The interactions between these processes and systems that are of most relevance to coastal management are highlighted, including coastal hazards such as beach erosion, dune migration, bluff retreat, coastal flooding and inlet closure/opening. Anthropogenic impacts are also analysed. The unit is presented in lectures and field excursions, the latter enabling each system to be examined first hand.

MARS5004

Coastal Management Field School Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Cowell **Session:** Intensive October **Classes:** Fieldwork 80 hours block mode **Assessment:** Assignment and report (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

The field school will be based around visits to a series of coastal sites along the NSW coast. The unit will include a series of introductory lectures followed by visits to the sites where both unit staff and local coastal managers and stakeholders will address the students on the nature of the site, its historical development and contemporary coastal management issues and solutions. Sites will be selected to the representative of both the range of coastal systems present along the NSW coast, as well as the range of management issues presented by the sites.

MARS5006

Coral Reefs, Science and Management Science

Credit points: 6 **Teacher/Coordinator:** Prof Maria Byrne **Session:** Semester 1 **Classes:** University base delivery: prefield trip tutorial (1-hour), twelve lectures (1-hour each). Field based delivery: two seminars (1-hour each), two tutorials - individual consultations to develop concepts in research (1-hour each), independent research and oral presentation. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Written assignments: essay and project report; oral presentations; seminar and lecture participation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Field experience *Note: Department permission required for enrolment.*

This unit provides an in - depth overview of the key biological and non-biological processes that make up coral reef ecosystems. There is a focus on the biogeographic, oceanographic and physiological processes underlying the integrity of global tropical reef systems. The Great Barrier Reef is used as a case study to explore emerging concepts on the influence of natural and anthropogenic processes on the integrity of global coral reef ecosystems. Learning activities will include a series of background lectures and research seminars and tutorials in the development of a major research project. A major aspect of this unit is an independent research project conducted under the supervision of the course instructors. The unit concludes with a series of oral presentations based on student research. Assessment tasks will consist of one essay, essay topic presentation and a research project report and presentation. The curriculum in this unit is based on current research and course notes will be provided. This is a field intensive course held at One Tree Island Research Station. The course is ex-Gladstone Queensland and students are expected to make their own way there. The field component of the unit will be run over 4-6 days and there will be an additional course fee for transport, food and accommodation, expected to be \$700.

MARS5007

Coral Reefs and Climate Change Science

Credit points: 6 **Teacher/Coordinator:** Dr Jody Webster **Session:** Semester 1a **Classes:** University based delivery: Prefield trip tutorials and lectures. Field based delivery: Lectures, seminars and tutorials. Individual consultations to develop concepts in research, independent research and oral presentation. **Assessment:** Written assignments: essay and project report; oral presentations; seminar and lecture participation (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit provides an in - depth understanding of the key geological, oceanographic, biological and economic factors effecting global climate change and coral reef response, with specific reference to the Great Barrier Reef. Predictions of worst and best case scenarios for the future of coral reef systems are discussed in the context of the latest science, and in light of how this science should underpin future management strategies and policy. Learning activities will include a series of background lectures and research seminars, and tutorials on the development of a major research project. A major aspect of this unit is an independent research project conducted under the supervision of the course instructors. The unit concludes with a series

of oral presentations based on student research. Assessment tasks will consist of an essay, a research seminar, and a research project report and presentation. This is a field intensive course held at either One Tree Island or Heron Island or Orpheus Island Research Stations. This unit will be run over 6-8 days and there will be an additional course fee for transport, food and accommodation, expected to be about \$700 (ex. travel to and from Gladstone/Townsville).

MARS5009

Topics in Australian Marine Science Science

Credit points: 6 **Session:** Semester 1 **Classes:** The unit will start on Thursday 6th March and will finish Thursday 5th June with a one week mid-semester break from 18 - 25 April. Weekly delivery on Thursday mornings 10 - 2pm at Sydney Institute of Marine Science (SIMS), Chowder Bay. Tutorial 10 - 10:45am, Practical 10:45 - 1pm, Lecture 1:15 - 2pm. **Assessment:** Practical exercises (50%), 1000 word report/assignment (20%), exam (30%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will introduce students to current research undertaken in various disciplines of marine science in Australia. It will be a multi-institutional unit taught at the Sydney Institute of Marine Science (SIMS) with contributions from the four University partners of SIMS. Lectures and tutorials will be taught by leading marine science researchers. Topics will cover physical and biological oceanography, climate change, molecular ecology, aquaculture, marine biology and marine geosciences. In practical classes, students will analyse and interpret remote-sensing data from the Integrated Marine Observing System (IMOS), which provides comprehensive information on the biological and physical processes of Australia's coastal and oceanic waters.

MARS5505

Marine Research Project A Science

Credit points: 6 **Teacher/Coordinator:** Dr Eleanor Bruce **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** 24 credit points of Marine Science and Management core units with a 75% average or above. **Prohibitions:** MARS5005 **Assessment:** Research Proposal (10%), research seminar (10%), thesis (80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Students taking MARS5505 must take MARS5506

This unit enables students who have completed earlier coursework to design and undertake a research project related to a marine science and/or management topic under the supervision of an appropriate member of staff. The unit is suitable for students who wish to learn how to undertake and complete an original research project, as well as students from industry and government organizations who wish to undertake a project that relates to their professional environment. The research topic should be arranged between the student and supervisor and must have a coastal or marine science and/or management focus. Potential topics range from modelling coastal impacts of predicted sea level rise, equilibrium shoreline profiles and reef microborer responses to environmental variables. The project topic may involve a field or lab component, or may be entirely literature-based. The project question and research design must be structured to be completed within one fulltime semester or two part-time semesters of study, including the literature review, field work, data analysis and report writing. MARS5505 and MARS5506 do not involve formal contact hours but students are required to work on the project in a continuous manner for the entire duration of the semester in which they are enrolled.

MARS5506

Marine Research Project B Science

Credit points: 6 **Teacher/Coordinator:** Dr Eleanor Bruce **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** 24 credit points of Marine Science and Management core units with a 75% average or above. **Prohibitions:** MARS5005 **Assessment:** Research Proposal (10%), research seminar (10%), thesis (80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Students taking MARS5505 must take MARS5506

This unit enables students who have completed earlier coursework to design and undertake a research project related to a marine science and/or management topic under the supervision of an appropriate member of staff. The unit is suitable for students who wish to learn how to undertake and complete an original research project, as well as students from industry and government organizations who wish to undertake a project that relates to their professional environment. The research topic should be arranged between the student and supervisor and must have a coastal or marine science and/or management focus. Potential topics range from modelling coastal impacts of predicted sea level rise, equilibrium shoreline profiles and reef microborer responses to environmental variables. The project topic may involve a field or lab component, or may be entirely literature-based. The project question and research design must be structured to be completed within one fulltime semester or two part-time semesters of study, including the literature review, field work, data analysis and report writing. MARS5505 and MARS5506 do not involve formal contact hours but students are required to work on the project in a continuous manner for the entire duration of the semester in which they are enrolled.

PHYS5032

Techniques for Sustainability Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arne Geschke 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 (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study offers an introduction to quantitative analysis techniques including multivariate regression, uncertainty analysis, climate modelling, structural decomposition, and dynamic systems modelling, with a strong emphasis on demonstrating their usefulness for environmental problem-solving. This unit will show how mathematics can be brought to life when utilised in powerful applications to deal with environmental issues. Throughout the unit of study, example applications will be described, including studies on ecosystem trophic chains, mapping of household consumption and environmental impact, wind turbine assessment, and the effect of land use patterns on threats to species.

PHYS5033

Environmental Footprints and IO Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arne Geschke 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%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study will provide an introduction to economic input-output theory and input-output analysis, with a focus on environmental applications such as carbon footprints and life-cycle analysis. The unit first explores national and global economic and environmental accounting systems and their relationships to organisational accounting. Second, it will present variants of the basic accounts, such as global multi-regional input-output systems and social accounting systems. Third, it will introduce the basic input-output calculus conceived by Nobel Prize Laureate Wassily Leontief, and provide concrete examples for how to apply this calculus to data published by statistical offices. The unit will then show how to integrate economic and environmental accounts, and generate boundary-free environmental footprint assessments. 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.

SUST5005

Policy and Sustainability Science

Credit points: 6 **Teacher/Coordinator:** Professor Rosemary Lyster **Session:** Intensive September **Classes:** Intensive classes for 4 full days in September 2015 **Corequisites:** SUST5001 **Assessment:** Essays, short written assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Climate change, ecological sustainability, food security, resource scarcity, green technology and innovation, rising ocean levels, climate refugees, drought and 'water wars', are just some of the complex topics that now confront policy makers at all levels of government. This unit of study aims to provide students with an understanding of the issues surrounding the development and implementation of policies for sustainability. At all levels there are a range of stakeholders- policy makers, regulators, non-government organisations, industry, citizens and community groups- confronted by a complex ethical environment in their pursuit of different and sometimes competing agendas. As a result, policy and particular policy instruments may reflect conflict and compromise rather than consensus. Students will be introduced to: the role of analysis (scientific, economic, social and political etc) in providing an evidence base; the variety of instruments and institutions available for policy delivery; the lobbying process in influencing policy determination; and effectiveness of policy design and implementation including identification of 'winners' and 'losers'.

WILD5001

Australasian Wildlife: Introduction Veterinary Science

Credit points: 6 **Teacher/Coordinator:** Dr Mathew Crowther **Session:** Intensive August **Classes:** Intensively taught unit, the remainder of the unit will involve personal study and project activity. See the Wildlife Health and Population Management website for dates. **Assessment:** Assessments for each unit may include practical work, field studies, student presentations and written reports (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit of study provides an introduction to the wildlife of Australasia, an overview of the present status of that wildlife, and an understanding of both conservation problems and management solutions. Issues in wildlife management are exemplified using a broad range of vertebrate species occupying different environments. Emphasis is placed on providing students with a coordinated and interdisciplinary approach to wildlife health and management, and on developing expertise in recognising and solving a broad range of problems in field populations. The unit integrates lectures, practical work and supervised study, and offers students the opportunity to work through real-world wildlife conservation problems relevant to their individual backgrounds.

WILD5002

Australasian Wildlife: Field Studies Veterinary Science

Credit points: 6 **Teacher/Coordinator:** Dr Mathew Crowther **Session:** Intensive September **Classes:** Intensively taught unit. See the Wildlife Health and Population Management website for dates. **Assessment:** Assessments for each unit may include practical work, field studies, student presentations and written reports (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit of study provides a first-hand introduction to the wildlife of Australasia, a practical overview of the present status of that wildlife, and an understanding of both conservation problems and management solutions. Issues in wildlife management are exemplified using sampling and diagnostic methods on a broad range of vertebrate species occupying different environments. The unit follows on from WILD5001 and provides practical experience via a five day field trip at the university farm "Arthursleigh" near Marulan NSW.

Medical Physics

Graduate Diploma in Medical Physics

Master of Medical Physics

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 2000 (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 title
GNMEDPHY-01	Graduate Diploma in Medical Physics
MAMEDPHY-01	Master of Medical Physics

2 Attendance pattern

The attendance pattern for these courses is full time or part time according to candidate choice.

3 Master's type

The master's degree in these resolutions is a professional master's course.

4 Embedded courses in this sequence

- (1) The embedded courses in this sequence are:
 - (a) Graduate Diploma in Medical Physics
 - (b) Master of Medical Physics
- (2) Providing candidates satisfy the admission requirements for each stage, a candidate may progress to the award of any course in this sequence. Only the highest award completed will be conferred.

5 Admission to candidature

- (1) With approval from the Dean, available places will be offered to qualified applicants according to the following admissions criteria.
- (2) Admission to the Graduate Diploma in Medical Physics requires a bachelor's degree in Science or Engineering from the University of Sydney, or equivalent qualification, provided the applicant has a major in physics or equivalent.
- (3) Admission to the Master of Medical Physics requires:
 - (a) a bachelor's degree in Science or Engineering with a minimum credit average from the University of Sydney, or equivalent qualification, provided the applicant has a major in physics or equivalent or
 - (b) completion of the requirements for the Graduate Diploma in Medical Physics from the University of Sydney or equivalent qualification with a grade point average of 3.25/5 or better.

6 Requirements for award

- (1) The units of study that may be taken for these awards are set out in the Medical Physics postgraduate coursework degrees table.
- (2) To qualify for the Graduate Diploma in Medical Physics a candidate must complete 48 credit points of core units of study.
- (3) To qualify for the Master of Medical Physics a candidate must complete 72 credit points of core units of study.

7 Transitional provisions

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2011 and persons who

commenced their candidature prior to 1 January, 2011 who elect to proceed under these resolutions.

- (2) Candidates who commenced prior to 1 January, 2011 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, 2016, or later date as the faculty may, in special circumstances, approve.

Course overview

The Master of Medical Physics (MMedPhys) is the entry level qualification for trainee medical physicists. Physical scientists apply their knowledge and training in many different areas of medicine including the treatment of cancer, medical imaging, physiological monitoring and medical electronics.

Course outcomes

The MMedPhys provides the entry level qualification for trainee medical physicists working in a hospital medical physics department. The course is accredited by the Australasian College of Physical Scientists and Engineers in Medicine (ACPSEM). Graduates of the MMedPhys will qualify to apply for trainee medical physicist positions in hospitals in Australia and New Zealand. Medical physicists employed in hospitals often undertake higher degree research studies part-time towards the Doctor of Philosophy (PhD) qualification.



Medical Physics

Units of study table

<i>Unit of study</i>	<i>Credit points</i>	<i>A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition</i>	<i>Session</i>
<i>All Degrees: Core Units</i>			
PHYS5002 Anatomy & Biol Essentials for Physicists	6		Semester 1
PHYS5029 Nuclear Medicine Physics	6		Semester 1
PHYS5011 Nuclear Physics	6		Semester 1
PHYS5012 Radiation Physics and Dosimetry	6	N PHYS5001	Semester 1
PHYS5005 Radiotherapy Physics	6		Semester 2
PHYS5006 Medical Imaging Physics	6		Semester 2
PHYS5018 Health Physics and Radiation Protection	6		Semester 2
PHYS5020 Computation and Image Processing	6	N PHYS5007	Semester 2
<i>Masters: Additional Core Unit</i>			
PHYS5019 Research Methodology and Project	24	<i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2



Medical Physics

Unit of study descriptions 2015

PHYS5002

Anatomy & Biol Essentials for Physicists Science

Credit points: 6 **Session:** Semester 1 **Classes:** One 3-hour lab class per week. **Assessment:** Mid-semester and final exams (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, introduces the concepts and nomenclature of the structure of the human cell, tissues, anatomical structure and physiology. The organisation and function of major organ systems that constitute the human body are covered. Examples of pathology of diseases commonly encountered in the practice of medical physics such as cancer, will be included. Basic principles of cell and molecular biology and molecular imaging will also be introduced. The course has been designed specifically for physics students with no prior knowledge of the field.

PHYS5029

Nuclear Medicine Physics Science

Credit points: 6 **Session:** Semester 1 **Classes:** 2-hour lecture and 1-hour practical per week. **Assessment:** Assignments and written exam (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will introduce the student to the physics associated with diagnostic and therapeutic applications in Nuclear Medicine. This will cover the use of radionuclides for imaging in single photon (SPECT) and positron emission tomography (PET), radiation and the patient, tomographic image reconstruction and kinetic analysis of imaging data. Internal radionuclide dosimetry will be addressed using standard (MIRD) models as well as by voxel-based estimators.

