



Science Postgraduate Handbook 2018

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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, the Doctor of Philosophy, the Doctor of Agricultural Economics, the Doctor of Science in Agriculture, and the Doctor of Veterinary Science, 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, the Doctor of Philosophy, the Doctor of Agricultural Economics, the Doctor of Science in Agriculture, and the Doctor of Veterinary Science, are provided and conferred according to the rules specified by the Senate and the Academic Board.
- (2) This list is amended with effect from 1 January, 2018. Degrees, diplomas and certificates no longer open for admission will be conferred by the Senate according to the rules specified by the Faculty at the time.

2 Degrees

Code	Course title & stream	Abbreviation	Credit points
RHSCIENC-01	Doctor of Science	DSc	Published Work
RHAGRECO-01	Doctor of Agricultural Economics	DAgrEc	Published Work
RHSCAGRI-01	Doctor of Science in Agriculture	DScAgr	Published Work
RHVETSCI-01	Doctor of Veterinary Science	DVSc	Published Work
RPPHDSCI-01	Doctor of Philosophy	PhD	Published Work
RPPHDAGR-01	Doctor of Philosophy (<i>no new intake from 2017</i>)	PhD	Published Work
RPPHDVET-01	Doctor of Philosophy (<i>no new intake from 2017</i>)	PhD	Published Work
RMPHLSCI-01	Master of Philosophy	MPhil	Research
RMPHLAGR-01	Master of Philosophy (<i>no new intake from 2017</i>)	MPhil	Research
MASCIENC-01	Master of Science (<i>no new intake from 2016</i>)	MSc	Research
RMSCVESC-01	Master of Science in Veterinary Science (<i>no new intake from 2017</i>)	MScVetSc	Research
RMVETCLS-01	Master of Veterinary Clinical Studies	MVetClinStud	Research
RMVETSCI-01	Master of Veterinary Science (<i>no new intake from 2017</i>)	MVSc	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
MAAGRENV-01	Master of Agriculture and Environment	MAgrEnv	72
MAANMSCI-01	Master of Animal Science (<i>no new intake from 2018</i>)	MAnimSc	72
MAASCABM-01	Animal Breeding Management (available by distance online only) (<i>no new intake from 2018</i>)	MAnimSc(ABMgt)	72
	Animal Genetics (<i>no new intake from 2018</i>)	MAnimSc(Animal Genetics)	72
	Animal Nutrition (<i>no new intake from 2018</i>)	MAnimSc(Animal Nutrition)	72
	Animal Reproduction (<i>no new intake from 2018</i>)	MAnimSc(Animal Reproduction)	72
MAVETPHE-01	Master of Veterinary Public Health (<i>no new intake from 2017</i>)	MVPH	48
MAVEPHMA-01	Master of Veterinary Public Health Management (<i>no new intake from 2018</i>)	MVPHMgt	48
MAVETSTD-02	Master of Veterinary Studies (<i>no new intake from 2018</i>)	MVetStud	72
MAVETSTD-03	Master of Veterinary Studies (Small Animal Clinical Studies)	MVetStud(Small Animal Clinical Studies)	48
MAWIHEPM-01	Master of Wildlife Health and Population Management (<i>no new intake from 2018</i>)	MWHPMgt	72



Code	Course title & stream	Abbreviation	Credit points
MAVETMED-01	Doctor of Veterinary Medicine	DVM	192
BPLIARSC-01	Bachelor of Liberal Arts and Science*	BLAS	144
BPMEДСCI-02	Bachelor of Medical Science* (no new intake from 2018)	BMedSc	144
BPPSYCHO-02	Bachelor of Psychology*	BPsych	192
BPSCIENC-05	Bachelor of Science*	BSc	144
	Dalyell		
	Health		
	Medical Science		
	Advanced* (no new intake from 2018)	BSc(Advanced)	144
	Advanced Mathematics* (no new intake from 2018)	BSc(Advanced Mathematics)	144
BUAGRECO-01	Bachelor of Agricultural Economics (no new intake from 2015)^	BAgrEc	192
BUFDAGBU-01	Bachelor of Food and Agribusiness^ (no new intake from 2018)	BFoodAgrib	192
BPENVSYS-01	Bachelor of Environmental Systems (no new intake from 2017)*	BEnvSys	144
BURESECN-01	Bachelor of Resource Economics (no new intake from 2015)^	BResEc	192
BUSCAGRI-01	Bachelor of Science in Agriculture^ (no new intake from 2018)	BScAgr	192
BUANVEBI-01	Bachelor of Animal and Veterinary Bioscience^ (no new intake from 2018)	BAnVetBioSc	192
BUSCVETE-01	Bachelor of Science (Veterinary)^ (no new intake from 2018)	BSc(Vet)	48
BPVETBIO-01	Bachelor of Veterinary Biology (exit only)	BVetBiol	144

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

^may be awarded with honours in an integrated program.

3 Combined degrees

Code	Course title & stream	Abbreviation	Credit points
BPCOMSCI-02	Bachelor of Commerce* and Bachelor of Science* (no new intake from 2018)	BCom/BSc	240
BPESMSCI-02	Bachelor of Education (Secondary: Mathematics)^ and Bachelor of Science*	BEd(Sec:Maths)/BSc	240
	Dalyell		
BPESISCI-02	Bachelor of Education (Secondary: Science)^ and Bachelor of Science*	BEd(Sec:Science)/BSc	240
	Dalyell		
BPENGMSC-01	Bachelor of Engineering^ and Bachelor of Medical Science* (no new intake from 2018)	BE/BMedSc	240
BPENGSCI	Bachelor of Engineering Honours^ and Bachelor of Science*	BE/BSc	240
	Dalyell		
	Health		
	Medical Science		
BPITCMSC-01	Bachelor of Information Technology^ and Bachelor of Medical Science* (no new intake from 2018)	BIT/BMedSc	240
BPITCSCI-01	Bachelor of Information Technology^ and Bachelor of Science* (no new intake from 2018)	BIT/BMedSc	240
BPSCIART-02	Bachelor of Science and Bachelor of Arts* (no new intake from 2018)	BSc/BA	192
BPSCILAW-02	Bachelor of Science* and Bachelor of Laws^	BSc/LLB	240
	Dalyell		
BUSCINUR-01	Bachelor of Science* and Master of Nursing	BSc/MN	192
	Dalyell		
	Health		
BPSCIAVS-01	Bachelor of Science and Bachelor of Advanced Studies	BSc/BAAdvStudies	192
	Dalyell		
	Advanced		
	Health		
	Medical Science		
	Agriculture		

Code	Course title & stream	Abbreviation	Credit points
	Animal and Veterinary Bioscience		
	Food and Agribusiness		
	Master of Veterinary Studies/Master of Veterinary Clinical Studies	MVetStud/MVetClinStud	48
	Canine Medicine	MVetStud/MVetClinStud(Canine Medicine)	48
	Equine Medicine	MVetStud/MVetClinStud(Equine Medicine)	48
	Equine Surgery	MVetStud/MVetClinStud(Equine Surgery)	48
	Feline Medicine	MVetStud/MVetClinStud(Feline Medicine)	48
	Ruminant Medicine	MVetStud/MVetClinStud(Ruminant Medicine)	48
	Small Animal Cardiology	MVetStud/MVetClinStud(Small Animal Cardiology)	48
	Small Animal Medicine	MVetStud/MVetClinStud(Small Animal Medicine)	48
	Small Animal Surgery	MVetStud/MVetClinStud(Small Animal Surgery)	48
	Veterinary Anaesthesia	MVetStud/MVetClinStud(Veterinary Anaesthesia)	48
	Veterinary Dermatology	MVetStud/MVetClinStud(Veterinary Dermatology)	48
	Veterinary Diagnostic Imaging	MVetStud/MVetClinStud(Veterinary Diagnostic Imaging)	48
	Veterinary Emergency Medicine and Critical Care	MVetStud/MVetClinStud(Veterinary Emergency Medicine and Critical Care)	48
	Veterinary Pathology	MVetStud/MVetClinStud(Veterinary Pathology)	48
BPVBLVMD-01	Bachelor of Veterinary Biology/Doctor of Veterinary Medicine	BVetBiol/DVM	288
	Bachelor of Science and Bachelor of Advanced Computing	BSc/BAdvComp	240
	Health		
	Medical Science		

*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
BPMSCMED-01	Bachelor of Medical Science* and Doctor of Medicine (no new intake from 2018)	BMedSc/MD	336
BPSCADMD-01	Bachelor of Science (Advanced)* and Doctor of Dental Medicine (no new intake from 2018)	BSc(Adv)/DMD	336
BSCIDMD-01	Bachelor of Science and Doctor of Dental Medicine	BSc/DMD	336
	Dalyell		
BPSCINUD-02	Bachelor of Science* and Master of Nutrition and Dietetics	BSc/MND	240
	Dalyell		
BPSCAMED-01	Bachelor of Science (Advanced)* and Doctor of Medicine (no new intake from 2018)	BSc(Adv)/MD	336
BPSCIMED-01	Bachelor of Science and Doctor of Medicine	BSc/MD	336
	Dalyell		
	Medical Science		

*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

Code	Course title & stream	Abbreviation	Credit points
GNPSYCHO-02	Graduate Diploma in Psychology	GradDipPsych	48
GNSCIENC-01	Graduate Diploma in Science	GradDipSc	48
GNSUSTAI-01	Graduate Diploma in Sustainability	GradDipSust	48
GNAGRENV-01	Graduate Diploma in Agriculture and Environment	GradDipAgrEnv	48
GNANMSCI-01	Graduate Diploma in Animal Science (<i>no new intake from 2018</i>)	GradDipAnimSc	48
GNASCABM-01	Animal Breeding Management (available by distance online only) (<i>no new intake from 2018</i>)	GradDipAnimSc(ABMgt)	48
	Animal Genetics (<i>no new intake from 2018</i>)	GradDipAnimSc(Animal Genetics)	48
	Animal Nutrition (<i>no new intake from 2018</i>)	GradDipAnimSc(Animal Nutrition)	48
	Animal Reproduction (<i>no new intake from 2018</i>)	GradDipAnimSc(Animal Reproduction)	48
GNVETPHE-01	Graduate Diploma in Veterinary Public Health (<i>no new intake from 2017</i>)	GradDipVPH	36
GNVEPHMA-01	Graduate Diploma in Veterinary Public Health Management (<i>no new intake from 2018</i>)	GradDipVPHMgt	36
GNVETSTD-01	Graduate Diploma in Veterinary Studies (<i>no new intake from 2018</i>)	GradDipVetStud	48
	Small Animal Clinical Studies	GradDipVetStud(Small Animal Clinical Studies)	36
GNWIHEPM-02	Graduate Diploma of Wildlife Health and Population Management (<i>no new intake from 2018</i>)	GradDipMWHPMgt	48

6 Graduate certificates

Code	Course title & stream	Abbreviation	Credit points
GCPSYCOA-01	Graduate Certificate in Coaching Psychology	GradCert(CoachPsych)	24
GCMASCMG-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
GCAGRENV-01	Graduate Certificate in Agriculture and Environment	GradCertAgrEnv	24
GCANMSCI-01	Graduate Certificate in Animal Science (<i>no new intake from 2018</i>)	GradCertAnimSc	24
GCASCABM-01	Animal Breeding Management (available by distance online only) (<i>no new intake from 2018</i>)	GradCertAnimSc(ABMgt)	24
	Animal Genetics (<i>no new intake from 2018</i>)	GradCertAnimSc(Animal Genetics)	24
	Animal Nutrition (<i>no new intake from 2018</i>)	GradCertAnimSc(Animal Nutrition)	24
	Animal Reproduction (<i>no new intake from 2018</i>)	GradCertAnimSc(Animal Reproduction)	24
GCVETPHE-01	Graduate Certificate in Veterinary Public Health (<i>no new intake from 2017</i>)	GradCertVPH	24
GCVEPHMA-01	Graduate Certificate in Veterinary Public Health Management (<i>no new intake from 2018</i>)	GradCertVPHMgt	24
GCVETSTD-01	Graduate Certificate in Veterinary Studies (<i>no new intake from 2018</i>)	GradCertVetStud	24
	Small Animal Clinical Studies	GradCertVetStud(Small Animal Clinical Studies)	24
GCWIHEPM-02	Graduate Certificate in Wildlife Health and Population Management (<i>no new intake from 2018</i>)	GradCertWHPMgt	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 2014 (the 'Coursework Rule'), the resolutions for the course of enrolment, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

1. Admissions

- (1) The provisions of the Coursework Rule and the Coursework Policy apply to the admission of domestic and international applicants to undergraduate and postgraduate coursework courses. Course resolutions may prescribe additional admission requirements.
- (2) The Faculty participates in the following approved special admission programs under the Coursework Policy:

Course	Broadway Scheme	Cadigal Program	E12 Scheme	Mature Age Applicants Scheme	Elite Athletes or Performers Scheme	Special Consideration for Admission Scheme	Future Leaders Scheme
Bachelor of Liberal Arts and Science	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bachelor of Science	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bachelor of Science and Bachelor of Advanced Studies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bachelor of Science (Advanced) and Bachelor of Advanced Studies	Yes	Yes	Yes	No	Yes	Yes	Yes
Bachelor of Science (Medical Science)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bachelor of Science (Medical Science) and Bachelor of Advanced Studies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bachelor of Science (Health)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bachelor of Science (Health) and Bachelor of Advanced Studies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bachelor of Science and Bachelor of Advanced Studies (Agriculture)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bachelor of Science and Bachelor of Advanced Studies (Food and Agribusiness)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bachelor of Science and Bachelor of Advanced Studies (Animal and Veterinary Bioscience)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Bachelor of Veterinary Bioscience and Doctor of Veterinary Medicine	Yes	Yes	Yes	No	Yes	Yes	No
Bachelor of Science and Doctor of Dental Medicine	No	Yes	No	No	No	No	No
Bachelor of Science and Doctor of Medicine	No	Yes	No	No	No	No	No



Course	Broadway Scheme	Cadigal Program	E12 Scheme	Mature Age Applicants Scheme	Elite Athletes or Performers Scheme	Special Consideration for Admission Scheme	Future Leaders Scheme
Bachelor of Science (Medical Science) and Doctor of Medicine	No	Yes	No	No	No	No	No
Bachelor of Science and Master of Nutrition and Dietetics	Yes	Yes	No	No	Yes	Yes	Yes
Bachelor of Psychology	Yes	Yes	No	No	Yes	Yes	Yes
Master of Clinical Psychology	n/a	Yes	n/a	n/a	n/a	n/a	n/a
Master of Clinical Psychology and Doctor of Philosophy	n/a	Yes	n/a	n/a	n/a	n/a	n/a

2. Enrolment restrictions

- (1) Except with the permission of the Associate 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 Associate 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 Associate Dean, undergraduate 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.
- (4) Except with the permission of the Associate Dean, postgraduate coursework students are prohibited from:
 - (a) re-enrolling in a unit of study that they have previously completed within the last 5 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 5 calendar years; and/or
 - (ii) for which credit equivalence or exemption has been granted within the last 5 calendar years.

3. Time Limits

The provisions of the Coursework Rule apply to the time limits for undergraduate and postgraduate programs, unless otherwise stated in the course resolutions.

4. Re-enrolment after an absence

Unless otherwise stated within the course resolutions, provisions of the Coursework Rule and the Coursework Policy apply. A student who plans to re-enrol after a period of suspension must advise the Student Centre of their intention prior to the commencement of semester. Students should pay careful attention to the significant dates in processes and their effect on results and financial liability.

5. Course Transfer

- (1) Schedule 1 of the Faculty Resolutions lists the allowable Undergraduate course transfers and the conditions for transfer approved by the Faculty of Science for students who commenced their studies after 1 January 2018. Schedule 2 of the Faculty Resolutions lists the allowable Postgraduate course transfers and the conditions for transfer approved by the Faculty of Science for students who commenced their studies after 1 January 2018. For students who commenced their studies prior to 1 January 2018, please refer to the 2017 Handbook.
- (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 Associate 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.
- (4) A student enrolled in a postgraduate coursework graduate diploma may, with the approval of the Associate 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.
- (5) All applications for transfer in a postgraduate coursework program must satisfy the Faculty specified time limits for application and transfer requests.

6. Credit for previous study

- (1) Unless otherwise stated within the course resolutions, the provisions of the Coursework Rule and the Coursework Policy apply to the granting of credit, and in addition:

Course	Rule
Undergraduate courses	All students must complete all the 3000-level units of study required for a Science Table A major at the University of Sydney.

Course	Rule
Postgraduate courses	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 five years. Unless otherwise stated in the course resolutions, external credit and reduced volume of learning are not available to students enrolled in postgraduate programs.
Master of Agriculture and Environment	Credit may be granted for specific core units up to a maximum of 25 percent of the requirements for the degree, but not for the elective units or research units. A reduction in volume of learning of up to 24 credit points may be available to students who have completed a qualification in an appropriate discipline at Level 8 of the Australian Qualifications Framework.
Bachelor of Veterinary Biology/Doctor of Veterinary Medicine	Credit may be granted only for specific core and elective units in Year 1 and Year 2 up to a maximum of 48 credit points. Studies must have been completed with at least a credit grade and no more than five years prior to admission.

7. Cross institutional study

- (1) Provided the Associate 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 in the course resolutions, cross-institutional study is not available to students enrolled in postgraduate programs.

8. International Study

- (1) The Faculty encourages students to participate in international study, unless the resolutions for a particular course preclude this. Provided the Associate Dean's permission has been obtained a student may be permitted to count units completed overseas towards their undergraduate degree by participating in:
 - (a) the University of Sydney Exchange Program; or
 - (b) a Study Abroad program; or
 - (c) an International Placement
- (2) For International Placements, Associate Dean approval must be given well in advance of travel for unit of study enrolment based on an agreed degree plan.
- (3) Students applying for Study Abroad should refer to the Faculty of Science - Short Term Independent Undergraduate Study Abroad local provisions.

9. Attendance

- (1) Unless otherwise stated in a separate local provision, students are expected to attend a minimum of 80% of timetabled activities for a unit of study, unless granted exemption by the Associate Dean.
- (2) For some units of study the minimum attendance requirement, as specified in the relevant table of units or the unit of study outline, may be greater than 80%.
- (3) The Associate Dean may determine that a student has failed a unit of study because of inadequate attendance.
- (4) The Associate Dean may allow additional assessment items where attendance is lower than the requirement as specified in 9(1) and 9(2).

10. Results

- (1) The provisions of the Coursework Rule and the Coursework Policy apply to the award of grades in Science units of study.
- (2) The determination of what warrants a DC grade after the published date for Discontinued not to count as failure is made at the discretion of the Associate Dean on a documented case-by-case basis. Discretion will not be exercised where:
 - (a) the request is made 12 months or more after the advertised date of result publication; or
 - (b) where the student has passed the unit of study.

11. Satisfactory Progress

In addition to meeting the provisions of the Coursework Rule and the Coursework Policy, students must also meet all progression requirements listed in specific course resolutions.

12. Re-assessment

Re-assessment is not permitted unless otherwise specified in the course resolutions.

13. Award of the bachelor degree with honours

The following rules apply to the award of the bachelor degree with Honours unless otherwise stipulated in the relevant course resolutions.

- (1) To qualify for admission to the bachelor degree with honours, an applicant must meet all of the following requirements:
 - (a) have either:
 - (i) qualified for the award of a relevant pass degree from the Faculty of Science; or
 - (ii) be a pass graduate of the Faculty of Science; or
 - (iii) be a pass graduate holding an equivalent qualification from another institution,
 - (b) have completed a minimum of 24 credit points of senior units of study relevant to the intended honours course (or equivalent at another institution);
 - (c) 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,
 - (d) satisfy any additional criteria set by the Head of School concerned.
- (2) 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 permission may be granted by the Associate Dean to undertake honours part-time.

- (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 Associate Dean and both Schools. A joint honours course shall comprise such parts of the two honours courses as may be decided by the Associate 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 the Science Honours Unit of Study Table.
- (5) The grade of honours and the honours mark are determined by performance in only the units of study listed in the Science Honours Unit of Study Table.
- (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

14. University Medal

A student who is awarded Honours Class 1 may be awarded 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.

15. Weighted Average Mark (WAM) and Science Weighted Average Mark (SCIWAM)

- (1) The University has a formula for calculating a WAM, which is defined in the University Glossary. WAMs are used by the University as one indicator of academic performance.
- (2) A SCIWAM is used by the Faculty of Science as one indicator of academic performance.
- (a) A SCIWAM is 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. Junior units are not included in the calculation.
- (b) Discontinued - Fail (DF) grades will contribute to the SCIWAM. The mark used for units of study with a grade of DF is zero.
- (c) Discontinued - Not to count as failure (DC) grades do not contribute to the SCIWAM.
- (d) Pass/Fail units of study do not contribute to the SCIWAM, with the exception of Exchange units where a mark is available.
- (3) In this Faculty:
- (a) A junior unit of study is a 1000-level unit.
- (b) An intermediate unit of study is a 2000-level unit.
- (c) A senior unit of study is a 3000-level unit or above.

16. 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 and double degrees who commenced prior to January 1 2018.
- (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 have an ATAR (or equivalent) of 99.00 or higher.
- (b) To be considered for entry into the Program in their second or third years, students not in the Program in the previous year should have AAMs of 85 or over in their previous year of study. 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 in the previous 12 months.
- (4) Readmission to the Program in a subsequent year requires:
- (a) AAM of 80 or above; and
- (b) completion of 42 credit points in the previous 12 months.
- (5) At the discretion of the Associate Dean, these requirements may be varied on a year to year or individual basis.

Schedule 1: Allowable Undergraduate Course Transfers

(1) Single Undergraduate Degrees

Transfer From	Transfer To	Requirements
Bachelor of Psychology (Arts and Social Sciences)	Bachelor of Arts	
Bachelor of Psychology (Science)	Bachelor of Science	

(2) Combined Undergraduate Degrees

Transfer From	Transfer To
Bachelor of Science and Bachelor of Laws	Bachelor of Arts and Bachelor of Laws
	Bachelor of Commerce and Bachelor of Laws
	Bachelor of Economics and Bachelor of Laws
	Bachelor of Engineering Honours and Bachelor of Laws

Transfer From	Transfer To
	Bachelor of Science

(3) **Double Degrees**

Transfer From	Transfer To	Requirements
Bachelor of Science and Master of Nutrition and Dietetics	Bachelor of Science	
Bachelor of Science / Doctor of Medicine	Bachelor of Science	Faculty Approval Required
Bachelor of Science and Doctor of Dental Medicine	Bachelor of Science	Faculty Approval Required

Schedule 2: Allowable Postgraduate Course Transfers

Transfer From	Transfer To	Requirements
Graduate Certificate in Coaching Psychology	Graduate Diploma in Coaching Psychology	Complete the requirements of the Graduate Certificate OR; accumulate a minimum of 18 cps in the Graduate Certificate within a maximum of two consecutive semesters with a WAM of at least 65.0.
Graduate Diploma in Coaching Psychology	Graduate Certificate in Coaching Psychology	
	Master of Science in Coaching Psychology	Complete the requirements of the Graduate Diploma OR; accumulate a minimum of 18 cps in the Graduate Diploma within a maximum of two consecutive semesters with a WAM of at least 65.0.
Master of Science in Coaching Psychology	Graduate Certificate in Coaching Psychology	
	Graduate Diploma in Coaching Psychology	
Master of Clinical Psychology and Doctor of Philosophy	Doctor of Philosophy	Course Coordinator approval required
	Master of Clinical Psychology	Course Coordinator approval required
Graduate Certificate in Environmental Science	Graduate Diploma in Environmental Science	Complete the requirements of the Graduate Certificate OR; accumulate a minimum of 18 cps in the Graduate Certificate within a maximum of two consecutive semesters with a WAM of at least 65.0.
Graduate Diploma in Environmental Science	Graduate Certificate in Environmental Science	
	Master of Environmental Science	Complete the requirements of the Graduate Diploma OR; accumulate a minimum of 18 cps in the Graduate Diploma within a maximum of two consecutive semesters with a WAM of at least 65.0.
Master of Environmental Science	Graduate Certificate in Environmental Science	
	Graduate Diploma in Environmental Science	
Graduate Certificate in Marine Science and Management	Graduate Diploma in Marine Science and Management	Complete the requirements of the Graduate Certificate OR; accumulate a minimum of 18 cps in the Graduate Certificate within a maximum of two consecutive semesters with a WAM of at least 65.0.
Graduate Diploma in Marine Science and Management	Graduate Certificate in Marine Science and Management	
	Master of Marine Science and Management	Complete the requirements of the Graduate Diploma OR; accumulate a minimum of 18 cps in the Graduate Diploma within a maximum of two consecutive semesters with a WAM of at least 65.0.
Master of Marine Science and Management	Graduate Certificate in Marine Science and Management	
	Graduate Diploma in Marine Science and Management	
Graduate Certificate in Sustainability	Graduate Diploma in Sustainability	Complete the requirements of the Graduate Certificate OR; accumulate a minimum of 18 cps in the Graduate Certificate within a maximum of two consecutive semesters with a WAM of at least 65.0.
Graduate Diploma in Sustainability	Graduate Certificate in Sustainability	
	Master of Sustainability	Complete the requirements of the Graduate Diploma OR; accumulate a minimum of 18 cps in the Graduate Diploma within a maximum of two consecutive semesters with a WAM of at least 65.0.
Master of Sustainability	Graduate Certificate in Sustainability	
	Graduate Diploma in Sustainability	
Graduate Diploma in Medical Physics	Master of Medical Physics	Complete the requirements of the Graduate Diploma with a WAM of 65.0 or better and have Course Coordinator approval.
Master of Medical Physics	Graduate Diploma in Medical Physics	Complete the Graduate Diploma requirements and have Course Coordinator approval
Graduate Certificate in Science (History and Philosophy of Science)	Graduate Diploma in Science	Course Coordinator approval required
Graduate Diploma in Agriculture and Environment	Graduate Certificate in Agriculture and Environment	Complete the degree requirements.
	Master of Agriculture and Environment	
Master of Agriculture and Environment	Graduate Certificate in Agriculture and Environment	Complete the degree requirements.
	Graduate Diploma in Agriculture and Environment	Complete the degree requirements.

Graduate Diploma in Science

Relationship of Graduate Diploma to research degrees

The Graduate Diploma in Science serves as an entry qualification for the degrees of Master of Philosophy 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. Entry to the Graduate Diploma is subject to approval by the relevant Head of School or Discipline Area, the Faculty, and confirmation that requirements for the award of a relevant Bachelor's degree have been met.

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 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

Course resolutions

1 Course codes

Code	Course
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.



Graduate Diploma in 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 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

Course resolutions

1 Course codes

Code	Course title
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 and 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.

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, 2017 and persons who commenced their candidature prior to 1 January, 2017 who elect to proceed under these resolutions.
- (2) Candidates who commenced prior to 1 January, 2017 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2022, or later date as the faculty may, in special circumstances, approve. Candidates who commenced prior to 1 January, 2017 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2022, 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. For more information on the Graduate Diploma in Psychology program, please see the following webpage: http://www.psych.usyd.edu.au/future_students/gdp/index.shtml

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 (PSYC2010/2910 (replaced PSYC2011/2911 in 2017), PSYC2012, PSYC2013 and PSYC2014) and 24 credit points of senior Psychology units of study. PSYC3018 must be included for students who have not completed PSYC2010/2910 at the



intermediate level. 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 in 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:			
PSYC2010 Brain and Behaviour	6	P PSYC1002 N PSYC2011, PSYC2911, PSYC2910	Semester 1
PSYC2910 Brain and Behaviour (Advanced)	6	P A mark of at least 75 in PSYC1002 N PSYC2011, PSYC2911, PSYC2010	Semester 1
PSYC2012 Statistics and Research Methods for Psych	6	A Recommended: HSC Mathematics, any level P PSYC1001 OR PSYC1002	Semester 1
PSYC2013 Cognitive and Social Psychology	6	P PSYC1001 and PSYC1002	Semester 2
PSYC2014 Personality and Psychology Assessment 1	6	P PSYC1001 and PSYC1002	Semester 2
NB: PSYC2010/2910 replaced PSYC2011/2911 from 2017.			
Senior Units			
Students must complete 24 credit points from the following:			
NB: For students who have not completed PSYC2010/2910 at the intermediate level, 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 plus at least one other Intermediate Psychology Unit of Study from PSYC2010, PSYC2910, PSYC2011, PSYC2911, PSYC2013, PSYC2014	Semester 2
PSYC3011 Learning and Behaviour	6	P (PSYC2011 or PSYC2911 or PSYC2010 or PSYC2910) and PSYC2012 N PSYC3911	Semester 1
PSYC3012 Cognition, Language and Thought	6	P PSYC2012 and PSYC2013	Semester 1
PSYC3013 Perceptual Systems	6	P (PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911) and PSYC2012 N PSYC3913	Semester 2
PSYC3014 Behavioural and Cognitive Neuroscience	6	P [(PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911) and 6 credit points from (PSYC2012 or PSYC2013 or PSYC2014)] OR [(PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911 or PSYC2013) and (ANAT2010 or ANAT2910) and PCOL2011] N PSYC3914	Semester 2
PSYC3914 Behavioural and Cognitive Neuroscience Adv	6	P [An average mark of 75 in (PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911) and 6 credit points from (PSYC2012 or PSYC2013 or PSYC2014)] OR [An average mark of 75 in (PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911 or PSYC2013) and (ANAT2010 or ANAT2910) and PCOL2011] N PSYC3014	Semester 2
PSYC3015 Personality and Psychology Assessment 2	6	P PSYC2012 and PSYC2014	Semester 1
PSYC3016 Developmental Psychology	6	P PSYC2012 and PSYC2013 N PSYC3916	Semester 2
PSYC3017 Social Psychology	6	P PSYC2013	Semester 1
PSYC3018 Abnormal Psychology	6	P (PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911) and PSYC2014	Semester 1
PSYC3020 Applied Psychology	6	P 12 credit points of junior psychology and 12 credit points in Intermediate Psychology N PSYC3019	Semester 2
HPSC3023 Psychology and Psychiatry: History and Phil	6	A HPSC2100 and HPSC2101 P (12 credit points of Intermediate HPSC units) OR (Credit or greater in an HPSC Intermediate unit) OR (12 Intermediate credit points in Psychology units)	Semester 1



Graduate Diploma in Psychology

Unit of study descriptions

PSYC2010

Brain and Behaviour Science

Credit points: 6 **Session:** Semester 1 **Classes:** 3x1hr lectures and 1x1hr tutorial per week **Prerequisites:** PSYC1002 **Prohibitions:** PSYC2011, PSYC2911, PSYC2910 **Assessment:** 1x2hr examination, 1x1500 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 examines a range of phenomena and principles in behaviour, learning and perception, abnormal psychology 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. The Abnormal Psychology section will focus on emotional and motivational disorders, such as 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.

Textbooks

Bouton, M.E. (2007). *Learning and Behavior: A Contemporary Synthesis*. Sinauer.

Wickens, A. (2009) *Introduction to Biopsychology*, 3rd edition. Pearson.

PSYC2910

Brain and Behaviour (Advanced) Science

Credit points: 6 **Teacher/Coordinator:** Dr Ian Johnston **Session:** Semester 1 **Classes:** 3x1hr lectures and 1x1hr tutorial per week **Prerequisites:** A mark of at least 75 in PSYC1002 **Prohibitions:** PSYC2011, PSYC2911, PSYC2010 **Assessment:** 1x2hr examination, 1x1500 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, Abnormal Psychology 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. The Abnormal Psychology section will focus on emotional and motivational disorders, such as 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.

Textbooks

Bouton, M.E. (2007). *Learning and Behavior: A Contemporary Synthesis*. Sinauer.

Wickens, A. (2009) *Introduction to Biopsychology*, 3rd edition. Pearson.

PSYC2012

Statistics and Research Methods for Psych Science

Credit points: 6 **Session:** Semester 1 **Classes:** 3 x 1 hour lectures per week for 6 weeks (even weeks) and 2 x 1 hour lectures per week for the remaining 7 weeks (odd weeks); 2 hour tutorial per week **Prerequisites:** PSYC1001 OR PSYC1002 **Assumed knowledge:** Recommended: HSC Mathematics, any level **Assessment:** One 2 hour final exam plus a combination of in class tests, midsemester exam, and/or a written assignment (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 **Session:** Semester 2 **Classes:** Three 1 hour lectures and one 1 hour tutorial per week. **Prerequisites:** PSYC1001 and PSYC1002 **Assessment:** One 2 hour exam, major assignment (1500-2000 word essay/report), minor assignment (short written practical exercise and/or tutorial quiz) (100%) **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, Social Psychology and Developmental Psychology. The section on Cognitive Processes focuses on current theories of memory, attention, and reasoning and discusses the methods and issues involved in investigating these processes in both healthy individuals and people with cognitive dysfunctions. The second section on Social Psychology examines salient social constructs such as impression management, and prejudice, and explores how mental processes affect social judgment and behaviour. The final section on Developmental Psychology presents and evaluates evidence about the early influences on children's social and cognitive development.

PSYC2014

Personality and Psychology Assessment 1 Science

Credit points: 6 **Session:** Semester 2 **Classes:** Three 1 hour lectures and one 1 hour tutorial per week. **Prerequisites:** PSYC1001 and PSYC1002 **Assessment:** One 2 hour exam, major assignment (1500-2000 word essay/report), minor assignment (short written practical exercise and/or tutorial quizzes and/or class presentation) (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 **Session:** Semester 2 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** PSYC2012 plus at least one other Intermediate Psychology Unit of Study from PSYC2010, PSYC2910, PSYC2011, PSYC2911, PSYC2013, PSYC2014 **Assessment:** One 2 hour exam, class tests, 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 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. The second 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.

Textbooks

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

PSYC3011

Learning and Behaviour Science

Credit points: 6 **Session:** Semester 1 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** (PSYC2011 or PSYC2911 or PSYC2010 or PSYC2910) and PSYC2012 **Prohibitions:** PSYC3911 **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. (2016). *Learning and Behavior: A contemporary synthesis*, 2nd edition. Sunderland, MA: Sinauer.

PSYC3012

Cognition, Language and Thought Science

Credit points: 6 **Session:** Semester 1 **Classes:** Two 1 hour lectures and one 2 hour practical per week. **Prerequisites:** PSYC2012 and PSYC2013 **Assessment:** One 2 hour exam, 2000 word practical 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 **Session:** Semester 2 **Classes:** Two 1-hour lectures and one 2-hour tutorial per week. **Prerequisites:** (PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911) and PSYC2012 **Prohibitions:** PSYC3913 **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 and 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 **Session:** Semester 2 **Classes:** Two 1 hour lectures and one 2 hour practical per week. **Prerequisites:** [(PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911) and 6 credit points from (PSYC2012 or PSYC2013 or PSYC2014)] OR [(PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911 or PSYC2013) and (ANAT2010 or ANAT2910) and PCOL2011] **Prohibitions:** PSYC3914 **Assessment:** One 2 hour exam, one major essay/report 2000-2500 words, tutorial quizzes 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 and neuroscientific methods. The practical component will also introduce students to experimental and neuropsychological approaches to studying the relationship between brain and behaviour.

PSYC3914

Behavioural and Cognitive Neuroscience Adv Science

Credit points: 6 **Session:** Semester 2 **Classes:** Two lectures, one 1 hour tutorial and one 2 hour practical per week. **Prerequisites:** [An average mark of 75 in (PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911) and 6 credit points from (PSYC2012 or PSYC2013 or PSYC2014)] OR [An average mark of 75 in (PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911 or PSYC2013) and (ANAT2010 or ANAT2910) and PCOL2011] **Prohibitions:** PSYC3014 **Assessment:** One 2 hour exam (end of semester), one quiz (mid-semester), one presentation, one 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. 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.

PSYC3015

Personality and Psychology Assessment 2

Science

Credit points: 6 **Session:** Semester 1 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** PSYC2012 and PSYC2014 **Assessment:** One 2 hour exam; one 2000-2500 word major essay/report, and in-class activities (e.g., tutorial presentations, in-class quizzes) (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study addresses current issues in personality, psychological testing, intelligence, and individual differences. Students are introduced to different theoretical models used in personality, intelligence, emotional intelligence, and metacognition and expected to critically evaluate these theories based on the supporting research evidence. This unit also presents different psychological testing techniques and methods.

PSYC3016

Developmental Psychology

Science

Credit points: 6 **Session:** Semester 2 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** PSYC2012 and PSYC2013 **Prohibitions:** PSYC3916 **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 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: sense of identity, conceptual development, children's thinking, social cognition, moral reasoning and behaviour, 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 **Session:** Semester 1 **Classes:** Two 1-hour lectures and one 2-hour tutorial per most weeks. **Prerequisites:** PSYC2013 **Assessment:** One 2-hour exam, one 2500 word research report (consisting of both group work and individually-written components), 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 among others: antisocial behaviours, discrimination, the self, emotion, cultural psychology, evolutionary psychology, and existential social psychology. 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 **Session:** Semester 1 **Classes:** Two 1 hour lectures and one 2 hour tutorial per week. **Prerequisites:** (PSYC2010 or PSYC2910 or PSYC2011 or PSYC2911) and PSYC2014 **Assessment:** One 2 hour exam, one 2000 word essay, quiz, 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:

(a) Adult abnormal psychology: Anxiety and related disorders (specific phobias, panic disorder, generalised anxiety disorder, OCD, PTSD); Substance-related and Addictive disorders (drug, alcohol, gambling); Eating disorders (anorexia nervosa, bulimia nervosa); Depressive disorders, Bipolar disorders; Schizophrenia, Personality disorders.

(b) Child abnormal psychology: Attention Deficit Hyperactivity Disorder; Conduct disorder; Anxiety disorders, Depression.

Textbooks

Rieger, E. (Ed.) (2014) *Abnormal Psychology: Leading researcher perspectives*. Sydney: McGraw-Hill Education. (3rd Ed).

PSYC3020

Applied Psychology

Science

Credit points: 6 **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 and 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, leadership and aspects of positive psychology.

HPSC3023

Psychology and Psychiatry: History and 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:** (12 credit points of Intermediate HPSC units) OR (Credit or greater in an HPSC Intermediate unit) OR (12 Intermediate credit points in Psychology units) **Assumed knowledge:** HPSC2100 and HPSC2101 **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.

Agriculture and Environment

Postgraduate studies are available towards a Master of Agriculture and Environment, Graduate Diploma in Agriculture and Environment and Graduate Certificate in Agriculture and Environment.

Admission to the **Master of Agriculture and Environment** and the **Graduate Diploma in Agriculture and Environment** requires a bachelor's degree in a related discipline, or an equivalent qualification, with at least a credit average for admission to the master's degree.

Students who have completed relevant prior learning at an equivalent level may be given up to 24 credit points advanced standing.

Admission to the **Graduate Certificate in Agriculture and Environment** is available only through transfer from the Master of Agriculture and Environment or from the Graduate Diploma of Agriculture and Environment.

Many units are based on compulsory fieldwork carried out before the semester starts. This means that all coursework students should be available to participate in fieldwork excursions two weeks prior to the starting date of semester.

Students may transfer between courses and receive credit for any completed units, provided they have not taken out the award from which they are transferring.

The Graduate Diploma and Master of Agriculture and Environment testamur will specify the area of specialisation:

- Agricultural and Environmental Economics
- Agricultural and Environmental Technologies
- Forest and Atmosphere Interactions
- Horticultural Technologies

Graduate Certificate in Agriculture and Environment

Graduate Diploma in Agriculture and Environment

Master of Agriculture and Environment

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

Course resolutions

1 Course codes

Code	Course title
GCAGRENV-01	Graduate Certificate in Agriculture and Environment
GNAGRENV-01	Graduate Diploma in Agriculture and Environment
GCAGRENV-01	Master of Agriculture and Environment

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, as defined by the Coursework Rule.

3 Embedded courses in this sequence

- (1) The embedded courses in this sequence are:
 - (a) the Graduate Certificate in Agriculture and Environment
 - (b) the Graduate Diploma in Agriculture and Environment
 - (c) the Master of Agriculture and Environment
- (2) Providing candidates satisfy the admission requirements for each stage, a candidate may progress to the award of any of the courses in this sequence. Only the longest award completed will be conferred. Admission to the Graduate Certificate in Agriculture and Environment is available only via transfer from the Master of Agriculture and Environment or from the Graduate Diploma of Agriculture and Environment, and with the approval of the Dean.

4 Admission

- (1) Available places will be offered to qualified applicants in the order in which complete applications are received, according to the following admissions criteria. In exceptional circumstances the Dean may admit applicants without these qualifications who, in the opinion of the faculty, have qualifications and evidence of experience and achievement sufficient to successfully undertake the award.
- (2) Admission to candidature for the Graduate Certificate in Agriculture and Environment is available only via transfer from the Master of Agriculture and Environment and or from the Graduate Diploma of Agriculture and Environment with the approval of the Dean.
- (3) Admission to the Graduate Diploma in Agriculture and Environment requires:
 - (a) a bachelor's degree in Agriculture, Science or Economics or an equivalent qualification
- (4) Admission to the Master of Agriculture and Environment requires:
 - (a) a bachelor's degree with a credit average in Agriculture, Science or Economics, or an equivalent qualification; or
 - (b) completion of the requirements of an embedded graduate diploma in this discipline from the University of Sydney, or equivalent qualification.

5 Requirements for award

- (1) The units of study that may be taken for the courses are set out in Table A.
- (2) To qualify for the award of the Graduate Certificate in Agriculture and Environment a candidate must complete 24 credit points.
- (3) To qualify for the award of the Graduate Diploma in Agriculture a candidate must complete 48 credit points, including at least 12 credit points from units of study listed in the table for the selected specialisation.
- (4) To qualify for the award of the Master of Agriculture and Environment a candidate must complete 72 credit points, including:
 - (a) 24 credit points of core units of study; and
 - (b) 24 credit points of elective units of study, including at least 12 credit points from units of study listed in the table for the selected specialisation; and
 - (c) 24 credit points of research capstone units of study.
- (5) With permission, up to 12 credit points of the elective requirements may be taken from other courses outside the Faculty, including foundational units of study.

6 Specialisations

- (1) Completion of a specialisation is a requirement of the Graduate Diploma of Agriculture and Environment and the Master of Agriculture and Environment, and requires the accumulation of 12 credit points chosen from units of study



listed in the table for that specialisation. The specialisations available are:

- (a) Agricultural and Environmental Economics
 - (b) Agricultural and Environmental Technologies
 - (c) Forest and Atmosphere Interactions
 - (d) Horticultural Technologies
- (2) Candidates for the Master of Agriculture and Environment will complete a research project as part of their research capstone units of study. The research area of this research project is expected to correlate to the chosen specialisation. However, the number of research projects in each specialisation varies from year to year, and may be limited.
- (3) Not every specialisation is available every year.

7 Recognition of prior learning

Candidates offered admission to the Master of Agriculture and Environment 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 economics, soil science, environmental science, plant science, environmental chemistry, agricultural science or agronomy.

8 Course transfer

A candidate for the master or graduate diploma may elect to discontinue study and graduate with a shorter award from this embedded sequence, with the approval of the Dean, and provided the requirements of the shorter award have been met.

9 Transitional provisions

- (1) These resolutions apply to students who commenced their candidature after 1 January, 2015 and students who commenced their candidature prior to 1 January, 2015 who elect to proceed under these resolutions.
- (2) Candidates who commenced prior to 1 January, 2015 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2020. The Faculty may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

Master of Agriculture and Environment

Candidates for the Master of Agriculture and Environment complete a total of 72 credit points from Table A, including:

- 24 credit points of core units of study
- 24 credit points of elective units of study, including at least 12 credit points of specialisation elective units and
- 24 credit points of capstone units of study.

Students who have completed relevant prior learning at an equivalent level may be given up to 24 credit points advanced standing.

Unit of study Table A

<i>Unit of study</i>	<i>Credit points</i>	<i>A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition</i>	<i>Session</i>
Table A units of study			
Core units			
AFNR5511 Soil Processes, Assessment and Management	6		Semester 1
AGRO4003 Crop and Pasture Agronomy	6		Semester 1
AFNR5801 Climate Change: Process, History, Issues	6	A A basic understanding of climate change processes and issues.	Semester 2
ECOS3013 Environmental Economics	6	P AREC2003 or RSEC2031 or ECOS2001 or ECOS2901	Semester 2
Capstone units			
AFNR5905 Research Paper	6	P AFNR5901 and AFNR5904 C AFNR5906	Semester 1 Semester 2
AFNR5906 Research Communication	6	P AFNR5901 and AFNR5904 C AFNR5905	Semester 1 Semester 2
AFNR5901 Research Review	6	C AFNR5904 N AFNR5902 or AFNR5903 <i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2
AFNR5904 Research Proposal and Approach	6	C AFNR5901 <i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2
Specialisation electives			
Agricultural and Environmental Economics			
AREC3004 Economics of Water and Bio-Resources <i>This unit of study is not available in 2018</i>	6	P AREC2003 or RSEC2031 or ECOS2001 or ECOS2901	Semester 2
ECOS3006 International Trade	6	P ECOS2001 or ECOS2901	Semester 1
ECOS3005 Industrial Organisation	6	P ECOS2001 or ECOS2901 N ECOS2201	Semester 2
AREC3001 Production Modelling and Management	6	P AREC2001 or AGE2103 or ECOS2001 or ECOS2901	Semester 2
AREC3002 Agricultural Markets	6	P AREC2001 or AGE2103 or ECOS2001 or ECOS2901	Semester 2
AREC3005 Agricultural Finance and Risk	6	P AREC2001 or AGE2103 or AREC2002 or AGE2101 or ECOS2001 or ECOS2901	Semester 1
Agricultural and Environmental Technologies			
AGRO4004 Sustainable Farming Systems	6		Semester 1
ENVI5708 Introduction to Environmental Chemistry	6		Semester 1
AFNR5110 Crop Improvement	6	A Basic knowledge of plant genetics and breeding, similar to that covered by GENE4012 and GENE4013.	Semester 2
AFNR5502 Remote Sensing, GIS and Land Management	6	A ENVX3001 and SOIL3004.	Semester 2
AFNR5510 The Soil at Work	6		Semester 2



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
AFNR5512 Water Management and Variable Climate	6	A UG Maths or Physics or Hydrology.	Semester 2
Horticultural Technologies			
AFNR5210 Sustainable Horticultural Cropping	6		Semester 1
AFNR5701 Plants and the Environment <i>This unit of study is not available in 2018</i>	6		Semester 1
AFNR5110 Crop Improvement	6	A Basic knowledge of plant genetics and breeding, similar to that covered by GENE4012 and GENE4013.	Semester 2
HORT4005 Research and Practice in Horticulture	6	P HORT3005	Semester 2
Forest and Atmosphere Interactions			
AFNR5701 Plants and the Environment <i>This unit of study is not available in 2018</i>	6		Semester 1
ENY3002 Fire in Australian Ecosystems	6	P AGEN2005 or BIOL2023 or BIOL2923	Semester 1
AFNR5705 Australian Forest Systems	6		Semester 2
ENY3003 Forest Ecosystem Science	6	P AGEN2001 or BIOL2023 or BIOL2923 or GEOS2121 <i>Students require a basic understanding of plant biology. Understanding principles of plant taxonomy and ecology will also be an advantage.</i>	Semester 2
Other electives			
AFNR5107 Principles of Biochemical Analysis	6	N AGCH4007	Semester 1
AGEN5001 Agricultural and Environmental Extension	6		Semester 1
ECOS3002 Development Economics	6	P ECOS2001 or ECOS2901 or ECOS2002 or ECOS2902	Semester 2
ENVI5708 Introduction to Environmental Chemistry	6		Semester 1
GOVT6135 Global Environmental Politics	6		Semester 1
PHYS5031 Ecological Econ and Sustainable Analysis	6		Semester 1
PHYS5034 Life Cycle Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 2
AREC3003 Econ of Minerals and Energy Industries	6	P AREC2003 or RSEC2031 or ECOS2001 or ECOS2901	Semester 2
ECOS3002 Development Economics	6	P ECOS2001 or ECOS2901 or ECOS2002 or ECOS2902	Semester 2
ECOS3005 Industrial Organisation	6	P ECOS2001 or ECOS2901 N ECOS2201	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
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
ECON5001 Microeconomic Theory	6	N ECON5040	Intensive February Semester 1 Semester 2
PHYS5033 Environmental Footprints and IO Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 1 Semester 2
SUST5001 Introduction to Sustainability	6	<i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	Semester 1 Semester 2

Graduate Diploma in Agriculture and Environment

Candidates for the Graduate Diploma in Agriculture and Environment complete a total of 48 credit points from Table A, including:

- at least 12 credit points of specialisation elective units

Candidates do not normally complete a research project.

Unit of study Table A

<i>Unit of study</i>	<i>Credit points</i>	<i>A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition</i>	<i>Session</i>
Table A units of study			
Core units			
AFNR5511 Soil Processes, Assessment and Management	6		Semester 1
AGRO4003 Crop and Pasture Agronomy	6		Semester 1
AFNR5801 Climate Change: Process, History, Issues	6	A A basic understanding of climate change processes and issues.	Semester 2
ECOS3013 Environmental Economics	6	P AREC2003 or RSEC2031 or ECOS2001 or ECOS2901	Semester 2
Capstone units			
AFNR5905 Research Paper	6	P AFNR5901 and AFNR5904 C AFNR5906	Semester 1 Semester 2
AFNR5906 Research Communication	6	P AFNR5901 and AFNR5904 C AFNR5905	Semester 1 Semester 2
AFNR5901 Research Review	6	C AFNR5904 N AFNR5902 or AFNR5903 <i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2
AFNR5904 Research Proposal and Approach	6	C AFNR5901 <i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2
Specialisation electives			
Agricultural and Environmental Economics			
AREC3004 Economics of Water and Bio-Resources <i>This unit of study is not available in 2018</i>	6	P AREC2003 or RSEC2031 or ECOS2001 or ECOS2901	Semester 2
ECOS3006 International Trade	6	P ECOS2001 or ECOS2901	Semester 1
ECOS3005 Industrial Organisation	6	P ECOS2001 or ECOS2901 N ECOS2201	Semester 2
AREC3001 Production Modelling and Management	6	P AREC2001 or AGE2103 or ECOS2001 or ECOS2901	Semester 2
AREC3002 Agricultural Markets	6	P AREC2001 or AGE2103 or ECOS2001 or ECOS2901	Semester 2
AREC3005 Agricultural Finance and Risk	6	P AREC2001 or AGE2103 or AREC2002 or AGE2101 or ECOS2001 or ECOS2901	Semester 1
Agricultural and Environmental Technologies			
AGRO4004 Sustainable Farming Systems	6		Semester 1
ENVI5708 Introduction to Environmental Chemistry	6		Semester 1
AFNR5110 Crop Improvement	6	A Basic knowledge of plant genetics and breeding, similar to that covered by GENE4012 and GENE4013.	Semester 2
AFNR5502 Remote Sensing, GIS and Land Management	6	A ENVX3001 and SOIL3004.	Semester 2
AFNR5510 The Soil at Work	6		Semester 2
AFNR5512 Water Management and Variable Climate	6	A UG Maths or Physics or Hydrology.	Semester 2



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
Horticultural Technologies			
AFNR5210 Sustainable Horticultural Cropping	6		Semester 1
AFNR5701 Plants and the Environment <i>This unit of study is not available in 2018</i>	6		Semester 1
AFNR5110 Crop Improvement	6	A Basic knowledge of plant genetics and breeding, similar to that covered by GENE4012 and GENE4013.	Semester 2
HORT4005 Research and Practice in Horticulture	6	P HORT3005	Semester 2
Forest and Atmosphere Interactions			
AFNR5701 Plants and the Environment <i>This unit of study is not available in 2018</i>	6		Semester 1
ENSY3002 Fire in Australian Ecosystems	6	P AGEN2005 or BIOL2023 or BIOL2923	Semester 1
AFNR5705 Australian Forest Systems	6		Semester 2
ENSY3003 Forest Ecosystem Science	6	P AGEN2001 or BIOL2023 or BIOL2923 or GEOS2121 <i>Students require a basic understanding of plant biology. Understanding principles of plant taxonomy and ecology will also be an advantage.</i>	Semester 2
Other electives			
AFNR5107 Principles of Biochemical Analysis	6	N AGCH4007	Semester 1
AGEN5001 Agricultural and Environmental Extension	6		Semester 1
ECOS3002 Development Economics	6	P ECOS2001 or ECOS2901 or ECOS2002 or ECOS2902	Semester 2
ENVI5708 Introduction to Environmental Chemistry	6		Semester 1
GOVT6135 Global Environmental Politics	6		Semester 1
PHYS5031 Ecological Econ and Sustainable Analysis	6		Semester 1
PHYS5034 Life Cycle Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 2
AREC3003 Econ of Minerals and Energy Industries	6	P AREC2003 or RSEC2031 or ECOS2001 or ECOS2901	Semester 2
ECOS3002 Development Economics	6	P ECOS2001 or ECOS2901 or ECOS2002 or ECOS2902	Semester 2
ECOS3005 Industrial Organisation	6	P ECOS2001 or ECOS2901 N ECOS2201	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
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
ECON5001 Microeconomic Theory	6	N ECON5040	Intensive February Semester 1 Semester 2
PHYS5033 Environmental Footprints and IO Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 1 Semester 2
SUST5001 Introduction to Sustainability	6	<i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	Semester 1 Semester 2

Graduate Certificate in Agriculture and Environment

Candidates for the Graduate Certificate of Agriculture and Environment complete a total of:

- 24 credit points of core units of study.

Admission to the Graduate Certificate in Agriculture and Environment is only available through transfer from the Master of Agriculture and Environment or from the Graduate Diploma of Agriculture and Environment.

Unit of study Table A

<i>Unit of study</i>	<i>Credit points</i>	<i>A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition</i>	<i>Session</i>
Table A units of study			
Core units			
AFNR5511 Soil Processes, Assessment and Management	6		Semester 1
AGRO4003 Crop and Pasture Agronomy	6		Semester 1
AFNR5801 Climate Change: Process, History, Issues	6	A A basic understanding of climate change processes and issues.	Semester 2
ECOS3013 Environmental Economics	6	P AREC2003 or RSEC2031 or ECOS2001 or ECOS2901	Semester 2
Capstone units			
AFNR5905 Research Paper	6	P AFNR5901 and AFNR5904 C AFNR5906	Semester 1 Semester 2
AFNR5906 Research Communication	6	P AFNR5901 and AFNR5904 C AFNR5905	Semester 1 Semester 2
AFNR5901 Research Review	6	C AFNR5904 N AFNR5902 or AFNR5903 <i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2
AFNR5904 Research Proposal and Approach	6	C AFNR5901 <i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2
Specialisation electives			
Agricultural and Environmental Economics			
AREC3004 Economics of Water and Bio-Resources <i>This unit of study is not available in 2018</i>	6	P AREC2003 or RSEC2031 or ECOS2001 or ECOS2901	Semester 2
ECOS3006 International Trade	6	P ECOS2001 or ECOS2901	Semester 1
ECOS3005 Industrial Organisation	6	P ECOS2001 or ECOS2901 N ECOS2201	Semester 2
AREC3001 Production Modelling and Management	6	P AREC2001 or AGE2103 or ECOS2001 or ECOS2901	Semester 2
AREC3002 Agricultural Markets	6	P AREC2001 or AGE2103 or ECOS2001 or ECOS2901	Semester 2
AREC3005 Agricultural Finance and Risk	6	P AREC2001 or AGE2103 or AREC2002 or AGE2101 or ECOS2001 or ECOS2901	Semester 1
Agricultural and Environmental Technologies			
AGRO4004 Sustainable Farming Systems	6		Semester 1
ENVI5708 Introduction to Environmental Chemistry	6		Semester 1
AFNR5110 Crop Improvement	6	A Basic knowledge of plant genetics and breeding, similar to that covered by GENE4012 and GENE4013.	Semester 2
AFNR5502 Remote Sensing, GIS and Land Management	6	A ENVX3001 and SOIL3004.	Semester 2
AFNR5510 The Soil at Work	6		Semester 2



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
AFNR5512 Water Management and Variable Climate	6	A UG Maths or Physics or Hydrology.	Semester 2
Horticultural Technologies			
AFNR5210 Sustainable Horticultural Cropping	6		Semester 1
AFNR5701 Plants and the Environment <i>This unit of study is not available in 2018</i>	6		Semester 1
AFNR5110 Crop Improvement	6	A Basic knowledge of plant genetics and breeding, similar to that covered by GENE4012 and GENE4013.	Semester 2
HORT4005 Research and Practice in Horticulture	6	P HORT3005	Semester 2
Forest and Atmosphere Interactions			
AFNR5701 Plants and the Environment <i>This unit of study is not available in 2018</i>	6		Semester 1
ENY3002 Fire in Australian Ecosystems	6	P AGEN2005 or BIOL2023 or BIOL2923	Semester 1
AFNR5705 Australian Forest Systems	6		Semester 2
ENY3003 Forest Ecosystem Science	6	P AGEN2001 or BIOL2023 or BIOL2923 or GEOS2121 <i>Students require a basic understanding of plant biology. Understanding principles of plant taxonomy and ecology will also be an advantage.</i>	Semester 2
Other electives			
AFNR5107 Principles of Biochemical Analysis	6	N AGCH4007	Semester 1
AGEN5001 Agricultural and Environmental Extension	6		Semester 1
ECOS3002 Development Economics	6	P ECOS2001 or ECOS2901 or ECOS2002 or ECOS2902	Semester 2
ENVI5708 Introduction to Environmental Chemistry	6		Semester 1
GOVT6135 Global Environmental Politics	6		Semester 1
PHYS5031 Ecological Econ and Sustainable Analysis	6		Semester 1
PHYS5034 Life Cycle Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 2
AREC3003 Econ of Minerals and Energy Industries	6	P AREC2003 or RSEC2031 or ECOS2001 or ECOS2901	Semester 2
ECOS3002 Development Economics	6	P ECOS2001 or ECOS2901 or ECOS2002 or ECOS2902	Semester 2
ECOS3005 Industrial Organisation	6	P ECOS2001 or ECOS2901 N ECOS2201	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
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
ECON5001 Microeconomic Theory	6	N ECON5040	Intensive February Semester 1 Semester 2
PHYS5033 Environmental Footprints and IO Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 1 Semester 2
SUST5001 Introduction to Sustainability	6	<i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	Semester 1 Semester 2

Units of study descriptions – Table A

Table A units of study

Core units

AFNR5511

Soil Processes, Assessment and Management

Credit points: 6 **Teacher/Coordinator:** A/Prof Damien Field **Session:** Semester 1 **Classes:** One lecture, two tutorials per week, case study and oral presentations **Assessment:** Essay (30%), group discussions (20%), case study report (30%), group presentation (20%) **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

AGRO4003

Crop and Pasture Agronomy

Credit points: 6 **Teacher/Coordinator:** A/Prof Daniel Tan(Coordinator), A/Prof Brett Whelan, Dr Rosalind Deaker **Session:** Semester 1 **Classes:** Twelve 2-hour lectures in weeks 1-13; four 2-hour practicals in weeks 8, 11-13; field excursions: week preceding start of semester and 6 (subject to weather) **Assessment:** Two data analysis projects (2x50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit examines agronomy as the discipline that underpins agricultural production. As a case study, the cotton industry is examined in detail to understand the end-user and social demands on agricultural production, the technical issues that challenge the farmer and the diversity of other specialist information from relevant disciplines such as entomology, pathology and soil science that must be integrated into the farming system. The unit also covers precision agriculture, legume science, rangeland science and crop protection. This unit includes a one-week excursion to cotton growing areas in northern NSW and Qld, specialist intensive instruction provided by the Cotton RDC, and a series of workshops, tutorials that provides analysis and synthesis of the major farming systems in this industry.

Pasture production is also considered in the context of farming systems.

AFNR5801

Climate Change: Process, History, Issues

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Franks (Coordinator), Dr Dan Penny, Dr Malcolm Possell **Session:** Semester 2 **Classes:** 18 hours lectures/tutorials, 12 hours practicals/field classes, 9 hours field trip preparation **Assumed knowledge:** A basic understanding of climate change processes and issues. **Assessment:** 2-hour exam (40%), tutorials (20%), practical report from field exercise (manuscript format) (40%) **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 where students will be introduced to climate change research.

Textbooks

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

ECOS3013

Environmental Economics

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** AREC2003 or RSEC2031 or ECOS2001 or ECOS2901 **Assessment:** 1x1500wd Essay (25%), 1hr Mid-semester test (25%), 1x2hr Final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The natural environment is invariably affected by production and consumption in our modern economy. In particular, environmental outcomes are important in the presence of market failures (externalities and public goods). This unit focuses on developing a student's detailed understanding of the economic techniques used by policymakers to address environmental issues. These techniques include: Pigovian taxes and subsidies; regulation with asymmetric information; marketable permits; pricing contributions for public goods; optimal damages; and the allocation of property-rights and market failures.

Capstone units

AFNR5905

Research Paper

Credit points: 6 **Teacher/Coordinator:** A/Prof Damien Field **Session:** Semester 1, Semester 2 **Classes:** Two Lectures in semester and regular meetings with Supervisor **Prerequisites:** AFNR5901 and AFNR5904 **Corequisites:** AFNR5906 **Assessment:** Research paper (100%) **Mode of delivery:** Supervision

This unit of study builds on the major research project proposed in AFNR5904. Working with their academic advisor students will execute their research strategy that provides data and subsequent data analysis towards solving the research question. The results and analysis will be presented in a format suitable for submission as a research paper to a relevant journal. Students will build their research skills, develop a strong analytical capacity, demonstrate a sound grasp of the topic, and ability to interpret results in a broad framework. Students will demonstrate their ability to draw reliable conclusions and identify future areas of research. Students will continue to develop their skills in solving research problems and enhance their intellectual and personal autonomy by means of managing a research program. Students will improve their communication skills through presentation of the research paper.



AFNR5906**Research Communication**

Credit points: 6 **Teacher/Coordinator:** A/Prof Damien Field **Session:** Semester 1, Semester 2 **Classes:** One workshop per week plus regular meetings with Supervisor **Prerequisites:** AFNR5901 and AFNR5904 **Corequisites:** AFNR5905 **Assessment:** Popular article (20%), poster (40%), oral presentation (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides the students with the opportunity to present the research findings of their major research project using several communication media appropriate for different audiences, for example, external stakeholders and /or popular media. Using poster and oral presentations students will communicate their research to the academic community in a professional conference environment. Students will also be required to attend the Faculty's seminar program that is relevant to their research topic. Students will build on their skills to use several modes of communication to demonstrate their ability to produce high quality results, draw reliable conclusions and identify future areas of research.

AFNR5901**Research Review**

Credit points: 6 **Teacher/Coordinator:** A/Prof Damien Field **Session:** Semester 1, Semester 2 **Classes:** Two lectures in semester and regular meetings with Supervisor **Corequisites:** AFNR5904 **Prohibitions:** AFNR5902 or AFNR5903 **Assessment:** Research review (100%) **Mode of delivery:** Supervision

Note: Department permission required for enrolment.

This aims to develop a student's ability to review the literature with the view of developing a major research project in an area of specialization. The student will work with an academic advisor on a mutually agreed topic for research to be undertaken and the subsequent writing of a literature review. The literature review will advance the student's ability to identify existing knowledge, define research problems, demonstrate a sound grasp for presenting a research question, and begin to define a research strategy. Students will develop their research and inquiry skills through sourcing a wide range of literature and improve their written communication skills.

AFNR5904**Research Proposal and Approach**

Credit points: 6 **Teacher/Coordinator:** A/Prof Damien Field **Session:** Semester 1, Semester 2 **Classes:** One workshop per week and regular meetings with Supervisor **Corequisites:** AFNR5901 **Assessment:** Written research proposal (60%), oral presentation (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment.

This unit of study aims to develop a student's ability to write a detailed research proposal and develop a strategy combined with the appropriate methodology to execute their research. Working with their academic advisor students will prepare a proposal describing; the background and aims, its significance and innovation, the justification of the methodology, the national benefit, and considerations of the required budget and project timeline. This unit will enable students to develop their ability to define a research project to be managed within a suitable research framework. Students will develop their skills in solving research problems and enhance their intellectual and personal autonomy through managing a research program.

Specialisation electives**Agricultural and Environmental Economics****AREC3004****Economics of Water and Bio-Resources**

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** AREC2003 or RSEC2031 or ECOS2001 or ECOS2901 **Assessment:** 1x50min Mid-semester Test (35%), 1x2hr Final Exam (50%), 3x500wd Tutorial Reports (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit develops knowledge and skills in natural resource economics built on previously gained economics training. The economics of dynamic natural systems is studied through application of advanced

modelling approaches. Particular emphasis is given to the economic mechanisms for managing water and biological resources including property rights, water allocation and water markets. Key policy instruments (taxes, quotas, standards) are analysed. Institutional and policy aspects will also be considered via analysis of water policy reform in Australia and elsewhere.

ECOS3006**International Trade**

Credit points: 6 **Session:** Semester 1 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** ECOS2001 or ECOS2901 **Assessment:** problem sets (5%), Mid-semester test (35%) and 2hr Final exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study provides a systematic analysis of the theory of international trade and trade policy. Initially differences between countries are emphasised as the source of trade and the gains from trade. Models that are examined include the Classical-Ricardian model, the Heckscher-Ohlin model and the Specific-Factors model. Next economics of scale and imperfect competition are introduced as sources of trade and gains from trade. The unit concludes with an examination of empirical studies aimed at testing trade theories. The analysis of trade policy begins with a discussion of the instruments of trade policy, in particular, tariffs and quotas and their effect on welfare. This discussion is then extended to the case of imperfect competition and strategic trade policy.

ECOS3005**Industrial Organisation**

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** ECOS2001 or ECOS2901 **Prohibitions:** ECOS2201 **Assessment:** Mid-semester test (35%), problem sets (5%) and 2hr Final exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study examines the nature of inter-firm rivalry in industries with market power. It explores the various ways in which firms can increase their market power by: extracting more surplus from consumers, by colluding with rivals or by excluding entrants. The unit also analyses the international competitiveness of industries in the context of industry assistance and the prevalence of foreign multinationals. Competition policy is also discussed.

AREC3001**Production Modelling and Management**

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** AREC2001 or AGE2103 or ECOS2001 or ECOS2901 **Assessment:** 1x2hr Final Exam (60%), 1x50min Mid-semester Test (15%), 1x1500wd Assignment (25%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on the principles of biological production economics and introduces optimisation methods to solve decision making problems encountered by agribusiness and natural resource firms and managers in public agencies. The principle focus is on the application of linear programming techniques, and students learn to consider solving decision making problems where the outcomes are not known with certainty, and where the timing of decisions is of essence.

AREC3002**Agricultural Markets**

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** AREC2001 or AGE2103 or ECOS2001 or ECOS2901 **Assessment:** 1000wd equivalent problem sets (30%), 1x1500wd essay (30%), 1x2hr final exam (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is designed to provide an understanding of the underlying forces driving agricultural markets. It addresses price analysis and efficiency, including aspects of form, time and space in agricultural marketing; information and contracts; changing consumer concerns (food safety, ethical production); futures market and other risk sharing devices. Building on the application of microeconomic theory to both production and consumption in agricultural markets, its content is analytical. The unit also investigates some of the forces

which prevent the efficient operation of world agricultural markets, including impediments to trade, imperfect markets for inputs and outputs and market power along the agricultural supply chain.

AREC3005

Agricultural Finance and Risk

Credit points: 6 **Session:** Semester 1 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** AREC2001 or AGE2103 or AREC2002 or AGE2101 or ECOS2001 or ECOS2901 **Assessment:** 1x2hr Final Exam (70%), 2x1500wd Assignments (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Agricultural production is typically risky, adding complexity to decision analysis and increasing need of risk consideration in agricultural policy design. This unit explores this theme, and has two related components: risk and risk management in agriculture, and issues of agricultural producer finance. These two components cover a broad range of topics that incorporate production risk and other sources of risk in agriculture.

Agricultural and Environmental Technologies

AGRO4004

Sustainable Farming Systems

Credit points: 6 **Teacher/Coordinator:** A/Prof Daniel Tan (Coordinator), Prof David Guest **Session:** Semester 1 **Classes:** Negotiated practicals and workshops (63 hours) **Assessment:** Final exam (50%), 3 assignments (3x10%), data analysis project (20%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit is designed to provide students with training in the professional skills required to practice agronomy. The unit principally builds on theoretical and applied knowledge gained in third year agronomy (AGRO3004). In this unit students will integrate their knowledge of plant physiology, soil science, experimental design, and biometry to address applied problems in agronomy, namely the issue of sustainability. Students will develop their ability to establish conclusions towards making recommendations for long term sustainability of crop and pasture systems. By implementing and managing a major field and/or glasshouse experiment(s) students will develop their research and inquiry skills. Team work is strongly encouraged in this unit and the integration and reporting of research findings will facilitate critical thinking and development of written communication skills. After completing this unit, students should be able to confidently design and manage a glasshouse/field experiment, and interpret and communicate their findings, by integrating knowledge from across disciplinary boundaries.

ENVI5708

Introduction to Environmental Chemistry

Credit points: 6 **Teacher/Coordinator:** Dr Feike Dijkstra (Coordinator); A/Prof. Thomas Bishop; Dr Floris van Ogtrop. **Session:** Semester 1 **Classes:** One 2-hour lecture and one practical per week; one field trip (weekend) **Assessment:** Writing assignment (35%), practical report (40%), presentation and peer review (15%), computer lab (10%) **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.

AFNR5110

Crop Improvement

Credit points: 6 **Teacher/Coordinator:** Prof Richard Trethowan, Prof Peter Sharp **Session:** Semester 2 **Classes:** The equivalent of three lectures and 3 hours practical work per week **Assumed knowledge:** Basic knowledge of plant genetics and breeding, similar to that covered by GENE4012 and GENE4013. **Assessment:** One 2-hour exam (50%), essay/assignment (20%), practical

reports (20%), presentation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Lectures, practical work and field trip(s) covering advanced aspects of the theory, philosophy and practice of plant breeding. Included are extended discussions of screening techniques (in the field, glasshouse and laboratory), conservation and exploitation of diversity, disease resistance, tissue culture, plant cytogenetics of relevance to pre-breeding and breeding. Also considered are the role of biotechnology processes and products in plant breeding; genetic engineering and the use of molecular marker technologies. This course will use examples from the full range of crops; broad-acre cereals and legumes, pastures, turf and horticultural crops, both perennial and annual. The main base of the course may vary between the ATP and Camden campuses. Field trips (mainly to the IA Watson Grains Research Centre, Narrabri) will be used especially to examine trial procedures and field-based operations, and to interact with commercial plant breeding.

AFNR5502

Remote Sensing, GIS and Land Management

Credit points: 6 **Teacher/Coordinator:** A/Prof Inakwu Odeh **Session:** Semester 2 **Classes:** One 2-hour lecture per week in weeks 1-7, project work weeks 8-13, one 3-hour practical weeks 1-7 **Assumed knowledge:** ENVX3001 and SOIL3004. **Assessment:** One 30 min presentation (10%), laboratory work reports (40%), group discussion online (10%), 1x3500wd project report (40%) **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

AFNR5510

The Soil at Work

Credit points: 6 **Teacher/Coordinator:** Prof Budiman Minasny (Coordinator), Prof Balwant Singh, Prof Alex McBratney, A/Prof. Stephen Cattle, A/Prof Damien Field **Session:** Semester 2 **Classes:** Problem-based unit: each student completes one problem as part of a team, involving multiple team meetings **Assessment:** Introduction to the problem group presentation (10%), status of the problem group report (10%), how to tackle the problem seminar (20%) - team seminars; before fieldwork; analyses done, results seminar (20%) - team seminars; final group report (25%), activities diary for group (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This is a problem-based applied soil science unit addressing the physical, chemical and biological components of soil function. It is designed to allow students to identify soil-related problems in the real-world and by working in a group and with an end-user, to suggest short and long-term solutions to problems such as fertility, resilience, carbon management, structural decline, acidification, salinisation and contamination. Students will gain a focused knowledge of the key soil drivers to environmental problems and will have some understanding on the constraints surrounding potential solutions. By designing and administering strategies to tackle real-world soil issues, students will develop their research and inquiry skills and enhance their intellectual autonomy. By producing reports and seminars that enables understanding by an end-user, students will improve the breadth of their communication skills. This is a core unit for students majoring or specialising in soil science and an elective unit for those wishing to gain an understanding of environmental problem-solving. It utilises and reinforces soil-science knowledge gained in SOIL2003 and SOIL2004, as well as generic problem-solving skills gained during the degree program.

Textbooks

Reference book: I.W.Heathcote 1997. Environmental Problem Solving: A Case Study Approach. McGraw-Hill, New York, NY, USA.

AFNR5512

Water Management and Variable Climate

Credit points: 6 **Teacher/Coordinator:** A/Prof Willem Vervoort (Coordinator), Dr Floris van Ogtrop, A/Prof Daniel Tan **Session:** Semester 2 **Classes:** 3 hour workshop per week, practical work, project work during workshops **Assumed knowledge:** UG Maths or Physics or Hydrology. **Assessment:** Assignments (50%), 2-hour exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on knowledge gained in undergraduate science units to develop an understanding of how climate variability affects water resources. Particular focus will be on the effect of climate variability and drought and how this affects plant production and water storage. At the completion of this unit student would be able to: Quantify drought and understand the different dimensions of drought; understand how climate variability impacts plant production and what stages; understand the memory of drought and the impact on resilience; understand how climate change can impact climate variability in the future. Open source software packages such as R and SWAT will be used for most analysis.

Horticultural Technologies

AFNR5210

Sustainable Horticultural Cropping

Credit points: 6 **Teacher/Coordinator:** A/Prof Brian Jones **Session:** Semester 1 **Classes:** 1-hour lecture per week, 2-hour tutorial/excursions for case study, and on-line discussions **Assessment:** On-line discussions (10%), group presentation (10%), project report (30%), 2-hour exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on knowledge gained in undergraduate plant and crop science units to develop an understanding of horticultural cropping systems management. Particular focus will be on intensive production systems and will provide them with a broad overview of current issues affecting the horticultural industries. Emphasis is on minimising the environmental impact of horticultural enterprises and introduces students to current themes and thinking in sustainable practices in horticultural science, such as efficient water management, sustainable use of fertilizers, salinity, integrated pest management and organic practices. Students also select an industry based case study analysis of a horticultural production system, designed to provide them with skills in data analysis and interpretation, problem identification and problem solving.

AFNR5701

Plants and the Environment

Credit points: 6 **Teacher/Coordinator:** A/Prof Margaret Barbour **Session:** Semester 1 **Classes:** 24 hrs lectures and in-class discussion, 36 hours practical **Assessment:** One 2hr exam (40%), in-class discussion (10%), research manuscript (25%), either research proposal or research manuscript (25%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The focus of this unit is the response of plants to the environment, drawing examples from both managed and natural ecosystems. Students will develop advanced-level understanding of plant-environment interaction at scales from leaves to whole ecosystems through presentation and discussion of current research papers. Practical sessions will provide students with hands-on experience of state-of-the-art measurement techniques. Understanding of basic biophysical processes will be applied to inform discussion about the effects of climate change on terrestrial ecosystem services, including crop productivity.

Textbooks

Copies of research papers for each lecture/discussion will be provided, as will review papers where appropriate.

AFNR5110

Crop Improvement

Credit points: 6 **Teacher/Coordinator:** Prof Richard Trethowan, Prof Peter Sharp **Session:** Semester 2 **Classes:** The equivalent of three lectures and 3 hours practical work per week **Assumed knowledge:** Basic knowledge of plant genetics and breeding, similar to that covered by GENE4012 and GENE4013. **Assessment:** One 2-hour exam (50%), essay/assignment (20%), practical reports (20%), presentation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Lectures, practical work and field trip(s) covering advanced aspects of the theory, philosophy and practice of plant breeding. Included are extended discussions of screening techniques (in the field, glasshouse and laboratory), conservation and exploitation of diversity, disease resistance, tissue culture, plant cytogenetics of relevance to pre-breeding and breeding. Also considered are the role of biotechnology processes and products in plant breeding; genetic engineering and the use of molecular marker technologies. This course will use examples from the full range of crops; broad-acre cereals and legumes, pastures, turf and horticultural crops, both perennial and annual. The main base of the course may vary between the ATP and Camden campuses. Field trips (mainly to the IA Watson Grains Research Centre, Narrabri) will be used especially to examine trial procedures and field-based operations, and to interact with commercial plant breeding.