PHYS5005

Radiotherapy Physics Science

Credit points: 6 **Session:** Semester 2 **Classes:** One 2-hour lecture and one 1-hour practical per week. **Assessment:** Assignments and written exam (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, both theoretical and practical aspects of the major topics in radiotherapy physics are covered. These topics include radiation beam production and modification, calibration and characterisation, principles of treatment planning, dose calculation and reporting, and the physics of brachytherapy.

PHYS5006

Medical Imaging Physics Science

Credit points: 6 **Session:** Semester 2 **Classes:** One 2-hour lecture and one 1-hour practical per week. **Assessment:** Assignments and written exam (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, the physical principles underlying the physics of imaging in diagnostic radiology, ultrasound, magnetic resonance imaging and functional

imaging modalities are covered. Advanced techniques, such as multi-modality imaging, are also introduced.

PHYS5011

Nuclear Physics Science

Credit points: 6 **Session:** Semester 1 **Classes:** One 3-hour lecture per week. **Assessment:** Assignments and written exam (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit is normally undertaken as part of the Master of Medical Physics or the Graduate Diploma in Medical Physics. Nuclear properties, nuclear models, nuclear decays (gamma, beta, alpha and heavy ion decay), natural radioactivity and radioactive decay series, artificial radioactivity, nuclear reactions (including high energy nuclear particle induced spallation reactions), nuclear fission (spontaneous and induced fission) and nuclear fusion are covered.

PHYS5012

Radiation Physics and Dosimetry Science

Credit points: 6 **Session:** Semester 1 **Classes:** One 2-hour lecture and one 1-hour practical per week. **Prohibitions:** PHYS5001 **Assessment:** Assignments and written exam (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit is normally undertaken as part of the Master of Medical Physics degree or the Graduate Diploma in Medical Physics. Sources of radiation, interaction of radiation with matter, physical, chemical and biological effects of radiation in human tissue, physical principles of dosimetry, internal and external dosimetry, radiation units and measurement are covered.

PHYS5018

Health Physics and Radiation Protection Science

Credit points: 6 **Session:** Semester 2 **Classes:** One 2-hour lecture and one 1-hour practical per week. **Assessment:** Assignments and written exam (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit is normally undertaken as part of the Master of Medical Physics degree or in the Graduate Diploma in Medical Physics. Physical and biological aspects of the safe use of ionising radiation, physical principles and underlying shielding design instrumentation, international and legislative requirements for radiation protection are covered. Factors affecting dose response of tissue are considered along with models describing characteristic behaviour.

PHYS5019

Research Methodology and Project Science

Credit points: 24 **Session:** Semester 1, Semester 2 **Classes:** Library information session and research work. **Assessment:** Report and research seminar (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

In this unit a research project is undertaken. The topic of the project will be determined in consultation with the course coordinator. In addition, the processes involved in conducting various forms of research, basic data analysis and interpretation, research writing and presentation skills are covered.



PHYS5020

Computation and Image Processing

Science

Credit points: 6 **Session:** Semester 2 **Classes:** One 1-hour lecture and one 2-hour practical per week. **Prohibitions:** PHYS5007 **Assessment:** Assignments and written exam (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this unit normally undertaken as part of the Masters of Medical Physics degree or the Graduate Diploma in Medical Physics, Monte Carlo modelling of radiation transport is covered, along with the theory of image formation, concepts of computing, numerical methods and image processing, including techniques such as enhancement, registration, fusion and 3D reconstruction.

Nutrition and Dietetics

Master of Nutrition and Dietetics

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 2000 (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 title
MANUTDIE-01	Master of Nutrition and Dietetics

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.

4 Admission to candidature

- (1) With approval from the Dean, available places will be offered to qualified applicants based on merit, according to the following admissions criteria:
- (2) Admission to the degree requires a Bachelor of Science degree from the University of Sydney, or equivalent qualification, with at least an average result of Credit. The degree must include successful completion within the last 10 years of two semesters of units of study of junior level Chemistry and successful completion of two semesters in each of Biochemistry/ Molecular Biology and Human Physiology at intermediate or senior level.

5 Requirements for award

- (1) The units of study that may be taken for the course are set out in the table for the Master of Nutrition and Dietetics.
- (2) To qualify for the Master of Nutrition and Dietetics a candidate must complete a prescribed program of 96 credit points, including:
 - (a) 48 credit points of first year units of study; and
 - (b) 24 credit points being the dietetics training placement; and
 - (c) 24 credit points being the Nutrition Research Project.

6 Satisfactory progress

Successful completion of the training placement is a requirement of this course. Candidates who fail the training placement once will be identified as not meeting academic progression requirements and become subject to the Progression provisions of the Coursework Rule. Candidates who fail the training placement a second time will be permanently excluded from the course if they cannot show cause. Any further failures in the training placement will result in automatic and permanent exclusion from the course.

7 Transitional provisions

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2014 and persons who commenced their candidature prior to 1 January, 2014 who elect to proceed under these resolutions.
- (2) Candidates who commenced prior to 1 January, 2014 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, or later date as the faculty may, in special circumstances, approve.

Course overview

The Master of Nutrition and Dietetics provides professional education for dietitians/nutritionists. It builds on major concepts from the study of human biochemistry and physiology to discuss the roles of all nutrients, nutritional contents of food and food and diet in health and disease. The programme includes all the units of study to ensure dietetics competence can be reached including public health, medical nutrition therapy, food services management, communication, management and research and evaluation.

The course requires two years of full-time work and study. The first year consists of coursework, lectures, tutorials and practicals. In the second year, one semester is devoted to clinical training and the other semester is spent on a small research project. The dates for this course do not follow the undergraduate academic year. The second year commences in late January.

Course outcomes

Upon completion of the course, the graduate will have a sound knowledge base in nutrition and dietetics, possess the skills to improve nutritional status of individuals, families, and the community at large and to modulate the course of illness with dietetics. The graduate will be skilled in basic research and have a lifelong commitment to the pursuit of excellence in professional conduct. Graduates of the Master of Nutrition and Dietetics are eligible to apply for admission to a research degree (Doctor of Philosophy).

Admission requirements

Applicants must have a Science degree from a recognised tertiary institution and have completed two semesters of study in Biochemistry/Molecular Biology and two semesters in Human Physiology at the intermediate or senior level. This prerequisite is required by the Dietitians Association of Australia. It would be expected that at least junior chemistry, biology and maths would also be included in the undergraduate degree. Applicants who meet the minimum entry requirements are then ranked according to their academic record with offers made on a competitive basis.

Course Structure

First year: This is an integrated academic year of teaching, practicals and study. All students take the units of study listed below.

Second year: In the second year students undertake a clinical training in hospital, community and food service training placement. The other semester is a research project. During the second year all students are required to attend formal seminars at the University approximately one day per month. The units of study are supervised by a Program Committee in Nutrition and Dietetics, chaired by the Head of School.



Nutrition and Dietetics

Units of study table

<i>Unit of study</i>	<i>Credit points</i>	<i>A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition</i>	<i>Session</i>
First Year Core Units			
NTDT5503 Dietary Intake & Nutritional Assessment	6	C NTDT5602, NTDT5601 and NTDT5604	Semester 1
NTDT5601 Nutritional and Food Science	6	C NTDT5602, NTDT5503 and NTDT5604 (previously known as NTDT5504)	Semester 1
NTDT5602 Methods in Nutrition Research	6	C NTDT5601, NTDT5503 and NTDT5604	Semester 1
NTDT5604 Dietetics Professional Studies	6	C NTDT5601, NTDT5602 and NTDT5503	Semester 1
NTDT5305 Food Service Management	6	P NTDT5601, NTDT5503, NTDT5604 and NTDT5602 C NTDT5307 and NTDT5608	Semester 2
NTDT5307 Medical Nutrition	12	P NTDT5503, NTDT5601, NTDT5602, NTDT5604 C NTDT5305 and NTDT5608	Semester 2
NTDT5608 Community and Public Health Nutrition	6	C NTDT5305 and NTDT5307 <i>NTDT5608 is available as an elective to students in the Graduate Certificate, Graduate Diploma and Master of Medicine as well as the Master of Science in Medicine (Metabolic Health). For these students, there are no prerequisites for entry into NTDT5608. However, these students must apply for Special Permission from the unit of study coordinator in order to be enrolled.</i>	Semester 2
Second Year Core Units			
NTDT5310 Nutrition Research Project	24		Semester 1 Semester 2
NTDT5612 Dietetics Training Placement	24	P NTDT5601, NTDT5503, NTDT5604, NTDT5602, NTDT5305, NTDT5307, NTDT5608 <i>Department permission required for enrolment. Placements commence in late January or early July.</i>	Intensive February Intensive July



Nutrition and Dietetics

Unit of study descriptions 2015

NTDT5305

Food Service Management Science

Credit points: 6 **Teacher/Coordinator:** Lana Hebden **Session:** Semester 2
Classes: 10 hours practical classes per semester, 4 hours lectures per week.
Prerequisites: NTDT5601, NTDT5503, NTDT5604 and NTDT5602
Corequisites: NTDT5307 and NTDT5608 **Assessment:** Practical task (30%), Major project (50%), Minor project (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The course introduces students to the principles of Food Service Management including food service systems, food safety, food service across the continuum of care and special populations, accreditation and standards, menu and recipe development and assessment, nutrition promotion and marketing, and management and leadership in food service. Students gain knowledge, as well as practical skills in clinical, community, industry and commercial applications.

NTDT5307

Medical Nutrition Science

Credit points: 12 **Teacher/Coordinator:** Dr Anna Rangan **Session:** Semester 2 **Classes:** Lectures and tutorials average 8 hours per week, and Medical Nutrition Therapy (MNT) Workshops average 4 hours per week **Prerequisites:** NTDT5503, NTDT5601, NTDT5602, NTDT5604 **Corequisites:** NTDT5305 and NTDT5608 **Assessment:** Two assignments (15%) and (20%), a mid semester test (15%) and end of semester exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The broad objectives involve learning the role of medical nutrition therapy to prevent and alleviate disease. The importance of client focused factors in dietary modification; education and interpretation of theory for client understanding are key discussion points. This unit of study involves the study of medicine as it relates to nutrition, and the modification of diet to alter the disease process and nutrition support of patients with wasting illnesses and it includes a paediatric program at the Children's Hospital Westmead.

Textbooks

Stewart, R. Griffith Handbook of Clinical Nutrition and Dietetics. 4th Edition, 2011.

Thomas, B (Ed). Manual of Dietetic Practice. (4th Edition 2007).

NTDT5310

Nutrition Research Project Science

Credit points: 24 **Teacher/Coordinator:** Ms Lana Hebden **Session:** Semester 1, Semester 2 **Classes:** Supervised research experience. Tutorial on scientific writing. **Assessment:** Oral presentation (15%), Supervisor assessment (35%) and research treatise (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

During the research semester each student conducts a small research project under the supervision of a research academic or practitioner. Research projects can include small surveys, simple bench work, literature reviews, or clinical trials, and are carried out within the University or with an approved external supervisor.

NTDT5503

Dietary Intake & Nutritional Assessment Science

Credit points: 6 **Teacher/Coordinator:** Dr Anna Rangan **Session:** Semester 1 **Classes:** Lectures/tutorials/workshops averaging 5 hours per week **Corequisites:** NTDT5602, NTDT5601 and NTDT5604 **Assessment:** One quiz (25%), one assignment (25%), 2-hour end of semester exam, (50%) **Campus:**

Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study covers Dietary Assessment Methods in the context of individual, group and population dietary data: purposes of dietary assessment; uses of dietary data; key dietary assessment methods and their use, application, strengths, weaknesses, sources of measurement error; quantification of portion and serve sizes; evaluation and validation of dietary data; use and application of dietary reference standards; food composition databases; and the appraisal and interpretation of dietary assessment methods in published literature. This unit of study also covers Anthropometry, Body Composition, Nutritional Biochemistry and Nutritional Screening: anthropometric and body composition methods for the assessment of nutritional status; reference standards for assessing body composition; anthropometric measurements; biochemical and haematological indices for nutritional assessment; assessment of physical activity; objectives, advantages, limitations, and applications of nutritional screening. Tutorials and workshops aim to address the practical aspects of the administration of dietary assessment methods, as well as validation, interpretation and critical appraisal of such methods.

Textbooks

R.S. Gibson Principles of Nutritional Assessment, 2nd ed. Oxford University Press. 2005.

NTDT5601

Nutritional and Food Science Science

Credit points: 6 **Teacher/Coordinator:** Dr Jimmy Louie **Session:** Semester 1 **Classes:** 3 hours lectures and 1 workshop per week (1-2 hours) **Corequisites:** NTDT5602, NTDT5503 and NTDT5604 (previously known as NTDT5504) **Assessment:** Short quizzes (20%); group presentation (30%); 3 hour final exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study give students a broad appreciation of food and nutrients, including an understanding of food sources of nutrients; the nutrients that are necessary for survival and maintenance of individual and population health; nutrient requirements at different stages of life, such as childhood, pregnancy and lactation and older age; factors affecting nutrient availability for absorption; and the significance of nutrient deficiency and excess intakes/toxicity on nutritional and disease status.

Textbooks

Mann J and Truswell AS 'Essentials of Human Nutrition' Oxford: Oxford University Press, 4th Edition, 2012.

NTDT5602

Methods in Nutrition Research Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Margaret Allman-Farinelli **Session:** Semester 1 **Classes:** 3 hours of lectures and 2 hours of tutorial or practical work per week. **Corequisites:** NTDT5601, NTDT5503 and NTDT5604 **Assessment:** 2.5 hour exam (60%); 2 assignments (10% and 30%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces students to both qualitative and quantitative research methods that are essential tools for dietitians. Qualitative methods include the development of questionnaires and conduct of focus groups. Students will learn about study design and methods used in epidemiology to be able to critically analyse the scientific literature of nutrition and dietetics. An introduction to statistical



tests with practical computer classes will also be included. Scientific writing techniques will be covered.

Textbooks

Bonita R, Beaglehole R, Kjellstrom T. Basic Epidemiology. 2nd Ed. World Health Organisation: Geneva, 2005
Lawrence M and Wolsely T (editors). Public Health Nutrition from Principles to Practice. Allen and Unwin 2007. ISBN: 978 174175 102 4. Chapter 14, pages 344-349

NTDT5604

**Dietetics Professional Studies
Science**

Credit points: 6 **Teacher/Coordinator:** Dr Fiona O'Leary **Session:** Semester 1 **Classes:** Lectures and tutorials average 5 hours per week **Corequisites:** NTDT5601, NTDT5602 and NTDT5503 **Assessment:** Business assignment (40%), Small Group Education assignment (30%) and Communication assignment (30%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This course is designed to facilitate students to develop professional communication and organization/management skills that will enable them to work effectively as dietitians. Dietitians work in varied environments - within private and government organizations, industry and in private practice; solely and within teams. Interpersonal, individual and group communication, as well as professional, management, organizational and general business skills are required in all of these areas. This unit of study introduces communication, management and organizational group dynamics and behavioural theory to dietetics students. Students will have the opportunity to apply these through practical examples in class and by the completion of assessment tasks. Of the 4 components of the Unit of Study, namely Business, Small Group Education, Interpersonal Communication and Media Skills, only the first three are assessed.

Textbooks

Bauer K and Sokolik C. Basic Nutrition Counselling Skills. Wadsworth, 2002. ISBN: 0720916645
Hollis, Calabrese and Sullivan Maillet. Nutrition Counseling and Education Skills for Dietetics Professionals. 2012 6th Edition
Hudson, N.R. Management Practice in Dietetics. California USA: Thompson Wadsworth. 2006.