HORT4005

Research and Practice in Horticulture

Credit points: 6 **Teacher/Coordinator:** A/Prof Brian Jones (Coordinator), Dr Kim-Yen Phan-Thein **Session:** Semester 2 **Classes:** One 2-hour tutorial per week; one 1-week excursion **Prerequisites:** HORT3005 **Assessment:** Industry reports (2x20%), field trip industry report (10%), two practical reports (2x10%), end of semester exam (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This Unit of Study provides students with a scientific grounding in the sustainable production of safe and nutritious fruit, vegetables and mushrooms. The unit encompasses the fundamentals of production system options, resource management and marketing practices. Case studies will be used to exemplify important developments in horticultural production, supply and marketing chains. Students will examine multiple real world examples of horticulture to develop skills in systematic problem-solving in production and marketing. Combining relevant industry knowledge, critical analytical skills, and a systems perspective will enable students to make valid, scientifically-informed decisions in horticulture and beyond. The unit is comprised of: lectures/workshops, practicals in production and post-harvest horticulture, and site visits to producers, research sites and industry bodies. The program includes a week-long field trip to major horticultural production regions to view operations and Q and A with owner/operators.

Forest and Atmosphere Interactions

AFNR5701

Plants and the Environment

Credit points: 6 **Teacher/Coordinator:** A/Prof Margaret Barbour **Session:** Semester 1 **Classes:** 24 hrs lectures and in-class discussion, 36 hours practical **Assessment:** One 2hr exam (40%), in-class discussion (10%), research manuscript (25%), either research proposal or research manuscript (25%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The focus of this unit is the response of plants to the environment, drawing examples from both managed and natural ecosystems. Students will develop advanced-level understanding of plant-environment interaction at scales from leaves to whole ecosystems through presentation and discussion of current research papers. Practical sessions will provide students with hands-on experience of state-of-the-art measurement techniques. Understanding of basic biophysical processes will be applied to inform discussion about the effects of climate change on terrestrial ecosystem services, including crop productivity.

Textbooks

Copies of research papers for each lecture/discussion will be provided, as will review papers where appropriate.

ENSY3002

Fire in Australian Ecosystems

Credit points: 6 **Teacher/Coordinator:** A/Prof Tina Bell **Session:** Semester 1 **Classes:** Two 1-hour lectures, one 3-hour practical per week **Prerequisites:** AGEN2005 or BIOL2023 or BIOL2923 **Assessment:** One 2-hour exam (40%), one 2000-2500wd essay (20%), three practical reports (40%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is intended to describe fundamental scientific knowledge relating to fire behaviour and ecological and social effects of bushfire in Australian ecosystems. The student will gain a greater understanding of how fire has shaped the landscape and the people. It is an elective unit that builds on basic knowledge gained in junior-level biology and chemistry and intermediate-level plant biology and soil science subjects. Firstly, fire behaviour including the elements of weather, fuel and landscape will be explained and examined in relation to predictive modelling and climate change. Secondly, the fire response of flora, fauna, fungi and microorganisms will be described at a range of different scales and analysed against a background of current land management practices in Australia. Social aspects of bushfire will be discussed and analysed according to contemporary policies and practices. At the end of this unit, students will be able to apply fire behaviour and ecological principles for planning purposes and to integrate scientific information from a range of sources to assess fire impacts on the environment and human communities. The students will gain research, literacy and communication skills through field-based data collection, essay and report writing and oral presentations.

Textbooks

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

AFNR5705

Australian Forest Systems

Credit points: 6 **Teacher/Coordinator:** Dr Andrew Merchant **Session:** Semester 2 **Classes:** 28.5 hours lectures/tutorials, 30 hours of fieldwork **Assessment:** One 2-hour exam (20%), two reports (2x25%), two oral presentations (2x10%) and one field report (10%) **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

ENSY3003

Forest Ecosystem Science

Credit points: 6 **Teacher/Coordinator:** Dr Andrew Merchant **Session:** Semester 2 **Classes:** Two lectures per week, one tutorial per fortnight, one field excursion (two days) in week 6 of semester **Prerequisites:** AGEN2001 or BIOL2023 or BIOL2923 or GEOS2121 **Assessment:** One 2-hour exam (50%), one 2000wd essay (40%), one oral presentation (10%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Students require a basic understanding of plant biology. Understanding principles of plant taxonomy and ecology will also be an advantage.

This unit of study enables students to understand the management and conservation of trees and forests in a changing climate. It is an elective unit for students enrolled in advanced topics for the Bachelor of Environmental Systems course program. Beginning with an introduction to the unique chemical, physical and ecological characteristics of trees, this unit then focuses on policy development and management prescriptions driven by fundamental processes of ecosystem function. At the end of this unit students will be able to articulate critical evaluations of scientific and policy based documents in relation to research and management of trees in the Australian landscape. Students will be given the opportunity to gain firsthand knowledge of Australian forest management by participating in a two day field excursion (in week 6 of semester) combined with industry, government, research and conservation groups. 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 an intricate knowledge of tree function and be able to relate this understanding to the management of trees and forests in a changing environment. Students will develop skills to enable effective communication with industry, conservation and governmental groups.

Other electives

AFNR5107

Principles of Biochemical Analysis

Credit points: 6 **Teacher/Coordinator:** Dr Claudia Keitel (Coordinator), Dr Rosalind Deaker, Dr Thomas Roberts, A/Prof Michael Kertesz, Dr Feike Dijkstra, Dr Neil Wilson **Session:** Semester 1 **Classes:** 18 hours of lectures and 36 hours of laboratory during the semester **Prohibitions:** AGCH4007 **Assessment:** Assessment includes attendance and participation in lectures and practical classes. Each module will comprise 25% of the final assessment mark and satisfactory progress in all modules is required for the successful completion of this unit. (4x25%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study is designed to expose students to the principles and practice of a diverse range of analytical methods used in life and environmental science. The unit of study will be presented in four modules including: materials and sampling techniques; separation techniques (chromatographic and electrophoretic); instrumentation and measurement techniques (spectral analyses); and microbiological and molecular biology techniques. Each module will be a combination of lectures and practical classes that will analyse common biological, agricultural or biochemical samples to illustrate the practical aspects of the theory. Students will also gain skills in data analysis relevant to the respective techniques.

At the completion of these modules, students will be familiar with the operation of a number of laboratory instruments, the theory that underpins their operation, be confident in the analysis of data, and be able to choose the most appropriate sampling strategy and analytical technique to perform high quality research.

AGEN5001

Agricultural and Environmental Extension

Credit points: 6 **Teacher/Coordinator:** Dr Peter Ampt **Session:** Semester 1 **Classes:** One 2-hour lecture per week, one 2-hour tutorial per week, one field trip (three days) **Assessment:** 1500wd essay (20%), tutorial/workshop participation (30%), 3000wd problem based learning project (30%), field trip report (20%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will develop knowledge, skills and understanding for engaging effectively with the people whose decisions shape

innovation in agricultural production and environmental management. The role of extension in agricultural and environmental management is a crucial aspect of sustainability, as extension agents provide the main conduit between scientists, economists and policymakers and the people who live and work in the landscape.

It develops key graduate competencies in communication and soft systems for careers including consulting, agribusiness, agricultural extension, environmental management, policy, participatory research and natural resource management. It covers integrative aspects of extension theory and practice, social learning, sustainable agriculture, knowledge domains, participatory action research, human geography, soft systems thinking and adaptive natural resource management. It is relevant to students pursuing agricultural and environmental streams and majors at both undergraduate and postgraduate level.

Students will learn to: describe and discuss the theoretical and practical underpinnings of extension; describe and analyse factors influencing the behaviours, attitudes and beliefs of natural resource managers; discuss and design effective extension programs/projects; conduct, analyse and evaluate simple surveys, focus groups and semi-structured interviews; critically evaluate the integration of conservation and production in the landscape; facilitate sustainable change.

Textbooks

Recommended reading, Jennings, J., Packham R. and Woodside, D.(eds) (2001) *Shaping Change* APEN; Hay, I (2012) *Communicating in Geography and the Environmental Sciences*, Oxford

ECOS3002

Development Economics

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** ECOS2001 or ECOS2901 or ECOS2002 or ECOS2902 **Assessment:** 1x1500wd written assessment (30%), 1x1hr mid-semester exam (20%), 1x2hr final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit examines the economic transformation of less-developed countries from microeconomic and macroeconomic perspectives. It covers applied topics such as education, health, nutrition, demographics, labour, agriculture and the private sector, focusing on how policies attempt to overcome market and institutional failures that are particularly acute in the developing world. Focus is given to applying theoretical and empirical tools necessary to conceptualise, analyse and interpret various issues in economic development. Applied examples from developing countries are used throughout the unit.

ENVI5708

Introduction to Environmental Chemistry

Credit points: 6 **Teacher/Coordinator:** Dr Feike Dijkstra (Coordinator); A/Prof. Thomas Bishop; Dr Floris van Ogtrop. **Session:** Semester 1 **Classes:** One 2-hour lecture and one practical per week; one field trip (weekend) **Assessment:** Writing assignment (35%), practical report (40%), presentation and peer review (15%), computer lab (10%) **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.

GOVT6135

Global Environmental Politics

Credit points: 6 **Session:** Semester 1 **Classes:** 1x2hr seminar/week **Assessment:** 1x2000wd Essay (30%), 1x4000wd Essay (50%), Seminar participation (20%) **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.

PHYS5031

Ecological Econ and Sustainable Analysis

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik **Session:** Semester 1 **Classes:** 1.5-hour lecture interspersed with hands-on exercises per week, and 1 hour seminar per week. **Assessment:** Essay, presentation and comprehensive diary/notes from lectures (100%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces contemporary topics from Ecological Economics and Sustainability Analysis, such as metrics for measuring sustainability; planetary boundaries and other natural limits; comparisons between ecological and environmental economics; valuing the environment; intergenerational discounting; global inequality with a focus on the climate change debate; and links between theories of well-being, human behaviour, consumerism and environmental impact. This unit includes guest lecturers from industry and research and an excursion. Each lecture includes hands-on exercises for practical skill-building. The unit sets the scene for the more detailed and specific units PHYS5032, PHYS5033, and PHYS5034.

PHYS5034

Life Cycle Analysis

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik **Session:** Semester 2 **Classes:** 2.5-hour lecture interspersed with hands-on exercises per week **Assessment:** Essay, presentation and comprehensive diary/notes from lectures (100%). **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study covers philosophy, techniques, applications and standards of Life-Cycle Assessment (LCA). It introduces methods from engineering (Process Analysis) and economics (Input-Output Analysis), and discusses current popular LCA tools. The unit places importance on practical relevance by including real-world cases studies and business applications as well as global standards such as the GHG Protocol for accounting for scopes -1, -2 and -3 emissions and ISO standards. The unit of study will culminate with practical exercises using current software tools to provide students with hands-on experience of preparing a comprehensive Life-Cycle Assessment of an application of their choice. Students will also benefit from also enrolling in PHYS5033 for a sound understanding of input-output analysis as the basis of hybrid LCA methods.

AREC3003

Econ of Minerals and Energy Industries

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** AREC2003 or RSEC2031 or ECOS2001 or ECOS2901 **Assessment:** 1x50min Mid-semester test (35%), 1x2hr Final Exam (50%), 3x500wd Tutorial Reports (15%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

The unit builds on previously acquired economics training and develops advanced understanding of the economics of minerals exploration, extraction and marketing and the economics of energy generation, distribution and use. The implications of mineral extraction and energy generation activities for natural resources and the environment are explored. The unit will foster in-depth knowledge of the markets for minerals and energy, their industry structure and business environment, including the role of markets for derivatives on minerals and energy commodities.

ECOS3002**Development Economics**

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** ECOS2001 or ECOS2901 or ECOS2002 or ECOS2902 **Assessment:** 1x1500wd written assessment (30%), 1x1hr mid-semester exam (20%), 1x2hr final exam (50%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit examines the economic transformation of less-developed countries from microeconomic and macroeconomic perspectives. It covers applied topics such as education, health, nutrition, demographics, labour, agriculture and the private sector, focusing on how policies attempt to overcome market and institutional failures that are particularly acute in the developing world. Focus is given to applying theoretical and empirical tools necessary to conceptualise, analyse and interpret various issues in economic development. Applied examples from developing countries are used throughout the unit.

ECOS3005**Industrial Organisation**

Credit points: 6 **Session:** Semester 2 **Classes:** 1x2hr lecture/week, 1x1hr tutorial/week **Prerequisites:** ECOS2001 or ECOS2901 **Prohibitions:** ECOS2201 **Assessment:** Mid-semester test (35%), problem sets (5%) and 2hr Final exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study examines the nature of inter-firm rivalry in industries with market power. It explores the various ways in which firms can increase their market power by: extracting more surplus from consumers, by colluding with rivals or by excluding entrants. The unit also analyses the international competitiveness of industries in the context of industry assistance and the prevalence of foreign multinationals. Competition policy is also discussed.

ENVI5809**Environmental Simulation Modelling**

Credit points: 6 **Teacher/Coordinator:** Dr Tristan Salles **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%) **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.

GEOG5004**Environmental Mapping and Monitoring**

Credit points: 6 **Teacher/Coordinator:** Dr Bree Morgan **Session:** Semester 2 **Classes:** 3 hours of lectures and two 6 hour practicals per semester. **Assumed knowledge:** This unit assumes a sound understanding of scientific principles, HSC level mathematics and understanding of basic statistics. **Assessment:** Assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit introduces methods for mapping environmental signatures in coastal and marine systems, using both biogeochemical analysis and GIS technologies. Students will learn, theoretically and practically, how environmental data is collected using a range of different methodologies (field and computer based), and application of this data to understanding landscape processes and quantifying environmental change. Students will acquire skills in applying environmental mapping techniques to interpreting key Earth surface processes and understanding the substantial impacts that humans can have on these, in terms of both contamination and remediation.

ECON5001**Microeconomic Theory**

Credit points: 6 **Session:** Intensive February, Semester 1, Semester 2 **Classes:** 1x3hr lecture/week, 1x1hr non-compulsory online tutorial/week **Prohibitions:** ECON5040 **Assessment:** Online quizzes equivalent to 1000wd (10%), 1x1.5hr Mid-semester test (35%), 1x2hr Final exam (55%), **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit presumes no prior exposure to economics and aims, by the end of the unit, to bring a proficiency equivalent to that of students with an intermediate level microeconomics unit in an Honours degree program. Many economic principles developed in this unit are routinely used in several other units in the program. Microeconomics studies how economic agents make choices in a variety of environments. The unit covers theory and applications of the principles of consumer choice, of firm behaviour, and of strategic interaction among economic agents. Equipped with these theories of decision making, students can address a range of interesting and important questions. Examples are: What market strategy should a firm adopt with its competitors? How might one create a market to deal with externalities such as pollution? What are the implications of different kinds of taxes? What compensation scheme will provide the right incentives to work?

PHYS5033**Environmental Footprints and IO Analysis**

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik and Prof Manfred Lenzen **Session:** Semester 1, Semester 2 **Classes:** 2-hour lecture interspersed with hands-on exercises per week **Assessment:** Comprehensive diary/notes from lectures, including a quantitative example (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study will provide students with both the theoretical understanding and the practical skills needed to carry out their own environmental footprint and impact analyses. This unit uses state of the art economic input-output theory and input-output analysis, and focuses on contemporary environmental applications such as carbon footprints and life-cycle assessment. The unit first explores national and global economic and environmental accounting systems and their relationships to organisational accounting. Second, it will present cutting-edge techniques enabling the global analysis of environmental impacts of international trade. Third, it offers hands-on instruction to master the basic input-output calculus conceived by Nobel Prize Laureate Wassily Leontief, and provide a step-by-step recipe for how to undertake boundary-free environmental footprinting by integrating economic and environmental accounts, and by applying Leontief's calculus to data published by statistical offices. Students will walk away from this unit equipped with all skills needed to calculate footprints, and prepare sustainability reports for any organisation, city, region, or nation, using organisational data, economic input-output tables and environmental accounts. Students will also benefit from also enrolling in PHYS5034 for a sound understanding of the role of input-output analysis within the field of Life-Cycle Assessment.

SUST5001**Introduction to Sustainability**

Credit points: 6 **Teacher/Coordinator:** Professor Philip McManus **Session:** Semester 1, Semester 2 **Classes:** One 2 to 2.5 hour interactive lecture per week with up to four hours per week spent on a combination of additional (e.g. on-line) learning tasks, small group sessions and consultation with lecturers. **Assessment:** Essays, oral presentations, short written assignments (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.

This unit of study will introduce students to the concepts and multidisciplinary nature of sustainability, starting with the physical basis of climate change and its impact on the environment and human development. This will be followed by several case studies covering Energy, Health, Development and Environment. The case studies will be presented by industry professionals and will illustrate sustainability issues currently before Australia- their origins, impacts and industry responses. The unit of study will provide students with a holistic systems lens through which to view their learning throughout the Masters program. This will underpin understanding of the integrated nature of sustainability and facilitate the challenging of silo-based assumptions- their own and those of others. The intention is to ground understanding of complex systems in the real world through the use of case studies that will demonstrate organisational change and problem solving in a world with competing values and conflicting views of what it means to live sustainably. Students completing the unit of

study will have a "sustainability tool kit" to apply to sustainability issues in their professional and community activities.

Coaching Psychology

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. The recommended mode is part-time.

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 of 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 Philosophy 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.

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

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 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

Course resolutions

1 Course codes

Code	Course and stream title
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.

Coaching Psychology

Sample Structure

The School of Psychology suggests the following unit of study enrolment sequences to maximise the learning experience. These suggested sequences allow for the fastest pathways to graduation relative to the time of student enrolment.

Sample Enrolment Sequence: Part-Time - Semester 1 Commencement

	Sem	Unit of study 1 & credit points	Unit of study 2 & credit points	Total
Year 1	1	PSYC4721 6	PSYC4722 6	12
	2	PSYC4724 6	PSYC4723 6	12
Year 2	1	PSYC4731 6	PSYC4730 6	12
	2	PSYC4727 6	PSYC4729 6	12
Total credit points:				48

Sample Enrolment Sequence: Full-Time - Semester 1 Commencement

	Sem	Unit of study 1 & credit points	Unit of study 2 & credit points	Unit of study 3 & credit points	Unit of study 4 & credit points	Total
Year 1	1	PSYC4721 6	PSYC4722 6	PSYC4731 6	PSYC4730 6	24
	2	PSYC4724 6	PSYC4727 6	PSYC4729 6	PSYC4723 6	24
Total credit points:						48

Please note for students completing through the research stream, units PSYC5016 and PSYC5017 are taken in the place of one elective unit in each of the final two semesters.



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 and Techniques of Coaching Psych	6		Semester 1
PSYC4722 Fundamentals of Coaching Practice	6	C PSYC4721	Semester 1
PSYC4724 Coaching Practice	6	P PSYC4721 and PSYC4722	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	P PSYC4721 and PSYC4722	Semester 2
PSYC4727 Positive Organisational Coaching	6	P PSYC4721, PSYC4722	Intensive July
PSYC4729 Groups, Teams and Systems	6	P PSYC4721 and PSYC4722 C PSYC4724	Semester 2
PSYC4730 Applied Positive Psychology	6		Semester 1
PSYC4731 Psychology of Peak Performance	6		Semester 1
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 (PSYC4721, PSYC4722, PSYC4723, PSYC4724, PSYC4727, PSYC4729, PSYC4730, PSYC4731) <i>Note: Department permission required for enrolment 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 (PSYC4721, PSYC4722, PSYC4723, PSYC4724, PSYC4727, PSYC4729, PSYC4730, PSYC4731) C PSYC5016 <i>Note: Department permission required for enrolment 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

PSYC4721

Theories and Techniques of Coaching Psychology

Credit points: 6 **Session:** Semester 1 **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

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

Credit points: 6 **Session:** Semester 1 **Classes:** Five day-long seminars (Block Teaching). **Corequisites:** PSYC4721 **Assessment:** In-semester assessment(s) (80%), Exam (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

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.

PSYC4724

Coaching Practice

Credit points: 6 **Session:** 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

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. Structured reflections, video taped coaching sessions and case presentations will form part of the unit. A lecture series on advanced topics in coaching practice, including psychodynamics, personality, supervision and case conceptualisation form part of this unit of study.

PSYC4723

Socio-Cognitive Issues in Coaching Psychology

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

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, emotional intelligence, developmental coaching, mindfulness, learned optimism, mindset theory, systems theory, attentional processes, rehearsal and imagery. The unit seeks to critically evaluate contemporary understandings and theories that have application to coaching. Issues associated with reliability and validity in measuring psychological variables 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 or coaching. This unit is run in a block teaching format.

PSYC4727

Positive Organisational Coaching

Credit points: 6 **Session:** Intensive July **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

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

Credit points: 6 **Session:** Semester 2 **Classes:** One 3 hour lecture per week. **Prerequisites:** PSYC4721 and PSYC4722 **Corequisites:** PSYC4724 **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 General systems theory, cybernetics and complex adaptive systems theories. In addition, major research findings in group and team dynamics will be covered. 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 undertake a small group project and presentation. Critical reflection upon this group work will form a key element of the assessment for this unit.

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

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 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

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

A reading pack can be available 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 (PSYC4721, PSYC4722, PSYC4723, PSYC4724, PSYC4727, PSYC4729, PSYC4730, PSYC4731) **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: Department permission required for enrolment. 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 (PSYC4721, PSYC4722, PSYC4723, PSYC4724, PSYC4727, PSYC4729, PSYC4730, PSYC4731) **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: Department permission required for enrolment. 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

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.

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 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

Course resolutions

1 Course codes

Code	Course and stream title
GCENVSCI-01	Graduate Certificate in Environmental Science
GNEENVSCI-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:
 - (a) Graduate Certificate in Environmental Science
 - (b) Graduate Diploma in Environmental Science
 - (c) 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

- (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 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.
- (3) Admission to the Graduate Certificate in Environmental Science requires:
 - (a) 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
 - (b) a Bachelors degree in any discipline, in addition to successfully completing 18 credit points of undergraduate science at the University of Sydney, including:
 - (i) 6 credit points in biology; and



- (ii) 6 credit points in chemistry; and
- (iii) 6 credit points in geography.
- (4) Admission to the Graduate Diploma in Environmental Science requires:
 - (a) 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
 - (b) completion of the embedded graduate certificate in this discipline, from the University of Sydney, or equivalent qualification; or
 - (c) 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) 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
 - (b) 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
 - (c) completion of the embedded graduate diploma in this discipline, from the University of Sydney, or equivalent qualification; or
 - (d) 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

- (1) 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.
- (2) To qualify for the Graduate Certificate in Environmental Science a candidate must complete 24 credit points, including:
 - (a) 18 credit points of core unit of study; and
 - (b) 6 credit points of elective units of study.
- (3) To qualify for the Graduate Diploma in Environmental Science a candidate must complete 48 credit points, including:
 - (a) 24 credit points of core units of study, and
 - (b) 24 credit points of elective units of study.
- (4) To qualify for the Master of Environmental Science a candidate must complete 72 credit points, including:
 - (a) 30 credit points of core units of study;
 - (b) 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

- (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.

Environmental Science

Units of study table

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.			
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
Elective Units			
AFNR5511 Soil Processes, Assessment and 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 better in 24 credit points of Environmental Science/ Environmental Science and Law core units N ENVI5501 <i>Note: Department permission required for enrolment Students taking ENVI5502 must take ENVI5503 and ENVI5504</i>	Semester 1 Semester 2
ENVI5503 Environmental Research Project B	6	P Distinction average or better in 24cp of Environmental Science/ Environmental Science and Law core units N ENVI5501 <i>Note: Department permission required for enrolment Students taking ENVI5503 must take ENVI5502 and ENVI5504</i>	Semester 1 Semester 2
ENVI5504 Environmental Research Project C	6	P Distinction average or better in 24cp of Environmental Science/ Environmental Science and Law core units N ENVI5501 <i>Note: Department permission required for enrolment Students taking ENVI5504 must take ENVI5502 and ENVI5503</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 This unit of study involves additional costs.</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
GEOS5501 Human Rights and the Environment	6	<i>This unit is delivered at the University of Sydney.</i>	Semester 2a
GOVT6135 Global Environmental Politics	6		Semester 1
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
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



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
MARS5007 Coral Reefs and Climate Change	6		Semester 1a
PHYS5031 Ecological Econ and 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
SUST5002 Food and Water Security	6	C SUST5001 <i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	Semester 2
SUST5005 Law, Policy and Sustainability	6	C SUST5001 <i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	Intensive October
WILD5001 Australasian Wildlife: Introduction	6		Intensive July
WILD5002 Australasian Wildlife: Field Studies	6		Intensive September
WILD5004 Vertebrate Pest Management	6		Intensive April

Environmental Science

Unit of study descriptions

AFNR5511

Soil Processes, Assessment and Management Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Damien Field **Session:** Semester 1 **Classes:** One lecture, two tutorials per week, case study and 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 Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Willem Vervoort (Coordinator), Dr Floris van Ogtrop, A/Prof Daniel Tan **Session:** Semester 2 **Classes:** 3 hour workshop per week, practical work, project work during workshops **Assumed knowledge:** UG Maths or Physics or Hydrology. **Assessment:** Assignments (50%), 2-hour exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on knowledge gained in undergraduate science units to develop an understanding of how climate variability affects water resources. Particular focus will be on the effect of climate variability and drought and how this affects plant production and water storage. At the completion of this unit student would be able to: Quantify drought and understand the different dimensions of drought; understand how climate variability impacts plant production and what stages; understand the memory of drought and the impact on resilience; understand how climate change can impact climate variability in the future. Open source software packages such as R and SWAT will be used for most analysis.

AFNR5705

Australian Forest Systems Science

Credit points: 6 **Teacher/Coordinator:** Dr Andrew Merchant **Session:** Semester 2 **Classes:** 28.5 hours lectures/tutorials, 30 hours of fieldwork **Assessment:** One 2-hour 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 Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Franks (Coordinator), Dr Dan Penny, Dr Malcolm Possell **Session:** Semester 2 **Classes:** 18 hours lectures/tutorials, 12 hours practicals/field classes, 9 hours field trip preparation **Assumed knowledge:** A basic understanding of climate change processes and issues. **Assessment:** 2-hour 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 where students will be introduced to 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 Jeff Neilson **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or better in 24 credit points of Environmental Science/ Environmental Science and Law core units **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 32 weeks (two semesters) 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 Jeff Neilson **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or better in 24cp of Environmental Science/ Environmental Science and Law core units **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 ENVI5503 must take ENVI5502 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 32 weeks (two semesters) 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 Jeff Neilson **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or better in 24cp of Environmental Science/ Environmental Science and Law core units **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 ENVI5504 must take ENVI5502 and ENVI5503

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 32 weeks (two semesters) 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:** A/Prof 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

ENVI5707

Energy - Sources, Uses and Alternatives Science

Credit points: 6 **Teacher/Coordinator:** Dr Arne Geschke **Session:** Semester 2 **Classes:** 2-hour lecture and 1 hour seminar per week; field trips **Assessment:** Essay, comprehensive diary/notes from lectures, and presentation (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study addresses physical principles and environmental impacts of energy generation and use. Different energy carriers, global energy resources, the economics associated with energy conversion, the politics and culture surrounding energy conversion and use, and renewable energy technologies are discussed. A key focus of the unit is on building numeracy skills for performing useful calculations related to energy and greenhouse gas emissions. This unit of study includes several field trips to energy utilities and associated energy sites.

ENVI5708

Introduction to Environmental Chemistry Science

Credit points: 6 **Teacher/Coordinator:** Dr Feike Dijkstra (Coordinator); A/Prof. Thomas Bishop; Dr Floris van Ogtrop. **Session:** Semester 1 **Classes:** One 2-hour lecture and one practical per week; one field trip (weekend) **Assessment:** Writing assignment (35%), practical report (40%), presentation and peer review (15%), computer lab (10%) **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 Robert Fisher **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 Tristan Salles **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 **Session:** Intensive July **Classes:** Two pre-departure lectures, 14-day field intensive. **Assessment:** Essay and presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Field experience

Note: Department permission required for enrolment. Note: This unit of study involves additional costs.

This unit of study constitutes an international field-based experience held in Southeast Asia during the July semester break. It explores the contested notions of sustainable development and sustainability through exposure to real world development dilemmas in Southeast Asia. We explore fundamental issues such as urbanization, sustainable livelihood, 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 Coordinators 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 \$1,200. Students will also be required to arrange their own international travel to the starting point (either Vientiane or Jakarta depending on the specific location of the course).

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 Kevin Davies **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:** Quiz and Assignments (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:** Dr Bree Morgan **Session:** Semester 2 **Classes:** 3 hours of lectures and two 6 hour practicals per semester. **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

This unit introduces methods for mapping environmental signatures in coastal and marine systems, using both biogeochemical analysis and GIS technologies. Students will learn, theoretically and practically, how environmental data is collected using a range of different methodologies (field and computer based), and application of this data to understanding landscape processes and quantifying environmental change. Students will acquire skills in applying environmental mapping techniques to interpreting key Earth surface processes and understanding the substantial impacts that humans can have on these, in terms of both contamination and remediation.

GEOG5501

Human Rights and the Environment

Science

Credit points: 6 **Teacher/Coordinator:** Dr Josephine Gillespie **Session:** Semester 2a **Classes:** 4 hours of class contact per week **Assessment:** Essays, reports (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: This unit is delivered at the University of Sydney.

This Unit of Study addresses the connections between human rights and the environment. We examine an array of environmental and natural resource management challenges through a human rights lens. Students will develop the skills to describe, interpret and analyse the relationship between environmental issues and human rights norms. We study the complexity of the human rights / environmental nexus in both conservation and development contexts. Topics include conservation and protected areas, rivers and dams, mining, climate change and forests. Throughout the course we consider the value, and limitations, of a human rights based approach to environmental decision making.

GOVT6135

Global Environmental Politics

Arts and Social Sciences

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.

MARS5001

Coastal Processes and Systems Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Ana Vila-Concejo, Dr Tristan Salles **Session:** Semester 1 **Classes:** One 2 hour lecture, one 1 hour tutorial per week **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 beaches, barriers and dunes; estuaries and inlets; and coral reefs. The interactions between these processes and systems that are of most relevance to coastal management are highlighted, including coastal hazards such as beach erosion. Anthropogenic impacts are also analysed. This unit includes an introduction to numerical modeling of coastal processes and systems using state-of-the-art modeling tools. The unit is presented in lectures and field excursions, the latter enabling each system to be examined first hand.

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:** A/Prof 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 future

and fate of 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. On campus 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 the independent research project conducted in the field (Great Barrier Reef) 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. The field intensive component of the course is held at One Tree Island or Heron Island or Orpheus Island Research Stations and will 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 and Sustainable Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik **Session:** Semester 1 **Classes:** 1.5-hour lecture interspersed with hands-on exercises per week, and 1 hour seminar per week. **Assessment:** Essay, presentation and comprehensive diary/notes from lectures (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces contemporary topics from Ecological Economics and Sustainability Analysis, such as metrics for measuring sustainability; planetary boundaries and other natural limits; comparisons between ecological and environmental economics; valuing the environment; intergenerational discounting; global equality with a focus on the climate change debate; and links between theories of well-being, human behaviour, consumerism and environmental impact. This unit includes guest lecturers from industry and research and an excursion. Each lecture includes hands-on exercises for practical skill-building. The unit sets the scene for the more detailed and specific units PHYS5032, PHYS5033, and PHYS5034.

PHYS5032

Techniques for Sustainability Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arne Geschke and Prof Manfred Lenzen **Session:** Semester 1, Semester 2 **Classes:** 2.5-hour lecture including tutorial per week **Assessment:** Two assignments based on weekly homework sheets (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 a practical introduction to quantitative analysis techniques including multiple regression, uncertainty analysis, integration, structural decomposition, and dynamic systems modelling, with a strong emphasis on demonstrating their usefulness for environmental problem-solving. This unit will show students how mathematics can be brought to life when utilised in powerful applications to deal with environmental and sustainability issues. Throughout the unit of study, example applications will be explained, including climate modelling, ecosystem trophic chain analysis, linking household consumption and environmental impact, identifying socio-demographic drivers of environmental change, and the uncovering the effect of land use patterns on threats to species.

PHYS5033

Environmental Footprints and IO Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik and Prof Manfred Lenzen **Session:** Semester 1, Semester 2 **Classes:** 2-hour lecture interspersed with hands-on exercises per week **Assessment:** Comprehensive diary/notes from lectures, including a quantitative example (100%) **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 students with both the theoretical understanding and the practical skills needed to carry out their own

environmental footprint and impact analyses. This unit uses state of the art economic input-output theory and input-output analysis, and focuses on contemporary environmental applications such as carbon footprints and life-cycle assessment. The unit first explores national and global economic and environmental accounting systems and their relationships to organisational accounting. Second, it will present cutting-edge techniques enabling the global analysis of environmental impacts of international trade. Third, it offers hands-on instruction to master the basic input-output calculus conceived by Nobel Prize Laureate Wassily Leontief, and provide a step-by-step recipe for how to undertake boundary-free environmental footprinting by integrating economic and environmental accounts, and by applying Leontief's calculus to data published by statistical offices. Students will walk away from this unit equipped with all skills needed to calculate footprints, and prepare sustainability reports for any organisation, city, region, or nation, using organisational data, economic input-output tables and environmental accounts. Students will also benefit from also enrolling in PHYS5034 for a sound understanding of the role of input-output analysis within the field of Life-Cycle Assessment.

PHYS5034

Life Cycle Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik **Session:** Semester 2 **Classes:** 2.5-hour lecture interspersed with hands-on exercises per week **Assessment:** Essay, presentation and comprehensive diary/notes from lectures (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study covers philosophy, techniques, applications and standards of Life-Cycle Assessment (LCA). It introduces methods from engineering (Process Analysis) and economics (Input-Output Analysis), and discusses current popular LCA tools. The unit places importance on practical relevance by including real-world cases studies and business applications as well as global standards such as the GHG Protocol for accounting for scopes -1, -2 and -3 emissions and ISO standards. The unit of study will culminate with practical exercises using current software tools to provide students with hands-on experience of preparing a comprehensive Life-Cycle Assessment of an application of their choice. Students will also benefit from also enrolling in PHYS5033 for a sound understanding of input-output analysis as the basis of hybrid LCA methods.

RESP5001

Integrated Environmental Practice Science

Credit points: 6 **Teacher/Coordinator:** A/Prof D Dragovich **Session:** Semester 1 **Classes:** Six 4-hour lectures and one 4-hour laboratory class 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.

SUST5002

Food and Water Security Science

Credit points: 6 **Teacher/Coordinator:** Associate Professor Robyn Alders **Session:** Semester 2 **Classes:** One 2 to 2.5 hour interactive lecture per week with up to four hours per week spent on a combination of additional (e.g. on-line) learning tasks, small group sessions and consultation with lecturers. **Corequisites:** SUST5001 **Assessment:** Essays, short written assignments

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

Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.

This unit 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

Law, Policy and Sustainability Science

Credit points: 6 **Teacher/Coordinator:** Associate Professor Ed Couzens **Session:** Intensive October **Classes:** Intensive classes for 4 full days in October **Corequisites:** SUST5001 **Assessment:** Class presentation and short essay (1,500-2,000 w, 20%) and long essay (6,000 w, 80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.

This unit examines how policy-makers engage with and implement policies and legal requirements for regulating ecologically sustainable development. Meeting the needs of a growing global population while at the same time maintaining the health of the environment, which provides the life support system for humanity, is the central policy challenge of the 21st century. Key sustainability challenges include: avoiding dangerous climate change, safeguarding biological diversity, providing food security, coping with resource scarcity, and promoting green technology including low-carbon energy generation. These issues provide acute challenges for governments given that they cut across a range of policy areas, and require long-term planning rather than short-term decision-making. The unit examines how policy-makers at international, national and sub-national scales consider and respond to sustainability issues. Students will be introduced to: the role of analysis (economic, legal, political, scientific and social etc) in providing an evidence base for decisions; the variety of instruments and institutions available for policy delivery; how the lobbying process influences policy determination; and effectiveness of policy design and implementation. The unit also examines how decision-making is influenced by stakeholders, including industry, nongovernmental organisations and citizens. It will be seen that sustainability policy design and implementation in the real world involves reconciling competing agendas and interests, and that trade-offs are often made that may strengthen or weaken the effectiveness of sustainability policies. Offered through the Sydney Law School, this unit introduces students to the legal imperatives (both international and national) which inform and mandate policy choices.

WILD5001

Australasian Wildlife: Introduction Science

Credit points: 6 **Teacher/Coordinator:** A/Prof David Phalen **Session:** Intensive July **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 (http://sydney.edu.au/vetscience/wildlife_masters/program/index.shtml) **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 Science

Credit points: 6 **Teacher/Coordinator:** A/Prof David Phalen **Session:** Intensive September **Classes:** Intensively taught unit. See the Wildlife Health and Population Management website for dates. (http://sydney.edu.au/vetscience/wildlife_masters/program/index.shtml) **Assessment:** There are two assessments. Assessment 1 is a journal that is kept during the week (20%). Assessment 2 is a report on the current status of one animal or group of animals in the Gardens (80%). **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 seven day field trip, five days at Mt. Annan Botanical Gardens and two days "Arthursleigh" near Marulan NSW. Students stay overnight at both locations. Survey methods for frogs, reptiles, birds, small mammals, bats and macropods are introduced and all students participate in these activities. There are multiple opportunities to work with the staff at the Gardens and to see how a natural reserve serves to preserve biodiversity in the face of surrounding urbanization.

WILD5004

Vertebrate Pest Management Science

Credit points: 6 **Teacher/Coordinator:** A/Prof David Phalen **Session:** Intensive April **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. Please see the Wildlife Masters Website for the timing of this course (http://sydney.edu.au/vetscience/wildlife_masters/program/index.shtml). **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 multiple vertebrate pests. Traditional mortality methods as well as emerging management tools are reviewed. The Unit is taught full-time over seven days at the university farm "Arthursleigh" near Marulan NSW. There are lectures, tutorials, and a variety of practical classes.

Textbooks

Unit of Study outline is the primary reference.

Environmental Science and Law

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.

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.

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 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

Course resolutions

1 Course codes

Code	Course title
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.



Environmental Science and Law

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 of study			
All students must complete LAWS6044, LAWS6252, and either RESP5001 or all of ENVI5502, ENVI5503, ENVI5504.			
LAWS6044 Environmental Law and Policy	6	A LAWS6252 or law degree from a common law jurisdiction N LAWS3430 or LAWS5130 <i>Students who do not hold a law degree from a common law jurisdiction must either have completed or be concurrently enrolled in LAWS6252 Legal Reasoning and the Common Law System before undertaking the environmental law units.</i>	Intensive March
LAWS6252 Legal Reasoning and the Common Law System	6	N LAWS6881 <i>Students are recommended to enrol well in advance of classes in order to complete pre-class readings (normally available to enrolled students 3 weeks prior to the first class). Law graduates from a non-common law jurisdiction are also recommended to complete classes for this unit during the first week of their commencing semester.</i>	Intensive April Intensive August Intensive March Intensive September
RESP5001 Integrated Environmental Practice	6		Semester 1
ENVI5502 Environmental Research Project A	6	P Distinction average or better in 24 credit points of Environmental Science/ Environmental Science and Law core units N ENVI5501 <i>Note: Department permission required for enrolment Students taking ENVI5502 must take ENVI5503 and ENVI5504</i>	Semester 1 Semester 2
ENVI5503 Environmental Research Project B	6	P Distinction average or better in 24cp of Environmental Science/ Environmental Science and Law core units N ENVI5501 <i>Note: Department permission required for enrolment Students taking ENVI5503 must take ENVI5502 and ENVI5504</i>	Semester 1 Semester 2
ENVI5504 Environmental Research Project C	6	P Distinction average or better in 24cp of Environmental Science/ Environmental Science and Law core units N ENVI5501 <i>Note: Department permission required for enrolment Students taking ENVI5504 must take ENVI5502 and ENVI5503</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.			
LAWS6041 Environmental Litigation	6		Intensive August
LAWS6047 Law of the Sea	6		Intensive October
LAWS6055 Heritage Law <i>This unit of study is not available in 2018</i>	6		Intensive September
LAWS6061 International Environmental Law	6		Intensive May
LAWS6065 Pollution, Corporate Liability and Govern	6	<i>This unit replaced LAWS6065 Pollution and Contaminated Land.</i>	Intensive May
LAWS6141 Asia Pacific Environmental Law	6		Intensive August



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
LAWS6163 Energy and Climate Law <i>This unit of study is not available in 2018</i>	6	N LAWS6863	Intensive September
LAWS6165 Biodiversity Law	6		Intensive April
LAWS6191 Water Law and Climate Change <i>This unit of study is not available in 2018</i>	6		Intensive October
LAWS6302 Human Rights and Environmental Law <i>This unit of study is not available in 2018</i>	6		Intensive April
LAWS6314 Coastal and Marine Law	6		Intensive March
LAWS6320 Climate Justice and Disaster Law	6	<i>This unit replaced LAWS6320 Climate Disaster Law.</i>	Intensive September
LAWS6331 International Wildlife Law <i>This unit of study is not available in 2018</i>	6		Intensive May
LAWS6343 International Law and Technology <i>This unit of study is not available in 2018</i>	6		Intensive August
LAWS6354 Environ Planning and Impact Assessment Law	6	A students who do not hold an undergraduate law degree must have completed LAWS6252 Legal Reasoning and the Common Law System before enrolling in this unit and LAWS6044 Environmental Law and Policy (MEL only) N LAWS6043, LAWS6045, LAWS3430, LAWS5130	Intensive October
LAWS6964 Global Energy and Resources Law	6		Intensive May
Elective units of study			
AFNR5511 Soil Processes, Assessment and 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	<i>This unit is delivered at the University of Sydney.</i>	Semester 2a
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 This unit of study involves additional costs.</i>	Intensive July
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
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 and Sustainable Analysis	6		Semester 1
PHYS5034 Life Cycle Analysis	6	<i>Minimum class size of 5 students.</i>	Semester 2
WILD5001 Australasian Wildlife: Introduction	6		Intensive July
WILD5002 Australasian Wildlife: Field Studies	6		Intensive September

Environmental Science and Law

Unit of study descriptions

AFNR5511

Soil Processes, Assessment and Management Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Damien Field **Session:** Semester 1 **Classes:** One lecture, two tutorials per week, case study and 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 Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Willem Vervoort (Coordinator), Dr Floris van Ogtrop, A/Prof Daniel Tan **Session:** Semester 2 **Classes:** 3 hour workshop per week, practical work, project work during workshops **Assumed knowledge:** UG Maths or Physics or Hydrology. **Assessment:** Assignments (50%), 2-hour exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on knowledge gained in undergraduate science units to develop an understanding of how climate variability affects water resources. Particular focus will be on the effect of climate variability and drought and how this affects plant production and water storage. At the completion of this unit student would be able to: Quantify drought and understand the different dimensions of drought; understand how climate variability impacts plant production and what stages; understand the memory of drought and the impact on resilience; understand how climate change can impact climate variability in the future. Open source software packages such as R and SWAT will be used for most analysis.

AFNR5705

Australian Forest Systems Science

Credit points: 6 **Teacher/Coordinator:** Dr Andrew Merchant **Session:** Semester 2 **Classes:** 28.5 hours lectures/tutorials, 30 hours of fieldwork **Assessment:** One 2-hour 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 Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Franks (Coordinator), Dr Dan Penny, Dr Malcolm Possell **Session:** Semester 2 **Classes:** 18 hours lectures/tutorials, 12 hours practicals/field classes, 9 hours field trip preparation **Assumed knowledge:** A basic understanding of climate change processes and issues. **Assessment:** 2-hour 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 where students will be introduced to 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 Kevin Davies **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:** Quiz and Assignments (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:** Dr Bree Morgan **Session:** Semester 2 **Classes:** 3 hours of lectures and two 6 hour practicals per semester. **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

This unit introduces methods for mapping environmental signatures in coastal and marine systems, using both biogeochemical analysis and GIS technologies. Students will learn, theoretically and practically, how environmental data is collected using a range of different methodologies (field and computer based), and application of this data to understanding landscape processes and quantifying environmental change. Students will acquire skills in applying environmental mapping techniques to interpreting key Earth surface processes and understanding the substantial impacts that humans can have on these, in terms of both contamination and remediation.

GEOS5501**Human Rights and the Environment****Science**

Credit points: 6 **Teacher/Coordinator:** Dr Josephine Gillespie **Session:** Semester 2a **Classes:** 4 hours of class contact per week **Assessment:** Essays, reports (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: This unit is delivered at the University of Sydney.

This Unit of Study addresses the connections between human rights and the environment. We examine an array of environmental and natural resource management challenges through a human rights lens. Students will develop the skills to describe, interpret and analyse the relationship between environmental issues and human rights norms. We study the complexity of the human rights / environmental nexus in both conservation and development contexts. Topics include conservation and protected areas, rivers and dams, mining, climate change and forests. Throughout the course we consider the value, and limitations, of a human rights based approach to environmental decision making.

ENVI5502**Environmental Research Project A****Science**

Credit points: 6 **Teacher/Coordinator:** Dr Jeff Neilson **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or better in 24cp of Environmental Science/ Environmental Science and Law core units **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 32 weeks (two semesters) 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 Jeff Neilson **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or better in 24cp of Environmental Science/ Environmental Science and Law core units **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 ENVI5503 must take ENVI5502 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 32 weeks (two semesters) 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 Jeff Neilson **Session:** Semester 1, Semester 2 **Classes:** Supervised research **Prerequisites:** Distinction average or better in 24cp of Environmental Science/ Environmental Science and Law core units **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 ENVI5504 must take ENVI5502 and ENVI5503

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 32 weeks (two semesters) 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:** A/Prof 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

ENVI5707

Energy - Sources, Uses and Alternatives Science

Credit points: 6 **Teacher/Coordinator:** Dr Arne Geschke **Session:** Semester 2 **Classes:** 2-hour lecture and 1 hour seminar per week; field trips **Assessment:** Essay, comprehensive diary/notes from lectures, and presentation (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study addresses physical principles and environmental impacts of energy generation and use. Different energy carriers, global energy resources, the economics associated with energy conversion, the politics and culture surrounding energy conversion and use, and renewable energy technologies are discussed. A key focus of the unit is on building numeracy skills for performing useful calculations related to energy and greenhouse gas emissions. This unit of study includes several field trips to energy utilities and associated energy sites.

ENVI5708

Introduction to Environmental Chemistry Science

Credit points: 6 **Teacher/Coordinator:** Dr Feike Dijkstra (Coordinator); A/Prof. Thomas Bishop; Dr Floris van Ogtrop. **Session:** Semester 1 **Classes:** One 2-hour lecture and one practical per week; one field trip (weekend) **Assessment:** Writing assignment (35%), practical report (40%), presentation and peer review (15%), computer lab (10%) **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 Robert Fisher **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 Tristan Salles **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 **Session:** Intensive July **Classes:** Two pre-departure lectures, 14-day field intensive. **Assessment:** Essay and presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Field experience

Note: Department permission required for enrolment. Note: This unit of study involves additional costs.

This unit of study constitutes an international field-based experience held in Southeast Asia during the July semester break. It explores the contested notions of sustainable development and sustainability through exposure to real world development dilemmas in Southeast Asia. We explore fundamental issues such as urbanization, sustainable livelihood, 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 Coordinators 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 \$1,200. Students will also be required to arrange their own international travel to the starting point (either Vientiane or Jakarta depending on the specific location of the course).

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.

LAWS6044

Environmental Law and Policy Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster (Coordinator), Dr Gerry Bates **Session:** Intensive March **Classes:** Mar 14-17 (9-5) **Prohibitions:** LAWS3430 or LAWS5130 **Assumed knowledge:** LAWS6252 or law degree from a common law jurisdiction **Assessment:** 2000wd essay (25%) and assignment (75%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: Students who do not hold a law degree from a common law jurisdiction must either have completed or be concurrently enrolled in LAWS6252 Legal Reasoning and the Common Law System before undertaking the environmental law 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.

LAWS6041 Environmental Litigation Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Justice Nicola Pain, Justice Rachel Pepper **Session:** Intensive August **Classes:** Aug 8-11 (9-5) **Assessment:** 4000wd paper on a practical task/topic (50%), 4000wd essay (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit focuses on litigation as a tool for resolving environmental disputes. The unit examines different types of environmental litigation and issues that can arise in litigation processes. Candidates will develop an understanding of the characteristics of environmental litigation, the advantages and limitations of different types of proceedings, and the range of outcomes that are possible for environmental litigation. The topics include litigation strategies, procedure and evidence, defensive actions (ie SLAPP litigation), and the outcomes of litigation. Reference will be made to recent cases, such as in the field of climate change, to illustrate the topics.

LAWS6047 Law of the Sea Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Prof Tim Stephens **Session:** Intensive October **Classes:** Oct 18, 19 and 25, 26 (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 September **Classes:** Sep 2, 3 & 9, 10 (9-5) **Assessment:** essay proposal and class presentation (20%), 7000wd essay (80%) **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 Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster, Assoc Prof Ed Couzens **Session:** Intensive May **Classes:** Apr 27, 28 and May 4, 5 (9-5)

Assessment: compulsory in-class practical assessment (40%) and assignment (60%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit aims to provide an introduction to the framework, concepts, sources and techniques of international environmental law, and to provide an overview of international law responses to current and emerging environmental challenges. The history and framework of international environmental law will be examined before exploring a range of topical international environmental law issues, including atmospheric protection and climate change, hazardous substances and wastes, biodiversity and GMOs, the protection of marine living resources, the protection of freshwater resources and issues concerning trade. The unit will also survey the influence of international environmental law on domestic environmental law through case studies. Overarching themes will include the interdependence of environmental issues, the effects of scientific uncertainty on international environmental regulation, implementation of international environmental obligations between states at different levels of economic development and the need for effectiveness in implementation and enforcement.

LAWS6065 Pollution, Corporate Liability and Govern Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster, Dr Kate Owens, Dr Gerry Bates **Session:** Intensive May **Classes:** May 18, 19 and 25, 26 (9-5) **Assessment:** class participation (10%) and 8000wd essay (90%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode
Note: This unit replaced LAWS6065 Pollution and Contaminated Land.

The aim of the unit of study is to provide an introduction to the framework, concepts, sources and techniques of pollution control law and corporate environmental liability. The history and framework of international laws regulating pollution will be examined before exploring a range of legal and regulatory measures for pollution control and corporate environmental liability at both the Commonwealth level and within New South Wales. An overarching theme will be the need for effectiveness in implementation and enforcement of pollution control and governance measures that have been developed to prevent harm and promote ecologically sustainable development.

LAWS6141 Asia Pacific Environmental Law Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Dr Saiful Karim, Dr Manuel Solis **Session:** Intensive August **Classes:** Aug 22-25 (9-5) **Assessment:** class participation (20%), 7000wd essay (80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

In this unit, the environmental law and policy of selected countries and regional organisations in the Asia Pacific will be studied against the background of relevant international environmental law and institutions. Unit topics will be divided into four sub-regions: Pacific Island Developing Countries; South East Asia Region (ASEAN and Mekong countries); North Asian Region (Japan, People's Republic of China); South Asian Region (South Asian Association of Regional Cooperation [SAARC] Countries). In relation to each region, the implications of international and regional environmental law and institutions will be explored, followed by country specific case studies involving a range of issues such as biodiversity, access to modern energy services, natural resources and environmental planning; industrial pollution; environmental impact assessment; climate change; and protection of the marine and coastal environment. Case studies on regional environmental issues such as ASEAN Haze will also be included.

LAWS6163 Energy and Climate Law Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster **Session:** Intensive September **Classes:** Sep 1, 2 & 8, 9 (9-5) **Prohibitions:** LAWS6863 **Assessment:** class participation (20%) and 7000wd essay (80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit addresses one of the most pressing global environmental concerns - global climate change. The unit explains the science of climate change and undertakes a detailed assessment of the 1992 United Nations Framework Convention on Climate Change (UNFCCC), including the 2015 Paris Agreement. All aspects of the UNFCCC are discussed including emissions reduction, climate change adaptation and disaster risk reduction, and the issue of climate displaced persons. Given that the burning of fossil fuels to produce energy is the primary cause of climate change, the unit looks at energy consumption patterns around the world and in Australia. It also assesses the legislative and market-based tools to reduce emissions including carbon trading schemes and renewable energy schemes around the world and at the Federal and state government levels in Australia. Climate adaptation and disaster risk reduction provisions in Australia are compared and contrasted with those in the United States and the European Union.

LAWS6165

Biodiversity Law Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Assoc Prof Ed Couzens **Session:** Intensive April **Classes:** Apr 13, 14 and 20, 21 (9-5) **Assessment:** class presentation and 2000wd essay (25%) and 6000wd (75%) **Practical field work:** If possible, an appropriate practical component (along field trip lines) will be added to give further insight. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Biological diversity is the variability among living organisms and the ecological complexes of which they are part, including diversity within species, between species and of ecosystems. Aside from whatever intrinsic value it may possess, biodiversity is crucial to support human life and welfare. Australia is fortunate to have some of the world's most complex and unique biodiversity - unfortunately, also to have one of the highest rates of extinction and loss of biodiversity. Despite a sophisticated system of environmental governance and a relatively high degree of environmental awareness, biodiversity continues to decline rapidly in Australia. This unit will consider the international legal regime related to the protection of biodiversity; how international instruments are incorporated into (or otherwise affect) Australia's regime; and the operation of Australia's regime at both national and state levels (the latter, particularly in NSW) - and will include consideration of various threats to biodiversity, different protection options (in situ and ex situ), and how biodiversity-related considerations affect and are affected by other Environmental Law fields

LAWS6191

Water Law and Climate Change Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster **Session:** Intensive October **Classes:** Oct 20, 21 & 27, 28 (9-5) **Assessment:** class participation (20%) and 7000wd essay (80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit of study recognises the threat of climate change to global water resources including Australia. The question is asked whether regulation or market-based measures, such as trading schemes, are best placed to deal with such a scarce resource. In the Australia context, the unit details arrangements at the Federal and State government levels to reform the sector - going back to 1994 - particularly in the Murray Darling Basin, within the context of broader economic reform and the National Competition Policy framework. The most recent legislative instrument to manage the Basin is the cross-jurisdictional Basin Plan which has had a difficult history. Attempts to manage the Basin are compared with management of another cross-jurisdictional water system - the Mekong River Basin. In the urban context, the unit addresses the corporatisation of water utilities and competition in the water service market including the possible implications of free trade agreements. This unit provides a fascinating case study of how science, economics, law and politics all come together in a clash of values and expectations to determine the best way to manage a scarce resource.

LAWS6252

Legal Reasoning and the Common Law System Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Ms Alexandra Fowler **Session:** Intensive April, Intensive August, Intensive March, Intensive September **Classes:** S1CIMR (Group A): Mar 5, 6 and 8, 9 (9-5); S1CIAP (Group B): Mar 26, 27 and Apr 9 and 10 (9-5); S2CIAU (Group C): Jul 30, 31 and Aug 2, 3 (9-5); S2CISE (Group D): Aug 20, 21 and Sep 3, 4 (9-5) **Prohibitions:** LAWS6881 **Assessment:** in-class test (30%) and take-home exam (70%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: Students are recommended to enrol well in advance of classes in order to complete pre-class readings (normally available to enrolled students 3 weeks prior to the first class). Law graduates from a non-common law jurisdiction are also recommended to complete classes for this unit during the first week of their commencing semester.

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 Health Law; Master of Labour Law and Relations 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.

LAWS6302

Human Rights and Environmental Law Law (Sydney Law School)

Credit points: 6 **Teacher/Coordinator:** Em Prof Ben Boer **Session:** Intensive April **Classes:** Apr 6-9 (9-5) **Assessment:** 2500wd assignment (30%) and 7000wd essay (70%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

The unit aims to provide students with an overview of the recent development of links between environmental law and human rights at both international and national levels. It will initially introduce the principles of international environmental law, and the relationship between the environment and human rights, with both ecocentric and anthropocentric approaches to be canvassed. The right to development, and especially the linkage between poverty, development and the environment, will be explored. Individual topics will include the relationships between human rights and pollution, land degradation, climate change, water security, implications of international trade, Indigenous peoples, biodiversity, genetic resources and access to nature. The human rights dimensions of environmental, cultural and social impact assessments will also be included. The unit will conclude with a discussion of the issue of access to environmental justice as an aspect of human rights, and the institutions relevant to achieving environmental justice.

Textbooks

DK Anton and DL Shelton, Environmental Protection and Human Rights, Cambridge 2011

LAWS6314

Coastal and Marine Law Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster, Assoc Prof Ed Couzens **Session:** Intensive March **Classes:** Mar 21-24 (9-5) **Assessment:** Presentation and 2000wd essay (25%) and 6000wd essay (75%) **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.

LAWS6320**Climate Justice and Disaster Law
Sydney Law School**

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster **Session:** Intensive September **Classes:** Aug 31, Sep 1 and 7, 8 (9-5) **Assessment:** class participation (10%) and 8000wd essay (90%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: This unit replaced LAWS6320 Climate Disaster Law.

Climate change impacts are already being felt around the world and governments are called upon to reduce greenhouse gas emissions, engage in climate change adaptation and disaster risk reduction, and respond to the loss and damage caused by climate disasters. Climate disasters demand an integration of multilateral negotiations on emissions reduction and adaptation, disaster risk reduction, sustainable development, Human Rights and human security. Via detailed examination of recent law and policy initiatives from developed and developing countries, this unit offers students a unique approach to human and non-human Climate Justice and its application to all stages of a disaster: prevention; response, recovery and rebuilding; and compensation and risk transfer. The role of insurance plays an important part in compensation and risk transfer. The unit of study comprehensively analyses the complexities of climate science, economics and their interfaces with the climate law-and policy-making processes, and also provides an in-depth analysis of multilateral climate change negotiations dating from the establishment of the 1992 United Nations Framework Convention on Climate Change (UNFCCC) to the 2015 Paris Agreement.

LAWS6331**International Wildlife Law
Law (Sydney Law School)**

Credit points: 6 **Teacher/Coordinator:** Assoc Prof Ed Couzens **Session:** Intensive May **Classes:** May 20, 21 & 27, 28 (9-5) **Assessment:** Presentation and 2000wd essay (25%) and 6000wd essay (75%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

The twentieth century saw rapid improvements in our understanding of wildlife conservation, management and protection; and of the ways in which international law can assist these. Nevertheless, there still are significant gaps in our understanding and we are still a long way from having effective international environmental law. This seminar unit will examine the nature of international law and the relationship between international law and national law generally; the history, sources and role of international environmental law and the relationship between international environmental law and national environmental law specifically; the past, present and future statuses of international wildlife and conservation laws; the origins and meanings (in different contexts and to different parties) of the terms 'conservation' and 'preservation'; significant global and regional international conventions in the wildlife context; the histories and futures of particular selected species; problems with the creation and enforcement of international wildlife and conservation laws; the incorporation of international wildlife law in Australian national law; and innovative ideas and programmes for improving the effectiveness of international laws relating to wildlife and conservation.

Textbooks

M Bowman, P Davies & C Redgwell, *Lyster's International Wildlife Law* (2010, 2nd ed.), Cambridge University Press

LAWS6354**Environ Planning and Impact Assessment Law
Sydney Law School**

Credit points: 6 **Teacher/Coordinator:** Mr Jeff Smith, Ms Susan O'Neill **Session:** Intensive October **Classes:** Oct 3-6 (9-5) **Prohibitions:** LAWS6043, LAWS6045, LAWS3430, LAWS5130 **Assumed knowledge:** students who do not hold an undergraduate law degree must have completed LAWS6252 Legal Reasoning and the Common Law System before enrolling in this unit and LAWS6044 Environmental Law and Policy (MEL only) **Assessment:** class presentation and 1000wd essay (25%) and 6000wd essay (75%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit has three aims. The first is to provide a sound analysis of Environmental Impact Assessment (EIA) procedures and environmental planning laws in NSW and at the Commonwealth level.

The second aim is to develop a critical understanding of EIA and environmental planning laws by examining their 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 current laws and legal practices.

LAWS6964**Global Energy and Resources Law
Sydney Law School**

Credit points: 6 **Teacher/Coordinator:** Dr Penny Crossley **Session:** Intensive May **Classes:** May 3, 4 and 10, 11 (9-5) **Assessment:** take-home exam (100%) or take-home exam (70%) and optional essay or problem question (30%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit provides a framework for understanding the role of law in: the discovery, financing, development and utilisation of energy and resources projects; energy trading on wholesale markets; mining and resources projects, including competition issues and access to essential infrastructure; addressing potential sources of conflict in the energy and resources sector including in dealing with international trade, native title and other indigenous issues, environmental and corporate social responsibility issues; and current national and international energy and resources controversies. Previous topics have included the role of renewable energy in energy security, challenges posed by energy and resources projects in Africa, conflict between Europe and Russia over gas supplies, energy storage, coal seam gas development, international maritime disputes in Asia over offshore oil and gas fields, corruption and transparency, and the Resource Curse in developing countries.

MARS5001**Coastal Processes and Systems
Science**

Credit points: 6 **Teacher/Coordinator:** A/Prof Ana Vila-Concejo, Dr Tristan Salles **Session:** Semester 1 **Classes:** One 2 hour lecture, one 1 hour tutorial per week **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 beaches, barriers and dunes; estuaries and inlets; and coral reefs. The interactions between these processes and systems that are of most relevance to coastal management are highlighted, including coastal hazards such as beach erosion. Anthropogenic impacts are also analysed. This unit includes an introduction to numerical modeling of coastal processes and systems using state-of-the-art modeling tools. The unit is presented in lectures and field excursions, the latter enabling each system to be examined first hand.

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:** A/Prof 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 future and fate of 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. On campus 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 the independent research project conducted in the field (Great Barrier Reef) 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. The field intensive component of the course is held at One Tree Island or Heron Island or Orpheus Island Research Stations and will 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 and Sustainable Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik **Session:** Semester 1 **Classes:** 1.5-hour lecture interspersed with hands-on exercises per week, and 1 hour seminar per week. **Assessment:** Essay, presentation and comprehensive diary/notes from lectures (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces contemporary topics from Ecological Economics and Sustainability Analysis, such as metrics for measuring sustainability; planetary boundaries and other natural limits; comparisons between ecological and environmental economics; valuing the environment; intergenerational discounting; global inequality with a focus on the climate change debate; and links between theories of well-being, human behaviour, consumerism and environmental impact. This unit includes guest lecturers from industry and research and an excursion. Each lecture includes hands-on exercises for practical skill-building. The unit sets the scene for the more detailed and specific units PHYS5032, PHYS5033, and PHYS5034.

PHYS5034

Life Cycle Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik **Session:** Semester 2 **Classes:** 2.5-hour lecture interspersed with hands-on exercises per week **Assessment:** Essay, presentation and comprehensive diary/notes from lectures (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study covers philosophy, techniques, applications and standards of Life-Cycle Assessment (LCA). It introduces methods from engineering (Process Analysis) and economics (Input-Output Analysis), and discusses current popular LCA tools. The unit places importance on practical relevance by including real-world cases studies and business applications as well as global standards such as the GHG Protocol for accounting for scopes -1, -2 and -3 emissions and ISO standards. The unit of study will culminate with practical exercises using current software tools to provide students with hands-on experience of preparing a comprehensive Life-Cycle Assessment of an application of their choice. Students will also benefit from also enrolling in PHYS5033 for a sound understanding of input-output analysis as the basis of hybrid LCA methods.

RESP5001

Integrated Environmental Practice Science

Credit points: 6 **Teacher/Coordinator:** A/Prof D Dragovich **Session:** Semester 1 **Classes:** Six 4-hour lectures and one 4-hour laboratory class 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.

WILD5001

Australasian Wildlife: Introduction Science

Credit points: 6 **Teacher/Coordinator:** A/Prof David Phalen **Session:** Intensive July **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 (http://sydney.edu.au/vetscience/wildlife_masters/program/index.shtml) **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 Science

Credit points: 6 **Teacher/Coordinator:** A/Prof David Phalen **Session:** Intensive September **Classes:** Intensively taught unit. See the Wildlife Health and Population Management website for dates. (http://sydney.edu.au/vetscience/wildlife_masters/program/index.shtml) **Assessment:** There are two assessments. Assessment 1 is a journal that is kept during the week (20%). Assessment 2 is a report on the current status of one animal or group of animals in the Gardens (80%). **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 seven day field trip, five days at Mt. Annan Botanical Gardens and two days "Arthursleigh" near Marulan NSW. Students stay overnight at both locations. Survey methods for frogs, reptiles, birds, small mammals, bats and macropods are introduced and all students participate in these activities. There are multiple opportunities to work with the staff at the Gardens and to see how a natural reserve serves to preserve biodiversity in the face of surrounding urbanization.

History and Philosophy of Science

Course overview

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

Course outcomes

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

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.

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 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

Course resolutions

1 Course codes

Code	Course and stream title
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.



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		Semester 1
HPSC4102 History of Science	6		Semester 2
HPSC4103 Sociology of Science	6		Semester 2
HPSC4104 Recent Topics in HPS	6		Semester 1 Semester 2
HPSC4105 HPS Research Methods	6		Semester 1
HPSC4108 Core topics: History and Philosophy of Sci	6		Semester 1 Semester 2



History and Philosophy of Science

Unit of study descriptions

HPSC4101 Philosophy of Science Science

Credit points: 6 **Teacher/Coordinator:** HPS Staff **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

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:** 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

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

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

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

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 and 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

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



Marine Science and Management

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 an innovative Master program in Marine Science and Management.

This interdisciplinary and cross-institutional program 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.

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 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

Course Resolutions

1 Course codes

Code	Course title
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.

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. MARS5507 and MARS5508.			
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>			
MARS5004 Coastal Management Field School	6		Intensive October
<i>Marine Biology / Biological Oceanography</i>			
ENVI5904 Methods in Applied Ecology	6		Semester 2
Additional Core Units: Master's Research Pathway Only			
MARS5507 Marine Research Project A	12	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 MARS5507 must take MARS5508</i>	Semester 1 Semester 2
MARS5508 Marine Research Project B	12	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 MARS5507 must take MARS5508</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 July
WILD5002 Australasian Wildlife: Field Studies	6		Intensive September
WILD5006 Ex Situ Wildlife Management	6		Intensive February
<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>			
CIVL9612 Fluid Mechanics	6	A CIVL9201 AND CIVL9611 AND (ENGG9802 OR CIVL9802). This unit of study follows on from Fluid Mechanics CIVL9611, which provides the essential fundamental fluid mechanics background and theory, and is assumed to be known and fully understood.	Semester 1
CIVL5670 Reservoir, Stream and Coastal Engineering	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



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
ENVI5903 Sustainable Development	6	<i>Note: Department permission required for enrolment This unit of study involves additional costs.</i>	Intensive July
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
SUST5005 Law, Policy and Sustainability	6	C SUST5001 <i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	Intensive October

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

AFNR5801

Climate Change: Process, History, Issues Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Franks (Coordinator), Dr Dan Penny, Dr Malcolm Possell **Session:** Semester 2 **Classes:** 18 hours lectures/tutorials, 12 hours practicals/field classes, 9 hours field trip preparation **Assumed knowledge:** A basic understanding of climate change processes and issues. **Assessment:** 2-hour 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 where students will be introduced to climate change research.

Textbooks

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

CIVL5670

Reservoir, Stream and Coastal Engineering Engineering and Information Technologies

Credit points: 6 **Session:** Semester 1 **Classes:** Lectures, Tutorials **Assumed knowledge:** CIVL3612 and MATH2061. **Assessment:** Through semester assessment (40%) and 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, an introduction to transport and mixing in inland waters, and to 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, natural river systems will be discussed, and the principles of sediment transport and scour, monitoring and management will be introduced. The basic equations for linear and nonlinear wave theories in coastal seas will be introduced, and wave forces on structures and an introduction to design of offshore structures will be discussed.

CIVL9612

Fluid Mechanics Engineering and Information Technologies

Credit points: 6 **Session:** Semester 1 **Classes:** Lectures, Tutorials, Laboratories **Assumed knowledge:** CIVL9201 AND CIVL9611 AND (ENGG9802 OR CIVL9802). This unit of study follows on from Fluid Mechanics CIVL9611, which provides the essential fundamental fluid mechanics background and theory, and is assumed to be known and fully understood. **Assessment:** Through semester assessment (65%) and Final Exam (35%) **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, pipe flow and pump design.

ENVI5705

Ecological Principles Science

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

Note: Department permission required for enrolment. Note: This unit of study involves additional costs.

This unit of study constitutes an international field-based experience held in Southeast Asia during the July semester break. It explores the contested notions of sustainable development and sustainability through exposure to real world development dilemmas in Southeast Asia. We explore fundamental issues such as urbanization, sustainable livelihood, 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 Coordinators 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 \$1,200. Students will also be required to arrange their own international travel to the starting point (either Vientiane or Jakarta depending on the specific location of the course).

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 Kevin Davies **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:** Quiz and Assignments (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:** Dr Bree Morgan **Session:** Semester 2 **Classes:** 3 hours of lectures and two 6 hour practicals per semester. **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

This unit introduces methods for mapping environmental signatures in coastal and marine systems, using both biogeochemical analysis and GIS technologies. Students will learn, theoretically and practically, how environmental data is collected using a range of different methodologies (field and computer based), and application of this data to understanding landscape processes and quantifying environmental change. Students will acquire skills in applying environmental mapping techniques to interpreting key Earth surface processes and understanding the substantial impacts that humans can have on these, in terms of both contamination and remediation.

MARS5001

Coastal Processes and Systems Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Ana Vila-Concejo, Dr Tristan Salles **Session:** Semester 1 **Classes:** One 2 hour lecture, one 1 hour tutorial per week **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 beaches, barriers and dunes; estuaries and inlets; and coral reefs. The interactions between these processes and systems that are of most relevance to coastal management are highlighted, including coastal hazards such as beach erosion. Anthropogenic impacts are also analysed. This unit includes an introduction to numerical modeling of coastal processes and systems using state-of-the-art modeling tools.

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 Ana Vila-Concejo **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. **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:** A/Prof 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 future and fate of 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. On campus 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 the independent research project conducted in the field (Great Barrier Reef) 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. The field intensive component of the course is held at One Tree Island or Heron Island or Orpheus Island Research Stations and will 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 **Teacher/Coordinator:** A/Prof Ana Vila-Concejo, Dr Eleanor Bruce **Session:** Semester 1 **Classes:** Please confirm start and finish of this unit of study with the Marine Science and Management Postgraduate Programme Coordinator. 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.

MARS5507

Marine Research Project A Science

Credit points: 12 **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 MARS5507 must take MARS5508

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.

MARS5508

Marine Research Project B

Science

Credit points: 12 **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 MARS5507 must take MARS5508

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:** 2.5-hour lecture including tutorial per week **Assessment:** Two assignments based on weekly homework sheets (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 a practical introduction to quantitative analysis techniques including multiple regression, uncertainty analysis, integration, structural decomposition, and dynamic systems modelling, with a strong emphasis on demonstrating their usefulness for environmental problem-solving. This unit will show students how mathematics can be brought to life when utilised in powerful applications to deal with environmental and sustainability issues. Throughout the unit of study, example applications will be explained, including climate modelling, ecosystem trophic chain analysis, linking household consumption and environmental impact, identifying socio-demographic drivers of environmental change, and the uncovering the effect of land use patterns on threats to species.

PHYS5033

Environmental Footprints and IO Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik and Prof Manfred Lenzen **Session:** Semester 1, Semester 2 **Classes:** 2-hour lecture interspersed with hands-on exercises per week **Assessment:** Comprehensive diary/notes from lectures, including a quantitative example (100%) **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 students with both the theoretical understanding and the practical skills needed to carry out their own environmental footprint and impact analyses. This unit uses state of the art economic input-output theory and input-output analysis, and focuses on contemporary environmental applications such as carbon footprints and life-cycle assessment. The unit first explores national and global economic and environmental accounting systems and their relationships to organisational accounting. Second, it will present cutting-edge techniques enabling the global analysis of environmental impacts of international trade. Third, it offers hands-on instruction to

master the basic input-output calculus conceived by Nobel Prize Laureate Wassily Leontief, and provide a step-by-step recipe for how to undertake boundary-free environmental footprinting by integrating economic and environmental accounts, and by applying Leontief's calculus to data published by statistical offices. Students will walk away from this unit equipped with all skills needed to calculate footprints, and prepare sustainability reports for any organisation, city, region, or nation, using organisational data, economic input-output tables and environmental accounts. Students will also benefit from also enrolling in PHYS5034 for a sound understanding of the role of input-output analysis within the field of Life-Cycle Assessment.

SUST5005

Law, Policy and Sustainability Science

Credit points: 6 **Teacher/Coordinator:** Associate Professor Ed Couzens **Session:** Intensive October **Classes:** Intensive classes for 4 full days in October **Corequisites:** SUST5001 **Assessment:** Class presentation and short essay (1,500-2,000 w, 20%) and long essay (6,000 w, 80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.

This unit examines how policy-makers engage with and implement policies and legal requirements for regulating ecologically sustainable development. Meeting the needs of a growing global population while at the same time maintaining the health of the environment, which provides the life support system for humanity, is the central policy challenge of the 21st century. Key sustainability challenges include: avoiding dangerous climate change, safeguarding biological diversity, providing food security, coping with resource scarcity, and promoting green technology including low-carbon energy generation. These issues provide acute challenges for governments given that they cut across a range of policy areas, and require long-term planning rather than short-term decision-making. The unit examines how policy-makers at international, national and sub-national scales consider and respond to sustainability issues. Students will be introduced to: the role of analysis (economic, legal, political, scientific and social etc) in providing an evidence base for decisions; the variety of instruments and institutions available for policy delivery; how the lobbying process influences policy determination; and effectiveness of policy design and implementation. The unit also examines how decision-making is influenced by stakeholders, including industry, nongovernmental organisations and citizens. It will be seen that sustainability policy design and implementation in the real world involves reconciling competing agendas and interests, and that trade-offs are often made that may strengthen or weaken the effectiveness of sustainability policies. Offered through the Sydney Law School, this unit introduces students to the legal imperatives (both international and national) which inform and mandate policy choices.

WILD5001

Australasian Wildlife: Introduction

Science

Credit points: 6 **Teacher/Coordinator:** A/Prof David Phalen **Session:** Intensive July **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 (http://sydney.edu.au/vetscience/wildlife_masters/program/index.shtml) **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

Science

Credit points: 6 **Teacher/Coordinator:** A/Prof David Phalen **Session:** Intensive September **Classes:** Intensively taught unit. See the Wildlife Health and Population Management website for dates. (http://sydney.edu.au/vetscience/wildlife_masters/program/index.shtml) **Assessment:** There are two assessments. Assessment 1 is a journal that is kept during the week (20%). Assessment 2 is a report on the current status of one animal or group of animals in the Gardens (80%). **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 seven day field trip, five days at Mt. Annan Botanical Gardens and two days "Arthursleigh" near Marulan NSW. Students stay overnight at both locations. Survey methods for frogs, reptiles, birds, small mammals, bats and macropods are introduced and all students participate in these activities. There are multiple opportunities to work with the staff at the Gardens and to see how a natural reserve serves to preserve biodiversity in the face of surrounding urbanization.

WILD5006

Ex Situ Wildlife Management

Science

Credit points: 6 **Teacher/Coordinator:** Dr Derek Spielman **Session:** Intensive February **Classes:** The Unit is taught in a full-time week in February at Taronga Western Plains Zoo in Dubbo, NSW. Please see the Masters of Wildlife Health and Population Management website for the specific dates (http://sydney.edu.au/vetscience/wildlife_masters/program/index.shtml) **Assessment:** The assessment of this unit occurs both in the full-time week and in an individual written assignment done in the students' own time. The full-time week contributes (40%) of the total mark through a group presentation on the status in the wild and in captivity of a species in the Taronga Western Plains Zoo. The remaining (60%) comes from a written assignment of 5,000 words on a successful species survival plan that involves a significant ex situ component. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Wildlife populations are under a variety of threats, most of which result from human activities. Modern conservation biology seeks practical solutions to these problems using a wide range of options. These options can include captive breeding and re-introduction programs, provided that a range of biological, ethical and politico-economic issues are addressed. This unit of study provides students with the tools to evaluate the likely cost-effectiveness of such programs. It also develops knowledge of the technologies available to capture and translocate wildlife, and of the planning required to maximise the chance of success. The unit is taught in a full-time week at Taronga Western Plains Zoo in Dubbo, NSW. The unit integrates lectures, tutorials, practical work and site visits and offers students the opportunity to examine real problems in the conservation and management of threatened wildlife populations using relevant case studies.

Textbooks

There is no text book available. Recommended readings are listed in Unit of Study outline.

Medical Physics

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 radiation safety.

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. The course structure provides access to research and data analytic skills which may be applied in academic research roles, start-up companies and health related data science.