NTDT5608

**Community and Public Health Nutrition
Science**

Credit points: 6 **Teacher/Coordinator:** Dr Jimmy Louie **Session:** Semester 2 **Classes:** 4 hours lectures and 2 tutorials per week **Corequisites:** NTDT5305 and NTDT5307 **Assessment:** 2 hour exam (45%); 4 assignments (55%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: NTDT5608 is available as an elective to students in the Graduate Certificate, Graduate Diploma and Master of Medicine as well as the Master of Science in Medicine (Metabolic Health). For these students, there are no prerequisites for entry into NTDT5608. However, these students must apply for Special Permission from the unit of study coordinator in order to be enrolled.

This unit of study introduces students to the concepts and principles underlying, and issues associated with, nutrition in community and public health contexts. It covers the principles of health promotion and teaches the students how to plan, implement and evaluate nutrition promotion strategies. The scope and distribution of chronic diseases and the role of nutrition in the etiology of diseases such as cancer, heart disease, diabetes and obesity is examined. This unit of study also investigates the food habits of culturally and linguistically diverse groups, nutritional intakes and requirements of people across the lifespan, and the current nutrition policies and guidelines aimed at preventing chronic diseases.

Textbooks

Lawrence M & Worsley (eds). Public Health Nutrition - from Principles to Practice. Sydney: Allen & Unwin. 2007.

NTDT5612

**Dietetics Training Placement
Science**

Credit points: 24 **Teacher/Coordinator:** Margaret Nicholson **Session:** Intensive February, Intensive July **Classes:** 20 weeks full-time placement **Prerequisites:** NTDT5601, NTDT5503, NTDT5604, NTDT5602, NTDT5305, NTDT5307, NTDT5608 **Assessment:** Pass or fail at completion **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Professional practice

Note: Placements commence in late January or early July.

During twenty weeks students develop further practice-based skills in each of three settings of work; individual case management, community/public health and food service management. The semester commences late January for 1st semester or early July for 2nd semester and runs for 20 weeks as prescribed in the requirements of the professional accrediting body.

Textbooks

Placement manual provided by the University.

Sustainability

Graduate Certificate in Sustainability

Graduate Diploma in Sustainability

Master of Sustainability

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 2000 (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 title
GCSUSTAI-01	Graduate Certificate in Sustainability
GNSUSTAI-01	Graduate Diploma in Sustainability
MASUSTAI-01	Master of Sustainability

2 Attendance pattern

The attendance pattern for these courses is full time or part time according to candidate choice.

3 Master's type

The master's degree in these resolutions is an advanced learning master's course.

4 Embedded courses in this sequence

- (1) The embedded courses in this sequence are:
 - (a) Graduate Certificate in Sustainability
 - (b) Graduate Diploma in Sustainability
 - (c) Master of Sustainability
- (2) Providing candidates satisfy the admission requirements for each stage, a candidate may progress to the award of any course in this sequence. Only the highest award completed will be conferred.

5 Admission to candidature

- (1) With approval from the Dean, available places will be offered to qualified applicants according to the following admissions criteria:
- (2) Admission to the Graduate Certificate in Sustainability requires:
 - (a) a degree of Bachelor from the University of Sydney or equivalent qualification; or
 - (b) experience which is considered to demonstrate the knowledge and aptitude required to undertake the units of study.
- (3) Admission to the Graduate Diploma in Sustainability requires:
 - (a) a degree of Bachelor from the University of Sydney or equivalent qualification; or
 - (b) completion of the requirements of the Graduate Certificate in Sustainability from the University of Sydney or equivalent qualification.
- (4) Admission to the Master of Sustainability requires:
 - (a) a degree of Bachelor with a credit average from the University of Sydney or equivalent qualification; or

- (b) completion of the requirements of the Graduate Diploma in Sustainability from the University of Sydney or equivalent qualification.

6 Requirements for award

- (1) The units of study that may be taken for these awards are set out in the table for Sustainability postgraduate courses. With the approval of the Dean and the program coordinator, candidates for the graduate certificate, graduate diploma or master's degree, with special aims or interests, may be allowed to substitute up to 12 credit points with relevant postgraduate units from outside the table.
- (2) To qualify for the Graduate Certificate in Sustainability a candidate must complete 24 credit points, including:
 - (a) 12 credit points of core units of study; and
 - (b) 12 credit points of units of study selected from the remaining core units of study or elective units of study.
- (3) To qualify for the Graduate Diploma in Sustainability a candidate must complete 48 credit points, including:
 - (a) 36 credit points of core units of study; and
 - (b) 12 credit points of units of study selected from the remaining core units of study or elective units of study.
- (4) To qualify for the Master of Sustainability a candidate must complete 72 credit points, including:
 - (a) 36 credit points of core units of study; and
 - (b) 12 credit points of elective units of study from the remaining core units of study or elective units of study; and
 - (c) 24 credit points of Capstone experience units of study.

7 Transitional provisions

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2011 and persons who commenced their candidature prior to 1 January, 2011 who elect to proceed under these resolutions.
- (2) Candidates who commenced prior to 1 January, 2011 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, 2016, or later date as the faculty may, in special circumstances, approve.

Course Overview

The Sustainability program delivers cross-disciplinary qualifications aimed at producing sustainability professionals able to extend their discipline-specific skills with an appreciation of the technological, commercial, legal, governmental and societal imperatives underpinning sustainability issues.

The Sustainability program has been developed in collaboration with the University's sustainability experts and industry professionals from areas such as energy, finance, the media, planning, health, law, and government. The Master of Sustainability builds upon the Graduate Diploma with a capstone experience in which students work in teams to research current sustainability problems in collaboration with industry (including their own employment if appropriate), aiming to deliver sustainable solutions to the industry partners.

Course outcomes

Upon completion of the course, graduates will be equipped to engage in developing and implementing solutions to the complex question of how to deliver acceptable life styles for all without compromising the fate of future generations.



Sustainability

Units of study table

<i>Unit of study</i>	<i>Credit points</i>	<i>A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition</i>	<i>Session</i>
Core Unit			
All students must complete the core unit.			
SUST5001 Introduction to Sustainability	6		Semester 1 Semester 2
Additional Core Units			
Students in the Graduate Certificate must complete one additional core unit (6 credit points).			
Students in the Graduate Diploma and the Masters must complete five additional core units (30 credit points).			
Students may take additional core units as electives units.			
SUST5002 Food and Water Security	6	C SUST5001	Semester 2
SUST5003 Energy and Resources	6	C SUST5001	Semester 1
SUST5004 Populations and Health	6	C SUST5001	Semester 2
SUST5005 Policy and Sustainability	6	C SUST5001	Intensive September
SUST5006 Sustainability: Business and Leadership	6	C SUST5001	Semester 1
PHYS5031 Ecological Econ & Sustainable Analysis	6		Semester 1
Capstone Experience Units			
Students in the Masters must complete 24 credit points of capstone experience.			
SUST5007 Research Project A	24	P Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 N SUST5009, SUST5008	Semester 1 Semester 2
SUST5008 Research Project B	12	P Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 N SUST5007	Semester 1 Semester 2
SUST5009 Research Project C	12	P Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 N SUST5007	Semester 1 Semester 2
Elective Units			
All students must complete two elective units (12 credit points).			
Students may take additional core units as electives units.			
AFNR5502 Remote Sensing, GIS and Land Management	6		Semester 2
AFNR5511 Soil Processes, Assessment & Management	6		Semester 1
AFNR5512 Water Management and Variable Climate	6	A UG Maths or Physics or Hydrology.	Semester 2
AFNR5801 Climate Change: Process, History, Issues	6	A A basic understanding of climate change processes and issues.	Semester 2
ARCH9080 Urban Ecology, Design and Planning	6	N PLAN9048	Semester 2
BETH5203 Ethics and Public Health	6	P A three-year undergraduate degree in science; medicine; nursing; allied health sciences; philosophy/ethics; sociology/anthropology; history; or other relevant field; or by special permission. N BETH5206	Semester 2
DESC9147 Sustainable Building Design Principles	6		Semester 1
DESC9148 Sustainable Building Design Practice	6		Semester 2
DESC9201 Indoor Environmental Quality (IEQ)	6		Semester 2



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
DVST6904 Rethinking Poverty	6		Semester 1 Semester 2
ECOP6108 Economic Management for Sustainability <i>This unit of study is not available in 2015</i>	6		Semester 2
EDPC5022 Design for Learning	6		Semester 1
EDPC5024 Systems, Change and Learning	6		Semester 2
ENVI5705 Ecological Principles	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 1
ENVI5708 Introduction to Environmental Chemistry	6		Semester 1
ENVI5801 Social Science of Environment	6		Semester 1
ENVI5809 Environmental Simulation Modelling	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 2a
ENVI5903 Sustainable Development	6	<i>Note: Department permission required for enrolment</i>	Intensive July
GEOG5001 Geographic Information Science A	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 1
GEOG5003 Environmental Remote Sensing <i>This unit of study is not available in 2015</i>	6	A Knowledge or experience equivalent to GEOG5001 (Introduction to GIS)	Semester 1
GEOG5004 Environmental Mapping and Monitoring	6	A This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics.	Semester 2
GOVT6222 Australian Enviro Politics & Policy	6		Semester 1
GOVT6223 Topics in Environmental Politics	6		Semester 2
GOVT6135 Global Environmental Politics <i>This unit of study is not available in 2015</i>	6		Semester 1
GOVT6316 Policy Making, Power and Politics	6		Semester 1 Semester 2
GOVT6331 Public Management and Governance	6		Semester 1
HPOL5000 Introduction to Health Policy	6		Semester 1
HPOL5007 Global Health Policy	6		Semester 2
IBUS5002 Strategy, Innovation & Entrepreneurship	6	N IBUS5001	Semester 1 Semester 2
IBUS6005 Ethical International Business Decisions	6		Semester 1
IBUS6011 New Business Opportunities and Startups	6	A IBUS5002, or completion of at least 24 credit points N WORK6112, IBUS5011 <i>Note: Department permission required for enrolment</i>	Intensive July Semester 1 Semester 2
IBUS6014 Intellectual Property Management	6	A IBUS5002, or completion of at least 24 credit points	Semester 1
IBUS6016 Social Entrepreneurship	6	A IBUS5002, or completion of at least 24 credit points <i>Note: Department permission required for enrolment</i>	Intensive December Intensive July Semester 1 Summer Main
INFS5001 Project Management	6	N INFS6014	Semester 1 Semester 2 Summer Early
LAWS6061 International Environmental Law	6	<i>Students seeking further study in international environmental law may undertake LAWS6922 Advanced International Environmental Law.</i>	Intensive May
LAWS6252 Legal Reasoning & the Common Law System	6	N LAWS6881 <i>International students who are required to enrol in this unit must undertake classes during the first week of their study. Health Law and Public Health students should enrol in LAWS6881 Introduction to Law for Health Professionals in lieu of LAWS6252, if available. This unit is not available to MLawIntDev students who have been granted a reduced volume of learning. Students must attend all classes on the timetabled dates as prescribed for their enrolled session/group. An Absent Fail grade may be granted to students who fail to attend the correct session/group.</i>	Intensive April Intensive August Intensive March Intensive September
MIPH5116 Culture, Health, Illness and Medicine	4		Semester 2
MKTG5001 Marketing Principles	6		Semester 1 Semester 2
NURS5002 Social Contexts of Health	6		Semester 1

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
PACS6914 Conflict-Resolving Media	6	N SCWK6935	Intensive March
PHYS5032 Techniques for Sustainability Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 1 Semester 2
PHYS5033 Environmental Footprints and IO Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 1 Semester 2
PHYS5034 Life Cycle Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 2
RSEC5431 Benefit Cost Analysis <i>This unit of study is not available in 2015</i>	6		Semester 1
RSEC5432 Environmental Economics <i>This unit of study is not available in 2015</i>	6		Semester 2
RSEC5433 Economics of Mineral & Energy Industries <i>This unit of study is not available in 2015</i>	6		Semester 2
TPTM6470 Sustainable Transport & Logistic Systems <i>This unit of study is not available in 2015</i>	6		Semester 1

Sustainability

Unit of study descriptions 2015

SUST5001

Introduction to Sustainability Science

Credit points: 6 **Teacher/Coordinator:** Associate Professor Tony Masters **Session:** Semester 1, Semester 2 **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. **Assessment:** Essays, oral presentations, short written assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

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.

SUST5002

Food and Water Security Science

Credit points: 6 **Teacher/Coordinator:** Professor Michael D'Occhio **Session:** Semester 2 **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, short written assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit explores the imperatives and challenges of ensuring an adequate supply of water and nutritious food in the face of changes in global markets, the environment and human population. These challenges will be examined in the context of access and potential trends in supply and demand. Factors influencing trends in supply include environmental degradation, climate change, energy scarcity, technology, changes in population and the patterns of global prosperity, growing urbanisation, and increased consumption. The unit will consider the underlying policy, economic and market-driven forces that play an important role in affecting both supply and demand. The needs of both developing and developed nations will be compared and the role of international, national and regional mechanisms will be discussed. Placing some emphasis on the relevance to Australia, the unit will explore available actions across a range of organisational levels such as communities, governments and NGOs.

SUST5003

Energy and Resources Science

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%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

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.

SUST5004

Populations and Health Science

Credit points: 6 **Teacher/Coordinator:** Associate Professor Tim Gill **Session:** Semester 2 **Classes:** Alternate full-day workshops and online tutorials on Thursdays in August, September and October. **Corequisites:** SUST5001 **Assessment:** Essays, short written assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit explores the extent to which environmental changes influence population demographics and health, and the extent to which demographic and secular changes impact on the physical environment. The influence of migration, conflict, food insecurity, scarce resources, droughts, flooding, heat stress, emerging and re-emerging infections and chronic health problems on poverty, ageing and dependency, physical, mental and social health and economic sustainability will be analysed alongside the elements needed to preserve the diversity and functioning of the ecosystem for future human survival. International models and policies for mitigating and/or adapting to the negative consequences of globalisation, urbanisation, overconsumption, and resource depletion will be analysed for their potential benefits and harms to sustainable population growth, optimal health and equitable distribution of essential resources.

SUST5005

Policy and Sustainability Science

Credit points: 6 **Teacher/Coordinator:** Professor Rosemary Lyster **Session:** Intensive September **Classes:** Intensive classes for 4 full days in September 2015 **Corequisites:** SUST5001 **Assessment:** Essays, short written assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Climate change, ecological sustainability, food security, resource scarcity, green technology and innovation, rising ocean levels, climate refugees, drought and 'water wars', are just some of the complex topics that now confront policy makers at all levels of government. This unit of study aims to provide students with an understanding of the issues surrounding the development and implementation of policies for sustainability. At all levels there are a range of stakeholders- policy makers, regulators, non-government organisations, industry, citizens and community groups- confronted by a complex ethical environment in their pursuit of different and sometimes competing agendas. As a result, policy and particular policy instruments may reflect conflict and



compromise rather than consensus. Students will be introduced to: the role of analysis (scientific, economic, social and political etc) in providing an evidence base; the variety of instruments and institutions available for policy delivery; the lobbying process in influencing policy determination; and effectiveness of policy design and implementation including identification of 'winners' and 'losers'.