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 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

Course resolutions

1 Course codes

Code	Course title
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 credit average 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, 2017 and persons who commenced their candidature prior to 1 January, 2017 who elect to proceed under these resolutions.

(2) Candidates who commenced prior to 1 January, 2017 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2020, or later date as the faculty may, in special circumstances, approve.



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 and 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 Units</i>			
PHYS5035 Research Methodology and Project A	12	P PHYS5002 and PHYS5029 and PHYS5011 and PHYS5012 and PHYS5005 and PHYS5006 and PHYS5018 and PHYS5020 N PHYS5019 <i>Note: Department permission required for enrolment</i> <i>Note: Departmental permission required for enrolment. This unit must be taken in combination with PHYS5036</i>	Semester 1 Semester 2
PHYS5036 Research Methodology and Project B	12	P PHYS5002 and PHYS5029 and PHYS5011 and PHYS5012 and PHYS5005 and PHYS5006 and PHYS5018 and PHYS5020 C PHYS5035 N PHYS5019 <i>Note: Department permission required for enrolment</i> <i>Note: Departmental permission required for enrolment. This unit must be taken in combination with PHYS5035</i>	Semester 1 Semester 2

Medical Physics

Unit of study descriptions

PHYS5002

Anatomy and Biol Essentials for Physicists Science

Credit points: 6 **Teacher/Coordinator:** Professor Annette Haworth **Session:** Semester 1 **Classes:** Three 3-hour lectures and ten 3-hour labs **Assessment:** Assignment, mid-semester exam and final 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, 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 **Teacher/Coordinator:** Professor Annette Haworth **Session:** Semester 1 **Classes:** Twelve 3-hour lectures and one 3-hour lab conducted after hours in a hospital. **Assessment:** Assignments, lab quiz and final 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.

PHYS5011

Nuclear Physics Science

Credit points: 6 **Teacher/Coordinator:** Professor Annette Haworth **Session:** Semester 1 **Classes:** One 3-hour lecture per week. **Assessment:** Assignments and final 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 **Teacher/Coordinator:** Professor Annette Haworth **Session:** Semester 1 **Classes:** Ten 3-hour lectures and three 3-hour labs (conducted after hours eg. 5.30pm) **Prohibitions:** PHYS5001 **Assessment:** Assignments, lab quizzes and final 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.

PHYS5005

Radiotherapy Physics Science

Credit points: 6 **Teacher/Coordinator:** Professor Annette Haworth **Session:** Semester 2 **Classes:** Ten 3-hour lectures and three 3-hour labs (conducted after hours eg. 5.30pm or on a weekend) **Assessment:** Assignments, lab quizzes and final 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 **Teacher/Coordinator:** Professor Annette Haworth **Session:** Semester 2 **Classes:** Ten 3-hour lectures and three 3-hour labs (conducted after hours eg. 5.30pm or on a weekend) **Assessment:** Assignments, lab quizzes and final 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.

PHYS5018

Health Physics and Radiation Protection Science

Credit points: 6 **Teacher/Coordinator:** Professor Annette Haworth **Session:** Semester 2 **Classes:** Ten 3-hour lectures and three 3-hour labs (conducted after hours eg. 5.30pm) **Assessment:** Assignments, lab quizzes and final 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.

PHYS5020

Computation and Image Processing Science

Credit points: 6 **Teacher/Coordinator:** Professor Annette Haworth **Session:** Semester 2 **Classes:** Six 3-hour lectures, five 1-hour lectures and five 2-hour labs **Prohibitions:** PHYS5007 **Assessment:** Assignments and final 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.

PHYS5035

Research Methodology and Project A Science

Credit points: 12 **Teacher/Coordinator:** Professor Annette Haworth **Session:** Semester 1, Semester 2 **Classes:** library information session and research work **Prerequisites:** PHYS5002 and PHYS5029 and PHYS5011 and PHYS5012 and PHYS5005 and PHYS5006 and PHYS5018 and PHYS5020 **Prohibitions:** PHYS5019 **Assessment:** report and research seminar (100%) at end of PHYS5036 **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Note: Departmental permission required for enrolment. This unit must be taken in combination with PHYS5036

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. Marks will be held over until PHYS5036 is completed.

PHYS5036

Research Methodology and Project B Science

Credit points: 12 **Teacher/Coordinator:** Professor Annette Haworth **Session:** Semester 1, Semester 2 **Classes:** library information session and research work **Prerequisites:** PHYS5002 and PHYS5029 and PHYS5011 and PHYS5012 and PHYS5005 and PHYS5006 and PHYS5018 and PHYS5020 **Corequisites:** PHYS5035 **Prohibitions:** PHYS5019 **Assessment:** Research report and research seminar (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Department permission required for enrolment. Note: Note: Departmental permission required for enrolment. This unit must be taken in combination with PHYS5035

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.

Sustainability

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, environmental, 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, resources, finance, the media, planning, health, law, government, and environmental systems. 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.

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 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

Course resolutions

1 Course codes

Code	Course title
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.

Sustainability

Units of study table

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
Core Unit			
All students must complete the core unit.			
SUST5001 Introduction to Sustainability	6	<i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	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 elective units.			
SUST5002 Food and Water Security	6	C SUST5001 <i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	Semester 2
SUST5003 Energy and Resources	6	C SUST5001 <i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	Semester 1
SUST5004 Sustainable Development and Population Health	6	C SUST5001 <i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	Semester 2
SUST5005 Law, Policy and Sustainability	6	C SUST5001 <i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	Intensive October
SUST5006 Sustainability: Business and Leadership	6	C SUST5001 <i>This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.</i>	Semester 1
PHYS5031 Ecological Econ and 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 SUST5008 or SUST5009	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 elective units.			
AFNR5502 Remote Sensing, GIS and Land Management	6	A ENVX3001 and SOIL3004.	Semester 2
AFNR5511 Soil Processes, Assessment and 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	N BETH5206	Semester 2
DESC9147 Sustainable Building Design Principles	6	<i>Note: Department permission required for enrolment</i>	Semester 1
DESC9148 Sustainable Building Design Practice	6	P DESC9201	Semester 1



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
DESC9201 Indoor Environmental Quality (IEQ)	6		Semester 2
DVST6904 Rethinking Poverty	6	<i>This unit is delivered at the University of Sydney.</i>	Semester 1 Semester 2
ECOP6108 Economic Management for Sustainability	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 This unit of study involves additional costs.</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
GOVT6223 Topics in Environmental Politics	6		Semester 2
GOVT6135 Global Environmental Politics	6		Semester 1
GOVT6316 Policy Making, Power and Politics	6		Semester 1 Semester 2
GOVT6331 Public Management and Governance	6		Semester 1 Semester 2
HPOL5000 Introduction to Health Policy	6		Semester 1
HPOL5007 Global Health Policy	6		Semester 2
IBUS5002 Strategy, Innovation and 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 IBUS5011 or WORK6112	Semester 1 Semester 2
IBUS6014 Intellectual Property Management <i>This unit of study is not available in 2018</i>	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	Semester 2
IBUS6023 Engaged Entrepreneurship Projects	6	P IBUS5002 <i>Note: Department permission required for enrolment</i>	Intensive December Intensive February Intensive January Intensive July Semester 1 Semester 2
INFS5001 Project Management	6	N INFS6014	Intensive January Semester 1 Semester 2
INFS6022 Systemic Sustainable Development	6	A Understanding the major functions of a business and how those business functions interact internally and externally so the company can be competitive in a changing market. How information systems can be used and managed in a business. How to critically analyse a business and determine its option for transformation. Desirable Experience as a member of a project team.	Semester 1
LAWS6061 International Environmental Law	6		Intensive May
LAWS6252 Legal Reasoning and the Common Law System	6	N LAWS6881 <i>Students are recommended to enrol well in advance of classes in order to complete pre-class readings (normally available to enrolled students 3 weeks prior to the first class). Law graduates from a non-common law jurisdiction are also recommended to complete classes for this unit during the first week of their commencing semester.</i>	Intensive April Intensive August Intensive March Intensive September

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
MIPH5116 Culture, Health, Illness and Medicine <i>This unit of study is not available in 2018</i>	4		Semester 2
MKTG5001 Marketing Principles	6		Semester 1 Semester 2
NURS5002 Social Contexts of Health	6		Semester 1
PACS6914 Conflict-Resolving Media	6	N SCWK6935	Intensive August
PHYS4801 Industrial Ecology	6		Semester 1
PHYS4802 Quantitative Disaster Analysis	6		Semester 2
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

Sustainability

Unit of study descriptions

SUST5001

Introduction to Sustainability Science

Credit points: 6 **Teacher/Coordinator:** Professor Philip McManus **Session:** Semester 1, Semester 2 **Classes:** One 2 to 2.5 hour interactive lecture per week with up to four hours per week spent on a combination of additional (e.g. on-line) learning tasks, small group sessions and consultation with lecturers. **Assessment:** Essays, oral presentations, short written assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.

This unit of study will introduce students to the concepts and multidisciplinary nature of sustainability, starting with the physical basis of climate change and its impact on the environment and human development. This will be followed by several case studies covering Energy, Health, Development and Environment. The case studies will be presented by industry professionals and will illustrate sustainability issues currently before Australia- their origins, impacts and industry responses. The unit of study will provide students with a holistic systems lens through which to view their learning throughout the Masters program. This will underpin understanding of the integrated nature of sustainability and facilitate the challenging of silo-based assumptions- their own and those of others. The intention is to ground understanding of complex systems in the real world through the use of case studies that will demonstrate organisational change and problem solving in a world with competing values and conflicting views of what it means to live sustainably. Students completing the unit of study will have a "sustainability tool kit" to apply to sustainability issues in their professional and community activities.

SUST5002

Food and Water Security Science

Credit points: 6 **Teacher/Coordinator:** Associate Professor Robyn Alders **Session:** Semester 2 **Classes:** One 2 to 2.5 hour interactive lecture per week with up to four hours per week spent on a combination of additional (e.g. on-line) learning tasks, small group sessions and consultation with lecturers. **Corequisites:** SUST5001 **Assessment:** Essays, short written assignments (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.

This unit 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

Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.

This unit will examine the critical roles that energy and resource usage play in global, national and local sustainability. The need for developed economies to decarbonise their energy supply and for developing countries to have access to clean energy and sustainable resources will require major changes in technology, policy and business systems. This unit of study will cover the fundamentals of energy and resource supply; sustainable supply and use of energy for industry, business and consumers; life cycle analysis; energy security and alternative energy systems. Students will gain an understanding of: different sources of energy and their uses; the economic, environmental and societal contexts of energy and resource use; the need and scope for a transition from conventional energy sources; sound principles for analysing different resource and energy supply options; the role of international agreements and federal policy in influencing resource and energy use.

SUST5004

Sustainable Development and Population Health Science

Credit points: 6 **Teacher/Coordinator:** 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

Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.

This unit introduces students to the extremely close nexus between human health, demographic change and environmental sustainability issues. This relationship is examined within the context of the three pillars of sustainable development with a focus on achieving equitable outcomes. 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, 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

Law, Policy and Sustainability



Science

Credit points: 6 **Teacher/Coordinator:** Associate Professor Ed Couzens
Session: Intensive October **Classes:** Intensive classes for 4 full days in October
Corequisites: SUST5001 **Assessment:** Class presentation and short essay (1,500-2,000 w, 20%) and long essay (6,000 w, 80%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.

This unit examines how policy-makers engage with and implement policies and legal requirements for regulating ecologically sustainable development. Meeting the needs of a growing global population while at the same time maintaining the health of the environment, which provides the life support system for humanity, is the central policy challenge of the 21st century. Key sustainability challenges include: avoiding dangerous climate change, safeguarding biological diversity, providing food security, coping with resource scarcity, and promoting green technology including low-carbon energy generation. These issues provide acute challenges for governments given that they cut across a range of policy areas, and require long-term planning rather than short-term decision-making. The unit examines how policy-makers at international, national and sub-national scales consider and respond to sustainability issues. Students will be introduced to: the role of analysis (economic, legal, political, scientific and social etc) in providing an evidence base for decisions; the variety of instruments and institutions available for policy delivery; how the lobbying process influences policy determination; and effectiveness of policy design and implementation. The unit also examines how decision-making is influenced by stakeholders, including industry, nongovernmental organisations and citizens. It will be seen that sustainability policy design and implementation in the real world involves reconciling competing agendas and interests, and that trade-offs are often made that may strengthen or weaken the effectiveness of sustainability policies. Offered through the Sydney Law School, this unit introduces students to the legal imperatives (both international and national) which inform and mandate policy choices.

SUST5006

Sustainability: Business and Leadership Science

Credit points: 6 **Teacher/Coordinator:** Professor Christopher Wright **Session:** Semester 1 **Classes:** One 2.5 hour interactive lecture per week with up to four hours per week spent on a combination of additional (e.g. on-line) learning tasks, small group sessions and consultation with lecturers. **Corequisites:** SUST5001 **Assessment:** Essays, short written assignments, group project (100%) **Practical field work:** Experiential learning with sustainable enterprise **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: This unit of study involves essay-writing. Academic writing skills equivalent to HSC Advanced English or significant consultation via the Writing Hub is assumed.

This unit of study will 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, sustainability and change management. 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. Learning will be facilitated through seminars, readings, as well as individual group projects.

PHYS5031

Ecological Econ and Sustainable Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik **Session:** Semester 1 **Classes:** 1.5-hour lecture interspersed with hands-on exercises per week, and 1 hour seminar per week. **Assessment:** Essay, presentation and comprehensive diary/notes from lectures (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study introduces contemporary topics from Ecological Economics and Sustainability Analysis, such as metrics for measuring sustainability; planetary boundaries and other natural limits; comparisons between ecological and environmental economics; valuing the environment; intergenerational discounting; global equality with a focus on the climate change debate; and links between theories of well-being, human behaviour, consumerism and environmental impact. This unit includes guest lecturers from industry and research and an excursion. Each lecture includes hands-on exercises for practical skill-building. The unit sets the scene for the more detailed and specific units PHYS5032, PHYS5033, and PHYS5034.

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:** SUST5008 or SUST5009 **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 either alone or in teams of 2-4 members propose a research enquiry (possibly based on their employment). If students are working as a team then each student must present and report on a discrete aspect of the project, while also showing how each part builds towards the whole. The project is multidisciplinary and should cover at least 2 sustainability theme areas (energy and resources, food and water, health and populations, policy, society and change, business, and sustainability analysis) and be approved by the Unit Coordinator. Students must also demonstrate an understanding of sustainable systems by considering the social, environmental, and economic consequences of their project. The Unit Coordinator will appoint an academic advisor for each student or 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 either alone or in teams of 2-4 members propose a research enquiry (possibly based on their employment). If students are working as a team then each student must present and report on a discrete aspect of the project, while also showing how each part builds towards the whole. The project is multidisciplinary and should cover at least 2 sustainability theme areas (energy and resources, food and water, health and populations, policy, society and change, business, and sustainability analysis) and be approved by the Unit Coordinator. Students must also demonstrate an understanding of sustainable systems by considering the social, environmental, and economic consequences of their project. The Unit Coordinator will appoint an academic advisor for each student or 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 either alone or in teams of 2-4 members propose a research enquiry (possibly based on their employment). If students are working as a team then each student must present and report on a discrete aspect of the project, while also showing how each part builds towards the whole. The project is multidisciplinary and should cover at least 2 sustainability theme areas (energy and resources, food and water, health and populations, policy, society and change, business, and sustainability analysis) and be approved by the Unit Coordinator. Students must also demonstrate an understanding of sustainable systems by considering the social, environmental, and economic consequences of their project. The Unit Coordinator will appoint an academic advisor for each student or 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 Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Inakwu Odeh **Session:** Semester 2 **Classes:** One 2-hour lecture per week in weeks 1-7, project work weeks 8-13, one 3-hour practical weeks 1-7 **Assumed knowledge:** ENVX3001 and SOIL3004. **Assessment:** One 30 min presentation (10%), laboratory work reports (40%), group discussion online (10%), 1x3500wd 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 and Management Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Damien Field **Session:** Semester 1 **Classes:** One lecture, two tutorials per week, case study and 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 Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Willem Vervoort (Coordinator), Dr Floris van Ogtrop, A/Prof Daniel Tan **Session:** Semester 2 **Classes:** 3 hour workshop per week, practical work, project work during workshops **Assumed knowledge:** UG Maths or Physics or Hydrology. **Assessment:** Assignments (50%), 2-hour exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit builds on knowledge gained in undergraduate science units to develop an understanding of how climate variability affects water resources. Particular focus will be on the effect of climate variability and drought and how this affects plant production and water storage. At the completion of this unit student would be able to: Quantify drought and understand the different dimensions of drought; understand how climate variability impacts plant production and what stages; understand the memory of drought and the impact on resilience; understand how climate change can impact climate variability in the future. Open source software packages such as R and SWAT will be used for most analysis.

AFNR5801

Climate Change: Process, History, Issues Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Peter Franks (Coordinator), Dr Dan Penny, Dr Malcolm Possell **Session:** Semester 2 **Classes:** 18 hours lectures/tutorials, 12 hours practicals/field classes, 9 hours field trip preparation **Assumed knowledge:** A basic understanding of climate change processes and issues. **Assessment:** 2-hour 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 where students will be introduced to 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

Sydney School of Architecture, Design and Planning

Credit points: 6 **Teacher/Coordinator:** Dr Adrienne Keane **Session:** Semester 2 **Classes:** 3 hrs lectures/tutorials/wk **Prohibitions:** PLAN9048 **Assessment:** Two assessments, each 50%; both assessments may comprise group and individual work. Peer assessment of group tasks may be required. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will introduce the conceptual bases for sustainable development and explore how principles of sustainability can be introduced into land use planning and urban design, including environmental management and multi-criteria evaluation methodologies in three modules. The unit will examine the evolution of urban areas in relation to their biophysical setting. This will lead to an understanding and appreciation of the urban ecology of a city in terms of the flows of materials, resources and energy, and the challenges presented by climate change and peak oil. The principles of sustainability and the history and development of concepts of urban sustainability will be demonstrated through case studies. Assessments will explore a student's learning of the methods and frameworks for evaluating and measuring sustainability that are introduced in this unit.

BETH5203

Ethics and Public Health Medicine (Sydney Medical School)

Credit points: 6 **Teacher/Coordinator:** TBC **Session:** Semester 2 **Classes:** 5x7hour intensives; or Distance Education (online). **Prohibitions:** BETH5206 **Assessment:** 5xOnline Quiz (50%); 1x2500wd essay (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode, Online

This unit provides students with an overview of the ethical and political issues that underlie public health and public health research. The unit begins with some fundamentals: the nature of ethics, of public health (and how it might be different to clinical medicine) and of public health ethics. It 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 range of practical public health problems and issues will be considered, including ethical dimensions of communicable and non-communicable diseases in populations, and the ethical challenges of public health research. 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 list of readings (in digital format).

DESC9147

Sustainable Building Design Principles Sydney School of Architecture, Design and Planning

Credit points: 6 **Teacher/Coordinator:** Dr Daniel Ryan **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Assessment:** Two assignments (1x35%, 1x65%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: Department permission required for enrolment.

This unit aims to develop a critical understanding in students of building design principles that reduce the impact of the built environment on energy, water and material resource flows. Students will gain an overview of technical strategies that reduce the environmental impact of buildings and develop an awareness of the benchmarks and metrics used to judge the implementation of environmental design principles. The unit pays particular attention to design principles that relate to the environmental performance of the building fabric and the thermal and hydraulic systems of buildings.

DESC9148

Sustainable Building Design Practice Sydney School of Architecture, Design and Planning

Credit points: 6 **Teacher/Coordinator:** Dr Daniel Ryan **Session:** Semester 1 **Classes:** 5-day intensive (9am-5pm) **Prerequisites:** DESC9201 **Assessment:** Two assignments (1x40%, 1x60%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Assessing building performance and integrating environmental building systems and construction forms the core of sustainable building design practice. This advanced unit explores the methods, workflows and regulatory frameworks to design best-practice sustainable buildings. It develops your ability to work as a sustainable building consultant. You will learn how to evaluate and critique the environmental performance of real-world projects and set targets and apply strategies to improve designs. The unit also reviews working methods for integrated design and will develop your ability to communicate environmental performance to other design team members.

DESC9201

Indoor Environmental Quality (IEQ) Sydney School of 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

Note: This unit is delivered at the University of Sydney.

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

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 Arts and Social Sciences

Credit points: 6 **Teacher/Coordinator:** Associate Professor Lina Markauskaite
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 Arts and Social Sciences

Credit points: 6 **Teacher/Coordinator:** Associate Professor 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:** A/Prof 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 Science

Credit points: 6 **Teacher/Coordinator:** Dr Feike Dijkstra (Coordinator); A/Prof. Thomas Bishop; Dr Floris van Ogtrop. **Session:** Semester 1 **Classes:** One 2-hour lecture and one practical per week; one field trip (weekend) **Assessment:** Writing assignment (35%), practical report (40%), presentation and peer review (15%), computer lab (10%) **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 Robert Fisher **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 Tristan Salles **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 **Session:** Intensive July **Classes:** Two pre-departure lectures, 14-day field intensive. **Assessment:** Essay and presentation (100%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Field experience

Note: Department permission required for enrolment. Note: This unit of study involves additional costs.

This unit of study constitutes an international field-based experience held in Southeast Asia during the July semester break. It explores the contested notions of sustainable development and sustainability through exposure to real world development dilemmas in Southeast Asia. We explore fundamental issues such as urbanization, sustainable livelihood, 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 Coordinators 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 \$1,200. Students will also be required to arrange their own international travel to the starting point (either Vientiane or Jakarta depending on the specific location of the course).

GEOG5001

Geographic Information Science A Science

Credit points: 6 **Teacher/Coordinator:** Dr Kevin Davies **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:** Quiz and Assignments (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:** Dr Bree Morgan **Session:** Semester 2 **Classes:** 3 hours of lectures and two 6 hour practicals per semester. **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

This unit introduces methods for mapping environmental signatures in coastal and marine systems, using both biogeochemical analysis and GIS technologies. Students will learn, theoretically and practically, how environmental data is collected using a range of different methodologies (field and computer based), and application of this data to understanding landscape processes and quantifying environmental change. Students will acquire skills in applying environmental mapping techniques to interpreting key Earth surface processes and understanding the substantial impacts that humans can have on these, in terms of both contamination and remediation.

GOVT6135

Global Environmental Politics Arts and Social Sciences

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.

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, Semester 2 **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:** block mode with compulsory intensive workshops on campus. 2 x 2-day workshops, online lectures and discussions **Assessment:** Online learning quiz (5%); online problem based learning exercise (15%); 1 x 1500wd written assignment (30%); 1 x 3000wd written assignment (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit aims to develop a critical and comparative understanding of the history, theory and practice of health policy. It gives an overview of the political choices and frameworks - national and global - that shape policymaking. The unit examines policy frameworks, and the

roles of politics, evidence and advocacy in setting policy priorities. Analysis and debates regarding health policy will be placed in broader contexts - comparing different health systems and priorities for health. Case studies will be used to examine the relationships between policy and practice.

Learning outcomes. By the end of this unit students will be able to: (i) Define the boundaries and key features of health policy; (ii) Understand the basic history and features of the Australian health system; (iii) Identify policy instruments and how they function; (iv) Understand the main frameworks used for analysing policy; (v) Understand the factors influencing how policy issues are prioritized in health; (vi) Gain skills in policy communication, including preparation of a policy brief.

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:** Block mode with compulsory intensive workshops on Campus or online only mode. Block mode 2 x 2 day workshops plus 4 tutorials (tutorials offered face-to-face or online) or online only. **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:** Block mode, Online

The aim of this unit 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. We analyse the influence and power of institutions and actors in the development and implementation of global health policy, and investigate the governance of global health policy responses. Teaching makes extensive use of current case studies from recognised experts in the field.

Learning outcomes. By the end of this unit students will be able to: (i) Explain the effects of globalization on health of populations; (ii) Demonstrate how events and trends in health and non-health areas affect global health policy; (iii) Identify and classify the different types of actors/institutions that influence health policy; (iv) Undertake a policy stakeholder analysis with reference to power, influence and interests; (v) Develop strategies to influence global health policy development and implementation; (vi) Define global health governance and its role in structuring and regulating global health policy.

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 and Entrepreneurship Business (Business School)

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 1x 3hr seminar per week **Prohibitions:** IBUS5001 **Assessment:** mid-semester test (20%), short essay (20%), group assignment (30%), final exam (30%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) evening

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 **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) evening

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 **Session:** Semester 1, Semester 2 **Classes:** 1x 3 hr lecture/seminar per week for classes **Prohibitions:** IBUS5011 or WORK6112 **Assumed knowledge:** IBUS5002, or completion of at least 24 credit points **Assessment:** business opportunity and strategy design assignment (35%), start up financials (15%), business plan assignment and presentation (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) evening

Being able to identify and exploit new business opportunities is critical to all sizes of businesses. Identifying new markets, developing new products and implementing new business models are highly-regarded and valuable skills for entrepreneurs and business managers alike. This unit is structured around learning from engaged practice in order to explore the special problems and opportunities associated with entrepreneurial start-ups. Students engage with start up and early stage businesses to deliver a plan to help them become profitable. Topics include opportunity recognition, strategy development, business model design, customer acquisition and retention, financial model development, as well as entrepreneurial and creative leadership.

IBUS6014

Intellectual Property Management Business (Business School)

Credit points: 6 **Session:** Semester 1 **Classes:** 1x 2hr lecture and 1x 1hr seminar/wk **Assumed knowledge:** IBUS5002, or completion of at least 24 credit points **Assessment:** IP protection written report (25%), mid semester test (20%), major project presentation (15%), participation (10%), major project written report (30%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) evening

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 **Session:** Semester 2 **Classes:** Semester 1: 1x 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 report (25%), practice and final pitch (25%), final report (25%), reflective piece (15%), workshop engagement and participation (10%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) evening

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.

IBUS6023

Engaged Entrepreneurship Projects Business (Business School)

Credit points: 6 **Session:** Intensive December, Intensive February, Intensive January, Intensive July, Semester 1, Semester 2 **Classes:** classes will include 39 hours contact with heavy emphasis on a mix of seminars, workshops and other sessions. With intensive block mode, students will typically be in-country for a period of 2 weeks, with seminars prior and after departure **Prerequisites:** IBUS5002 **Assessment:** Respond to the brief (0%), interim pitch (15%), final pitch (15%), final report (30%), reflective piece (40%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) evening, Field experience

Note: Department permission required for enrolment.

This unit of study will be intensively taught off campus, enabling you to engage deeply with entrepreneurial contexts and opportunities. The unit will be offered in a variety of contexts but could include businesses in cities, towns or remote locations in Australia and Asia. You will work intensively with a business or community to resolve a particular problem, and apply entrepreneurial insights and actions to grow an existing or new enterprise. These problems could be addressed through commercial or social entrepreneurship, and will typically require that you engage with other fields such as architecture or engineering. The focus of the unit is learning with action, and acting with learning - you will cover topics that will ensure you appropriately understand the situation, as well as organisational resources, capabilities and vision. With this understanding you will be challenged to develop an entrepreneurial strategy and funding proposal that can be implemented by the enterprise.

INFS5001

Project Management Business (Business School)

Credit points: 6 **Session:** Intensive January, Semester 1, Semester 2 **Classes:** Semester 1 and Semester 2: 1 x 3hr seminar per week; Summer School: 3 x 3hr seminar per week **Prohibitions:** INFS6014 **Assessment:** Semester 1 and Semester 2: group assignment (25%), individual assignment (30%), exam (45%); Summer School: individual assignment (50%), exam (50%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) evening, Block mode

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).

INFS6022

Systemic Sustainable Development Business (Business School)

Credit points: 6 **Session:** Semester 1 **Classes:** 1x 3hr seminar per week **Assumed knowledge:** Understanding the major functions of a business and how those business functions interact internally and externally so the company can be competitive in a changing market. How information systems can be used and managed in a business. How to critically analyse a business and determine its option for transformation. Desirable Experience as a member of a project team. **Assessment:** assignment 1 (10%), assignment 2 (40%), assignment 3 - report (40%), assignment 3 - presentation (10%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) evening

In this unit of study students will engage comprehensively and critically with the challenges and opportunities presented to businesses by the United Nation's agenda of sustainable development. This UN agenda outlines a systemic development concept for the period 2016-2030 covering four critical dimensions: economic development, social inclusion, environmental sustainability, and good governance. The key idea of this framework is the mobilisation of key all societal actors in the public and private sectors, in order to achieve a transition from 'business-as-usual' thinking towards a sustainable development path. As the principal engine for economic growth and job creation, but also the principal consumers of natural resources, businesses have a critical role to play in this process. Critically, businesses will have to develop and deliver many of the new technologies, organizational models, and management systems that are required in this transition. Against this background, in this unit of study you will analyse how business leaders and managers can transform their companies towards systemic sustainable development. You will learn to apply relevant theoretical frameworks based on the practices of pioneering companies, and critically question the feasibility of the UN agenda in light of the competitive nature of business.

LAWS6061

International Environmental Law Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Prof Rosemary Lyster, Assoc Prof Ed Couzens **Session:** Intensive May **Classes:** Apr 27, 28 and May 4, 5 (9-5) **Assessment:** compulsory in-class practical assessment (40%) and assignment (60%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

This unit aims to provide an introduction to the framework, concepts, sources and techniques of international environmental law, and to provide an overview of international law responses to current and emerging environmental challenges. The history and framework of international environmental law will be examined before exploring a range of topical international environmental law issues, including atmospheric protection and climate change, hazardous substances and wastes, biodiversity and GMOs, the protection of marine living resources, the protection of freshwater resources and issues concerning trade. The unit will also survey the influence of international environmental law on domestic environmental law through case studies. Overarching themes will include the interdependence of environmental issues, the effects of scientific uncertainty on international environmental regulation, implementation of international environmental obligations between states at difference levels of economic development and the need for effectiveness in implementation and enforcement.

LAWS6252

Legal Reasoning and the Common Law System Sydney Law School

Credit points: 6 **Teacher/Coordinator:** Ms Alexandra Fowler **Session:** Intensive April, Intensive August, Intensive March, Intensive September **Classes:** S1CIMR (Group A): Mar 5, 6 and 8, 9 (9-5); S1CIAP (Group B): Mar 26, 27 and Apr 9 and 10 (9-5); S2CIAU (Group C): Jul 30, 31 and Aug 2, 3 (9-5); S2CISE (Group D): Aug 20, 21 and Sep 3, 4 (9-5) **Prohibitions:** LAWS6881 **Assessment:** in-class test (30%) and take-home exam (70%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Block mode

Note: Students are recommended to enrol well in advance of classes in order to complete pre-class readings (normally available to enrolled students 3 weeks prior to the first class). Law graduates from a non-common law jurisdiction are

also recommended to complete classes for this unit during the first week of their commencing semester.

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 Health Law; Master of Labour Law and Relations 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:** 1x3000 word essay (65%) and 1x1hr class facilitation (25%), class participation 10%. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Online, 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:** in-semester exam(s) (25%), final exam (35%), team project (30%), class participation (10%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day, Normal (lecture/lab/tutorial) evening

This unit introduces students to 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. An emphasis is placed on strategy planning and the marketing decision process. It is an introduction to the issues and terminology of marketing that can serve as a standalone understanding of the basics of marketing or as a foundation unit for further study in marketing. The unit focuses on the practical analysis marketing and the marketing management process and the development of the marketing mix the components that make up a 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:** Student assessment (100%) conducted throughout the semester, as advised within the relevant unit of study outline **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 August **Classes:** Intensive delivery over 5 days (total 30hrs) **Prohibitions:** SCWK6935 **Assessment:** 2x2500wd Commentaries (80%), Seminar participation (20%) **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

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.

PHYS4801

Industrial Ecology Science

Credit points: 6 **Teacher/Coordinator:** Dr Arne Geschke **Session:** Semester 1 **Classes:** 1x1hr lecture and 1x1hr tutorial per week **Assessment:** short seminar presentation and summary, comprehensive notes from lectures and tutorials. **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Industrial Ecology is a cross-disciplinary research field. This unit will provide an introduction to the principles and applications of Industrial Ecology, with a focus on understanding the complexity and interconnectedness between economic and environmental systems. The unit will explore goals and methods of Industrial Ecology, with an emphasis on concrete applications, such as renewable energy systems, waste generation, recycling and industrial symbiosis, urban sustainability, and many more. Through these examples students will gain a thorough understanding of the usefulness of Industrial Ecology principles and approaches, for example in quantitative assessments of environmental impact and social risk, design of environmentaleconomic policy and energy systems, and urban sustainability planning. Students will be introduced to the Industrial Ecology Virtual Laboratory technology newly developed at the School of Physics. Students will walk away from this unit equipped with all skills needed to undertake their own environmental, social and economic Industrial Ecology projects in the virtual laboratory.

Textbooks

Taking stock of industrial ecology by Roland Clift and Angela Druckman. E-book available via the library website.

PHYS4802

Quantitative Disaster Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik **Session:** Semester 2 **Classes:** 1x1.5hr lecture and 1x1hr tutorial per week **Assessment:** written essay, oral presentation, comprehensive notes from lectures and tutorials

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

In recent decades, anthropogenic disasters such as climate change are increasingly adding to natural disasters, both impacting on increasing numbers of people and assets of built infrastructure, resulting in increasing loss of lives and damage cost. It is therefore important to understand the impacts of disasters before they strike and the vulnerability of certain sectors of the economy, enabling us to take precautionary measures to protect people and minimise damage. Disaster analysis has become a powerful tool for assessing potential economic losses, and in particular for preparing recovery plans and developing scenarios for building resilience into the economy. This unit will provide an introduction to the field of disaster analysis, with particular emphasis on simulating and quantifying the effects of a disaster on an economy, both directly and indirectly as a result of cascading disruptions of supply chains. The aim of the unit is to equip students with an understanding of the quantitative approaches underlying the field of disaster analysis, and their importance for complementing humanitarian engineering and for planning resilient economies. In particular, students will study the technique of disaster input-output analysis and undertake hands-on exercises, modeling disasters and shocks at regional, national and global scales. This unit of study will explore the many applications of disaster modelling in assessing the impacts of floods, droughts, diseases, and a collapse of animal and plant populations.

Textbooks

Comprehensive reference lists will be distributed to students each week.

PHYS5032

Techniques for Sustainability Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arne Geschke and Prof Manfred Lenzen **Session:** Semester 1, Semester 2 **Classes:** 2.5-hour lecture including tutorial per week **Assessment:** Two assignments based on weekly homework sheets (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 a practical introduction to quantitative analysis techniques including multiple regression, uncertainty analysis, integration, structural decomposition, and dynamic systems modelling, with a strong emphasis on demonstrating their usefulness for environmental problem-solving. This unit will show students how mathematics can be brought to life when utilised in powerful applications to deal with environmental and sustainability issues. Throughout the unit of study, example applications will be explained, including climate modelling, ecosystem trophic chain analysis, linking household consumption and environmental impact, identifying socio-demographic drivers of environmental change, and the uncovering the effect of land use patterns on threats to species.

PHYS5033

Environmental Footprints and IO Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik and Prof Manfred Lenzen **Session:** Semester 1, Semester 2 **Classes:** 2-hour lecture interspersed with hands-on exercises per week **Assessment:** Comprehensive diary/notes from lectures, including a quantitative example (100%) **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 students with both the theoretical understanding and the practical skills needed to carry out their own environmental footprint and impact analyses. This unit uses state of the art economic input-output theory and input-output analysis, and focuses on contemporary environmental applications such as carbon footprints and life-cycle assessment. The unit first explores national and global economic and environmental accounting systems and their relationships to organisational accounting. Second, it will present cutting-edge techniques enabling the global analysis of environmental impacts of international trade. Third, it offers hands-on instruction to master the basic input-output calculus conceived by Nobel Prize

Laureate Wassily Leontief, and provide a step-by-step recipe for how to undertake boundary-free environmental footprinting by integrating economic and environmental accounts, and by applying Leontief's calculus to data published by statistical offices. Students will walk away from this unit equipped with all skills needed to calculate footprints, and prepare sustainability reports for any organisation, city, region, or nation, using organisational data, economic input-output tables and environmental accounts. Students will also benefit from also enrolling in PHYS5034 for a sound understanding of the role of input-output analysis within the field of Life-Cycle Assessment.

PHYS5034

Life Cycle Analysis Science

Credit points: 6 **Teacher/Coordinator:** Dr Arunima Malik **Session:** Semester 2 **Classes:** 2.5-hour lecture interspersed with hands-on exercises per week **Assessment:** Essay, presentation and comprehensive diary/notes from lectures (100%). **Campus:** Camperdown/Darlington, Sydney **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: Minimum class size of 5 students.

This unit of study covers philosophy, techniques, applications and standards of Life-Cycle Assessment (LCA). It introduces methods from engineering (Process Analysis) and economics (Input-Output Analysis), and discusses current popular LCA tools. The unit places importance on practical relevance by including real-world cases studies and business applications as well as global standards such as the GHG Protocol for accounting for scopes -1, -2 and -3 emissions and ISO standards. The unit of study will culminate with practical exercises using current software tools to provide students with hands-on experience of preparing a comprehensive Life-Cycle Assessment of an application of their choice. Students will also benefit from also enrolling in PHYS5033 for a sound understanding of input-output analysis as the basis of hybrid LCA methods.

Veterinary Studies and Veterinary Clinical Studies

Master of Veterinary Studies / Master of Veterinary Clinical Studies

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

Course resolutions

1 Course codes

Code	Course title
	Master of Veterinary Studies / Master of Veterinary Clinical Studies

2 Attendance pattern

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

3 Master's type

This is a combined master's degree consisting of a coursework master's degree which is an advanced learning master's course, as defined by the Coursework Rule; and a research master's degree.

4 Streams

(1) The combined degree of the Master of Veterinary Studies / Master of Veterinary Clinical Studies is available in the following streams:

- (a) Avian Medicine
- (b) Canine Medicine
- (c) Equine Medicine
- (d) Equine Sports Medicine and Rehabilitation
- (e) Equine Surgery
- (f) Feline Medicine
- (g) Ruminant Medicine
- (h) Small Animal Cardiology
- (i) Small Animal Surgery
- (j) Small Animal Medicine
- (k) Veterinary Anaesthesia
- (l) Veterinary Behaviour
- (m) Veterinary Dermatology
- (n) Veterinary Diagnostic Imaging
- (o) Veterinary Emergency Medicine and Critical Care
- (p) Veterinary Epidemiology
- (q) Veterinary Neurology
- (r) Veterinary Oncology
- (s) Veterinary Ophthalmology
- (t) Veterinary Pathology

(2) The degree of Master of Veterinary Studies / Master of Veterinary Clinical Studies shall be awarded in the stream in which the candidate enrolls. The testamur for the degree shall specify the stream.