SUST5006

Sustainability: Business and Leadership Science

Credit points: 6 **Teacher/Coordinator:** Dr Richard Seymour **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, short written assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will help build your understanding of the knowledge, skills and activities required to lead sustainability and change in, and with, businesses and organisations. The unit presents the relevance and importance of business mission and strategy, and will introduce the roles of corporate social responsibility, social entrepreneurship and impact measurement. It will also explore stakeholders associated with business (including shareholders, consumers and government) and how they can both motivate and impede change in the context of sustainability. Flexible and inclusive models of leadership will be introduced as we seek an appreciation of systems theory and its crucial place in understanding the complex nature of sustainability. Building on an understanding of distributed leadership and the nature of systems, action research and action learning are introduced as ideal frameworks to affect societal and organisational change. Learning will be facilitated through seminars, readings, as well as individual group projects.

PHYS5031

Ecological Econ & Sustainable Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Christopher Dey **Session:** Semester 1 **Classes:** 2-hour lecture and 1-hour tutorial per week. **Assessment:** Major essay, tutorial summary, and course compilation diary (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce selected recent topics from Ecological Economics, such as concepts of sustainability (definitions); comparisons with environmental economics, intergenerational discounting; time and equity in the climate change debate; valuing the environment; links between theories of well-being, consumerism and environmental impact; and cost benefit analysis. The unit sets the scene for the more detailed and specific units PHYS 5032, PHYS 5033, and PHYS 5034.

SUST5007

Research Project A Science

Credit points: 24 **Teacher/Coordinator:** Dr Joy Murray **Session:** Semester 1, Semester 2 **Classes:** Regular meetings at times by agreement with mentor **Prerequisites:** Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 **Prohibitions:** SUST5009, SUST5008 **Assessment:** Combination of 3 written reports, 3 presentations. **Diary/Log, meeting attendance (100%)** **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Students in teams of 2-4 members propose a research enquiry (possibly based on their employment). Ideally, students work in teams (although this may depend on any IP constraints of their employers). The project is multidisciplinary and should cover at least 2 sustainability theme areas (such as energy, health, development, environment) and be approved by the Unit Coordinator. The Unit Coordinator will appoint an academic mentor for each group from among the relevant researchers in the University. Students will keep a diary/log of their activities, to be submitted for assessment at the end of semester.

SUST5008

Research Project B Science

Credit points: 12 **Teacher/Coordinator:** Dr Joy Murray **Session:** Semester 1, Semester 2 **Classes:** Regular meetings at times by agreement with mentor **Prerequisites:** Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 **Prohibitions:** SUST5007 **Assessment:** Combination of 3 written reports, 3 presentations. **Diary/Log, meeting attendance (100%)** **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Students in teams of 2-4 members propose a research enquiry (possibly based on their employment). Ideally, students work in teams (although this may depend on any IP constraints of their employers). The project is multidisciplinary and should cover at least 2 sustainability theme areas (such as energy, health, development, environment) and be approved by the Unit Coordinator. The Unit Coordinator will appoint an academic mentor for each group from among the relevant researchers in the University. Students will keep a diary/log of their activities, to be submitted for assessment at the end of semester.

SUST5009

Research Project C Science

Credit points: 12 **Teacher/Coordinator:** Dr Joy Murray **Session:** Semester 1, Semester 2 **Classes:** Regular meetings at times by agreement with mentor **Prerequisites:** Any 36 credit points of the following: SUST5001, SUST5002, SUST5003, SUST5004, SUST5005, SUST5006, PHYS5031 **Prohibitions:** SUST5007 **Assessment:** Combination of 3 written reports, 3 presentations. **Diary/Log, meeting attendance (100%)** **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Students in teams of 2-4 members propose a research enquiry (possibly based on their employment). Ideally, students work in teams (although this may depend on any IP constraints of their employers). The project is multidisciplinary and should cover at least 2 sustainability theme areas (such as energy, health, development, environment) and be approved by the Unit Coordinator. The Unit Coordinator will appoint an academic mentor for each group from among the relevant researchers in the University. Students will keep a diary/log of their activities, to be submitted for assessment at the end of semester.

AFNR5502

Remote Sensing, GIS and Land Management Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** A/Prof Inakwu Odeh **Session:** Semester 2 **Classes:** 3x1-hr lectures/week weeks 1-6, 1x1 project weeks 7-11, 1x1-2 hour presentation scheduled for weeks 12 and 13, 1x3-hr practical weeks 1-6 **Assessment:** 1x 30 min presentation (10%), laboratory work reports (40%), Group discussion online (10%), 1x3500w project report (40%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is aimed at advanced techniques in Remote Sensing (RS), linked with Geographical Information Systems (GIS), as applied to land management problems. We will review the basic principles of GIS and then focus on advanced RS principles and techniques used for land resource assessment and management. This will be followed by practical training in RS techniques, augmented by land management project development and implementation based on integration of GIS and RS tools. The unit thus consists of three separate but overlapping parts: 1) a short theoretical part which focuses on the concepts of RS; 2) a practical part which aims at developing hands-on skills in using RS tools, and 3) an application-focused module in which students will learn the skills of how to design a land management project and actualise it using integrated GIS and RS techniques.

Syllabus summary: Lectures will cover: Overview of the basic principles of Geographical Information Science (GISc), Advanced principles of remote sensing, Land resource information and data capture using RS, Digital elevation modelling and terrain analysis using remote sensing; Image enhancement and visualization; Image classification and interpretation; RS data interpretation for land resource inventory; RS and GIS for land use and land cover change analysis; Coupling of models of land resource assessment with GIS and RS. Fifty percent

of learning time will be devoted to the design and implementation of projects, which can be selected from GIS and RS applications in: agricultural land management, vegetation studies, water and catchment (hydrological) studies; land-cover and land-use change modelling, pesticide and herbicide environmental risk assessment, environmental impact analysis, land degradation modelling including soil salinity, soil erosion, etc.

Textbooks

Textbook: Jesen J. R. 2006. Remote sensing of the environment: an earth resource perspective. 2nd ed. Pearson Prentice Hall Upper Saddle, New Jersey. Reference Textbook: Rees W.G. 2001. Physical principles of remote sensing. 2nd ed. Cambridge University Press, Cambridge, United Kingdom.

AFNR5511

Soil Processes, Assessment & Management Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** Dr Damien Field **Session:** Semester 1 **Classes:** 1 Lec, 2 tutorials/wk, case study & oral presentations. **Assessment:** Essay (30%), Group discussions (20%), Case study report (30%), Group presentation (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Soils support agricultural and natural ecosystems and regulate environmental interactions between the hydrosphere and atmosphere. It is the quality of our soils that affect productivity, the environment, health and ultimately sustainability. However, challenges such as those presented by lack of plant nutrient supply, soil acidification, physical degradation, soil contamination, and loss of soil biodiversity are problems at a global scale that threaten the sustainability of the environment and society. As well as the threats the importance of maintaining a quality soil that regulates environmental interactions will be explored, such as soil as a sink for carbon affecting climate interactions or understanding how a rich soil biodiversity can contribute to food production affecting food security. To do this, this unit of study is concerned with exploring the key pedology, soil chemistry, soil physical and soil biological processes that drive these challenges to soil quality. Time will be spent investigating how the quality of the soil can be assessed, using the indicators of the mentioned soil processes, and how the resulting data can be aggregated and communicated in a meaningful way. Working with case studies, the students will identify problems that are assessed using soil quality or function analysis with the aim of identifying management options. The management options will be evaluated to determine their adoptability and implement ability. By investigating the case studies using soil quality or function analysis students will develop their research and enquiry skills. Assessing and developing adoptable management strategies the students will develop their skills in synthesising material from multiple sources and enhance their intellectual autonomy. By producing reports and presenting seminars the students will develop their communication skills.

Textbooks

Textbooks: D. Hillel, 2004. Introduction to Environmental Soil Physics, Elsevier Science, San Diego, CA USA.

AFNR5512

Water Management and Variable Climate Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** A/Prof Willem Vervoort **Session:** Semester 2 **Classes:** 3 hr workshop/week, practical work, project work **Assumed knowledge:** UG Maths or Physics or Hydrology. **Assessment:** Assignments (30%), project report (20%), 2 hr exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on knowledge gained in undergraduate soil science and crop science units to develop an understanding of catchment water management. Particular focus will be on the effect of climate variability and change on water management decisions on output and externalities (Salinity, landscape losses). At the completion of this unit student would be able to: Identify which climate variables will be most affected by climate change and variability; Evaluate which field and farm scale outputs will be most affected by climate change and variability; Develop scenarios based on distributions of climate variability; and Calculate the likely impacts of climate variability and

change on streamflow, water availability and irrigation water demand using Monte Carlo techniques.

The open source software package SWAT will be used for most analysis and other open source software will be used if needed.

Textbooks

Rees W.G. 2001. Physical principles of remote sensing. 2nd ed. Cambridge University Press, Cambridge, United Kingdom.

AFNR5801

Climate Change: Process, History, Issues Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Franks, Dr Dan Penny **Session:** Semester 2 **Classes:** 18 hrs lecture/tutorial, 12 hrs practical/field classes, 9 hrs field trip preparation **Assumed knowledge:** A basic understanding of climate change processes and issues. **Assessment:** 2hr exam (40%), tutorials (20%), practical report from field exercise (manuscript format) (40%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides students with an overview of current debates and approaches to understanding and quantifying interactions between the biosphere, oceans and atmosphere, as used around the world, and the consequences of those interactions for climate. The unit considers climate change on a variety of timescales. This unit will include a weekend field trip to Snowy Mountains field sites managed by the University of Sydney where students will be introduced to cutting edge, ongoing climate change research.

Textbooks

A reading list will be provided consisting of selected book chapters, journal articles and other publications

ARCH9080

Urban Ecology, Design and Planning Architecture, Design and Planning

Credit points: 6 **Teacher/Coordinator:** Assoc Prof Roderick Simpson **Session:** Semester 2 **Classes:** Lectures 1hr/wk for weeks 1-9, Tutorial 2hrs/wk weeks 1-9, 3hrs/wk weeks 10-13 **Prohibitions:** PLAN9048 **Assessment:** Assignment (25%), Presentation (25%), Case-study related report (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

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:

Module 1 will examine the evolution of urban areas in relation to their biophysical setting using the Sydney metropolitan area as a case study. This will lead to an understanding and appreciation of the urban ecology of the city in terms of the flows of materials, resources and energy, and the challenges presented by climate change and peak oil.

Module 2 will introduce principles of sustainability and the history and development of concepts of urban sustainability.

Module 3 will introduce methods and frameworks for evaluating and measuring sustainability.

BETH5203

Ethics and Public Health Medicine (Sydney Medical School)

Credit points: 6 **Teacher/Coordinator:** A/Professor Stacy Carter **Session:** Semester 2 **Classes:** 5x8hr Intensives; or Distance Education (online). **Prerequisites:** A three-year undergraduate degree in science; medicine; nursing; allied health sciences; philosophy/ethics; sociology/anthropology; history; or other relevant field; or by special permission. **Prohibitions:** BETH5206 **Assessment:** 5xOnline Quiz (50%); 1x2500wd essay (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Online

This unit provides students with an overview of the ethical and political issues that underlie public health and public health research. The unit introduces key concepts in public health ethics including liberty, utility, justice, solidarity and reciprocity, and introduces students to different ways of reasoning about the ethics of public health. A critical history of public health and an examination of public health law provide important context. Students also explore the ethical dimensions of central public health problems, including modifying lifestyles, managing

communicable diseases, researching communities, responding to global health challenges and using evidence. Throughout, the emphasis is on learning to make sound arguments about the ethical aspects of public health policy, practice and research. Most learning occurs in the context of five teaching intensives, which are highly interactive and focus on the development and application of reasoning skills.

Textbooks

Students are provided with a book of readings (in digital format).

DESC9147

Sustainable Building Design Principles Architecture, Design and Planning

Credit points: 6 **Teacher/Coordinator:** Daniel Ryan **Session:** Semester 1 **Classes:** 5 day intensive (9am-5pm) **Assessment:** 2 x assignment (1 x 35%, 1 x 65%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

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 Architecture, Design and Planning

Credit points: 6 **Teacher/Coordinator:** Michael Muir **Session:** Semester 2 **Classes:** 5 day intensive (9am-5pm) **Assessment:** Individual Sustainable Design Case Study (40%); Individual Schematic Sustainable Design (60%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Unit content: Sustainable design frameworks; understanding energy, material and water flows between buildings and their environment; the principles of passive solar heating strategies in cold and temperate climates; strategies for controlling solar and other loads on the building fabric; principles of cooling by natural ventilation; low energy mechanical cooling strategies; hybrid and mixed-mode cooling strategies; water sensitive design; environmental and health impacts of building materials; embodied energy of building materials. By the completion of the unit students will be expected to demonstrate their knowledge of the relevant properties of building materials and construction elements which impact upon the environmental performance of buildings and to demonstrate their competence at applying this knowledge to the formulation of appropriate sustainable design strategies.

DESC9201

Indoor Environmental Quality (IEQ) Architecture, Design and Planning

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%) **Campus:** Camperdown/Darlington, Sydney **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.

DVST6904

Rethinking Poverty Arts and Social Sciences

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 1x2hr seminar/week **Assessment:** 1x2000wd Essay (40%), 1x2000wd Take-home exercise (35%), 1x1hr Exam (15%), 1x1000wd Reading notes (10%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Poverty reduction has always been a central development goal. Major international programs such as the UN's Millennium Goals place poverty at their centre. New explanatory concepts such as social exclusion, capability, social capital and sustainability have considerably expanded our thinking about its nature. Students will examine cases from many parts of the world of the way discourses, policies and development practices operate together, enabling an evaluation of contemporary approaches to poverty and their effects on those most vulnerable.

ECOP6108

Economic Management for Sustainability Arts and Social Sciences

This unit of study is not available in 2015

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr seminar/week **Assessment:** 1x1000wd equivalent Seminar presentation (15%), 1x1000wd seminar paper (15%), 1x2500wd Research essay (30%), x 1.5hr examination (30%), Seminar participation (10%), **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to environmental economic theory, ecological economics, and other critical perspectives in order to develop an understanding of the parameters that define management of economy-environment interactions. Students will develop a critical appreciation of the systemic nature of the pressures imposed on environmental/ecological systems and the intractable problems this presents. The unit examines the different tendencies that inform environmental management and sustainable development; and the relative merits/weaknesses of the strategies and policies advanced.

EDPC5022

Design for Learning Education and Social Work

Credit points: 6 **Teacher/Coordinator:** Professor Peter Goodyear; Dr Kate Thompson **Session:** Semester 1 **Classes:** 1x2hr seminar/week - evening **Assessment:** 2x1500wd short assignments (2x25%) and 1x3000wd final paper (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) evening

This course provides a framework for considering many of the core problems facing those who carry out the work of educational design. It offers a model of the architecture of learning situations and focuses on three main design components that influence the character and outcomes of learning: the design of good learning tasks, the design of physical and digital resources and spaces for learning, and design intended to evoke convivial learning relationships. The course does not aim to teach specific design techniques - for example, the steps in Instructional Systems Design (ISD). Rather, it suggests ways of identifying which tools and techniques, from the many now available, are most likely to be appropriate for a specific design challenge. The course therefore offers an overview of selected, contemporary approaches, techniques and tools of relevance to designing for other people's learning. It also provides an opportunity to review empirical research on how designers design and what knowledge they draw upon in design work.

EDPC5024

Systems, Change and Learning Education and Social Work

Credit points: 6 **Teacher/Coordinator:** Dr Lina Markauskaite **Session:** Semester 2 **Classes:** 1x2hr seminar/week - evening **Assessment:** 2x1500wd

short assignments (2x25%) and 1x3000wd group project and presentation (50%)
Campus: Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) evening

In this core unit we will use 'systems inquiry' as a conceptual framework to explore change and learning processes, on the individual, group and organisational level. We focus on a theory-based approach to change management and organisational learning, so that students can come to appreciate the complexity and non-linearity of bringing about change in schools, corporations and other organisations. Drawing on contemporary research in the learning sciences, we will explore group and individual learning and conceptual change processes. Students will apply modern conceptual change approaches to investigate their own learning process, and will gain hands-on experience as they apply systems inquiry concepts and methods to analyse change problems in their own professional environment.

ENVI5705

Ecological Principles

Science

Credit points: 6 **Teacher/Coordinator:** Dr Charlotte Taylor **Session:** Semester 1 **Classes:** One 3-hour lecture per week. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Case study, assignment, critical review, presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces fundamental concepts of modern ecology for environmental scientists through a series of modules focussing on applied questions. Using case studies from Australia, students are exposed to the challenges of doing ecology and how cutting edge research is being applied to environmental management using evidence-based approaches. Meetings and discussions with people working in the field give students an insight into the ways that ecologists address ecological problems and how way they generate an understanding of natural systems. Students have the opportunity to consider different ways of doing science and ways of dealing with different kinds of data, including qualitative, quantitative, anecdotal and experimental approaches

ENVI5708

Introduction to Environmental Chemistry

Agriculture and Environment

Credit points: 6 **Teacher/Coordinator:** Dr Feike Dijkstra **Session:** Semester 1 **Classes:** 1x 2-hour lecture and 1x practical per week; 1x field trip (weekend) **Assessment:** Presentation (15%), Laboratory Report (40%), Assignment (40%), Class Participation (5%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The aim of the course is to introduce students to the major physical and chemical processes that control the concentration and dispersion of chemical pollutants in natural and impacted environments. The course will demonstrate how to use contaminant data effectively and how to judge the quality of chemical data. This knowledge will be used to design and to assess environmental projects, and to judge the magnitude of impact by human activity on environments and the risk posed by contaminants to ecosystem functioning. The course aims to provide present and future managers employed in environmental professions with the skills to use data with confidence and to make management decisions knowing the risks inherent in variable data quality. A field trip will be undertaken early in the semester.

ENVI5801

Social Science of Environment

Science

Credit points: 6 **Teacher/Coordinator:** Dr Josephine Gillespie **Session:** Semester 1 **Classes:** One hour lecture and one hour seminar per week plus directed reading. **Assessment:** Essays and seminar participation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides both a conceptual and an empirical foundation for the analysis of relationships between society, the environment and natural resources. In our recent past the rapid rate of global environmental change has necessitated a breakdown of traditional

disciplinary boundaries in research and social scientists are increasingly called upon to work alongside natural scientists in unraveling the complexities of the human-environmental nexus. Students will examine a number of environmental issues and consider a variety of social science academic perspectives about environmental management.

ENVI5809

Environmental Simulation Modelling

Science

Credit points: 6 **Teacher/Coordinator:** Dr David Chapman **Session:** Semester 2a **Classes:** Six all day sessions **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Project plus report (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces participants to the power of simulation modelling in understanding and predicting behaviour of natural systems. It covers fundamental concepts, logic, and techniques (including sensitivity analysis), and develops skills in application to environmental problems such as catchment management and population dynamics.

ENVI5903

Sustainable Development

Science

Credit points: 6 **Teacher/Coordinator:** Dr Jeff Neilson and Prof Phil Hirsch **Session:** Intensive July **Classes:** Two pre-departure lectures, 14-day field intensive. **Assessment:** Essay (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Field experience

Note: Department permission required for enrolment.

This unit of study constitutes an international field-based experience held in Indonesia during the July semester break. It explores the contested notions of sustainable development and sustainability through exposure to real world development dilemmas in one of Asia's most dynamic countries. We explore fundamental issues such as urbanization, resource scarcity and economic globalization. The unit of study involves lectures, in-situ readings and discussion groups, introduction to field methods, stakeholder meetings and experiential learning. Students interested in this unit should confirm their interest to the Unit Coordinator by the end of March of the year the field school will be held. There will be additional costs associated with this unit to cover food, accommodation, local transport and field assistance of about \$1200 Students will also be required to arrange their own international travel to the starting point (either Bangkok or Jakarta).

GEOG5001

Geographic Information Science A

Science

Credit points: 6 **Teacher/Coordinator:** Dr David Chapman **Session:** Semester 1 **Classes:** Six lectures plus six workshops. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Report (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study gives an overview of basic spatial data models, and enables students to understand the use of data from a variety of sources within a geographical information system (GIS). The analysis of spatial data, and its manipulation to address questions appropriate to planning or locational applications, will be addressed, as will the development of thematic maps from diverse data layers.

GEOG5003

Environmental Remote Sensing

Science

This unit of study is not available in 2015

Credit points: 6 **Session:** Semester 1 **Classes:** 2 one hour lectures and a 4 hour practical per week **Assumed knowledge:** Knowledge or experience equivalent to GEOG5001 (Introduction to GIS) **Assessment:** Assignments, practicals (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit of study explores how remote sensing has enabled the science of Earth Observation to become the most valuable and widely-used tool for characterising and quantifying Earth's vegetation, geology and marine ecosystems. The study introduces the physical processes that influence how light interacts with materials of the Earth's surface, which is the basis for Earth Observation. The course uses state-of-the-art, industry-standard software to introduce many different techniques in the analysis and interpretation of remotely sensed data. We will explore different kinds of remotely sensed data, starting from a simple colour photograph to multispectral and hyperspectral data gathered from satellites and aircraft. Earth Observation is becoming an essential skill for anyone interested in the natural environment - skills which are applicable across a wide range of science and environmental disciplines. Starting off simply, you will acquire the skills and knowledge to enable you to map and quantify vegetation and geology using image data acquired in different parts of the world. The objective of this course is to 'demystify' the use of satellite data and to provide the essential theoretical and practical skills to enable students to process data acquired by Earth Observation satellites and aircraft.

GEOG5004

Environmental Mapping and Monitoring Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Cowell **Session:** Semester 2 **Classes:** 2 hours of lectures and one three hour practical per week. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit introduces methods associated with acquiring data in the field and examines issues associated with application of spatial data to environmental monitoring, terrain mapping and geocomputing. Students will learn both theoretically and practically how environmental data is collected using different remote sensing techniques, (pre)processing methods of integrating data in a GIS environment and the role of spatial data in understanding landscape processes and quantifying environmental change.

GOVT6135

Global Environmental Politics Arts and Social Sciences

This unit of study is not available in 2015

Credit points: 6 **Session:** Semester 1 **Classes:** 1x2hr seminar/week **Assessment:** 1x2000wd Essay (30%), 1x4000wd Essay (50%), Seminar participation (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit examines the environment as a political and policy issue. Although relatively recent, the environment has become a full-fledged public policy issue exerting influence in local, national and international arenas. The unit will first focus on the specific features of the policy that influences the capability of contemporary societies to enhance the management of environmental resources and of public goods in general. Second, it discusses the development of environmental policy in Western countries, with a particular emphasis on the European Union. Third, a grid for the analysis of environmental policy will be presented, with a discussion of the main actors (political, institutional and socio-economic) involved in it and of the factors (interests and ideas) influencing their positions. Fourth, the unit briefly discusses environmental conflicts and consensual approaches used for tackling them.

GOVT6222

Australian Enviro Politics & Policy Arts and Social Sciences

Credit points: 6 **Teacher/Coordinator:** Prof David Schlosberg **Session:** Semester 1 **Classes:** 1x2-hr seminar/week **Assessment:** 2x1000wd seminar papers (2x15%); 1x3000wd research paper (50%); seminar preparation and participation (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit will offer a broad survey of environmental politics and policy in Australia. It will provide an introduction to the issues raised, the stakeholders and movements involved, analysis of the discourses used and potential policies to be implemented, an overview of the political issues and pressures involved, and reflection on the actual implementation of a range of policies at the local, state, and national level. Australian environmental politics will also be examined in comparative perspective.

GOVT6223

Topics in Environmental Politics Arts and Social Sciences

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr seminar/week **Assessment:** 2x 1000wd Seminar paper (30%), 1x3400wd Essay (50%), 1x600wd equivalent Oral Presentation (10%), 1x Seminar participation (10%), **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will offer a broad overview of a key contemporary issue in environmental politics. Topics could include climate change policy, environmental justice, food security and politics, sustainable cities, or timely issues in the Australian or global context. The goal will be to ground these issues in the relevant literatures of politics and environmental studies. Check with the unit coordinator or Department for the particular topic to be addressed in any given semester.

GOVT6316

Policy Making, Power and Politics Arts and Social Sciences

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 1x2hr seminar/week **Assessment:** 1x2000wd Short Essay (30%), 1x4000wd Long Essay (50%), 1x Seminar participation (20%), **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit focuses on the nature of public policy and the processes by which it is produced. Relevant issues are common to all nation states, although they take specific forms in each individual country. First, the unit takes an overview of public policy - dealing with basic themes such as 'What is policy?' through to different approaches to understanding the policy process. These include policy cycles, rationality, interest groups, institutions, and socio-economic interests. Second, it maps out and examines the main components of public policy making: actors, institutions and policy instruments. Third, it focuses on aspects of policy-making processes which often attract a high level of attention from analysts. These include problem definition, agenda setting, decision-taking, policy implementation, policy evaluation and crisis policy-making. Fourth, it examines wider issues in terms of the state and who ultimately holds power over the making and shaping of public policy. Finally, it examines the 'bigger pictures' of long term policy trends, and the extent to which national policy making capacities and processes have been affected by globalisation. Assessments offer a large element of flexibility, allowing students to concentrate on areas of particular interest.

GOVT6331

Public Management and Governance Arts and Social Sciences

Credit points: 6 **Session:** Semester 1 **Classes:** 1x1hr lecture/week, 1x1hr in-class group work/week **Assessment:** 1x3000wd Case study (50%), 1x1000wd Case study outline (10%), 1x2hr Examination (30%), 1x Seminar participation (10%), **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit outlines some of the most important developments in contemporary public management and governance and how these relate to the everyday practices of those working in the public sector. It uses examples drawn from a number of OECD countries to: critically analyse the forces that have driven the move towards 'public management'; examine the theory and practice of 'public governance'; evaluate the merits of these developments; and apply this knowledge to better understand specific developments across different contexts.

HPOL5000**Introduction to Health Policy
Medicine (Sydney Medical School)**

Credit points: 6 **Teacher/Coordinator:** Dr Anne Marie Thow **Session:** Semester 1 **Classes:** Distance Education with compulsory Intensive workshops on Campus. 2 x 2-day workshops, online lectures and discussions **Assessment:** 1 x 1500wd written assignment (30%); 1 x 3000wd written assignment (50%); Online learning quiz (5%); online problem based learning exercise (15%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Distance education/intensive on campus

To develop a critical and comparative understanding of the history, theory and practice of health policy. To give an overview of the political choices and frameworks - national and global - that shape policymaking.

Learning objectives:

- acquire a critical understanding of the basic history and features of the Australian health system
- understand the main frameworks used to analyse and make policy
- understand the main issues in the translation of policy into practice
- demonstrate the capacity to apply these understandings in particular settings through case studies.

Content:

This unit explores the main structures and institutions that make health policy. The unit examines debates over policy frameworks, and the evidence and advocacy in setting priorities. Conflicts over health policy will be placed in broader contexts - comparing different health systems and assessing global influences. Case studies will be used to examine the relationships between policy and practice.

Textbooks

Buse K, Mays N, Walt G (2012). Making health policy. Second edition. Open University Press: London. Other recommended reading materials will be available on the unit's eLearning site

HPOL5007**Global Health Policy
Medicine (Sydney Medical School)**

Credit points: 6 **Teacher/Coordinator:** Dr Carmen Huckel Schneider, Dr Anne Marie Thow **Session:** Semester 2 **Classes:** Distance Education with compulsory Intensive workshops on Campus or online. 2 x 2 day workshops plus 4 tutorials (tutorials offered face-to-face or online) **Assessment:** 1 x 2000 word essay (35%), Tutorial discussion papers or online discussion (15%), 1 x 3000 word essay (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Online

This unit explores the impact of globalization the health of populations and policy making processes. It also investigates the potential to improve health outcomes globally through policy. The aim of this course is to equip students with the knowledge and skills to identify and articulate political and policy processes at the global level, become familiar with institutions and actors involved in global health policy and utilize strategies for influencing policy making at the global level. The unit will explore global health threats that transcend national boundaries; especially those whose causes or results transcend the capacity of individual states to influence. We analyse the influence and power of institutions and actors in the development and implementation of global health policy, including the World Health Organisation, UNICEF, the World Bank, the WTO, the Gates Foundation and NGOs. We will also investigate the governance of global health policy responses. Teaching will make extensive use of current case studies from recognised experts in the field.

Textbooks

Buse K, Mays N, Walt G (2012). Making health policy. Second edition. Open University Press: London. Reading list available on eLearning

IBUS5002**Strategy, Innovation & Entrepreneurship
Business (Business School)**

Credit points: 6 **Teacher/Coordinator:** Dr Richard Seymour **Session:** Semester 1, Semester 2 **Classes:** 1x 3hr seminar per week **Prohibitions:** IBUS5001 **Assessment:** individual assignments (40%), group assignment (30%), and final exam (30%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This foundation unit provides an introduction to the essential concepts and frameworks relevant to the fields of strategy, innovation and entrepreneurship. Topics covered include the key elements of business strategy, including developing a business mission, understanding the external environment, reviewing internal resources and capabilities, and business and corporate strategy. The importance of entrepreneurial activity and the challenges faced by startup ventures, as well as examples of successful and unsuccessful business innovations, are highlighted. The emphasis of the unit is on understanding the strategic activity of both startup and established businesses with a focus on issues relevant to entrepreneurs as well as business managers.

IBUS6005**Ethical International Business Decisions
Business (Business School)**

Credit points: 6 **Teacher/Coordinator:** Dr Fanny Salignac **Session:** Semester 1 **Classes:** 1x 3 hour seminar per week from week 1 to week 13 **Assessment:** Group assignments (40%), final exam (30%), and individual assignments (30%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

In order to succeed in international business, both corporations and individuals need broad decision-making abilities. Business decision-making tools yield more coherent and justifiable results when used with an understanding of the ethical, social and environmental aspects of the process. This applies to various situations in the international business setting including business relations with government, customers, employees, and NGOs. This unit is designed to look at these non-financial elements in the decisions made within the international business context. Upon completion of this unit, students will have enhanced skills and knowledge relevant to the understanding of ethical issues and ethical decisions making in international business organisations.