(3) Candidates wishing to transfer between streams should contact the Faculty Office.

5 Admission to candidature

- (1) This combined degree is available to domestic and international candidates.
- (2) Available places will be offered to qualified applicants based on academic merit and relevant professional experience, according to the following admissions criteria:
 - (a) A Bachelor of Veterinary Science with Honours or equivalent, such as a masters degree which is recognised by the NSW Veterinary Practitioners Board (relevant professional experience in the relevant stream is desirable).
 - (b) Full registration, or Registration with conditions, or Limited Registration with the NSW Veterinary Practitioners Board for the entire duration of the candidature.
- (3) Admission to candidature will be conditional upon the appointment of an appropriate clinical supervisor and associate supervisor.
- (4) The Associate Dean Postgraduate Studies in consultation with the Associate Dean Clinical Services will appoint a research supervisor and associate supervisor for each candidate in accordance with the HDR Rule and Academic Board policies for postgraduate research higher degree supervision.

6 Requirements for award

To qualify for the award of the Master of Veterinary Studies / Master of Veterinary Clinical Studies, a candidate must complete 48 credit points relevant to their chosen stream, including:

- (i) Undertake a research project and producing a research thesis (containing a literature review, and chapters on materials and methods, results and discussion) that meets the requirements specified in the HDR Rule.
- (ii) The thesis should not normally exceed 40,000 words.

7 Progression rules and probation

- (1) Candidates who fail any unit of study will be identified as not meeting academic progression requirements and become subject to the Progression provisions of the Coursework Rule. Candidates who subsequently fail the unit of study for a second time will be excluded from the course if they cannot show cause. Any further failures will result in automatic exclusion from the course.



- (2) There are no unit of study barriers for progression.
- (3) Requirements for progress in the Master of Veterinary Clinical Studies will require that:
 - (a) 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.
 - (b) In the probationary period each candidate must:
 - (i) complete a specified research methods unit of study if prescribed by the Faculty;
 - (ii) develop and present a refined research proposal to the satisfaction of the Supervisor.
 - (c) The HDR Rule specifies the conditions for the progression by the Faculty for the Master of Veterinary Clinical Studies
 - (i) 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.

8 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 Postgraduate Education and Research Training Committee will act in place of the PhD Award Sub-committee.

9 Award of the degree

- (1) The Master of Veterinary Studies is awarded on successful completion of 48 credit points.
- (2) The Master of Veterinary Clinical Studies is awarded at the Pass level only.

10 Embedded courses in this sequence

- (1) The embedded courses in this sequence are:
 - (a) the Graduate Certificate in Veterinary Studies (in the relevant stream);
 - (b) the Graduate Diploma in Veterinary Studies (in the relevant stream);
 - (c) the Master of Veterinary Studies (in the relevant stream).

11 Course transfer

A candidate for the Master of Veterinary Studies/Master of Veterinary Clinical Studies may abandon the combined degree and elect to discontinue study and graduate with the Master of Veterinary Studies alone or with a shorter award from the embedded sequence detailed in the course resolutions for this degree in the relevant stream as defined by the combined Master of Veterinary Studies/Master of Veterinary Clinical Studies, or graduate with the Master of Veterinary Clinical Studies alone, with the approval of the Dean, and provided the requirements of the shorter award or research master's respectively, have been met.

Veterinary Studies and Veterinary Clinical Studies

Unit of study table

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
Veterinary Studies Clinical Residency Program			
Master of Veterinary Clinical Studies and Master of Veterinary Studies			
To qualify for this award a candidate must complete 48 credit points of approved coursework, including research or a case report.			
Elective Units			
VETS9013 Advanced Case Report in Vet Studies	6	<i>Note: Department permission required for enrolment Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2
VETS9014 Advanced Veterinary Clinical Practice 1	12	<i>Note: Department permission required for enrolment This is a supervised unit of study. Enrolment in this unit is subject to the availability of a suitable supervisor and submission of Learning Agreement outlining learning outcomes, approaches, assessment and assessment criteria before enrolment in and commencement of unit of study. Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2
VETS9015 Advanced Veterinary Clinical Practice 2	12	<i>Note: Department permission required for enrolment This is a supervised unit of study. Enrolment in this unit is subject to the availability of a suitable supervisor and submission of Learning Agreement outlining learning outcomes, approaches, assessment and assessment criteria before enrolment in and commencement of unit of study. Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2
VETS9016 Veterinary Training: Related Disciplines	6	<i>Note: Department permission required for enrolment Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2
VETS9017 Advanced Veterinary Clinical Practice 3	12	<i>Note: Department permission required for enrolment Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2
VETS9050 Diagnostic Laboratory Techniques	6	<i>Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2
VETS9051 Haematological and Biochemical Analysis	6	P VETS9050 <i>Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2
VETS9052 Necropsy and Surgical Pathology	6	P VETS9050 <i>Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2
VETS9054 Diagnostic Instrumentation Advanced	6	P VETS9050 and VETS9051 and VETS9052 and VETS9053 <i>Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2
VETS9055 Clinical Pathology Interpretation Adv	6	P VETS9050 <i>Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2
VETS9056 Necropsy and Surgical Pathology Adv	6	P VETS9050 and VETS9052 <i>Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2
VETS9057 Cytological Analysis Advanced	6	P VETS9050 and VETS9053 <i>Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.</i>	Semester 1 Semester 2



Veterinary Studies and Veterinary Clinical Studies

Units of study are offered in supervised mode. Students may select from any of the units of study shown below.

Supervised units of study are typically on-campus with very few students. Enrolment in these units is dependent on agreement from a suitable supervisor. Some supervised units of study, eg research project units of study, may be taken by distance students with an approved internal or external supervisor.

Unit of study descriptions

Veterinary Studies Clinical Residency Program

Master of Veterinary Clinical Studies and Master of Veterinary Studies

To qualify for this award a candidate must complete 48 credit points of approved coursework, including research or a case report.

Elective Units

VETS9013

Advanced Case Report in Vet Studies

Credit points: 6 **Teacher/Coordinator:** Dr Peter Bennett **Session:** Semester 1, Semester 2 **Classes:** 150 hours of case investigation and write-up **Assessment:** 2,000 - 6,000 word case report, oral presentation(s) (dependent on length of case report) **Mode of delivery:** Supervision

Note: Department permission required for enrolment. Note: Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This unit will require the investigation and preparation of a case report suitable for publication in a scientific journal. The case chosen should make a novel contribution to the veterinary literature. The length of the case report will vary according to journal requirements. Oral presentation(s) will form a part of the assessment for this unit, varying according to the required length of the report. Students should discuss the case regularly with their supervisor and complete a student/supervisor agreement form early to submit to the Sub Dean for Postgraduate Coursework.

VETS9014

Advanced Veterinary Clinical Practice 1

Credit points: 12 **Teacher/Coordinator:** Dr Peter Bennett **Session:** Semester 1, Semester 2 **Classes:** Supervision **Assessment:** On-going assessment of clinical performance (50%), written assessment task (in a format suitable for publication) (30%), Communication task (10%), Detailed case log (10%) **Mode of delivery:** Supervision

Note: Department permission required for enrolment. Note: This is a supervised unit of study. Enrolment in this unit is subject to the availability of a suitable supervisor and submission of Learning Agreement outlining learning outcomes, approaches, assessment and assessment criteria before enrolment in and commencement of unit of study. Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This is a post graduate unit for students admitted into the UVTH resident training program (an advanced learning program) and provides students with direct supervised in a chosen area of study aligned with their chosen veterinary specialist discipline (e.g. Veterinary Medicine, Veterinary Surgery, Veterinary Pathology etc).

This Unit provides students with a Capstone experience, allowing candidates to consolidate their learning and develop their clinical skills and knowledge further in their chosen speciality. It also gives students

the opportunity to participate in an externship, in order to meet ANZCVSc specialist requirements

Students are required to discuss learning outcomes, methods for achieving them, assessment and assessment criteria with their supervisor and submit documentation to the program Academic Supervisor before enrolment in and commencement of study in the relevant Semester.

Students must also outline their intention to participate in an externship prior to enrolment and receive approval from the program Academic Supervisor.

Textbooks

There are no set textbooks for this unit of study

VETS9015

Advanced Veterinary Clinical Practice 2

Credit points: 12 **Teacher/Coordinator:** Dr Peter Bennett **Session:** Semester 1, Semester 2 **Classes:** Supervision **Assessment:** Supervisor Report of on-going clinical performance (50%), written assessment task (in a format suitable for publication) (30%), Communication task (10%) detailed case log (10%) **Mode of delivery:** Supervision

Note: Department permission required for enrolment. Note: This is a supervised unit of study. Enrolment in this unit is subject to the availability of a suitable supervisor and submission of Learning Agreement outlining learning outcomes, approaches, assessment and assessment criteria before enrolment in and commencement of unit of study. Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This is a post graduate unit for students admitted into the UVTH resident training program (an advanced learning program) and provides students with direct supervision in a chosen area of study aligned with their chosen veterinary specialist discipline (e.g. Veterinary Medicine, Veterinary Surgery, Veterinary Pathology etc).

This Unit provides students with a Capstone experience, allowing candidates to consolidate their learning and develop their clinical skills and knowledge further in their chosen speciality. It also gives students the opportunity to participate in an externship, in order to meet ANZCVSc specialist requirements

Students are required to discuss learning outcomes, methods for achieving them, assessment and assessment criteria with their supervisor and submit documentation to the program Academic Supervisor before enrolment in and commencement of study in the relevant Semester.

Students must also outline their intention to participate in an externship prior to enrolment and receive approval from the program Academic Supervisor.

Textbooks

There are no set textbooks for this unit of study

VETS9016

Veterinary Training: Related Disciplines

Credit points: 6 **Teacher/Coordinator:** Dr Peter Bennett **Session:** Semester 1, Semester 2 **Classes:** Supervision **Assessment:** Supervisor Report of on-going clinical performance (50%), written assessment task (20%), oral assessment task (20%), detailed activity log (10%) **Mode of delivery:** Supervision

Note: Department permission required for enrolment. Note: Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This unit will allow students to be supervised in specific areas of study in related disciplines that are considered desirable but not covered in any other postgraduate units of their selected stream.

Students must discuss learning outcomes, methods for achieving them, assessment and assessment criteria with their Primary Discipline



Supervisor and submit a Learning Agreement to the program Academic Supervisor before enrolment in and commencement of study in the relevant Semester.

Textbooks

There are no set textbooks for this unit of study

VETS9017

Advanced Veterinary Clinical Practice 3

Credit points: 12 **Teacher/Coordinator:** Dr Peter Bennett **Session:** Semester 1, Semester 2 **Classes:** No. of student contact hours per week: Supervised clinical training, 2 hrs small group activities (rounds, journal club, tutorials), 4 hrs self-directed learning activities as set by supervisor. **Assessment:** a) Formal Assessment: Supervisor Report of on-going clinical performance (50%), written assessment task (in a format suitable for publication) (30%), Communication task (10%) detailed case log (10%) b) Other expected student workload (Assist with clinical case management, revision and private study **Mode of delivery:** Supervision

Note: Department permission required for enrolment. Note: Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This is a postgraduate unit for students admitted into the UVTH resident training program (an advanced learning program) and provides students with direct supervision in a chosen area of study aligned with their chosen veterinary specialist discipline (e.g. Veterinary Medicine, Veterinary Surgery, Veterinary Pathology etc).

This Unit provides students with a Capstone experience, allowing candidates to consolidate their learning and develop their clinical skills and knowledge further in their chosen specialty. It also gives students the opportunity to participate in an externship, in order to meet ANZCVSc specialist requirements

Students are required to discuss learning outcomes, methods for achieving them, assessment and assessment criteria with their supervisor and submit documentation to the program Academic Supervisor before enrolment in and commencement of study in the relevant Semester.

Students must also outline their intention to participate in an externship prior to enrolment and receive approval from the program Academic Supervisor.

Textbooks

There are no set textbooks for this unit of study.

VETS9050

Diagnostic Laboratory Techniques

Credit points: 6 **Teacher/Coordinator:** A/Prof Mark Krockenberger, Dr Rachael Gray **Session:** Semester 1, Semester 2 **Classes:** Supervision **Assessment:** 5,000 word assignment and an oral presentation or equivalent. **Mode of delivery:** Supervision

Note: Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This Unit of Study focuses on components that allow a diagnostic veterinary laboratory to provide quality information for the purposes of diagnosis and prognosis. There will be opportunities to understand specimen handling and processing, safety in the laboratory, diagnostic instrumentation, aspects of quality control and assurance for laboratory results, and the establishment and use of reference ranges. Students will be exposed to the theory and practice of a wide range of diagnostic techniques and procedures.

At the end of this Unit of Study, students will: Operate common laboratory instrumentation; Know safety requirements for handling and processing biological specimens; Understand aspects of quality control and assurance in relation to laboratory results; Understand the use of reference ranges; Know the theory behind common diagnostic laboratory techniques; Communicate effectively to colleagues results of laboratory tests.

Textbooks

Raphael SS (senior author). Lynch's Laboratory Technology. 4th edn. Philadelphia: WB Saunders 1983 ISBN 0-7216-7465-8
Kaplin LA, Pesce AJ. eds. Clinical Chemistry. 3rd edn. St Louis: Mosby 1996 ISBN 0-8151-5243-4
Burtis CA, Ashwood ER. eds. Tietz Fundamentals of Clinical Chemistry. 5th edn. Philadelphia: WB Saunders 2001 ISBN 0-7216-8634-6

VETS9051

Haematological and Biochemical Analysis

Credit points: 6 **Teacher/Coordinator:** A/Prof Mark Krockenberger, Dr Rachael Gray **Session:** Semester 1, Semester 2 **Classes:** Supervision **Prerequisites:** VETS9050 **Assessment:** 5,000 word assignment and an oral presentation or equivalent. **Mode of delivery:** Supervision

Note: Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This Unit of Study focuses on the use of haematological and biochemical tests in the investigation of disease. Faecal analysis and Urinalysis (all aspects) are included in this unit for convenience. Students will develop knowledge of commonly used tests and analytes, and skill in interpretation of results. Practical skills will be developed in haematology, urinalysis and faecal analysis. At the end of this Unit of Study, students will: Know and use the range of haematological and biochemical tests available for investigation of disease; Perform a full blood count; Understand haematological investigation of anaemia, leukaemia and bleeding disorders; Perform routine urinalysis; Perform faecal analysis; Identify cells and other morphological structures on blood films, urine wet preparations, and faecal smears; Interpret the significance of results and communicate these effectively to colleagues.

Textbooks

Archer RK, Jeffcott LB. Comparative Clinical Haematology. 1st edn. Oxford: Blackwell Scientific. 1977 ISBN 0-632-00289-1

VETS9052

Necropsy and Surgical Pathology

Credit points: 6 **Teacher/Coordinator:** A/Prof Mark Krockenberger. **Session:** Semester 1, Semester 2 **Classes:** Supervision **Prerequisites:** VETS9050 **Assessment:** 5,000 word assignment and an oral presentation or equivalent. **Mode of delivery:** Supervision

Note: Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This unit focuses on developing observation, interpretation and reporting skills for morbid anatomy and histopathology. Students will perform necropsies and select tissues for histopathological examination. They will also be exposed to techniques of processing and staining (H and E, special stains and immunohistochemical staining). There will be special attention paid to describing gross and microscopic changes, and writing reports. Students will be exposed to the fundamentals of interpretation. At the end of this Unit of Study, students will: Perform necropsies on, and collect tissues from, standard species; Effectively describe and communicate gross pathological changes (necropsy and biopsy); Select fixed tissues for histopathological processing; Understand the theory and practice of tissue processing and staining; Examine and describe histopathological slides; Understand basic interpretive techniques; Write adequate biopsy and necropsy reports.

Textbooks

Slauson DO, Cooper BJ. Mechanisms of Disease. A Textbook of Comparative General Pathology. 3rd edn. Mosby 2002
McGavin MD, Carlton WW, Zachary JF. Thomson's Special Veterinary Pathology. 3rd edn. Mosby 2000

VETS9054

Diagnostic Instrumentation Advanced

Credit points: 6 **Teacher/Coordinator:** A/Prof Mark Krockenberger, Dr Rachael Gray **Session:** Semester 1, Semester 2 **Classes:** Supervision **Prerequisites:** VETS9050 and VETS9051 and VETS9052 and VETS9053 **Assessment:** 5,000 word assessment and oral presentations or equivalent. **Mode of delivery:** Supervision

Note: Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This Unit of Study focuses on laboratory instrumentation used in veterinary practice as well as in a commercial laboratory practice. Students will be exposed to in-depth theory and practice of a wide range of diagnostic techniques and procedures. There will be a greater emphasis on quality control and assurance for laboratory results. Statistical analysis of results and establishment of reference intervals

will be an important component of this UoS. At the end of this Unit of Study, students will: Effectively operate common and advanced laboratory instrumentation; Know safety requirements for handling and processing biological specimens; Have advanced understanding aspects of quality control and assurance in relation to laboratory results; Understand the statistical evaluation of laboratory results; Be able to develop reference intervals for a range of biochemical and haematological tests; Know in-depth the theory behind common and advanced diagnostic laboratory techniques; Communicate effectively to colleagues results of laboratory tests.

Textbooks

Kaneko JJ, Harvey JW, Bruss ML. eds. *Clinical Biochemistry of Domestic Animals*. 5th edn. San Diego: Academic Press Inc. 1997 ISBN 0-12-396305-2

VETS9055

Clinical Pathology Interpretation Adv

Credit points: 6 **Teacher/Coordinator:** A/Prof Mark Krockenberger, Dr Rachael Gray **Session:** Semester 1, Semester 2 **Classes:** Supervision **Prerequisites:** VETS9050 **Assessment:** 6,000 word assessment and oral presentations or equivalent. **Mode of delivery:** Supervision

Note: Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This Unit of Study focuses on the advanced interpretation of clinical pathology results for purposes of diagnosis and prognosis. There will be a great emphasis on haematological and biochemical test analysis, with students being introduced to specialist topics such as bone marrow analysis, blood typing, coagulation studies, endocrinological analysis, protein electrophoresis analysis and acute phase proteins determination. At the end of this Unit of Study, students will: Understand advanced haematological investigation of anaemia, leukaemia and bleeding disorders; Perform bone marrow analysis; Perform and interpret coagulation studies; Perform and interpret endocrine assays; Perform and interpret protein electrophoretic and acute phase protein analysis; Interpret the significance of all clinical pathology results and communicate these effectively to colleagues.

Textbooks

Archer RK, Jeffcott LB. *Comparative Clinical Haematology*. 1st edn. Oxford: Blackwell Scientific 1977. ISBN 0-632-00289-1

VETS9056

Necropsy and Surgical Pathology Adv

Credit points: 6 **Teacher/Coordinator:** A/Prof Mark Krockenberger. **Session:** Semester 1, Semester 2 **Classes:** Supervision **Prerequisites:** VETS9050 and VETS9052 **Assessment:** 6,000 words assessment, oral presentation (may be included in necropsy procedures), necropsy and surgical pathology techniques and reporting are a major emphasis and will incorporate most of the 6,000 words assessment **Mode of delivery:** Supervision

Note: Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This Unit of Study focuses on developing advanced observation, interpretation and reporting skills for morbid anatomy and histopathology. Students will perform necropsies and select complete ranges of tissues for histopathological examination. They will also be expected to develop skills in techniques of processing a wide range of tissues and staining (in particular histochemical and immunohistochemical stains). There will be a greater emphasis paid to describing gross and microscopic changes, and writing reports. Students will be exposed to advanced levels of interpretation. At the end of this Unit of Study, students will: Perform necropsies on, and collect a wide range of tissues from, standard species; Describe and communicate gross pathological changes (necropsy and biopsy) at an advanced level; Select a wide range of fixed tissues for histopathological processing; Understand the theory and practice of routine tissue processing and staining; Understand the theory and practice of histochemical and immunohistochemical processing and staining; Perform histochemical and immunohistochemical processing and staining; Examine and describe histopathological slides to an advanced level; Be able to interpret common diseases from necropsy and biopsy material; Write superior biopsy and necropsy reports.

Textbooks

Slauson DO, Cooper BJ. *Mechanisms of Disease. A Textbook of Comparative General Pathology*. 3rd edn. Mosby 2002

VETS9057

Cytological Analysis Advanced

Credit points: 6 **Teacher/Coordinator:** A/Prof Mark Krockenberger, Dr Rachael Gray **Session:** Semester 1, Semester 2 **Classes:** Supervision **Prerequisites:** VETS9050 and VETS9053 **Assessment:** Assessment may be negotiated between student and supervisor to the equivalent of: 5,000 - 6,000 words of formal, written assignments (includes case reports), One 15 minute presentation, Cytological processing and reporting (non-negotiable). **Mode of delivery:** Supervision

Note: Students must have current registration with the NSW Veterinary Practitioners Board, Australia and must be admitted into a UVTH residency training program.

This Unit of Study focuses on the processing and interpretation of cytological samples. This will include both fluid and solid tissue analysis. There will be an emphasis on description and interpretation of fluids and solid tissue cytology. There will be an expectation that report writing will be of a high standard. At the end of this Unit of Study, students will: Process cytological samples from urine, joints, body cavities and cerebrospinal fluid; Process cytological samples from solid tissue (including fine needle cell aspirates, imprints and scrapings); Identify and interpret cells and other morphological structures in fluids and solid; Interpret pathological processes and common conditions in cytological samples; Write superior reports for cytological samples.

Textbooks

Raskin RE, Meyer DJ. eds. *Atlas of Canine and Feline Cytology*. 1st edn. Philadelphia: WB Saunders 2001. ISBN 0-7216-6335-4

Baker R, Lumsden JH. eds. *Color Atlas of Cytology of the Dog and Cat*. 1st edn. St Louis: Mosby. 2000. ISBN 0-8151-0402-2

Cowell RL, Tyler RD, Meinkoth JH. eds. *Diagnostic Cytology and Hematology of the Dog and Cat*. 2nd edn, St Louis: Mosby. 1999. ISBN 0-8151-0362-X

Cowell RL, Tyler RD. eds. *Diagnostic Cytology and Hematology of the Horse*. 2nd edn. St Louis: Mosby Inc. 2002. ISBN 0-323-01317-1

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 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

Course resolutions

1 Course codes

Code	Course and stream title
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, 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 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, 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 (two academic or one academic and one work experience related), as required by the Head of the School of Psychology.
- (4) Aboriginal and Torres Strait Islander applicants who wish to be considered for admission under the Cadigal program must additionally apply through the University's Mana Yura Student Support Team. Eligible applicants may be given priority for interviews.

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 Policy 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.

9 Progression rules

- (1) Candidates for the award course must satisfactorily complete all units of study.
- (2) Candidates who fail to satisfactorily complete a practicum unit of study at the first attempt can, following remediation, make a second attempt at completing a practicum unit of study.
- (3) Candidates who fail to satisfactorily complete two practicum units of study will be deemed to fail to meet progression requirements and may be asked to show good cause why they should be permitted to re-enrol in the award course.
- (4) Coursework and research units of study will be dealt with under the Progression rules of the University of Sydney (Coursework) Policy 2014.

10 Transitional provisions

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2018 and persons who commenced their candidature prior to 1 January, 2018 who elect to proceed under these resolutions.
- (2) Candidates who commenced prior to 1 January, 2018 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2023, or later date as the faculty may, in special circumstances, approve.

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, Dialectical Behaviour Therapy, 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>Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 1
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	<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>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>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
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

Sample Structure

Sample Full-Time Enrolment Sequence

	Sem	Unit of study 1 & credit points	Unit of study 2 & credit points	Unit of study 3 & credit points	Unit of study 4 & credit points	Total
Year 1	1	PSYC6078 6	PSYC6082 6	PSYC6083 6	PSYC6089 6	24
	2	PSYC6072 6	PSYC6079 6	PSYC6084 6	PSYC6085 6	24
Year 2	1	PSYC6073 6	PSYC6076 6	PSYC6080 6	PSYC6086 6	24
	2	PSYC6075 6	PSYC6077 6	PSYC6081 6	PSYC6087 6	24
Total credit points:						96



Clinical Psychology

Unit of study descriptions

PSYC6072

Case and Research Seminars 1 Science

Credit points: 6 **Session:** Semester 2 **Classes:** 3-hour weekly seminars
Assessment: Attendance at case and research seminars; Attendance at the School of Psychology Colloquium, PSYCHFEST Research proposal presentation (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 PSYC6089 Research, Ethics and Professional Practice. All students are required to attend and contribute to discussion of case and research seminar presentations throughout the semester, and are expected to attend the School Colloquium. All students will prepare a written case report. Students are required to complete one adult therapy, one child assessment or therapy, and one assessment case report across all case and research seminars units of study. Students will present their research and submit their ethics application, as necessary.

PSYC6073

Case and Research Seminars 2 Science

Credit points: 6 **Session:** Semester 1 **Classes:** 3-hour weekly seminars
Assessment: Case presentation; Case reports; 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 PSYC6072 Case and Research Seminars 1. All students are required to attend and contribute to discussion of case and research seminar presentations throughout the semester, and are expected to attend the School Colloquium. All students will present a clinical case and prepare written case report(s). Students are required to complete one adult therapy, one child assessment or therapy, and one assessment case report across all case and research seminars units of study.

PSYC6075

Case and Research Seminars 3 Science

Credit points: 6 **Session:** Semester 2 **Classes:** 3-hour weekly seminars
Assessment: Case presentation; Case reports; PsychFest research progress presentation (MCP) (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: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit of study will continue the case and research seminars introduced in PSYC6073 Case and Research Seminars 2. All students are required to attend and contribute to discussion of case and research seminar presentations throughout the semester, and are expected to attend the School Colloquium. Students will prepare case reports written up from an external placement. Students are required to complete one adult therapy, one child assessment or therapy, and

one assessment case report across all case and research seminars units of study. MCP students will present their research.

Textbooks

None

PSYC6076

Research Project 1 Science

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** Practical work
Prerequisites: PSYC6089 **Assessment:** Research report (MCP) or Systematic Review (MCP/PhD) (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: 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. MCP students are to complete a research report comprising a literature review including their research question, method section, analytic plan and research timeline including relevant details of their research. The total length of this initial project report must be no less than 2000 words. MCP/PhD students will complete a systematic review prepared as a manuscript for submission, including introduction and aims, method, results and discussion sections. The length of the systematic review will be determined by the area reviewed and journal guidelines, but should be at least 3000 words. These assessments will facilitate the write up of the thesis.

Textbooks

None

PSYC6077

Research Project 2 Science

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** Practical work
Prerequisites: PSYC6089 **Assessment:** Research thesis (MCP) or Literature Review (MCP/PhD) (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: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

MCP students will conduct analysis and interpretation of the data they have collected for their empirical research project. They will write up a completed study, which will be in the form of a manuscript ready for submission to a peer reviewed journal. This paper can, but does not have to be, submitted to a journal prior to being included in the project report. A concise review of the relevant literature needs to precede the manuscript. The total length of the project report must be no less than 5000 words. MCP/PhD students will complete a review of the relevant literature and write this up as a chapter for inclusion in their thesis. The length of the substantive literature review will typically fall in the range of 8,000-12,000 words.

Textbooks

None

PSYC6078

Clinical Skills and Placement 1A Science

Credit points: 6 **Session:** Semester 1 **Classes:** 3-hour weekly workshops; Clinical placement: 5 weeks, 1 day / week **Assessment:** Clinical Viva (Adult Therapy); Clinical Skills tape; Placement Contract (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: 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 **Session:** Semester 1, Semester 2 **Classes:** Clinical placement: 24 weeks, 1.5-2 days / week **Assessment:** Contract, mid-placement review, clinical log (compulsory requirements for accreditation) end-of-placement review (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: 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 **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%). 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: 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 hospitals and community health settings. One external placement is required to be adults and one with children/adolescents and families.

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 **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%). 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: 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 hospitals and community health settings. One external placement is required to be adults and one with children/adolescents and families. 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 **Session:** Semester 1 **Classes:** 3-hour weekly lectures **Assessment:** Clinical role play (Video); Clinical role play (Written self-critique); Open book exam (two-hour) (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: 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.

PSYC6083
Assessment Across the Lifespan
Science

Credit points: 6 **Session:** Semester 1 **Classes:** 3-hour weekly lectures **Assessment:** Clinical viva (WAIS-IV); Clinical viva (WISC-IV); Adult report writing assignment; Child report summary assignment (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: 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 **Session:** Semester 2 **Classes:** 4-hour weekly seminars
Prerequisites: PSYC6083 **Assessment:** Written assignment (2500 words) (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 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 improving adherence to treatment, facilitating medical decision-making, 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 concepts in most common disorders that involve the central nervous system. The course aims to develop students' understanding of functional brain organisation, recovery of function, core neuropsychological syndromes and rehabilitation. Lectures will include theoretical components, case presentations and discussions.

PSYC6085

Specialised Areas of Practice

Science

Credit points: 6 **Session:** Semester 2 **Classes:** 3-hour weekly seminars
Assessment: Two written assignments (1500 words) (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: 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.

PSYC6086

Reflective Practice and Placement 2

Science

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 3-hour weekly lectures
Prerequisites: PSYC6079 **Assessment:** Two written assignments (1500-2000 words); Contract, mid-placement review, clinical log (compulsory requirements for accreditation), end-of-placement review (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: 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 patient, in the therapeutic relationship and in the internal dialogue of the

clinician. Further exploration of critical and philosophical issues will be offered explored to enable students to contextualize the therapies they provide and reflect on them from a wider perspective. 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.

PSYC6087

Advanced Models and Seminars

Science

Credit points: 6 **Session:** Semester 2 **Classes:** 3-hour weekly seminars
Prerequisites: PSYC6082 **Assessment:** Two written assignments (1500 words); Class participation (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: 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 **Session:** Semester 1 **Classes:** 3-hour weekly lectures
Assessment: Clinical viva (Ethics); Preliminary research proposal (1-page) (MCP) or Research plan (2000 words) (MCP/PhD) (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: 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. All students are required to attend and contribute to discussion of case and research seminar presentations throughout the semester, and are expected to attend the School Colloquium.

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 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

Course resolutions

1 Course codes

Code	Course title
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:
 - (a) 12 credit points of junior chemistry, or equivalent; and
 - (b) 12 credit points of junior human biology, or equivalent; and
 - (c) 12 credit points of intermediate or senior level Biochemistry and/or Molecular Biology, or equivalent; and
 - (d) 12 credit points of intermediate or senior level Human Physiology, or equivalent; and
 - (e) 6 credit points of intermediate or senior level Nutrition Science, or equivalent; and
 - (f) 6 credit points of intermediate or senior level Food Science or equivalent.

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 Policy. 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, 2021 and persons who commenced their candidature prior to 1 January, 2021 who elect to proceed under these resolutions.
- (2) Candidates who commenced prior to 1 January, 2021 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, 2026, 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 program includes all the units of study to ensure dietetics competence can be reached including public health, medical nutrition therapy, food service management, communication, management and research and evaluation. The units of study are supervised by a Program Committee in Nutrition and Dietetics, chaired by the Head of School.

Additionally, the Program Advisory Committee meets annually and has membership from external leaders in nutrition and dietetics.

Course outcomes

Upon completion of the course, the graduate will have a sound knowledge base in nutrition and dietetics, possess the skills to improve the 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). The Master of Nutrition and Dietetics is currently accredited by the Dietitians Association of Australia (DAA). A graduate of this program is eligible to become a full member of DAA and to join the Accredited Practising Dietitian (APD) Program. The University is required to maintain a current accreditation status as outlined in the DAA accreditation process available on the DAA website.

Admission requirements

Applicants must have a Science degree from a recognised tertiary institution and have completed:

- two semesters Chemistry at Junior level, two semesters of human-focused Biology at Junior level, two semesters of Biochemistry/Molecular Biology at Intermediate or Senior level, two semesters in Human Physiology at Intermediate or Senior level, one semester of Nutrition Science at Intermediate or Senior level, and one semester of Food Science at Intermediate or Senior level.

These prerequisites are required by the Dietitians Association of Australia. Junior Mathematics, including basic statistics, is assumed knowledge. 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 in the Unit of Study table.

Second year: In the second year students undertake a 20 week clinical training program in hospitals, community and food service. 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 second year commences mid January and finishes late November.

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 and Nutritional Assessment	6	C NTDT5602 and NTDT5601 and NTDT5604	Semester 1
NTDT5601 Nutritional and Food Science	6	C NTDT5602 and NTDT5503 and (NTDT5604 or NTDT5504)	Semester 1
NTDT5602 Methods in Nutrition Research	6	C NTDT5601 and NTDT5503 and (NTDT5504 or NTDT5604)	Semester 1
NTDT5604 Dietetics Professional Studies	6	C NTDT5601 and NTDT5602 and NTDT5503	Semester 1
NTDT5305 Food Service Management	6	P NTDT5601 and NTDT5503 and NTDT5604 and NTDT5602 C NTDT5307 and NTDT5608	Semester 2
NTDT5307 Medical Nutrition	12	P NTDT5503 and NTDT5601 and NTDT5602 and 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 and NTDT5503 and NTDT5604 and NTDT5602 and NTDT5305 and NTDT5307 and 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

NTDT5305

Food Service Management Science

Credit points: 6 **Teacher/Coordinator:** Dr Luke Gemming **Session:** Semester 2 **Classes:** 3 hour Lectures and 3 hour workshops on average per week **Prerequisites:** NTDT5601 and NTDT5503 and 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:** A/Prof 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 and NTDT5601 and NTDT5602 and 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. 5th Edition, 2015.

NTDT5310

Nutrition Research Project Science

Credit points: 24 **Teacher/Coordinator:** Prof Margaret Allman-Farinelli, Merry Ireland **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, epidemiology or clinical trials, and are carried out within the University or with an approved external supervisor.

NTDT5503

Dietary Intake and Nutritional Assessment Science

Credit points: 6 **Teacher/Coordinator:** A/Prof Anna Rangan **Session:** Semester 1 **Classes:** Lectures/tutorials/workshops averaging 5 hours per week **Corequisites:** NTDT5602 and NTDT5601 and NTDT5604 **Assessment:** One quiz (25%), one assignment (25%), 2.5-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. (recommended)

NTDT5601

Nutritional and Food Science Science

Credit points: 6 **Teacher/Coordinator:** Dr Luke Gemming **Session:** Semester 1 **Classes:** 3 hours lectures and 1 workshop per week (1-2 hours) **Corequisites:** NTDT5602 and NTDT5503 and (NTDT5604 or 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:** Dr Vasant Hirani **Session:** Semester 1 **Classes:** 3 hours of lectures and 2 hours of tutorial or practical work per week. **Corequisites:** NTDT5601 and NTDT5503 and (NTDT5504 or NTDT5604) **Assessment:** 2.5 hour exam (60%), two 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. 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 also 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:** Lecture/workshops and tutorials average 5 hours per week **Corequisites:** NTDT5601 and 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; within teams and as sole practitioners. 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, 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
Holli, 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 Vasant Hirani **Session:** Semester 2 **Classes:** 4 hours lectures and 2 tutorials per week **Corequisites:** NTDT5305 and NTDT5307 **Assessment:** 2 hour exam (50%); two assignments (50%) **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 and Worsley (eds). Public Health Nutrition - from Principles to Practice. Sydney: Allen and 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 and NTDT5503 and NTDT5604 and NTDT5602 and NTDT5305 and NTDT5307 and 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 domains; individual case management, community/public health nutrition 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, DAA.

Textbooks

Placement manual provided by the University.

Veterinary Medicine

- Course Overview
- Practical and clinical experience
- Accreditation

Doctor of Veterinary Medicine

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

Course resolutions

1 Course codes

Code	Course title
MAVETMED-01	Doctor of Veterinary Medicine

2 Attendance pattern

The attendance pattern for this course is full time.

3 Master's type

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

4 Admission to candidature

With approval from the Dean, available places will be offered to qualified applicants based on merit, according to the following admissions criteria:

- Admission to the degree requires a bachelor's degree from the University of Sydney, or equivalent qualification, and completion of one semester of study in general chemistry (physical and inorganic), organic chemistry, biology and biochemistry.
- Applicants must submit a veterinary science admission statement including relevant work experience and animal handling experience.
- English language requirements must be met where these are not demonstrated by sufficient qualifications taught in English.
- If some applicants are ranked equally according to the above criteria, the Faculty may further rank applicants according to the demonstration of their aptitude for the practice of veterinary medicine as assessed at an interview and make recommendations to the Dean for admission accordingly.

5 Requirements for award

- The units of study that may be taken for the course are set out in the table for the Doctor of Veterinary Medicine.
- To qualify for the Doctor of Veterinary Medicine a candidate must complete a prescribed program of 192 credit points, and:
- the prescribed extramural placements including:
 - 6 weeks of preparatory clinical placements and:
 - 12 weeks of farm placements

6 Progression rules

- Candidates for the degree may enrol in the units of study prescribed for Year 2 of candidature only after completion of Year 1.
- Candidates for the degree may enrol in the units of study prescribed for Year 3 of candidature only after completion of Year 1 and Year 2.
- Candidates for the degree may enrol in the units of study prescribed for the final year of candidature only after completion of Year 1, and Year 2 and Year 3.

7 Reassessment

Students enrolled in a postgraduate unit of study prescribed for Year 1, Year 2, Year 3 or Year 4 of candidature of the Doctor of Veterinary Medicine, who fail one unit of study only within a semester may be offered the opportunity for re-assessment for the failed unit of study.

- The scope of the re-assessment will encompass all topics and learning outcomes within the unit of study. The methods used for re-assessment may differ from those used in the original delivery of the unit.
- Re-assessment will only be offered to eligible students on the dates prescribed in the year schedule, and it is the student's responsibility to be available to attend at these times.
- The maximum mark awarded for a unit of study in these circumstances will be Pass (50 - PS for units of study with Mark and Grade assessment type or SR for units of study with Grade only (Pass/Fail) assessment type).
- Students who have been awarded an Absent Fail grade for a unit of study will not be eligible for re-assessment for that unit of study.

8 Award of the degree

The Doctor of Veterinary Medicine is awarded as a Pass degree only.

Course Overview

The Doctor of Veterinary Medicine is structured as a four year program with learning integrated across units of study in each year.