IBUS6011**New Business Opportunities and Startups
Business (Business School)**

Credit points: 6 **Teacher/Coordinator:** Bronwyn Darlington, Jarrod Ormiston (intensive session) **Session:** Intensive July, Semester 1, Semester 2 **Classes:** Semester 1 & 2: 1x 3 hr lecture/seminar per week; Intensive session: 2 x 3hr lecture/workshops pre-departure (Sydney), 30hrs lecture/workshops in country action-research, 1 x 3hr seminar post trip (Sydney) **Prohibitions:** WORK6112, IBUS5011 **Assumed knowledge:** IBUS5002, or completion of at least 24 credit points **Assessment:** Individual assessment (70%), group assignment (10%), and group presentation (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

For small open economies such as Australia's, new business opportunity identification and exploitation are often critical to firms' long-term growth and survival. Identifying new markets, developing new products and implementing new business models are highly-regarded and valuable skills for entrepreneurs and business managers alike. In addition to exploring the special problems (and advantages) associated with entrepreneurial start-ups, the unit explores commercialisation and corporate venturing. Topics include opportunity recognition, strategy development, business planning and investor documentation, venture capital and other funding sources, as well as entrepreneurial and creative leadership. The unit is structured around learning from engaged practice, and requires students to work with startup and early stage businesses.

IBUS6014**Intellectual Property Management
Business (Business School)**

Credit points: 6 **Teacher/Coordinator:** TBA **Session:** Semester 1 **Classes:** 1x 2hr lecture and 1x 1hr seminar/wk **Assumed knowledge:** IBUS5002, or completion of at least 24 credit points **Assessment:** Individual assessment (30%), group assignment (15%), group presentation (15%), and final exam (40%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Intellectual property (IP) represents the property of an individual's mind, intellect, and proprietary knowledge. There are a number of means

of protecting IP, including patents, copyright and trademarks. Creating IP does not necessarily mean an individual owns the rights to use it, as most forms require individuals to take formal steps to register their IP and obtain the legal rights of ownership (both in Australia and internationally). This unit covers aspects including the concept of IP, how to identify and protect it in a local and international context, creating the conditions to encourage and leverage IP in a commercial context, how to manage a portfolio of IP, and enforcement scenarios. The unit concentrates on how to utilise IP to create, control and exchange value, with particular attention paid to the practice of open innovation.

IBUS6016

Social Entrepreneurship Business (Business School)

Credit points: 6 **Teacher/Coordinator:** Jarrod Ormiston **Session:** Intensive December, Intensive July, Semester 1, Summer Main **Classes:** Semester 1: 1 x 3hr lecture/workshop per week; Intensive sessions: 2 x 3hr lecture/workshops pre-departure (Sydney), 30hrs lecture/workshops in country, 1 x 3hr seminar post trip (Sydney) **Assumed knowledge:** IBUS5002, or completion of at least 24 credit points **Assessment:** Individual assignments (55%), group assignment (30%) and presentation (15%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

Social entrepreneurs are committed to furthering a social mission through enterprises that rank social, environmental or cultural impact on a par with, or even above, profit. Intersecting the business and not-for-profit worlds, social entrepreneurship addresses many complex local and global problems. This unit critically introduces the concept and develops frameworks for understanding social entrepreneurship (also referred to as social enterprise and social innovation). Teaching and learning utilises case studies, and includes the opportunity to apply theory to real-world experiences. Topics include creating innovative social enterprises, sustainable business models, philanthropy and funding, impact assessment, and leadership. The unit is structured around learning from engaged practice, and provides the opportunity to work with social enterprises.

INFS5001

Project Management Business (Business School)

Credit points: 6 **Teacher/Coordinator:** Petri Hallikainen **Session:** Semester 1, Semester 2, Summer Early **Classes:** 1 x 3hr seminar per week **Prohibitions:** INFS6014 **Assessment:** group assignment (25%), individual assignment (30%), and final exam (45%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Based on the Project Management Body of Knowledge (PMBOK) this unit introduces the end-to-end project management lifecycle. Students learn how to select appropriate projects based on their alignment with an organisation's strategy and then how to manage those projects successfully from initiation through execution to completion. The unit covers the essential components of effective project management and how to apply them in an integrated manner. The unit also explores both the technical and behavioural aspects of project management - including Microsoft Project - and students gain experience in critically analysing the application of concepts in specific project contexts. As organisations increasingly structure their activities on a project basis, the unit is of value to a range of discipline specialisations. The unit can also contribute to achievement of internationally recognised accreditation from the Project Management Institute (PMI).

LAWS6061

International Environmental Law Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster, Ms Kate Owens **Session:** Intensive May **Classes:** Apr 17, 18 & 20, 21 (9-5) **Assessment:** 2500wd problem-based assignment (30%) and 5500wd essay (70%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: Students seeking further study in international environmental law may undertake LAWS6922 Advanced International Environmental Law.

This unit aims to provide students with an overview of the development of international environmental law throughout the twentieth century.

Attention will primarily be devoted to the international law and policy responses to global and regional environmental and resource management issues. Basic principles will be discussed prior to taking a sectoral approach in looking at the application of international environmental law in specific issue areas. The unit includes material on implementation of international environmental law in the Asia Pacific region. Relevant Australian laws and initiatives will be referred to from time to time. The focus is on law and policy that has been applied to deal with environmental problems in an international and transboundary context.

LAWS6252

Legal Reasoning & the Common Law System Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** S1CIMR (Group A) & S1CIAP (Group B); Assoc Prof Belinda Smith and S2CIAU (Group C) & S2CISE (Group D); Mr Michael Skinner **Session:** Intensive April, Intensive August, Intensive March, Intensive September **Classes:** Group A: Mar 3 to 6 (9-5) Group B: Mar 20, 21 & Apr 10, 11 (9-5) Group C: Jul 28 to 31 (9-5) Group D: Sep 4, 5 & 18, 19 (9-5) **Prohibitions:** LAWS6881 **Assessment:** in-class test (25%) and take-home exam (75%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: International students who are required to enrol in this unit must undertake classes during the first week of their study. Health Law and Public Health students should enrol in LAWS6881 Introduction to Law for Health Professionals in lieu of LAWS6252, if available. This unit is not available to MLawIntDev students who have been granted a reduced volume of learning. Students must attend all classes on the timetabled dates as prescribed for their enrolled session/group. An Absent Fail grade may be granted to students who fail to attend the correct session/group.

This is a compulsory unit for all postgraduate students who do not hold a law degree or equivalent from a common law jurisdiction entering the: Master of Administrative Law and Policy; Master of Business Law; Master of Environmental Law; Master of Environmental Science and Law; Master of Global Law; Master of Health Law; Master of International Business and Law; Master of Labour Law and Relations; Master of Law & International Development as well as Graduate Diplomas offered in these programs. The unit has been designed to equip students with the necessary legal skills and legal knowledge to competently apply themselves in their chosen area of law. Instruction will cover the legislative process; the judiciary and specialist tribunals; precedent; court hierarchies; legal reasoning; constitutional law; administrative law; contracts; and torts. Some elements of the unit will be tailored in accordance with the requirements of the particular specialist programs.

MIPH5116

Culture, Health, Illness and Medicine Medicine (Sydney Medical School)

Credit points: 4 **Teacher/Coordinator:** Dr Cynthia Hunter **Session:** Semester 2 **Classes:** 1 x 2 day workshop; 1 x 2hr seminar per week for 7 weeks; also offered fully online. **Assessment:** 1x3000word essay (75%) and 1x1hr class facilitation (25%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit aims to provide an integrated and interpretive approach to an understanding of health-related behaviours of populations in international settings, by synthesizing anthropological knowledge and methodology, and the interactions of culture, biology, psychology and environment. The teaching process is by student-led, lecturer-guided, discussion based review and critical analysis of relevant topics. During the unit, students will explore a range of issues in global and multicultural health from an anthropological perspective. Methodological approaches will encompass ethnography and other anthropological data collection methods. The issues covered will include cultural influences on health, illness and healing, such as indigenous and traditional beliefs and systems, gender and cultural change and the impact of modernization and development on illness and healing. The impact examines disease and illness patterns - their distribution and persistence, mental illness and culture and attitudes towards the use of medications; and the provision of culturally sensitive and appropriate services. The emphasis will be on covering a range of topic areas relevant to the students enrolled, and those of particular

importance in contemporary international and multicultural health contexts.

Textbooks

Readings are available on the unit's eLearning site.

MKTG5001

Marketing Principles Business (Business School)

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 1x 3 hr seminar per week **Assessment:** case analysis presentation (10%), in-class discussion (8%), mid-term exam (20%), team presentation (15%), team marketing plan (25%), final exam (20%), and research participation (2%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces students to the basic principles and language of marketing theory and practice. Marketing principles are examined in relation to a wide variety of products and services, in both commercial and non-commercial domains. A strong emphasis is placed on strategy planning and the marketing decision process. Students learn via the analysis of case studies drawn from the Asia-Pacific region, as well as the USA. The unit is presented in four sections. These are: (a) introduction to marketing and the marketing management process, (b) strategic issues in marketing - focusing on the preliminary analyses that are required before a marketing decision can be made, (c) the marketing mix - a detailed look at the components that make up a marketing plan, and (d) marketing planning, implementation and control processes. Students gain practical experience in analysing marketing situations and developing a comprehensive marketing plan.

NURS5002

Social Contexts of Health Nursing (Sydney Nursing School)

Credit points: 6 **Session:** Semester 1 **Classes:** 10x2-hr lectures, and 8x2-hr tutorials **Assessment:** essay (40%) and group work (10%) and written examination (50%) **Campus:** Mallett Street, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The main focus of this unit is on the social determinants of health through a critical analysis of the relationships between social factors (e.g., ethnicity, gender, socio-economic status, employment) and patterns of health and illness across the lifespan in contemporary Australia. The unit includes a module that introduces students to epidemiology, the study of causes and patterns of disease within defined populations. This unit is underpinned by the understanding that ideas and beliefs about health, illness and care are intrinsically connected to particular social and historical contexts. Some of these ideas and beliefs relevant to Australia today will be explored. The unit also introduces students to the study of cultural competence as it relates to health care in contemporary Australia.

PACS6914

Conflict-Resolving Media Arts and Social Sciences

Credit points: 6 **Session:** Intensive March **Classes:** Intensive delivery over 5 days (total 30hrs) **Prohibitions:** SCWK6935 **Assessment:** 2x2500wd Commentaries (80%), Seminar participation (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit examines media representations of conflict and their influence on the behaviour of those involved. It introduces creative ways for journalists, media development workers and media activists to apply principles of conflict resolution. Students diagnose 'war journalism' and 'peace journalism', and analyse conflict in a journalism context. Theories of news and concepts of objectivity and responsibility are critically explored. Students gain practical skills in peace journalism and media activism as well as devising peace journalism interventions in conflict-affected areas.

PHYS5032

Techniques for Sustainability Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arne Geschke 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 (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study offers an introduction to quantitative analysis techniques including multivariate regression, uncertainty analysis, climate modelling, structural decomposition, and dynamic systems modelling, with a strong emphasis on demonstrating their usefulness for environmental problem-solving. This unit will show how mathematics can be brought to life when utilised in powerful applications to deal with environmental issues. Throughout the unit of study, example applications will be described, including studies on ecosystem trophic chains, mapping of household consumption and environmental impact, wind turbine assessment, and the effect of land use patterns on threats to species.

PHYS5033

Environmental Footprints and IO Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arne Geschke 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%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study will provide an introduction to economic input-output theory and input-output analysis, with a focus on environmental applications such as carbon footprints and life-cycle analysis. The unit first explores national and global economic and environmental accounting systems and their relationships to organisational accounting. Second, it will present variants of the basic accounts, such as global multi-regional input-output systems and social accounting systems. Third, it will introduce the basic input-output calculus conceived by Nobel Prize Laureate Wassily Leontief, and provide concrete examples for how to apply this calculus to data published by statistical offices. The unit will then show how to integrate economic and environmental accounts, and generate boundary-free environmental footprint assessments. 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.

PHYS5034

Life Cycle Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Christopher Dey **Session:** Semester 2 **Classes:** 2-hour lecture and 1-hour tutorial per week **Assessment:** Major essay, seminar presentation and course diary compilation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study will cover the areas of the philosophy, techniques, applications and standards of Life-Cycle Assessment (LCA). It will include Process Analysis, Input-Output Analysis and Hybrid Analysis. Current LCA tools will be discussed. Case 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 will provide a context. Students will also benefit from also enrolling in PHYS5033 for a sound understanding of input-output based Hybrid LCA methods.

RSEC5431

Benefit Cost Analysis Agriculture and Environment

This unit of study is not available in 2015

Credit points: 6 **Teacher/Coordinator:** Dr Shauna Phillips **Session:** Semester 1 **Classes:** 1x2 hr lecture/wk, commencing week 1, 1x1hr tutorial/wk, commencing week 2 **Assessment:** 1 x oral presentation (5%), 1 x written individual essay (20%), 1 x 1hr mid-semester exam (25%), 1 x 2hr final examination (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit provides a detailed treatment of benefit-cost analysis and its use in public sector decision making and project evaluation. The underpinning concepts in welfare economics are analysed in detail, such as economic efficiency, criteria for assessing social welfare improvements, and economic surplus measures. Procedures of undertaking a benefit-cost analysis are presented, and tools of non-market valuation for environmental assets are covered in detail. These techniques include both stated and revealed preference techniques, including contingent valuation, choice modeling, hedonic pricing and travel cost methods.

RSEC5432

Environmental Economics Agriculture and Environment

This unit of study is not available in 2015

Credit points: 6 **Teacher/Coordinator:** Dr Tihomir Ancev **Session:** Semester 2 **Classes:** 2x1-hr lectures/week commencing week 1, 1x1-hr tutorial/week commencing week 2 **Assessment:** Report and presentation from the practical experience in environmental economics (20%), one (1 hr.) mid-term exam (30%), and two hour (2 hr.) final exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit provides theoretical and empirical background necessary for a resource economist to be able to successfully function when faced with various environmental problems. The unit investigates economic aspects of a range of environmental issues. The studied concepts are exemplified with environmental problems related to agriculture (soil salinity, algal blooms, overgrazing etc.) as well as with environmental problems typical to Australia. The guiding economic themes are: competing uses of the environment / externalities, market failure, the importance of property rights, optimal allocation of pollution abatement, and the processes for making choices relating to non-market goods. Some social issues with environmental impacts are studied through exploration of the problems of population size and distribution, economic growth, and environmental regulation.

Textbooks

Perman, R., Y. Ma, J. McGilvray and M. Common. Natural Resource and Environmental Economics. Pearson, 3rd Ed. 2003
Tom Tietenberg., 2008. Environmental and Natural Resource Economics
Endres. 2011. Environmental Economics: Theory and Policy

RSEC5433

Economics of Mineral & Energy Industries Agriculture and Environment

This unit of study is not available in 2015

Credit points: 6 **Teacher/Coordinator:** Dr Tihomir Ancev **Session:** Semester 2 **Classes:** (2 lec, 1 tut)/wk **Assessment:** excursion attendance and report (25%); one (1 hr.) mid-term exam (30%) and one (2 hr.); two hour (2 hr.) final exam (45%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit provides theoretical and empirical background on the economics of minerals exploration, extraction and marketing and on the economics of energy generation, distribution and use. The economics of minerals and energy commodity markets will be discussed and analysed. The interactions of mineral extraction and energy generation activities with other natural resources and the environment will be of particular interest (e.g. mine site remediation, land use conflicts). Sustainability and prospects for long term efficient use of these resources, as well as the development and use of alternative technologies will also be discussed. In addition, institutional and policy issues (e.g. regulatory reform), will be analysed. The unit will discuss the main aspects of the markets for minerals and energy, market structure, business environment and price movements. The unit will also provide an introductory discussion on the markets for derivatives (options, futures, forward, swaps) on minerals and energy commodities.