Clinical case examples are used throughout the program to demonstrate the relevance of each topic in understanding the complexities of animal diseases including their diagnosis, treatment and prevention.

Research training is embedded throughout the course, to ensure students are proficient users and creators of research.



Training in professional and clinical skills forms an essential part of the course program, commencing in DVM Year 1 and consisting of interactive small group practical classes and intra- and extramural placements.

Final year is dedicated entirely to work-integrated learning where students undertake intra and extramural clinical placements, in addition to opportunities for placements in non-clinical sectors of the veterinary profession.

Year 1 Function of the Normal Animal Body and Year 2 Principles and Approach to Clinical Disease

Year 1 employs a body systems approach to learning about the basic veterinary sciences (anatomy, physiology, and histology) within a medical context.

During **Year 2**, students will develop skills in disease investigation by examining common disease syndromes and investigating the causes of disease (pathobiology, infectious diseases, pharmacology).

During Years 1 and 2, three days are timetabled for learning and teaching activities at the Camperdown campus per week. Aspects of all major disciplines are introduced via the following on-campus activities:

- small and large group tutorials
- case-based scenarios
- interactive lectures related to the current topic
- laboratory and computer practical sessions
- interactive online learning.

Two days per week comprise practical and professional skills training in small group situations:

- animal handling, personal safety and protection
- basic surgical and laboratory skills
- clinical consultation skills
- clinic visits in the University Veterinary Teaching Hospital.

These activities take place at a range of locations including the University Farms, Camden Campus teaching facilities, University Veterinary Teaching Hospitals (Camperdown and Camden campuses), and the clinical skills lab (Camperdown campus). Students will also visit the University farm at Arthursleigh.

Animal husbandry placements commence during the second semester and must be completed by the end of second year.

Year 3: Animal Health and Disease Management

Building on the knowledge and skills attained during years 2 and 3, students will develop an advanced approach to maintaining health and managing disease across the major companion, exotic and production animal species. Third year is mostly based at the Camden campus, with some learning and teaching activities based at the Camperdown campus.

Preparatory clinical placements in which students spend time in private external veterinary practices must be completed by the end of third year.

Year 4: Professional Placements Program

Year 4 is a capstone experience combining intramural (in University Veterinary Teaching Hospitals) and extramural (in industry and private veterinary practices) placements. These extramural placements may be taken at any approved Australian or international industry or private veterinary practice.

These placements enable students to gain workplace experience in a broad range of small animal, large animal and industry situations in preparation for introduction to the workforce following graduation.

All students are required to undertake rotations at University Veterinary Teaching Hospitals (Camperdown and Camden campuses), extramural small animal and rural mixed practices, the Livestock Health and Pest Authority and at other sites on nomination.

Students are responsible for funding their transport and accommodations expenses to complete each rotation.

Practical and clinical professional experience

Clinical professional experience

The Faculty of Veterinary Science maintains teaching hospitals at Camperdown and Camden campuses, where students and veterinarians work together in a clinical teaching and learning environment.

Referral and primary accession cases are seen at both sites, and the University Veterinary Teaching Hospital at Camden also provides veterinary services to farms in the region. A wide range of companion animals, farm animals, racing animals, exotic and native wildlife species are seen.

Visiting specialists complement faculty specialists in most disciplines in providing an excellent learning environment for veterinary students. Knowledge of medicine, surgery, anaesthesia, diagnostic imaging, clinical pathology and production animal issues are developed with small group teaching.

Practical work requirements

Students are required to complete an extramural studies program of practical work in pre-clinical (animal husbandry) and preparatory clinical (veterinary practice) placements during vacation periods from Year 1 to Year 3.

Students are also required to attend a placement at an abattoir in Year 3 or 4.

In Year 4, students complete a minimum of 42 weeks of clinical rotations at approved extramural sites and the University Veterinary Teaching Hospitals (Sydney and Camden).

The extramural studies program meets requirements set by the Royal College of Veterinary Surgeons and is an essential component of the Doctor of Veterinary Medicine degree. All arrangements for placements in these programs are made through the Faculty Office.

Accreditation

The faculty holds and maintains continuous accreditation through the transition to a new veterinary program.

Graduates of accredited programs are immediately eligible for registration with the Veterinary Practitioners Board in each state and territory in Australia.

The course is also recognised internationally by the Royal College of Veterinary Surgeons (UK) and is accredited by the American Veterinary Medical Association (AVMA). Students graduating from an AVMA-accredited school have their degree recognised in North America and are entitled to sit the US National Veterinary Licensing Examinations.

To maintain international accreditation, the faculty must constantly monitor, critically evaluate and improve the quality of the Doctor of Veterinary Medicine curriculum, both in learning and assessment methods, teaching facilities and graduate outcomes.

This means the Doctor of Veterinary Medicine program meets the highest international standards and is constantly being reviewed and improved as the profession changes. Graduates of the University of Sydney veterinary program can go on to work internationally with confidence that they have completed a rigorous and internationally scrutinised course.

Doctor of Veterinary Medicine

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>
Year 1			
Year 1 of the Doctor of Veterinary Medicine has the following 48 credit point structure:			
VETS6101 The Veterinary Professional 1	3	A One semester of study in each of: general chemistry (physical and inorganic), organic chemistry, biology and biochemistry.	Semester 1
VETS6102 Professional Skills 1A	6	A Basic knowledge of clinical veterinary practice; empathy for and confidence in interactions with animals, One semester of study in each of general chemistry (physical and inorganic), organic chemistry, biology and biochemistry.	Semester 1
VETS6103 Research and Enquiry 1A	3		Semester 1
VETS6104 Foundations of Veterinary Science A	12	A One semester of study in each of general chemistry (physical and inorganic), organic chemistry, biology and biochemistry.	Semester 1
VETS6105 Animal Management Systems 1	3	A Basic knowledge of clinical veterinary practice, one semester of study in each of general chemistry (physical and inorganic), organic chemistry, biology and biochemistry P VETS6102	Semester 2
VETS6106 Professional Skills 1B	6	A Basic knowledge of clinical veterinary practice; empathy for and confidence in interactions with animals, one semester of study in each of general chemistry (physical and inorganic), organic chemistry, biology and biochemistry P VETS6102	Semester 2
VETS6107 Research and Enquiry 1B	3	P VETS6103	Semester 2
VETS6108 Foundations of Veterinary Science B	12	A 2 semesters of chemistry, 1 semester of biology, 1 semester of biochemistry P VETS6104	Semester 2
Year 2			
Year 2 of the Doctor of Veterinary Medicine has the following 48 credit point structure:			
VETS6201 The Veterinary Professional 2	3	P VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108	Semester 1
VETS6202 Professional Skills 2A	6	P VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 <i>It is assumed that student have a basic knowledge of clinical veterinary practice; empathy for and confidence in interactions with animals</i>	Semester 1
VETS6203 Research and Enquiry 2A	3	P VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108	Semester 1
VETS6204 Principles of Animal Disease A	12	P VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108	Semester 1
VETS6205 Animal Management Systems 2	3	P VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 and VETS6201 and VETS6202 and VETS6203 and VETS6204 <i>It is assumed that students have a basic knowledge of clinical veterinary practice, biology and biochemistry</i>	Semester 2
VETS6206 Professional Skills 2B	6	P VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 and VETS6201 and VETS6202 and VETS6203 and VETS6204 <i>It is assumed that student have a basic knowledge of clinical veterinary practice; empathy for and confidence in interactions with animals</i>	Semester 2
VETS6207 Research and Enquiry 2B	3	P VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 and VETS6201 and VETS6202 and VETS6203 and VETS6204	Semester 2
VETS6208 Principles of Animal Disease B	12	P VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 and VETS6201 and VETS6202 and VETS6203 and VETS6204	Semester 2
Year 3			
Year 3 of the Doctor of Veterinary Medicine has the following 48 credit point structure:			
VETS6301 Veterinary Public Practice	3	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208	Semester 1
VETS6302 Clinical Foundations	3	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208	Semester 1
VETS6303 Small Animal Practice A	6	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 C VETS6302	Semester 1
VETS6304 Livestock Practice A	3	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 C VETS6302	Semester 1



Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
VETS6305 Equine Practice A	3	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 C VETS6302	Semester 1
VETS6306 Exotic and Wildlife Practice	3	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 C VETS6302	Semester 1
VETS6307 Research and Enquiry 3A	3	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208	Semester 1
VETS6308 Veterinary Practice Management	3	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208	Semester 2
VETS6309 Small Animal Practice B	6	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6303	Semester 2
VETS6310 Livestock Practice B	6	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6304	Semester 2
VETS6311 Equine Practice B	3	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6305	Semester 2
VETS6312 Intensive Animal Practice	3	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6302	Semester 2
VETS6313 Research and Enquiry 3B	3	P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208	Semester 2
Year 4			
Year 4 of the Doctor of Veterinary Medicine has the following 48 credit point structure:			
VETS6401 Small Animal Clinics A	6	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 <i>The majority of the unit of study will involve practical work in the form of clinical practice, facilitated in a rotational format. Students will be involved in the handling, examination, diagnostic procedures and treatment of various small animal species.</i>	Semester 1 Semester 2
VETS6402 Small Animal Clinics B	6	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 <i>This unit of study involved four weeks of practical clinical experience at the UVTHS, focusing on developing clinical knowledge and skills in the area of veterinary anaesthesia.</i>	Semester 1 Semester 2
VETS6403 Small Animal Clinics C	6	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 <i>The majority of the unit of study will involve practical work in the form of clinical practice, facilitated in a rotational format. Students will be involved in the handling, examination, diagnostic procedures and treatment of dogs, cats, birds, reptiles, exotic pets and wildlife.</i>	Semester 1 Semester 2
VETS6404 Small Animal Clinics D	3	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 <i>The majority of the unit of study will involve practical work in the form of general clinical practice. Students will be involved in the handling, examination, diagnostic procedures and treatment, and wellness management of animals commonly presented in small animals practice.</i>	Semester 1 Semester 2
VETS6405 Large Animal Clinics A	6	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 <i>Four weeks of practical experience in clinical environments focusing on multiple disciplinary areas required to facilitate effective equine clinical assessment and care.</i>	Semester 1 Semester 2
VETS6406 Large Animal Clinics B	3	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 <i>Two weeks of clinical practical experience in working with livestock, ruminant, and herd populations via the University Livestock Veterinary Service at Camden campus.</i>	Semester 1 Semester 2
VETS6407 Lab Investigations of Clinical Disease	3	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 <i>The unit of study is entirely practical, utilising diagnostic accessions to perform and interpret laboratory testing.</i>	Semester 1 Semester 2

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
VETS6408 Public, Industry, or Community Placement	3	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 <i>Four weeks of practical experience of professional practice as required within a public, industry, or community-based body that serves the public good and/or underprivileged communities that lack regular access to veterinary services directly involved in servicing the livestock industries and/or public health. Students will also undertake a 3-day placement at an export abattoir.</i>	Semester 1 Semester 2
VETS6409 Extramural Placement 1	3	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313	Semester 1 Semester 2
VETS6410 Extramural Placement 2	3	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313	Semester 1 Semester 2
VETS6411 Extramural Placement 3	3	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313	Semester 1 Semester 2
VETS6412 Extramural Placement 4	3	A All content from Years 1, 2, and 3 of the DVM P VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313	Semester 1 Semester 2

Pattern of enrolment for the Doctor of Veterinary Medicine

Year 1: Function of the normal animal body

Code	Unit of study name	Semester	Credit Points
VETS6101	The Veterinary Professional 1	1	3
VETS6102	Professional Skills 1A	1	6
VETS6103	Research and Enquiry 1A	1	3
VETS6104	Foundations of Veterinary Science A	1	12
VETS6105	Animal Management Systems 1	2	3
VETS6106	Professional Skills 1B	2	6
VETS6107	Research and Enquiry 1B	2	3
VETS6108	Foundations of Veterinary Science B	2	12
	Total:		48

Year 2: Principles and approach to animal diseases

Code	Unit of study name	Semester	Credit Points
VETS6201	The Veterinary Professional 2	1	3
VETS6202	Professional Skills 2A	1	6
VETS6203	Research and Enquiry 2A	1	3
VETS6204	Principles of Animal Disease A	1	12
VETS6205	Animal Management Systems 2	2	3
VETS6206	Professional Skills 2B	2	6
VETS6207	Research and Enquiry 2B	2	3
VETS6208	Principles of Animal Disease B	2	12
	Total:		48

Year 3: Health and disease management

The following Units of Study will be taken at the Camden campus.

Code	Unit of study name	Semester	Credit Points
VETS6301	Veterinary Public Practice	1	3
VETS6302	Clinical Foundations	1	3
VETS6303	Small Animal Practice A	1	6
VETS6304	Livestock Practice A	1	3
VETS6305	Equine Practice A	1	3
VETS6306	Exotic and Wildlife Practice	1	3
VETS6307	Research and Enquiry 3A	1	3
VETS6308	Veterinary Practice Management	2	3
VETS6309	Small Animal Practice B	2	6
VETS6310	Livestock Practice B	2	6
VETS6311	Equine Practice B	2	3
VETS6312	Intensive Animal Practice	2	3
VETS6313	Research and Enquiry 3B	2	3
	Total:		48

Year 4: Professional placement year

Code	Unit of study name	Semester	Credit Points
VETS6401	Small Animal Clinics A	1, 2	6
VETS6402	Small Animal Clinics B	1, 2	6



Pattern of enrolment for the Doctor of Veterinary Medicine

Code	Unit of study name	Semester	Credit Points
VETS6403	Small Animal Clinics C	1, 2	6
VETS6404	Small Animal Clinics D	1, 2	3
VETS6405	Large Animal Clinics A	1, 2	6
VETS6406	Large Animal Clinics B	1, 2	3
VETS6407	Laboratory Investigations of Clinical Disease	1, 2	3
VETS6408	Public, Industry, or Community Placement	1, 2	3
VETS6409	Extramural Placement 1	1, 2	3
VETS6410	Extramural Placement 2	1, 2	3
VETS6411	Extramural Placement 3	1, 2	3
VETS6412	Extramural Placement 4	1, 2	3
	Total:		48

Doctor of Veterinary Medicine

Year 1

Year 1 of the Doctor of Veterinary Medicine has the following 48 credit point structure:

VETS6101

The Veterinary Professional 1

Credit points: 3 **Teacher/Coordinator:** Dr Sanaa Zaki **Session:** Semester 1 **Classes:** 1 week intensive at start of semester 1, then tutorials, lectures, presentations and independent study throughout the semester. **Assumed knowledge:** One semester of study in each of: general chemistry (physical and inorganic), organic chemistry, biology and biochemistry. **Assessment:** Presentation with peer feedback, self and peer assessment of leadership and teamwork competencies; written exam. **Mode of delivery:** Normal (lecture/lab/tutorial) day

This Unit of Study introduces you to foundational knowledge, skills and attitudes for being an effective veterinary professional. Key themes include lifelong learning, professionalism, one health, communication, teamwork, ethics, the human-animal bond and anthrozoology, cultural competence, emotional intelligence and leadership. The course also orientates you to studying with the Faculty and University as you attain your veterinary degree. Specifically, this Unit of Study will prepare you for: contributing to society as a professional veterinarian; making the most of your veterinary degree; conducting effective veterinary consultations; working successfully in veterinary workplace environments and teams; fostering positive practices in relation to professional wellbeing and self-care; maintaining clear professional records; upholding professional standards and ethics; effectively approaching situations in different cultural settings; managing your finances and career; and consistently improving your professional practice. Developing your knowledge and skills in these areas will help you develop veterinary graduate attributes essential for long term effectiveness and success in your veterinary career.

Textbooks

There are no prescribed textbooks for this unit of study. Students will be directed to appropriate resources as required.

VETS6102

Professional Skills 1A

Credit points: 6 **Teacher/Coordinator:** Dr Tony D. Mogg and A/Prof Christina Dart **Session:** Semester 1 **Classes:** Introductory lecture, practical classes and demonstrations, tutorials, field trips, workplace training in veterinary teaching hospitals, independent study **Assumed knowledge:** Basic knowledge of clinical veterinary practice; empathy for and confidence in interactions with animals. One semester of study in each of general chemistry (physical and inorganic), organic chemistry, biology and biochemistry. **Assessment:** Practical examinations, oral presentations/examinations, written assignments/reflective statements, clinical supervisor feedback, Objective Structured Clinical Examination, formative self and peer assessment **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this unit of study students will be introduced to, and begin to develop confidence and competency in, fundamental professional skills relevant to veterinary practice. The skills will include basic animal handling, basic clinical skills, personal and professional attributes, basic laboratory skills and clinical experience in veterinary teaching hospitals. Successful completion of this unit of study requires students to: (1) Attend and actively participate in all compulsory classes, (2) Achieve at least a pass grade in all compulsory assessment tasks, and (3) Submit all compulsory documents (veterinary teaching hospital site contracts and skills logs, feedback forms etc.).

Textbooks

There is no prescribed textbook for this unit. Students will be directed to appropriate resources as required.

VETS6103

Research and Enquiry 1A

Credit points: 3 **Teacher/Coordinator:** A/Prof Navneet Dhand **Session:** Semester 1 **Classes:** Large group classes, small group tutorials/ discussion groups, computer laboratory tutorials, research seminars, online resources and independent study. **Assessment:** Writing an abstract; Quiz; Assignment. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Research and enquiry is implicit in every aspect of every career path in veterinary science. This unit will equip students with skills in generating research evidence as well as in searching and critically evaluating available evidence. The candidate will develop the skills necessary to formulate relevant questions and to collate, evaluate and synthesise evidence to answer these questions. The candidate will gain knowledge and develop fundamental skills in designing and conducting field experiments, including clinical trials, and evaluating journal articles about such experiments. Skills will be developed in using spreadsheets and conducting statistical analyses for data collected during simple experiments. Guidelines for publishing clinical trials will be discussed to enable candidates to critically evaluate methods (design, conduct and analysis) of clinical trials presented in journal articles and marketing brochures.

Textbooks

There is no prescribed textbook for this unit. Students will be directed to appropriate resources as required.

VETS6104

Foundations of Veterinary Science A

Credit points: 12 **Teacher/Coordinator:** Dr Glenn Shea **Session:** Semester 1 **Classes:** Activities will vary from week to week, but will be a mixture of practical classes, tutorials, workshops and lectures **Assumed knowledge:** One semester of study in each of general chemistry (physical and inorganic), organic chemistry, biology and biochemistry. **Assessment:** Intra-semester exam; an intrasemester assignment; end of semester theory and practical exams. **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this unit, the basic gross anatomy, histology (microscopic anatomy) and physiology of the integumentary, musculoskeletal, digestive, cardiovascular and respiratory systems of domestic mammals are considered. The dog is used as the main anatomical exemplar, although some comparative anatomical detail, particularly for the digestive system, is included. Clinical material is used both to illustrate normal structure and function, and to provide the anatomical, histological and physiological knowledge that underpins the clinical examination and investigative techniques of these systems, such as auscultation, palpation and haematology. The material in this unit will underpin the acquisition of relevant



skills in the unit of study Professional Skills 1A. Examples of disease in animals created by structural abnormalities and dysfunction are used to illustrate the application of this knowledge. This unit will provide a thorough basis for more advanced applied, regional and comparative anatomical and physiological learning in later years of the DVM in paraclinical and clinical disciplines. The body systems studied in this unit provide a framework of the mammalian body that will be further developed in Foundations of Veterinary Science B.

Textbooks

Required: Dyce, KM, Sack, WO and Wensing, CJG (2010). Textbook of Veterinary Anatomy. 4th Edition. Elsevier, St Louis. Evans, HE and de LaHunta, A (2013). Miller's Anatomy of the Dog. 4th Edition. Elsevier, St Louis. Sjaastad V, Sand, O and Hove, K (2010). Physiology of Domestic Animals. 2nd Edition. Scandinavian Veterinary Press, Oslo. Either Samuleson, DA (2007). Textbook of Veterinary Histology. Elsevier, St Louis, OR Eurell, JA and Frappier, BL (2006). Dellmann's Textbook of Veterinary Histology. 6th Edition. Blackwell, Ames.

VETS6105

Animal Management Systems 1

Credit points: 3 **Teacher/Coordinator:** A.Prof Imke Tammen **Session:** Semester 2 **Classes:** Large group classes and lectures, Small group tutorials/ discussion groups, On farm practicals, Independent study **Prerequisites:** VETS6102 **Assumed knowledge:** Basic knowledge of clinical veterinary practice, one semester of study in each of general chemistry (physical and inorganic), organic chemistry, biology and biochemistry **Assessment:** Theory exam, Group assignment with oral presentation and written component, Reflective statement, Formative online quizzes **Mode of delivery:** Normal (lecture/lab/tutorial) day

Animal Management Systems 1 will introduce students to the husbandry, housing, feeding and management of the major production, performance and companion animals, as well as key economic influences on livestock production. It will establish animal welfare standards and concepts of biosecurity, ethics and breeding programs. Students will be equipped with the necessary knowledge to understand farming and animal management systems when attending placements. This unit of study will also provide a foundation on which to build an understanding of animals' disease.

Textbooks

There is no required text for the course. A number of recommended textbooks, journal references and online resources that may prove useful in understanding lecture material or in the preparation of assessment tasks are listed in the handbook.

VETS6106

Professional Skills 1B

Credit points: 6 **Teacher/Coordinator:** Dr Tony D. Mogg and A/P Christina Dart **Session:** Semester 2 **Classes:** Introductory lecture, practical classes and demonstrations, tutorials, field trips, workplace training in veterinary teaching hospitals, independent study **Prerequisites:** VETS6102 **Assumed knowledge:** Basic knowledge of clinical veterinary practice; empathy for and confidence in interactions with animals, one semester of study in each of general chemistry (physical and inorganic), organic chemistry, biology and biochemistry **Assessment:** Practical examinations, oral presentations/ examinations, written assignments/ reflective statements, clinical supervisor feedback, Objective Structured Clinical Examination, formative self and peer assessment **Mode of delivery:** Normal (lecture/lab/tutorial) day

In this Unit of study students will continue to develop confidence and competency in fundamental professional skills relevant to veterinary practice, building on their experiences in Professional Skills 1A. The skills will include basic animal handling and husbandry, basic clinical skills, personal and professional attributes, basic laboratory skills and clinical experience in veterinary teaching hospitals. Successful completion of this unit of study requires students to: (1) Attend and actively participate in all compulsory classes, (2) Achieve at least a pass grade in all compulsory assessment tasks, and (3) Submit all compulsory documents (veterinary teaching hospital site contracts and skills logs, feedback forms etc.).

Textbooks

There is no prescribed textbook for this unit. Students will be directed to appropriate resources as required

VETS6107

Research and Enquiry 1B

Credit points: 3 **Teacher/Coordinator:** Professor Michael Ward **Session:** Semester 2 **Classes:** Large group classes, small group tutorials/ discussion groups, computer laboratory tutorials, online resources and independent study. **Prerequisites:** VETS6103 **Assessment:** Study design assignment; participation; end-of-semester exam **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will contribute to graduates being able to create new knowledge and understanding through the process of research and enquiry. Within Research and Enquiry 1B students will continue to develop the skills necessary to synthesise evidence. This will be based within the context of using and interpreting diagnostic tests (module 1), and designing observational studies (module 2) to answer animal health and production questions relevant to veterinary science and allied professions. Scenarios that include client-owned individual animals within a clinical setting; herds, flocks and other groups of animals; and national control programs will be used to explain principles and purpose of sensitivity and specificity of diagnostics tests, and the principles of study design (such as target populations, case definition, sampling and measurement). Research and Enquiry 1B will focus on research in observational studies, building on Research and Enquiry 1A skills and knowledge in clinical trials. Students will critically incorporate available evidence (including peer-reviewed and non-peer reviewed literature) and practice communication skills. Additionally students will become familiar with basic statistical methods to evaluate evidence, a framework for animal ethics in research and cultural competence as it relates to conducting research (module 3).

Textbooks

Thrusfield, M.V. Veterinary Epidemiology. 2013, 3rd ed., ISBN 1118713419

VETS6108

Foundations of Veterinary Science B

Credit points: 12 **Teacher/Coordinator:** Assoc Prof Mark Krockenberger **Session:** Semester 2 **Classes:** Activities will vary from week to week, but will be a mixture of practical classes, tutorials, workshops and lectures. **Prerequisites:** VETS6104 **Assumed knowledge:** 2 semesters of chemistry, 1 semester of biology, 1 semester of biochemistry **Assessment:** Quizzes, individual and group assignment, end of semester theory exam, end of semester practical exam. **Mode of delivery:** Normal (lecture/lab/tutorial) day

Understanding normal structure and function of the animal body is critical to understanding disease and dysfunction and as such, principles of preventative and therapeutic intervention. The overarching purpose of this unit of study is to provide an advanced understanding of the normal structure and function of the major co-ordinating Systems of the mammalian body and preliminary contextual understanding of the important concepts of pathophysiology and general pathology. The unit of study is underpinned by an understanding of basic concepts and the frameworks of structure and function achieved in the Foundations of Veterinary Science A. This Unit of Study will provide the foundation for advanced learning

in DVM year 2 of systemic pathology, pathophysiology and aetiopathogenesis in the setting of the major organ systems in the context of clinical scenarios of companion and production animals.

Textbooks

Dyce, KM, Sack, WO and Wensing, C.JG (2010). Textbook of Veterinary Anatomy. 4th Edition. Elsevier, St Louis.; Evans, HE and de LaHunta, A (2013). Miller's Anatomy of the Dog. 4th Edition. Elsevier, St Louis.; Samuelson, DA (2007). Textbook of Veterinary Histology. Elsevier, St Louis.; Sjaastad V, Sand, O and Hove, K (2010). Physiology of Domestic Animals. 2nd Edition. Scandinavian Veterinary Press, Oslo.; Zachary, JF and McGavin, MD (2012). Pathologic Basis of Veterinary Disease. 5th edition. Mosby, Elsevier.

Year 2

Year 2 of the Doctor of Veterinary Medicine has the following 48 credit point structure:

VETS6201

The Veterinary Professional 2

Credit points: 3 **Teacher/Coordinator:** Dr Peter Higgins **Session:** Semester 1 **Classes:** 2 week intensive at start of semester 1, then tutorials, lectures, presentations and independent study throughout the semester **Prerequisites:** VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 **Assessment:** Completion of independent learning project and associated forms, Presentation with peer feedback, self and peer assessment of leadership and teamwork competencies; written exam **Mode of delivery:** Normal (lecture/lab/tutorial) day

This Unit of Study introduces the student to intermediate professional skills for approaching disease investigation and engaging with presenting signs. It also builds on and extends their knowledge of professional competencies introduced in Year 1 and required as an effective veterinary professional. Key themes include clinical communication and professional reasoning, introduction to physical examination and disease investigation, lifelong learning, risk management and self-care, professionalism, legislation and ethics, cultural competence, emotional intelligence, practice management and leadership. Developing and extending their knowledge and skills in these areas will help students attain veterinary graduate attributes essential for long term effectiveness and success in their veterinary career. An integral part of this unit of study is an opportunity to extend their professional capabilities in an area of personal interest through the Independent Learning Project, allowing them to extend and differentiate their abilities from others in future employment applications.

Textbooks

There are no prescribed textbooks for this unit of study. Students will be directed to appropriate resources as required.

VETS6202

Professional Skills 2A

Credit points: 6 **Teacher/Coordinator:** Dr Tony D. Mogg and Assoc Prof Christina Dart **Session:** Semester 1 **Classes:** Introductory lecture, Practical classes and demonstrations, Tutorials, Workshops; Independent study **Prerequisites:** VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 **Assessment:** Practical examinations, Oral presentations/examinations, Written assignments/reflective statements, Clinical supervisor feedback, Objective Structured Clinical Examinations (OSCEs), Formative self and peer assessment **Practical field work:** Field trips, Workplace training in Veterinary Teaching Hospitals **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: It is assumed that student have a basic knowledge of clinical veterinary practice; empathy for and confidence in interactions with animals

In this unit of study students will continue in the development of their confidence and competency in, fundamental professional skills relevant to veterinary practice. These will include animal handling, clinical and laboratory skills, as well as the development of relevant personal and professional attributes, and clinical experience in veterinary teaching hospitals. Successful completion of this unit of study requires students to: (1) Attend and actively participate in all compulsory classes, (2) Achieve at least a pass grade in all compulsory assessment tasks, and (3) Submit all compulsory documents (veterinary teaching hospital site contracts and skills logs, feedback forms etc.).

Textbooks

There are no prescribed textbooks for this unit of study. Students will be directed to appropriate resources as required.

VETS6203

Research and Enquiry 2A

Credit points: 3 **Teacher/Coordinator:** Assoc Prof Merran Govendir **Session:** Semester 1 **Classes:** lectures and tutorials **Prerequisites:** VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 **Assessment:** Synthesis of an animal ethics proposal (40%), Synthesis of a visual communication task (30%), Online quiz (30%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will continue to build on previous Research and Enquiry 1A and 1B units of study. This unit will continue to expand students' appreciation of the contribution of research to the veterinary sciences and develop their skills in the synthesis and communication of new and existing knowledge. Where possible this unit will integrate with the UoS Principles of Animal Disease A VETS6204 by utilising content and examples from the relevant module/s as triggers to explore this unit's themes. The themes for this unit are to i) synthesise an animal ethics proposal that complies with the Australian code for the care and use of animals for scientific purposes with an emphasis on the 3Rs (reduction, replacement and refinement) of animal use; ii) elaborate on principles introduced in Research and Enquiry 1B to explore diagnostic test validation in a laboratory and field settings using pathogen susceptibility testing to anti-infective drugs as an exemplar and how the results are interpreted with reference to population data from both the animals and pathogens (with this theme culminating in consideration of the prudent use of anti-infectives; iii) appreciate and utilise effective practices in the generation of visual communication tools and verbal presentation techniques and iv) explore the skills and tools applied to investigate a disease outbreak or herd problem involving one premise or event

Textbooks

There are no prescribed textbooks for this unit of study. Students will be directed to appropriate resources as required.

VETS6204

Principles of Animal Disease A

Credit points: 12 **Teacher/Coordinator:** Dr Derek Spielman **Session:** Semester 1 **Classes:** Activities will vary weekly, but will be a mix of practical classes, tutorials, workshops and lectures. **Prerequisites:** VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 **Assessment:** Intra-semester (35%); end of semester written examinations and practical exam (65%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

A fundamental understanding of disease and dysfunction is critical to applying principles of preventative and therapeutic interventions in veterinary practice. This unit of study provides a thorough grounding in knowledge and skills for a wide range of veterinary disciplines including veterinary

pathology, veterinary clinical pathology, immunology, veterinary microbiology, veterinary parasitology, animal behaviour, veterinary pharmacology and veterinary diagnostic imaging. An integrated multi-disciplinary approach will highlight the underlying pathophysiology and aetiopathogenesis of clinical and subclinical disease affecting several major body systems. This unit will emphasise a pathobiological approach to investigations providing a logical diagnostic framework to facilitate students' understanding of disease and disease investigation. This unit of study will utilise scenarios from companion animals, production animals and wildlife to contextualise problems involving haematology, disorders of growth, dermatopathology, reproductive system pathology, gastrointestinal pathology, as well as behavioural manifestations during disease and the investigation of sudden (unexpected) deaths. The use of case-based scenarios will motivate and direct students to develop the concepts and principles underscoring therapeutics and disease control and management programs. The unit provides the foundation for integrated parasite/pest management (IPM) strategies. In addition, vector-, water- and food- borne diseases and transboundary diseases will be included enabling students to understand their relevance to the human-animal bond, public health, trade and biosecurity. Reinforcing the development and maintenance of normal structure and function will highlight abnormalities associated with specific clinical presentations and disease entities. This unit of study integrates with the concepts and skills taught within VETS6203 (Research and Enquiry 2A) and VETS6202 (Professional skills 2A) to prepare students for the clinical units of study in DVM 3.

Textbooks

Beveridge I and Emery D (2015) *Australasian Animal Parasites Inside and Out*. Australian Society for Parasitology. <http://parasite.org.au/publications/australian-animal-parasites-inside-and-out/>, Zachary and McGavin (2012) *Pathologic Basis of Veterinary Disease*. 5th Ed. Mosby. Refer to specific module outlines for relevant recommended texts.

VETS6205

Animal Management Systems 2

Credit points: 3 **Teacher/Coordinator:** Dr Peter White **Session:** Semester 2 **Classes:** Classes will be a mixture of lectures, practical and tutorials **Prerequisites:** VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 and VETS6201 and VETS6202 and VETS6203 and VETS6204 **Assessment:** Practical/oral assessment, Written Assignment, Online quizzes: formative and summative **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: It is assumed that students have a basic knowledge of clinical veterinary practice, biology and biochemistry

Animal management Systems 2 will build on and extend student knowledge gained in Animal Management Systems 1 including the husbandry, housing, feeding and management of the major production, performance and companion animals, as well as key economic influences on livestock production. Using an animal welfare focus, students will build their knowledge of the concepts of biosecurity, nutrition, and breeding. Students will be equipped with further knowledge to help them understand farming and animal management systems and provide a foundation on which to develop an appreciation of disease management that will be taught in subsequent years.

Textbooks

Handbooks and online resources. Lucas and Southgate, *Aquaculture: farming aquatic animals and plants* (2nd edition, 2012). Huntington, Peter, Jane Myers, and Elizabeth Owens. *Horse Sense: the guide to horse care in Australia and New Zealand*. Landlinks Press, 2004. Cottle DJ ed. *International Sheep and Wool Handbook*. NPU, 2010. P. McDonald, R.A. Edwards, J.F.D. Greenhalgh, C.A. Morgan, L.A. Sinclair and R.G. Wilkinson. *Animal Nutrition* (7th edition published in 2011) (Prentice Hall).

VETS6206

Professional Skills 2B

Credit points: 6 **Teacher/Coordinator:** Dr Tony D. Mogg and Assoc Prof Christina Dart **Session:** Semester 2 **Classes:** Introductory lecture, Practical classes and demonstrations, Tutorials, Workshops; Independent study **Prerequisites:** VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 and VETS6201 and VETS6202 and VETS6203 and VETS6204 **Assessment:** Practical examinations, Oral presentations/examinations, Written assignments/reflective statements, Clinical supervisor feedback, Objective Structured Clinical Examinations (OSCEs), Formative self and peer assessment **Practical field work:** Field trips, Workplace training in Veterinary Teaching Hospitals **Mode of delivery:** Normal (lecture/lab/tutorial) day

Note: It is assumed that student have a basic knowledge of clinical veterinary practice; empathy for and confidence in interactions with animals

In this unit of study students will continue in the development of their confidence and competency in, fundamental professional skills relevant to veterinary practice. These will include animal handling, clinical and laboratory skills, as well as the development of relevant personal and professional attributes, and clinical experience in veterinary teaching hospitals. Successful completion of this unit of study requires students to: (1) Attend and actively participate in all compulsory classes, (2) Achieve at least a pass grade in all compulsory assessment tasks, and (3) Submit all compulsory documents (veterinary teaching hospital site contracts and skills logs, feedback forms etc.)

Textbooks

There are no prescribed textbooks for this unit of study. Students will be directed to appropriate resources as required.

VETS6207

Research and Enquiry 2B

Credit points: 3 **Teacher/Coordinator:** Assoc Prof Jenny-Ann Toribio **Session:** Semester 2 **Classes:** Lectures and tutorials **Prerequisites:** VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 and VETS6201 and VETS6202 and VETS6203 and VETS6204 **Assessment:** Proposal for research 25%, Communication tool 25%, Outbreak investigation assignment 50% **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will build on previous Research and Enquiry units in Year 1 and 2 of the DVM. It will consolidate and extend student skills relevant to the planning and conduct of research, and to applications of enquiry and investigation encountered across units in Year 3 and rotation placements in Year 4. Skills in evidence based practice will be extended to the evaluation and conduct of systematic reviews relevant to a clinical question; consideration of the investigation of outbreaks involving multiple premises and the application of surveillance to inform evaluation of disease risk; and in communication to identification of communication tools appropriate for conveying research outcomes to specific target audiences. Awareness of ethical issues in research will be extended to research that involves sourcing data from people and the requirements for a human ethics application. Each student will prepare a project brief for research in an area of the veterinary science of interest to the student and receive feedback on the proposed work. Where appropriate, this unit will integrate with VETS6208 Principles of Animal Disease B by utilizing content and examples across aligned modules.

Textbooks

There are no prescribed textbooks for this unit of study. Students will be directed to appropriate resources as required.

VETS6208**Principles of Animal Disease B**

Credit points: 12 **Teacher/Coordinator:** Dr Rachael Gray **Session:** Semester 2 **Classes:** Activities will vary from week to week, but will be a mixture of practical classes, tutorials, workshops and lectures. **Prerequisites:** VETS6101 and VETS6102 and VETS6103 and VETS6104 and VETS6105 and VETS6106 and VETS6107 and VETS6108 and VETS6201 and VETS6202 and VETS6203 and VETS6204 **Assessment:** Intra-semester (40%); end of semester written examinations and practical exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

A fundamental understanding of disease and dysfunction is critical to the application of principles of preventative and therapeutic intervention in the veterinary clinical setting. This unit of study will provide a thorough grounding in knowledge and skills for a wide range of veterinary disciplines including veterinary pathology, veterinary clinical pathology, immunology, veterinary microbiology, veterinary parasitology, animal behaviour, veterinary pharmacology and veterinary diagnostic imaging. An integrated multi-disciplinary approach will be used to highlight the underlying pathophysiology and aetiopathogenesis of clinical and subclinical disease within the setting of several major body systems. This unit will emphasise a pathobiological approach to the investigative process providing a logical framework for diagnostics to facilitate students' understanding of disease and disease investigation. This unit of study will utilise scenarios from companion animals, production animals and wildlife to contextualise problems of the cardiovascular and respiratory systems, urinary system, musculoskeletal system, nervous system, endocrine system, as well as behavioural problems and the investigation of sudden (unexpected) death. The unit provides the foundation for integrated parasite/pest management (IPM) strategies. In addition, vector-, water- and food-borne diseases and transboundary diseases will be included enabling students to understand their relevance to the human-animal bond, public health, trade and biosecurity. Reinforcement of the development and maintenance of normal structure and function will be employed to highlight abnormalities associated with specific clinical presentations and disease entities. The unit of study is underpinned by the knowledge and understanding of animal disease and the investigative approach achieved in Principles of Animal Disease A in DVM 2 semester 1, and integrates with the concepts and skills taught within VETS6207 (Research and Enquiry 2B) and VETS6206 (Professional skills 2B) to prepare students for the clinical units of study in DVM 3.