Textbooks

T. J. Brennan, L. K. Palmer, and A. S. Martinez, Alternating Currents: Electricity Markets and Public Policy, Resources for the Future Press, Washington D.C., 2002.
J. E. Tilton, On Borrowed Time? Assessing the Threat of Mineral Depletion, Resources for the Future Press, Washington D.C., 2003.
R. Perman, Y. Ma, J. McGilvray and M. Common. Natural Resource and Environmental Economics. Pearson, 3rd Ed. 2003.

T. Tietenberg., Environmental and Natural Resource Economics., 6th Edition, Addison-Wesley, 2003.

F. E. Banks., Energy Economics: A Modern Introduction., Kluwer Academic Publishers, 2000.

S. Kesler., Mineral Resources, Economics and the Environment, Maxwell Macmillan International, 1994. N.B. Students are advised not to buy the textbook before lectures commence in case there are any changes.

TPTM6470

Sustainable Transport & Logistic Systems Business (Business School)

This unit of study is not available in 2015

Credit points: 6 **Teacher/Coordinator:** Professor Stephen Greaves **Session:** Semester 1 **Classes:** 2 x 3 hour lectures (same day) every other week. Refer to timetable for further details. **Assessment:** individual homework exercise (25%), pop quizzes (2) (20%), team project with group and individual component (40%), and team presentation with group and individual component (15%) **Campus:** Burren Street, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

How can we accommodate the rapidly expanding movement of passengers and freight in a way that is environmentally and socially sustainable into the future? This unit introduces students to the major environmental issues that must be considered in contemporary transport and logistics operations including climate change, regional and local air pollution, noise pollution and safety. The focus then turns to specific modes, focusing initially on passenger transport, where we identify the major trends working against sustainability and the range of regulatory, behavioural, pricing, and voluntary strategies available to try to reverse these trends. We then introduce the notion of 'green' logistics and what regulators and companies can/should be doing to facilitate more sustainable practices in the shipment of freight. We then consider the issues/challenges around sustainable aviation and international shipping practice. Finally, we consider the critical issue of safety and what strategies have/could be employed to mitigate the impacts. Throughout the unit, we focus on what is going on in both the developed and emerging world nations, where the challenges are potentially on a different order of magnitude. The unit is of particular value to students majoring in transport, logistics, environmental planning, and urban planning.

Postgraduate Research

Students in research degrees in the Faculty of Science undertake supervised research leading to the writing of a thesis.

Degrees

The Faculty of Science offers the following postgraduate research degrees:

- Doctor of Philosophy (PhD)
- Master of Clinical Psychology / Doctor of Philosophy (MCP/PhD)
- Master of Science (MSc)

It should be noted that research Honours programs are also offered by the Faculty of Science. Information for these programs is provided in the Science Undergraduate Handbook.

Doctor of Philosophy

The degree of Doctor of Philosophy is a research degree awarded for a thesis considered to be a substantially original contribution to the subject concerned. Some coursework may be required, but in no case is it a major component. Applicants should normally hold a master's degree or a bachelor's degree with first class honours. The usual minimum period of candidature is three years of full-time study, or the equivalent of part-time study.

Master of Clinical Psychology / Doctor of Philosophy

The degree of Master of Clinical Psychology / Doctor of Philosophy is a double degree with a coursework masters and research doctorate. Students must complete the requirements for the Master of Clinical Psychology and the Doctor of Philosophy. Applicants should normally hold a relevant bachelor's degree with first class honours in psychology. The usual minimum period of candidature is five and a half years of full-time study, or the equivalent of part-time study. Students should refer to the MCP/PhD course resolutions.

Master of Science

The Master of Science is a research master's degree offered by the Faculty of Science that requires two years of full-time study or the equivalent of part-time study. During this time during which a candidate undertakes supervised research and write a thesis. The entry requirement is usually a bachelor's degree with first or second class honours or equivalent. Students should refer to the MSc course resolutions.

Rules Covering Research

The University of Sydney (Higher Degree by Research) Rule 2011 and the Academic Board Thesis and Examination of Higher Degrees by Research Policy and Procedure govern research at the University. These are available via the University Policy Register at sydney.edu.au/policy.

Additional Information

Additional information for research students is available at:

- Policy Online
- Graduate Studies Handbook
- Graduate Studies Office website
- Faculty of Science - Current Postgraduates website

Thesis Submission Information

Information relating to the submission of a thesis is provided at the following locations:

- Faculty of Science - Thesis Submission and Examination Information
- SUPRA - The Thesis Guide

Within the Faculty of Science, there are no formal requirements or guidelines other than those listed above. There are no requirements for single/double spacing or single/double sided presentation, nor font size, figure presentation, format of bibliographic citations, etc. Candidates should, however, be aware that if the degree is awarded, the thesis becomes a public document, the quality of which reflects on the ability of the candidate. Moreover, utilising a format that will make the examiners' tasks easier is obviously sensible.



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 University of Sydney (Higher Degree by Research) Rule 2011 and the Academic Board Thesis and Examination of Higher Degrees by Research Policy and Thesis and Examination of Higher Degrees by Research Procedures, that are available via the University of Sydney's Policy Register.

The degree of Doctor of Philosophy is a research degree awarded for a thesis considered to be a substantially original contribution to the subject concerned. Some coursework may be required but in no case is it a major component.

Applicants should normally hold a master's degree with research or a bachelor's degree with first or high second-class honours of the University of Sydney, or an equivalent qualification from another university or institution.

The degree may be taken on either a full-time or part-time basis. In the case of full-time candidates, the minimum period of candidature is six semesters and the maximum period of candidature is normally eight semesters for full-time candidates. The first full year of candidature is normally on probation.

Part-time candidature may be approved for applicants who can demonstrate that they are engaged in an occupation or other activity which leaves them substantially free to pursue their candidature for the degree. They should be able to devote at least 20 hours per week to candidature or an equivalent annual period made up in blocks. The minimum period of candidature will be six semesters and the maximum period of candidature is normally sixteen semesters for part-time candidates.

Master of Clinical Psychology / Doctor of Philosophy

Master of Clinical Psychology and 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 (Student Appeals against Academic Decisions) Rule 2006 (as amended) and the Academic Board policies on Academic Dishonesty and Plagiarism.

In respect of the Master of Clinical Psychology component of the double degree, these resolutions must be read in conjunction with the University of Sydney (Coursework) Rule 2000 and the Resolutions of the Faculty of Science.

In respect of the Doctor of Philosophy component of the double degree, these resolutions must be read in conjunction with the University of Sydney (Higher Degree by Research) Rule 2011.

Course resolutions

1 Course codes

Code	Course and stream title
MACLPPHD-01 / RPPHDSCI-04	Master of Clinical Psychology and Doctor of Philosophy

2 Attendance pattern

The attendance pattern for this course is full-time or part-time. Both full-time and part-time students must follow a fixed timetable in the Master of Clinical Psychology component of the double degree.

3 Admission to candidature

Available places will be offered to qualified applicants based on merit and interview, according to the following admissions criteria.

- (1) To be eligible to be admitted to candidature by the Dean or Associate Dean, an applicant must:
 - (a) hold or have completed the requirements for the degree of Bachelor of Psychology, Bachelor of Science (Honours), Bachelor of Arts (Honours), Bachelor of Economics (Social Sciences)(Honours) or Bachelor of Liberal Studies (Honours) from the University of Sydney with First Class Honours or Second Class Honours Division 1 in Psychology; and
 - (b) satisfy the Head of the School of Psychology of his or her personal suitability for the practice of clinical psychology, as determined by interview.
- (2) The Dean or Associate Dean may admit to candidature an applicant who does not meet the requirements of sub-clause (1), provided that the applicant holds a qualification or qualifications that, in the opinion of the Dean or Associate Dean, are equivalent to those prescribed in sub-clause (1).
- (3) An applicant for admission to candidature must submit to the Faculty:
 - (a) satisfactory evidence of the applicant's eligibility for admission; and
 - (b) two referees' reports (one academic, the other work experience related), as required by the Head of the School of Psychology.
- (4) The admission requirements for the Doctor of Philosophy must also be satisfied.

4 Requirements for award

- (1) The units of study that may be taken for the Master of Clinical Psychology are set out in the table of units of study for the Master of Clinical Psychology course.
- (2) To qualify for the award of the degree of Master of Clinical Psychology, a candidate must:
 - (a) complete 96 credit points of units of study as set out in the table of units of study; and
 - (b) complete clinical placements as prescribed by the Head of School; and

- (c) conduct a research project on an approved topic.
- (3) The candidate must also satisfy the requirements for the Doctor of Philosophy.

5 Cross-institutional study

Cross-institutional study is not available in this course.

6 Course transfer

- (1) A candidate in the Master of Clinical Psychology and Doctor of Philosophy double degree may abandon the Master of Clinical Psychology component and continue in the Doctor of Philosophy.
- (2) A candidate in the Master of Clinical Psychology and Doctor of Philosophy double degree may abandon the Doctor of Philosophy and transfer into the Master of Clinical Psychology standalone degree course.

7 Credit for previous study

- (1) Credit transfer for the Master of Clinical Psychology component is subject to the provisions of the Coursework Rule and the Resolutions of the Faculty of Science, except that:
 - (a) no more than 48 credit points may be credited; and
 - (b) the coursework should have been completed no more than three years prior to first enrolment in this course and not have been counted towards another award.
- (2) Credit transfer for the Doctor of Philosophy component is subject to the provisions of the Doctor of Philosophy course resolutions relating to the degree of Master of Science and the HDR Rule.

8 Time limits

Except with the permission of the Dean or Associate Dean, a candidate will complete the requirements for the Master of Clinical Psychology component of the double degree:

- (1) within a minimum period of six semesters and a maximum period of twelve semesters for full-time study; or
- (2) within a minimum period of eight semesters and a maximum period of twelve semesters for part-time study; and
- (2) within six calendar years of admission to candidature.

10 Transitional provisions

These resolutions apply to students who commenced their candidature after 1 January, 2015 .

Course overview

The Master of Clinical Psychology (MCP) trains psychology graduates in the professional specialisation of clinical psychology. The MCP program is based on a Scientist-Practitioner model with an emphasis on a cognitive behavioural therapeutic approach, providing students with expertise, both practical and academic, to enable them to work as professional Clinical Psychologists in a variety of clinical settings. Advanced units of study and external placements allow students to develop a breadth of clinical experience as they are introduced to additional therapeutic approaches such as Schema therapy, DBT, Systems and Child and Family therapy.

Course outcomes

Our graduates will have a highly developed knowledge base and strong clinical skills necessary for both the practice of professional psychology on the one hand and conducting psychological research on the other.



Master of Clinical Psychology / Doctor of Philosophy

Units of study table

<i>Unit of study</i>	<i>Credit points</i>	<i>A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition</i>	<i>Session</i>
First Year			
Semester 1			
PSYC6078 Clinical Skills and Placement 1A	6	Note: Department permission required for enrolment Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.	Semester 1 Semester 2
PSYC6082 Treatment Across the Lifespan	6	Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.	Semester 1
PSYC6083 Assessment Across the Lifespan	6	Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.	Semester 1
PSYC6089 Research, Ethics and Professional Practice	6	Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney	Semester 1
Semester 2			
PSYC6072 Case and Research Seminars 1	6	Degree Association: MCP	Semester 2
PSYC6079 Placement 1B	6	P PSYC6078 Note: Department permission required for enrolment Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.	Semester 1 Semester 2
PSYC6084 Health and Neuropsychology	6	P PSYC6083 Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.	Semester 2
PSYC6085 Specialised Areas of Practice	6	Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney	Semester 2
Second Year			
Semester 1			
PSYC6073 Case and Research Seminars 2	6	Degree Association: MCP	Semester 1
PSYC6086 Reflective Practice and Placement 2	6	P PSYC6079 Note: Department permission required for enrolment Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.	Semester 1 Semester 2
Semester 2			
PSYC6076 Research Project 1	6	P PSYC6089 Note: Department permission required for enrolment Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.	Semester 1 Semester 2
PSYC6087 Advanced Models and Seminars	6	P PSYC6082 Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney	Semester 2
Third Year			
Semester 1			
PSYC6077 Research Project 2	6	P PSYC6089 Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.	Semester 1 Semester 2
PSYC6080 External Placement 1	6	P PSYC6079 Note: Department permission required for enrolment Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.	Semester 1 Semester 2
Semester 2			
PSYC6075 Case and Research Seminars 3	6	Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.	Semester 2
PSYC6081 External Placement 2	6	Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.	Semester 1 Semester 2



Master of Clinical Psychology / Doctor of Philosophy

Unit of study descriptions 2015

PSYC6072

Case and Research Seminars 1 Science

Credit points: 6 **Teacher/Coordinator:** Prof Stephen Touyz **Session:** Semester 2 **Classes:** 13 two-hour case and research seminars **Assessment:** Research proposal; Attendance at case and research seminars; Attendance at the School of Psychology Colloquium (100%). Students must demonstrate satisfactory performance on all assessments to satisfy requirements for this unit of study. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Degree Association: MCP

This unit of study will continue the case and research seminars introduced in PSYC6069 Ethics and Professional Practice. The unit of study will comprise attendance at formal weekly presentations, where Year 2 students will present a clinical case for discussion and Year 3 students will present their research findings. All students are required to attend throughout the semester, and are expected to attend the School Colloquium. It is expected that students will spend one day per week during this semester researching their chosen topic. Students are expected to be meeting with their supervisors during this semester to finalise aspects of their study design and methodology. If the research involves the recruitment of clinical samples off-site, students should expect to meet with their key individuals who will be involved with their research off-campus to negotiate the details of their project, the recruitment of subjects and to ensure its feasibility. Students are required to submit a formal written research proposal, which will form the basis of the research proposal presentation in the following semester.

PSYC6073

Case and Research Seminars 2 Science

Credit points: 6 **Teacher/Coordinator:** Prof Stephen Touyz **Session:** Semester 1 **Classes:** 13 two-hour case and research seminars **Assessment:** Research presentation; Case report; Attendance at case and research seminars; Attendance at the School of Psychology Colloquium (100%). Students must demonstrate satisfactory performance on both assessments to satisfy requirements for this unit of study. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Degree Association: MCP

This unit of study will continue the case and research seminars introduced in PSYC6072 Case and Research Seminars 1. The unit of study will comprise attendance at formal weekly presentations, where Year 2 students will present a clinical case for discussion and Year 3 students will present their research findings. All students are required to attend throughout the semester and are expected to attend the School Colloquium. Students are to prepare a written case report.

PSYC6075

Case and Research Seminars 3 Science

Credit points: 6 **Teacher/Coordinator:** Professor Stephen Touyz **Session:** Semester 2 **Classes:** Seminars 1hr/wk **Assessment:** Case presentation; case report; brief research presentation (all requirements must be satisfied; 100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

Students will attend a research seminar where they will listen to first year students present their final research proposals (early in semester) and will also present their own research study (late in semester). The

format will be poster/mini presentations to allow all students to showcase their research. Students will also present a clinical case in this seminar series.

Textbooks

None

PSYC6076

Research Project 1 Science

Credit points: 6 **Teacher/Coordinator:** Caroline Hunt **Session:** Semester 1, Semester 2 **Classes:** Practical work **Prerequisites:** PSYC6089 **Assessment:** Research plan and progress report (50%); literature review (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

During this unit students will be involved in data collection for their studies, with the expectation that at least a day a week will be involved in data collection and will write their literature review. Students will write a progress report that contains sections including an overview of the research question and design, the start and estimated completion date of recruitment, target recruitment numbers and the total recruited to date, obstacles encountered, plans to overcome obstacles.

Textbooks

None

PSYC6077

Research Project 2 Science

Credit points: 6 **Teacher/Coordinator:** Caroline Hunt **Session:** Semester 1, Semester 2 **Classes:** Practical work **Prerequisites:** PSYC6089 **Assessment:** Empirical paper (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

Students will conduct analysis and interpretation of the data they have collected in their empirical research project. They will write a draft of an empirical paper that is in the form of a manuscript ready for submission to a peer reviewed journal. If appropriate, following feedback, the student and their supervisor will submit the paper for publication.

Textbooks

None

PSYC6078

Clinical Skills and Placement 1A Science

Credit points: 6 **Teacher/Coordinator:** Dr Maree Abbott **Session:** Semester 1, Semester 2 **Classes:** 7 skills training seminars; 12 days clinical placement **Assessment:** Clinical vivas in assessment; treatment; ethical practice (students must demonstrate competency in all assessment components) Clinical Placement competency (students must demonstrate competency in all assessment components) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

The unit of study allows students to develop the practical skills of clinical psychology practice and put these into practice during their introductory placement in the Psychology Clinic. Clinical skills will be developed through observation of demonstration of model clinical



skills, and role play practice with staff feedback. The placement will encompass adult psychometric assessment and therapy practice.

PSYC6079
Placement 1B
Science

Credit points: 6 **Teacher/Coordinator:** Caroline Hunt **Session:** Semester 1, Semester 2 **Classes:** Clinical placement, 24 wks, 2 days/week (includes face-to-face patient contact, reading/preparation, clinic administration tasks such as notes and reports) **Prerequisites:** PSYC6078 **Assessment:** Contract, mid-placement review, clinical log (compulsory requirements for accreditation) end-of-placement review (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

The unit is designed to provide students with intensely supervised practice in conducting the fundamentals of clinical assessment, diagnosis, formulation, treatment planning, and treatment implementation for adult patients, psychometric assessments for adults and children/adolescents and child, adolescent and family work. A cognitive-behavioural approach is predominant in this placement for adult work. It will also provide an introduction to the practice of conducting psychometric assessments with the aim of achieving competency in the administration, scoring, interpretation and report writing for these assessments. It is expected that three to four cases will be undertaken, but additional cases may be prescribed until a student reaches competency. All students will also conduct child, adolescent or family therapy under the supervision of clinical psychologists with expertise in this area. Students may be offered the opportunity to run a group, subject to availability. Students will be allocated to specific supervisors for adult and child, adolescent and family therapy. While supervisors vary in the format in which they offer supervision, with a mixture of individual, group and observation formats being offered, supervision is intense and with a high level of observation by supervisors throughout the placement.

Textbooks

None prescribed. A wide range of clinical texts are available for consultation in the School of Psychology Test Library.

PSYC6080
External Placement 1
Science

Credit points: 6 **Teacher/Coordinator:** Caroline Hunt **Session:** Semester 1, Semester 2 **Classes:** Clinical placement, 24 wks, 2 days/week (includes face-to-face patient contact, reading/preparation, patient-related administration tasks such as notes and reports) **Prerequisites:** PSYC6079 **Assessment:** Contract, mid-placement review, clinical log (compulsory requirements for accreditation) end of placement review (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit of study involves students completing a placement in a setting external to the University Psychology Clinic. The placement will expose students to a range of presentations in one of the following settings, including hospitals and community health settings.

Textbooks

None prescribed. A wide range of clinical texts are available for consultation in the School of Psychology Test Library.

PSYC6081
External Placement 2
Science

Credit points: 6 **Teacher/Coordinator:** Caroline Hunt **Session:** Semester 1, Semester 2 **Classes:** Clinical placement, 24 wks, 2 days/week **Assessment:** Contract, mid-placement review, clinical log (compulsory requirements for accreditation) end of placement review (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit of study involves students completing a placement in a setting external to the University Psychology Clinic. The placement will expose students to a range of presentations in one of the following settings, including hospitals and community health settings. As the final clinical placement, this unit represents a capstone experience in bringing together learning from prior coursework and clinical placements.

Textbooks

None prescribed. A wide range of clinical texts are available for consultation in the School of Psychology Test Library.

PSYC6082
Treatment Across the Lifespan
Science

Credit points: 6 **Teacher/Coordinator:** Dr David Hawes **Session:** Semester 1 **Classes:** 1 lec/wk **Assessment:** One 2hr exam, one 500w assignment and 40 minute video, clinical viva, weekly readings (students must pass all assessment components). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit introduces current perspectives and on the conceptualisation and treatment of child and adult psychopathology. Core theories and models are presented within a developmental-ecological framework, and examined in relation to the aetiology, course, and maintenance of common psychological problems. Theoretical and practical skills-based training addresses core consultation processes (e.g., relational skills, engaging families) as well as key formats for intervention (e.g., individual, group, parent/family, school-based). Emphasis is placed on the learning of strong practical skills that can be applied to treatment targets in the context of evidence-based, formulation-driven practice. Attention is given to the clinical issues of unique importance to intervention in distinct periods across the lifespan, with respect to case formulation, treatment planning, therapeutic process, and evaluation of outcomes.

Textbooks

Barlow, D. (2007). *Clinical Handbook of Psychological Disorders* (4th Edition). New York: Guilford Press. Dadds, M. R., & Hawes, D. J. (2006). *Integrated family intervention for child conduct problems*. Brisbane, Queensland: Australian Academic Press. Dishion, T. J., & Stormshak, E. A. (2007). *Intervening in children's lives: An ecological, family-centered approach to mental health care*. Washington, DC: American Psychological Association. Kendall, P.C. (2006). *Child and adolescent therapy: Cognitive-behavioral procedures* (3rd ed.). NY: Guilford. Leahy, R.L. (2003). *Cognitive Therapy Techniques: A practitioner's guide*. New York: Guilford Press. Mash, E. J., & Barkley, R. A. (2002). *Child psychopathology*, 2nd ed. NY: Guilford Press. Mash, E. J., & Barkley, R. A. (2007). *Assessment of Childhood Disorders*, 4th ed. NY: Guilford Press. Page, A., & Stritzke, W. (2006). *Clinical Psychology for Trainees: Foundations of Science-Informed Practice*. Cambridge: Cambridge University Press. Wells, A. (1997). *Cognitive Therapy of Anxiety Disorders: A practice manual and conceptual guide*. Chichester, UK: Wiley & Sons.

PSYC6083
Assessment Across the Lifespan
Science

Credit points: 6 **Teacher/Coordinator:** Dr Suncica Sunny Lah **Session:** Semester 1 **Classes:** 1 lec/wk **Assessment:** WAIS-IV pass out, WISC-IV pass out, adult report writing assignment, child case assignment (students must achieve competency for each course component), preparation for pass outs, scoring exercises **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

In this unit students will develop expert understanding of theories and acquire advanced clinical skills that are important for psychological assessment of children and adults. The unit is based on the scientist-practitioner model which highlights the importance of critical thinking and utilisation of up to date research in selection of instruments and techniques to be used in assessments. The unit will promote a clinical approach that integrates clinical history, presentation and results obtained from psychometric testing (when appropriate) to form an opinion. Assessment and management of suicide risk will also be covered. It will develop a conceptual framework for understanding core psychological and developmental disorders, and assessment of these disorders. The unit will focus on assessment of behaviour, affect and cognition across the lifespan. Students will be

taught how to undertake psychological assessments and how to communicate these complex findings to a range of audiences.

PSYC6084

Health and Neuropsychology Science

Credit points: 6 **Teacher/Coordinator:** Dr Catalina Lawsin **Session:** Semester 2 **Classes:** 13 x 4 lectures **Prerequisites:** PSYC6083 **Assessment:** 2 research reports each worth (40%) weekly assessments totally (20%), readings **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit aims to integrate neuropsychology and health psychology to understand the psychological implications of health disorders/disabilities across the lifespan. The health psychology component will examine the relationships between psychological and physical functioning across a range of medical disorders and the way in which cognitive and behavioural factors influence psychological and physical functioning of those with health related problems. This component of the course will be concerned with theories and interventions that improve quality of life for people with medical problems. The course will aim to investigate theories and practice in the areas of adjustment to illness, working with patients and their families with chronic illness and dealing with death and dying. The neuropsychology component of this unit of study will introduce students to core neuropsychological syndromes and rehabilitation. Lectures will include theoretical components, case presentations and discussions.

Textbooks

Feinberg T. M.J (2003). Behavioural neurology & neuropsychology. Second Edition. USA: McGraw-Hill. Hunter, S.J., Donders, J (2007). Pediatric neuropsychological intervention. UK: Cambridge University Press. Morgan, J.E., Ricker, J.H. (2008). Textbook of clinical neuropsychology. New York: Taylor & Francis.E., Farah.

PSYC6085

Specialised Areas of Practice Science

Credit points: 6 **Teacher/Coordinator:** Paul Rhodes **Session:** Semester 2 **Classes:** 12 4hr lectures **Assessment:** 3x2000w essays **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney

The aim of this unit is to introduce students to specialised modes of assessment and treatment beyond the core models and diagnoses they have learned about to date. This includes both complex presentations in individuals and complex dynamics and interventions in couples and families.

Textbooks

Rhodes, P. & Wallis, A. (2011) A Practical Approach to Family Therapy: Structured Guidelines and Key Skills

PSYC6086

Reflective Practice and Placement 2 Science

Credit points: 6 **Teacher/Coordinator:** Dr Paul Rhodes **Session:** Semester 1, Semester 2 **Classes:** Placement 1 day x 16 wks, 8 x 3-hr lecture **Prerequisites:** PSYC6079 **Assessment:** 3 x 3000w essays, contract; end-of-placement-review; weekly clinic log, weekly reflective log **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit is designed to extend clinical assessment, formulation, treatment planning, and treatment implementation skills and knowledge for adult and child patients. It also extends trainees' knowledge and experience conducting and interpreting psychometric assessments. Trainees will be allocated to new supervisors for this placement and supervision methods will become less intense, more individual and begin to reflect formats available in external placements. A secondary

aim of this unit is to develop students' awareness of complex processes in the therapy room, both those presented by the client, in the therapeutic relationship and in the internal dialogue of the clinician. Units include a focus on complex psychodynamic phenomenon, as conceptualised in contemporary evidence-based practice and support the development of mature reflective children who are able to focus on both professional and personal development across their careers.

Textbooks

McWilliams, N. (2011). Psychoanalytic Formulation: Understanding Personality Structure in the Clinical Process. Guildford: NY. Stedmon & Dallos (2009). Reflective Practice in Psychotherapy and Counselling. OUP: NY. Kenny, D. (2012). Bringing Up Baby: The Psychoanalytic Infant Comes of Age. Karnac: London. White, M. (1997). Narratives of Therapists' lives. Adelaide, South Australia: Dulwich Centre Publications.

PSYC6087

Advanced Models and Seminars Science

Credit points: 6 **Teacher/Coordinator:** Prof Stephen Touyz **Session:** Semester 2 **Classes:** 12 4hr lectures **Prerequisites:** PSYC6082 **Assessment:** 3 x 2500w essays **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney

This unit is designed to provide students with advanced level training in psychotherapeutic approaches. For example, the unit will cover responses to complex human problems, including personality disorders, from a wider variety of clinical orientations. It focuses on a range of advanced models of therapy, including from time to time, seminars by visiting clinical academics or practitioners with expertise in specific therapeutic approaches.

PSYC6089

Research, Ethics and Professional Practice Science

Credit points: 6 **Teacher/Coordinator:** Prof Stephen Touyz **Session:** Semester 1 **Classes:** 11 lec, 1 1hr seminar/wk, practical work on research planning **Assessment:** Ethical viva 0.5hr; research proposal 1000w **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney

This unit will introduce students to current standards of ethical and professional practice in clinical psychology and promote life-long learning and understanding. The unit will also strengthen theory-practice links by exposing students to a range of topics that are relevant to ethical and professional issues that present in the Psychology Clinic and later in professional life, including cultural competence. Students will attend lectures on research methods and evaluation in clinical research, and a series of seminars where they will listen to second year students who will present clinical cases and brief research presentations. Within this unit of study, students will also begin to plan their own research project and submit a preliminary research proposal.

Textbooks

Psychiatric Ethics: Third Edition. Edited by Sidney Bloch, Paul Chodoff and Stephen Green, Oxford University Press, 1999. Page, A, Stritzke, W (2006). Clinical Psychology for trainees. Foundations of Science - Informed Practice, Cambridge University Press

Master of Science

Master of 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 (Higher Degree by Research) Rule 2011 (the 'HDR Rule'), the Academic Board resolutions relating to the Degree of Doctor of Philosophy and the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended).

Course resolutions

Part 1: Preliminary

1 Course codes

Code	Course and stream title
RMSCIENC-01	Master of Science

Part 2: Admission requirements

2 Eligibility for admission to candidature

- (1) To be eligible to be admitted to candidature by the Dean or Associate Dean, an applicant must hold or have completed the requirements for the degree of Bachelor of Science from the University of Sydney, with first or second class honours.
- (2) The Dean or Associate Dean may admit to candidature an applicant who does not meet the requirements of sub-clause (1), provided that the applicant holds a qualification or qualifications that, in the opinion of the Faculty Board of Postgraduate Research, are equivalent to those prescribed in sub-clause (1).

3 Application for admission to candidature

- (1) An applicant for admission to candidature must submit to the Faculty:
 - (a) satisfactory evidence of the applicant's eligibility for admission;
 - (b) a proposed course of research and advanced study, approved by the Head of the Department in which the work is to be undertaken; and
 - (c) a statement certifying the applicant's understanding that, subject to the HDR Rule, if the candidature is successful, his or her thesis will be lodged with the University Librarian and made available for immediate public use.

4 Credit transfer

The HDR Rule specifies the conditions for the granting of credit for previous studies, including the effect on completion times.

Part 3: Candidature

5 Appointment of supervisor

The Head of Department will appoint a supervisor and associate supervisor for each candidate in accordance with the HDR Rule and Academic Board policies on postgraduate research higher degree supervision.

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;
- (c) conduct research on an approved topic; and
- (d) write a thesis embodying the results of the research.

9 The thesis

- (1) A candidate shall produce a thesis that meets the requirements specified in HDR Rule.
- (2) The thesis would generally be expected to be less than 80,000 words.

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 any specified units of study;
 - (b) develop and present a refined research proposal to the satisfaction of the supervisor and Head of Department; and
 - (c) demonstrate adequate English language competency for the completion of the degree.

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

- (1) The attendance pattern for this course is full-time or part-time according to candidate choice. Visa requirements commonly restrict international students to full-time study only.
- (2) A full-time candidate shall pursue candidature continuously throughout the year, except for a period of recreation leave (usually four weeks) and shall not have any substantial employment during the day.
- (3) A candidate who does not comply with the attendance requirements set out in sub-clause (2) shall be regarded as a part-time candidate.

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

A candidate may suspend enrolment from the degree subject to the conditions specified by the HDR Rule.

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 the thesis will be conducted in general accordance with standards prescribed by Academic Board for the Doctor of Philosophy, except that:
 - (a) three copies of the thesis shall be submitted by the candidate;
 - (b) two examiners will be appointed by the Faculty, at least one of whom shall be external to the University; and
 - (c) the Faculty Board of Postgraduate Research committee will act in place of the PhD Award Sub-Committee.

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, 2012 and students who commenced their candidature prior to 1 January, 2012 who elect to proceed under these resolutions.
- (2) Candidates who commenced prior to 1 January, 2012 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 Faculty may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

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