Textbooks

Beveridge I and Emery D (2015) *Australasian Animal Parasites Inside and Out*. Australian Society for Parasitology. <http://parasite.org.au/publications/australian-animal-parasites-inside-and-out/>. Zachary and McGavin (2012) *Pathologic Basis of Veterinary Disease*. 5th Ed. Mosby. Discipline specific texts and readings will be provided within each module.

Year 3

Year 3 of the Doctor of Veterinary Medicine has the following 48 credit point structure:

VETS6301**Veterinary Public Practice**

Credit points: 3 **Teacher/Coordinator:** Dr Siobhan Mor **Session:** Semester 1 **Classes:** Intensive at start of semester, then lectures throughout the semester **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 **Assessment:** group theory-based assignment (30%), theory-based quiz (25%), written examination (45%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Veterinarians make vital contributions - at local, regional and global levels - to some of the most pressing challenges facing modern society, including emerging infectious diseases, food safety and food security, and antimicrobial resistance. This unit introduces you to the knowledge and technical skills that underpin the roles of veterinary professionals in serving the public good. Specifically, this Unit of Study will prepare you to: contribute to Emergency Animal Disease (EAD) response; oversee animal welfare and food safety in abattoirs; and advise clients, community members and policy developers on risks associated with zoonotic diseases and how to minimise them. During the intensive, you will participate in lectures, interactive tutorials and practicals designed to integrate prior learning on epidemiology, animal welfare, pathology, microbiology, and parasitology within the context of EAD response and food safety. You will also be introduced to the global frameworks that support animal health at an international level. During the semester, you will participate in tutorials focussed on risk management and risk communication in practice settings in relation to a number of common zoonotic disease scenarios in Australia. Legislation relevant to the above areas will be introduced throughout the unit.

VETS6302**Clinical Foundations**

Credit points: 3 **Teacher/Coordinator:** A/Prof Christina Dart **Session:** Semester 1 **Classes:** introductory lectures, independent study, tutorials, practical classes and demonstrations **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 **Assessment:** online quiz (30%) to be undertaken in the early part of the semester, written theory assignment (70%) to be undertaken at the end of the semester **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will facilitate foundational clinical knowledge and skills in disciplines including anaesthesia, surgery, medicine, imaging, therapeutics and infection control. This foundational unit of study will sit at the beginning of semester 1. The student will study fundamental concepts for practicing safe and humane sedation administration (chemical restraint), general anaesthesia, and pain relief in animal species. Foundational surgical concepts will include principles of wound healing, surgical suture materials and their use, haemostasis principles, and aseptic techniques as part of foundational principle of infection control in practice. Foundational knowledge and skills in diagnostic imaging will encompass radiography and ultrasonography principles, radiological safety, and principles of image interpretation. The students will be introduced to concepts of prescribing therapeutics in clinical and non-clinical veterinary practice, including rationalisation of use based on disease priority, safety, efficacy, patient response, disease prevalence, and by considering owner and regulatory constraints. Students will advance understandings of diagnostic frameworks and case management in veterinary medicine through clinical reasoning, utilising an evidence based approach, and remaining cognisant and sensitive to clients' needs and constraints.

VETS6303**Small Animal Practice A**

Credit points: 6 **Teacher/Coordinator:** Dr Chris Tan, Ms Joanna Whitney, Dr Fernando Martinez Taboada **Session:** Semester 1 **Classes:** activities will vary from week to week, but will be a mixture of practical classes, tutorials and lectures **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 **Corequisites:** VETS6302 **Assessment:** intra-semester theory-based examination (20%) delivered mid-semester, intra-semester theory-based written assessment (15%) delivered at the end of semester, end-of-semester theory-based examination (65%) delivered at the end of semester **Mode of delivery:** Normal (lecture/lab/tutorial) day

Mastering essential clinical competencies and the application of the problem-oriented approach is essential for the transition into clinical practice. This unit of study will consolidate the skills and knowledge from DVM1 and DVM2 in a case-based approach to the diagnosis and treatment of common clinical syndromes in small animals. An integrated multi-disciplinary approach will be used to highlight the importance and interrelatedness of all aspects of clinical practice (medicine, surgery, anaesthesia, behaviour, pharmacology and diagnostic imaging) in case management. Consideration of the responsibilities of small animal clinicians with regard to infection control, zoonoses and public health in the context of clinical practice will form part of this unit. The unit will provide grounding in the basic principles of diagnosis and treatment of urogenital, neurological, ophthalmological, cardiorespiratory, endocrinological, musculoskeletal, behavioural, alimentary, dermatological, haematological and oncological conditions. It focuses on developing the students' day one skills and professional attitude required for their clinical placements. Practical classes and small group learning will be included in the teaching of this unit to allow students to develop clinical thinking, practical skills and communication proficiencies.

Textbooks

Students will be directed by teaching staff to required texts

VETS6304

Livestock Practice A

Credit points: 3 **Teacher/Coordinator:** Dr Jennie Mohler, Dr Michael Reynolds, Associate Professor John House **Session:** Semester 1 **Classes:** activities will vary weekly, but will be a mix of practical classes, tutorials, workshops and lectures **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 **Corequisites:** VETS6302 **Assessment:** intra-semester theory exam (40%), end-of-semester theory and practical exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Livestock Practice A combines the teaching of ruminant (primarily bovine) and porcine medicine and surgery in a practical setting where students progress from the fundamental clinical and surgical problems as would be encountered in a rural mixed practice. Much of the lecture course utilises problem-based learning using a case-based approach. This approach is designed to augment skills developed in other disciplines including animal husbandry, anatomy, pathology, microbiology, pharmacology, veterinary medicine and veterinary surgery. The course is designed to assist the student in learning effective problem solving skills, determination of differential diagnoses and the judicious use of appropriate diagnostic aids when attempting to reach a diagnosis. Options and approaches to commonly used therapeutic measures are included. The learning is integrated across species and deals with the major body systems, such as cardiac, respiratory, neuromuscular, ocular, skin, alimentary and renal disorders, and also includes an introduction to herd and flock diseases in livestock. The practical classes are designed to augment and expand the student's experiences in large animal clinical skills.

VETS6305

Equine Practice A

Credit points: 3 **Teacher/Coordinator:** Dr Tony D. Mogg **Session:** Semester 1 **Classes:** tutorials and case discussions, independent study **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 **Corequisites:** VETS6302 **Assessment:** mid-semester scenario-based essay (20%), mid-semester oral presentation of written assignment (pass/fail), end-of-semester practical examination (pass/fail), end-of-semester case-based theory written examination (80%) **Practical field work:** Practical classes and demonstrations, Workplace training at the University Veterinary Teaching Hospital Camden (UVTHC) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Equine Practice A and B will assist students in developing the knowledge, skills and attitudes relevant to equids required of a 'day-one' graduate in rural mixed practice. These units of study will provide the foundations for equine and mixed practice clinical placements in DVM Year 4. Equine Practice A will build on the content of DVM Years 1 and 2, and VETS6302 Clinical Foundations, and will expose students to a wide range of aspects of equine practice using a case-based pedagogic approach.

Textbooks

Equine Clinical Medicine, Surgery and Reproduction, Munroe, G and Weese, S (eds), Manson, 2011.

VETS6306

Exotic and Wildlife Practice

Credit points: 3 **Teacher/Coordinator:** A/Prof David Phalen **Session:** Semester 1 **Classes:** large group classes, independent study **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 **Corequisites:** VETS6302 **Assessment:** case-based written theory examination (50%) delivered mid-semester, case-based written theory examination (50%) delivered at the end of semester **Practical field work:** Practical classes and demonstrations, Workplace training at the University Veterinary Teaching Hospital Camden (UVTHC) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit will cover the basic husbandry of commonly kept exotic pets and wildlife species presented to veterinarians. Applied anatomy of these species will be taught so that students will be able to safely handle these animals, complete physical examinations of them, collect diagnostic samples from them, interpret radiographs and other images of them, treat them, and undertake common surgical procedures on them. Common disease processes and their manifestations, treatments, and prevention will be discussed. Upon completion of this unit of study, students will be comfortable seeing these species in their practice for routine appointments, and will be aware when referral to a specialist is indicated.

VETS6307

Research and Enquiry 3A

Credit points: 3 **Teacher/Coordinator:** A/Prof Jan Slapeta, Prof Michael Ward **Session:** Semester 1 **Classes:** individual and group consultation with advisor and advisors, respectively, independent study on professionally focused project **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 **Assessment:** progress report on professionally focused project approved by advisor and assessor (pass/fail) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit forms a first part of a capstone experience in which the student formulates a question based on systematic investigation of a topic related to a discipline in veterinary medicine or an allied health science, under the guidance of a research advisor and peers under independent review. The investigation can include lab/bench, field/clinic research or secondary data analysis. The investigation must demonstrate independent data collection, critical analysis and reflection on existing dimension of knowledge. Literature reviews are not acceptable.

VETS6308

Veterinary Practice Management

Credit points: 3 **Teacher/Coordinator:** Dr Sanaa Zaki **Session:** Semester 2 **Classes:** 2 week intensive (lectures and tutorials) at start of semester, presentations and independent study throughout the semester **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108,

VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 **Assessment:** groupwork assessment (60%) during intensive block, multiple-choice question (mcq) theory examination (40%) scheduled for the end of semester **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit extends students' foundational knowledge and skills for working effectively as a veterinary professional, by introducing key concepts in Practice Management. The unit also builds on and extends students' application of professional competencies introduced in VETS6101 The Veterinary Professional 1 and VETS6201 The Veterinary Professional 2 including communication, teamwork, cultural competence, professional reasoning and leadership. It utilises a case-based approach to aid understanding of financial, legal and ethical perspectives in the management of problems encountered in Veterinary Practice. Students are given opportunities to review, critically evaluate and present their findings on case studies that reflect real life veterinary challenges. This is supplemented with keynote presentations from professional experts in business, finance and law. Specifically this will facilitate students' preparedness for clinical placements in DVM4 and Clinical Practice beyond graduation.

VETS6309

Small Animal Practice B

Credit points: 6 **Teacher/Coordinator:** Dr Chris Tan, Ms Joanna Whitney, Dr Fernando Martinez Taboada **Session:** Semester 2 **Classes:** activities will vary from week to week, but will be a mixture of practical classes, tutorials and lectures **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6303 **Assessment:** intra-semester theory-based examination (20%) delivered mid-semester, intra-semester written assessment (15%) delivered at the end of semester, theory-based written examination (65%) delivered at the end of semester **Mode of delivery:** Normal (lecture/lab/tutorial) day

Mastering essential clinical competencies and the application of the problem-oriented approach is essential for the transition into clinical practice. This unit of study will consolidate the skills and knowledge from DVM1 and DVM2 in a case-based approach to the diagnosis and treatment of common clinical syndromes in small animals (cats, dogs, ferrets, rabbits, and rodents). An integrated multi-disciplinary approach will be used to highlight the importance and interrelatedness of all aspects of clinical practice (medicine, surgery, anaesthesia, behaviour, pharmacology and diagnostic imaging) in case management. Consideration of the responsibilities of small animal clinicians with regard to infection control, zoonoses and public health in the context of clinical practice will form part of this unit. The unit will provide grounding in the basic principles of diagnosis and treatment of urogenital, neurological, ophthalmological, cardiorespiratory, endocrinological, musculoskeletal, behavioural, alimentary, dermatological, haematological and oncological conditions. It focuses on developing the students' day one skills and professional attitude required for their clinical placements. Practical classes and small group learning will be included in the teaching of this unit to allow students to develop clinical thinking, practical skills and communication proficiencies.

Textbooks

Students will be directed by teaching staff to required texts

VETS6310

Livestock Practice B

Credit points: 6 **Teacher/Coordinator:** Dr Jennie Mohler, Dr Michael Reynolds, A/Prof John House **Session:** Semester 2 **Classes:** activities will vary weekly, but will be a mix of practical classes, tutorials, workshops and lectures **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6304 **Assessment:** intra-semester theory exam (40%), end-of-semester theory and practical exam (60%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Livestock Practice will develop deep learning approaches to solving problems of ruminant (mainly bovine, but also ovine and caprine) production, and reproduction. In addition to lectures and practical classes, it uses a case-based approach to deliver group case studies on-line for student presentations, known as TILHAPS (teaching innovations in livestock health and production). These cases require integration of pathological and epidemiological investigative skills to provide evidence based solutions in the management of disease and productivity problems in a 'whole farm' setting. The course is designed to advance student learning in preparation for the intramural and extramural clinical placements encountered in final year. The practical classes will continue to build the confidence of students in handling large animals in rural mixed and public practice settings.

VETS6311

Equine Practice B

Credit points: 3 **Teacher/Coordinator:** Dr Tony D. Mogg **Session:** Semester 2 **Classes:** tutorials and case discussions, independent study **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6305 **Assessment:** mid-semester scenario-based essay (20%), mid-semester oral presentation of written assignment (pass/fail), end-of-semester practical examination (pass/fail), end-of-semester case-based theory written examination (80%) **Practical field work:** Practical classes and demonstrations, Workplace training at the University Veterinary Teaching Hospital Camden (UVTHC) **Mode of delivery:** Normal (lecture/lab/tutorial) day

Equine Practice A and B will assist students in developing the knowledge, skills and attitudes relevant to equids required of a 'day-one' graduate in rural mixed practice. These units of study will provide the foundations for equine and mixed practice clinical placements in DVM Year 4. Equine Practice B will build on the content of DVM Years 1 and 2, VETS6302 Clinical Foundations, and VETS6305 Equine Practice A, and will expose students to a wide range of aspects of equine practice using a case-based pedagogic approach.

Textbooks

Equine Clinical Medicine, Surgery and Reproduction, Munroe, G and Weese, S (eds), Manson, 2011.

VETS6312

Intensive Animal Practice

Credit points: 3 **Teacher/Coordinator:** Dr Paul Hick **Session:** Semester 2 **Classes:** activities will vary from week to week, but will be a mixture of practical classes, tutorials, workshops and lectures **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6302 **Assessment:** mid-semester theory-based case studies (30%), mid-semester practical class evaluations (15%) (5% each for aquaculture, pigs, and poultry), end-of-semester written theory examination (55%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit of study will provide students with an understanding of the major factors driving the profitability and sustainability of fish, poultry and pig industries. The emphasis is on epidemiology, management and preventive medicine, with Page 6 consideration given to welfare aspects of intensively housed animals. which are essential knowledge and skills required for a sound approach to identifying and solving health problems and improving production and welfare. Students will be equipped with the approaches required to practice veterinary medicine across the entire range of contexts in intensive animal industries. The focus will be on disease and health management in the context of Australian production systems with an awareness of exotic diseases and different diseases in these industries at an international level. The general principles of health

and disease of the relevant species learnt previously will be developed into a sound approach to clinical practice. Clinical skills and diagnostic modalities including pathology specific to the intensive animal will be developed. The course will expand beyond individual animal medicine to integrated health and production management and regulatory roles for health professionals for diseases of significance to regulation, human health and trade.

VETS6313

Research and Enquiry 3B

Credit points: 3 **Teacher/Coordinator:** Prof Michael Ward, A/Prof Jan Slapeta **Session:** Semester 2 **Classes:** individual and group consultation with advisor and advisors, respectively; independent study on professionally focused project **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208 **Assessment:** manuscript on professionally focused project evaluated by advisor and reviewed by assessor (100%) **Mode of delivery:** Normal (lecture/lab/tutorial) day

This unit forms the second and final part of a capstone experience in which the student will systematically investigate a topic to test a hypothesis under the guidance of a research advisor and peers under independent review. The unit is a logical progression from VETS6307. The cap-stone experience project will culminate in preparation of a manuscript in the style of an appropriate scientific journal and present the results of the investigation in either an oral or poster presentation to peers and faculty. Literature reviews are not acceptable.

Year 4

Year 4 of the Doctor of Veterinary Medicine has the following 48 credit point structure:

VETS6401

Small Animal Clinics A

Credit points: 6 **Teacher/Coordinator:** Dr Mara Hickey **Session:** Semester 1, Semester 2 **Classes:** four-week clinical rotation specifically in the fields of primary accession and emergency medicine at the UVTHS **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** supervisor report form, activity log, skills log, communication task, individual summative examination **Mode of delivery:** Professional practice

Note: The majority of the unit of study will involve practical work in the form of clinical practice, facilitated in a rotational format. Students will be involved in the handling, examination, diagnostic procedures and treatment of various small animal species.

This unit of study will provide students with essential experience and training in the management of emergency cases and the care of hospitalised patients at the University Veterinary Teaching Hospital Sydney (UVTHS). Students will have the opportunity to practice clinically-relevant techniques such as history taking, physical examination, diagnostic sample collection, interpretation of radiographs and ultrasound, medical record keeping, critical analysis of case-related information, development and implementation of treatment plans and evaluation of outcomes. The focus will be on triage and care of cases presenting in an emergency situation. In addition, students will intergrate various learning activities to effectively diagnose and treat patients and develop skills to enhance the client-veterinarian and veterinarian-patient relationship and form effective collegial teams.

Textbooks

No texts required.

VETS6402

Small Animal Clinics B

Credit points: 6 **Teacher/Coordinator:** Dr Alastair Mair **Session:** Semester 1, Semester 2 **Classes:** four-week practicum; tutorials; self-directed learning activities **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** supervisor report form, activity log, skills log, communication task, individual summative examination **Mode of delivery:** Professional practice

Note: This unit of study involved four weeks of practical clinical experience at the UVTHS, focusing on developing clinical knowledge and skills in the area of veterinary anaesthesia.

This unit of study is designed to provide student interns with essential exposure to and experience in small anaesthesia and surgery. This study forms a placement which is part of an integrated approach to the delivery of small animal practice related content over the four years of the DVM programme, the over-arching aim of which is to prepare DVM graduates with the day-one knowledge, skills and attitudes required to succeed in the small animal clinical environment. It will be comprised of two weeks of practical clinical experience in each small animal surgery and anaesthesia. Student interns are involved in the management of a wide variety of cases requiring surgery and /or anaesthesia, from the time of admission until discharge from the hospital. They will be integrated into the daily activities of the anaesthesia and surgery unit. Emphasis will be placed on problem oriented approach to making medical and therapeutic decisions and which integrate judgments based on previous material and evidence-based disease management approaches in the various clinical veterinary science disciplines, as well as laboratory diagnostics.

Textbooks

Tranquilli WJ, Thurmon JC and Grimm KA (2007) Lumb and Jones' Veterinary Anaesthesia and Analgesia, 4th Edition, Wiley-Blackwell Hall WL, Clarke KW and Trim CM (2013) Veterinary Anaesthesia, 11th Edition, Harcourt Publishers Ltd. King LG and Boag A (2007) BSAVA Manual of Canine and Feline Emergency and Critical care, 2nd Edition, BSAVA

VETS6403

Small Animal Clinics C

Credit points: 6 **Teacher/Coordinator:** Mariano Makara **Session:** Semester 1, Semester 2 **Classes:** a one-week clinical rotation through the AREPH; a one-week clinical rotation with the diagnostic imaging team at the UVTHS; and a two-week clinical rotation with the medicine team at the UVTHS **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** individual assessment of clinical capabilities through client communication and interactions, presentations at rounds, and patient care outcomes, assessed daily during the one-week AREPH rotation **Mode of delivery:** Professional practice

Note: The majority of the unit of study will involve practical work in the form of clinical practice, facilitated in a rotational format. Students will be involved in the handling, examination, diagnostic procedures and treatment of dogs, cats, birds, reptiles, exotic pets and wildlife.

This unit of study consolidates the theory of avian, reptile, exotic pet and wildlife medicine and surgery, as well as of canine and feline internal medicine and diagnostic imaging, and applies this theory to the diagnosis and treatment of diseases in patients presenting to the University Veterinary Teaching Hospital at Sydney (UVTHS) and the Avian Reptile and Exotic Pet Hospital (AREPH). Case material will be used to develop student's use of the problem-orientated approach in patient assessment. During placements, acquiring appropriate skills in history-taking, physical examination, interpretation of diagnostic imaging modalities and clinicopathological test results, routine clinical procedures and implementation of treatments will be emphasised. Cases will form the basis of interactive collegiate discussions on patient-specific identification and assessment of problems. Student interns will participate in clinical activities, including client communication, collection of samples for diagnostic tests, acquisition of diagnostic images, developing treatment and nutrition plans, routine health management, disease management, management of patients in hospital, and medical record-keeping.

Textbooks

Ettinger SJ and Feldman EC (ed) (2010) Textbook of Veterinary Internal Medicine: Diseases of the Dog and the Cat 7th Ed. Elsevier Saunders, St Louis. (ISBN: 9781416065937) Additional reference books and online resources will be available during the rotations.

VETS6404

Small Animal Clinics D

Credit points: 3 **Teacher/Coordinator:** Jenni Green **Session:** Semester 1, Semester 2 **Classes:** two-week practical experience **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** supervisor report form, activity/case log, skills log, communication task, individual summative examination **Mode of delivery:** Professional practice

Note: The majority of the unit of study will involve practical work in the form of general clinical practice. Students will be involved in the handling, examination, diagnostic procedures and treatment, and wellness management of animals commonly presented in small animals practice.

This unit of study comprises two weeks of blended practical clinical experience. Student interns will be involved in the management of a wide variety of cases such as they are presented to general practice in a non-metropolitan setting. They will apply consultations skills, clinical reasoning, and consolidate knowledge of abnormal and normal presentations to determine animal health. They conduct wellness and preventative health consultation and perform immunisation, and formulate and conduct diagnostic and treatment plans within the context of general practice. They recognise life threatening and serious conditions and initiate appropriate treatment. Student interns will formulate a rational approach to further investigation or patient referral taking into account owner preferences and financial constraints and they prepare documentation for referring patients. During this placement student interns will solidify knowledge and skills in anaesthesia and surgery by undertaking routine neutering procedures in dogs and cats. Emphasis will be placed on problem oriented approach and on making evidence based medical and therapeutic decisions, which integrate judgments based on previous foundational material including principles and approach to health and disease management.

Textbooks

No texts required.

VETS6405

Large Animal Clinics A

Credit points: 6 **Teacher/Coordinator:** Tony D. Mogg **Session:** Semester 1, Semester 2 **Classes:** four-week practical experience, including routine clinical activities, rounds, tutorials, and practical classes **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** supervisor report form, clinical anatomy quiz, attendance and performance at clinical rounds, treatment facilitations, and tutorials, communication task, skills log, activity log, individual summative examination **Mode of delivery:** Professional practice

Note: Four weeks of practical experience in clinical environments focusing on multiple disciplinary areas required to facilitate effective equine clinical assessment and care.

This unit of study incorporates multiple aspects of equine practice, including anaesthesia, diagnostic imaging, medicine, reproduction and surgery, with a strong focus on the primary care aspects of equine practice. The placement experience includes a range of routine clinical activities, rounds, tutorials and practical classes, designed to provide a balance between clinical and didactic learning opportunities. This placement is part of an integrated approach to the delivery of equine practice related content over the four years of the DVM programme, the over-arching aim of which is to prepare DVM graduates with the day-one knowledge, skills and attitudes required to succeed in the equine clinical environment.

Textbooks

Equine Clinical Medicine, Surgery and Reproduction, Munroe, G and Weese, S (eds), Manson, 2011.

VETS6406

Large Animal Clinics B

Credit points: 3 **Teacher/Coordinator:** Jennie Mohler **Session:** Semester 1, Semester 2 **Classes:** two-week practical experience **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** supervisor report form, attendance and performance during clinical rounds and tutorials, overnight field trip, communication task, skills log, activity log, individual summative examination **Mode of delivery:** Professional practice

Note: Two weeks of clinical practical experience in working with livestock, ruminant, and herd populations via the University Livestock Veterinary Service at Camden campus.

The University Livestock Veterinary Service provides routine herd health and medicine services to dairy clients, and a 24-hour ambulatory service to local livestock owners. This unit of study will be facilitated within this service through a two-week, livestock and ruminant health focused practical experience. Veterinary student interns will be expected to participate in all facets of the clinic activities. Practical experiences in this unit of study will encompass the further development of problemsolving skills, clinical knowledge and acumen, and technical and communication skills relevant to conditions found in ruminant species, as well as laboratory diagnostic and pathophysiological considerations. Practical work will also provide students with important knowledge and experience in dairy production and animal welfare, and in the relationship between ruminant health and food quality and safety relevant to human populations.

Textbooks

No texts required.

VETS6407

Lab Investigations of Clinical Disease

Credit points: 3 **Teacher/Coordinator:** Mark B. Krockenberger **Session:** Semester 1, Semester 2 **Classes:** two intensive weeks of teaching (one based at Camden, one at Camperdown) comprising morning and afternoon laboratory sessions **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** group case report due at the end of each week of the rotation (20%), individual take-home written examination due by the end of the rotation (20%), individual communication task due at the end of each week of the rotation (10%), individual examination to take place at the end of the year (50%) **Mode of delivery:** Professional practice

Note: The unit of study is entirely practical, utilising diagnostic accessions to perform and interpret laboratory testing.

This unit of study provides the capstone experience for the paraclinical disciplines of pathobiology. It focuses on the implementation of a diagnostic approach, utilising the strengths of the disciplines of diagnostic pathology (anatomical and clinical), microbiology, and parasitology, to further develop students' understanding of the utility and limitations of laboratory-based diagnostic tools in clinical practice. The learning context will foster: (1) a scientific, discipline-based systematic approach to apply an understanding of normal function, homeostasis, pathophysiology, mechanisms of health/disease, and the natural history and manifestations of important animal diseases during diagnosis; (2) an understanding of the principles and hands-on experiences in physical and laboratory diagnostic methods and interpretation (including diagnostic pathology, clinical pathology, microbiology, parasitology and necropsy); and (3) an emphasis on problem solving that results in making and applying medical judgments based on sound evidence provided by laboratory-based testing.

Textbooks

No required texts.

VETS6408

Public, Industry, or Community Placement

Credit points: 3 **Teacher/Coordinator:** Dr Siobhan Mor **Session:** Semester 1, Semester 2 **Classes:** four-week practical experience rotation, 3-day placement **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** supervisor report form (to be graded either proficient, satisfactory, or unsatisfactory), activity log, skills log, communication task **Mode of delivery:** Professional practice

Note: Four weeks of practical experience of professional practice as required within a public, industry, or community-based body that serves the public good and/or underprivileged communities that lack regular access to veterinary services directly involved in servicing the livestock industries and/or public health. Students will also undertake a 3-day placement at an export abattoir.

This unit of study enables student interns to identify the importance of veterinarians outside of conventional clinical practice in contributing to animal and human health and wellbeing. The unit involves a four-week rotation with a public or private organisation that serves the public good and/or underprivileged communities that lack regular access to veterinary services. In addition, students will undertake a 3-day placement at an export abattoir. Organisations that may be suitable for this placement include (but are not limited) to those involved with: Animal ethics and animal welfare; Veterinary legislation and animal policy; Veterinary product development; Population health and conservation; Diagnostic services; Zoonoses and food safety; Laboratory and epidemiological research; Outbreak investigation, disease surveillance and response; Animal disease control programs; Community-based animal programs.

Textbooks

No texts required.

VETS6409

Extramural Placement 1

Credit points: 3 **Teacher/Coordinator:** Dr Peter Bennett **Session:** Semester 1, Semester 2 **Classes:** four-week period of practical experience in an approved rural or remote practice/placement **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** supervisor report form (to be graded either proficient, satisfactory, or unsatisfactory), activity log, skills log, communication task **Mode of delivery:** Professional practice

This unit of study involves placement at a Faculty-approved external rural or remote location linked to the veterinary student intern's career interest area. Suitability of placements will be negotiated between the veterinary intern and the unit of study coordinator. Interns will be under the supervision of an extramural supervisor who will liaise with Faculty, review the aims of the rotation with the intern, and assess the performance of the intern via a standard report form. Interns are expected to fully participate in agreed activities whilst attending the placement, typically taking on the role and schedule of a full-time, supervised veterinary associate. The requirements of this rotation include the completion of the following documents: an introductory letter to the placement at least four weeks prior to the rotation; a site contract; learning agreement form; skills report form; and rotation feedback form. During the rotation interns are expected to participate in three meetings with the extramural supervisor and complete a communication task.

Textbooks

No texts required.

VETS6410

Extramural Placement 2

Credit points: 3 **Teacher/Coordinator:** Dr Peter Bennett **Session:** Semester 1, Semester 2 **Classes:** four-week period of practical experience in an approved rural or remote practice/placement **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** supervisor report form (to be graded either proficient, satisfactory, or unsatisfactory), activity log, skills log, communication task **Mode of delivery:** Professional practice

This unit of study involves placement at a Faculty-approved external location linked to the veterinary student intern's career interest area. Suitability of placements will be negotiated between the veterinary intern and the unit of study coordinator. Interns will be under the supervision of an extramural supervisor who will liaise with Faculty, review the aims of the rotation with the intern, and assess the performance of the intern via a standard report form. Interns are expected to fully participate in agreed activities whilst attending the placement, typically taking on the role and schedule of a full-time, supervised veterinary associate. The requirements of this rotation include the completion of the following documents: an

introductory letter to the placement at least four weeks prior to the rotation; a site contract; learning agreement form; skills report form; and rotation feedback form. During the rotation interns are expected to participate in three meetings with the extramural supervisor and complete a communication task.

Textbooks

No texts required.

VETS6411

Extramural Placement 3

Credit points: 3 **Teacher/Coordinator:** Dr Peter Bennett **Session:** Semester 1, Semester 2 **Classes:** four-week period of practical experience in an approved rural or remote practice/placement **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** supervisor report form (to be graded either proficient, satisfactory, or unsatisfactory), activity log, skills log, communication task **Mode of delivery:** Professional practice

This unit of study involves placement at a Faculty-approved external location linked to the veterinary student intern's career interest area. Suitability of placements will be negotiated between the veterinary intern and the unit of study coordinator. Interns will be under the supervision of an extramural supervisor who will liaise with Faculty, review the aims of the rotation with the intern, and assess the performance of the intern via a standard report form. Interns are expected to fully participate in agreed activities whilst attending the placement, typically taking on the role and schedule of a full-time, supervised veterinary associate. The requirements of this rotation include the completion of the following documents: an introductory letter to the placement at least four weeks prior to the rotation; a site contract; learning agreement form; skills report form; and rotation feedback form. During the rotation interns are expected to participate in three meetings with the extramural supervisor and complete a communication task.

Textbooks

No texts required.

VETS6412

Extramural Placement 4

Credit points: 3 **Teacher/Coordinator:** Dr Peter Bennett **Session:** Semester 1, Semester 2 **Classes:** four-week period of practical experience in an approved rural or remote practice/placement **Prerequisites:** VETS6101, VETS6102, VETS6103, VETS6104, VETS6105, VETS6106, VETS6107, VETS6108, VETS6201, VETS6202, VETS6203, VETS6204, VETS6205, VETS6206, VETS6207, VETS6208, VETS6301, VETS6302, VETS6303, VETS6304, VETS6305, VETS6306, VETS6307, VETS6308, VETS6309, VETS6310, VETS6311, VETS6312, VETS6313 **Assumed knowledge:** All content from Years 1, 2, and 3 of the DVM **Assessment:** supervisor report form (to be graded either proficient, satisfactory, or unsatisfactory), activity log, skills log, communication task **Mode of delivery:** Professional practice

This unit of study involves placement at a Faculty-approved external location linked to the veterinary student intern's career interest area. Suitability of placements will be negotiated between the veterinary intern and the unit of study coordinator. Interns will be under the supervision of an extramural supervisor who will liaise with Faculty, review the aims of the rotation with the intern, and assess the performance of the intern via a standard report form. Interns are expected to fully participate in agreed activities whilst attending the placement, typically taking on the role and schedule of a full-time, supervised veterinary associate. The requirements of this rotation include the completion of the following documents: an introductory letter to the placement at least four weeks prior to the rotation; a site contract; learning agreement form; skills report form; and rotation feedback form. During the rotation interns are expected to participate in three meetings with the extramural supervisor and complete a communication task.

Textbooks

No texts required.

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 Philosophy (MPhil)

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 Philosophy

The Master of Philosophy is a research master's degree offered by the Faculty of Science that requires up to 1.5 years of full-time study or the equivalent of part-time study. During this time, a candidate undertakes supervised research and writes a thesis, and students are also expected to take coursework units as defined by their research plan and agreed with supervisors. The entry requirement is usually a bachelor's degree. Students should refer to the MPhil course resolutions.

Higher Doctorates

The Faculty of Science offers 4 higher doctorates, being:

- Doctor of Agricultural Economics
- Doctor of Science
- Doctor of Science in Agriculture
- Doctor of Veterinary Science

These degrees are awarded for a thesis that is considered to be a distinguished contribution to knowledge, in a field appropriate to the degree. No research training is provided for these degrees as they are aimed at academics nearing the end of their career rather than those at the beginning. Students are required to enrol for a minimum of one part-time research period. To be eligible, applicants must hold a degree that was conferred more than 5 years ago, and hold that degree from the University or have worked for the University for at

least 3 years full time or equivalent. Those applying to the Doctor of Veterinary Science also hold or have completed all the academic requirements for the Bachelor of Veterinary Science. The Higher Doctorates are governed by the University Of Sydney (Higher Degree by Research) Rule 2011.

Higher Degree by Research Policies and Procedures

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, Progress Planning and Review for Higher Degree by Research Students Policy and Procedures 2015 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
- Faculty of Science - Current Postgraduates website

Thesis Submission Information

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

- HDR Administration Centre - Thesis Submission and Examination Information
- SUPRA - The Thesis Guide
- SUPRA - The Thesis Guide download

Within the Faculty of Science, there are no formal requirements or guidelines other than those listed above. Students are generally expected to submit an electronic version of their thesis for examination and after examination to the library. 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 the University of Sydney (Higher Degree by Research) Rule 2011 (as amended). Candidates should be familiar with this Rule. The Academic Board Thesis and Examination of Higher Degrees by Research Policy and Procedure, and Progress Planning and Review for Higher Degree by Research Students Policy and Procedures 2015 are also relevant to this degree and can be accessed via the University 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. The first full year of candidature is normally on probation. The minimum period of candidature is three years. In the case of full-time candidates the maximum period of candidature is normally four years, and the maximum period of candidature for part-time candidatures is 8 years, although it should be noted that the maximum is dependent on the proportion of full-time and part-time enrolment.

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.



Master of Philosophy

Course overview

The degree of Master of Philosophy is a research degree awarded for a thesis considered to be a substantially original contribution to the subject concerned. Some coursework is likely to be required especially in the first year of the degree and for those who do not already hold an honours degree.

Applicants should normally hold a bachelor's degree with at least a credit grade in the senior level unit(s) of study relevant to the proposed area of research or an equivalent qualification from another university or institution.

The degree may be taken on either a full-time or part-time basis. The first full year of candidature is normally on probation.

In the case of full-time candidates, the minimum period of candidature is 1.5 years and the maximum period of candidature is 2 years.

Part-time candidature may be approved for applicants who can demonstrate that they are engaged in an occupation or other activity which leaves them substantially free to pursue their candidature for the degree. 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 for part-time candidates will be 3 years and the maximum period of candidature is 4 years, although it should be noted that the maximum is dependent on the proportion of full-time and part-time enrolment.

Master of Philosophy

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

Course resolutions

Part 1: Preliminary

1 Course codes

Code	Course and stream title
RMPHLSI-01	Master of Philosophy

Part 2: Admission requirements

2 Eligibility for admission to candidature

- (1) Subject to sub-clause (2) and (3), to be eligible for admission by a Dean or Associate Dean to candidature for the Master of Philosophy, an applicant must hold or have completed all the academic requirements, in a subject area related to the proposed course of advanced study and research, for a University of Sydney:
 - (a) Master's degree; or
 - (b) Bachelor's degree with honours; or
 - (c) Bachelor's degree with a result of at least a Credit grade in the senior level unit(s) of study relevant to the proposed area of research.
- (2) A 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 Postgraduate Research Committee are equivalent to those prescribed in sub-clause (1).
- (3) The Dean or Associate Dean may impose on a student admitted to candidature pursuant to sub-clause (2) such conditions as the Dean or Associate Dean considers appropriate.

3 Application for admission to candidature

- (1) An applicant for admission to candidature for a Master's degree must submit to the Faculty:
 - (a) a proposed course of advanced study and research approved by the Head of Department, in which the work is to be undertaken;
 - (b) satisfactory evidence of the applicant's eligibility for admission; and
 - (c) a statement certifying the applicant's understanding that, subject to the HDR Rule and Academic Board policies and procedures for Higher Degrees by Research, if the candidature is successful, their 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 Control of candidature

The HDR Rule specifies the conditions for the control of candidature by the University.

6 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 and procedures for Higher Degrees by Research.



7 Other studies during candidature

- (1) Each student will complete a Training Needs Analysis no later than the end of the first research period of their enrolment.
- (2) The Head of Department may from time to time require a student to attend, undertake or complete assessment for lectures, seminars, courses or practical work during the course of the candidature, in accordance with the HDR Rule. This may include enrolment in units of study. These requirements will be informed by the Training Needs Analysis

8 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: Enrolment and progression

9 Probation

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.

10 Time limits, earliest and latest submission dates

- (1) A full time student may not submit a thesis for examination earlier than the end of three semesters (HDR Rule) of enrolled candidature and a student who has undertaken all of their candidature on a part-time basis must not submit their thesis for examination earlier than the end of the third year of enrolled candidature.
- (2) Where a student has undertaken their candidature as a mixture of part-time candidature and full-time candidature, a part-time semester will be counted as the equivalent of one half of a full-time semester, and the student must not submit their thesis for examination earlier than the end of one and a half equivalent full-time years of enrolled candidature.
- (3) The HDR Rule specifies the latest completion times and submission dates for full- and part-time candidates in this course. The latest date for submission of thesis is normally the end of the fourth full-time semester of enrolment (or equivalent).

11 Mode of attendance

The attendance pattern for this course is full-time or part-time as approved by the Dean.

12 Discontinuation of candidature

A candidate may discontinue enrolment in the degree subject to the conditions specified by the HDR Rule.

13 Suspension of candidature

A candidate may suspend enrolment from the degree subject to the conditions specified by the HDR Rule.

14 Leave of absence

A candidate may take leave of absence from the degree subject to the conditions specified by the HDR Rule.

15 Progress

A candidate is required to maintain and demonstrate satisfactory progress towards the timely completion of the degree. Progress will be reviewed at intervals no longer than one year according to the provisions of the HDR Rule and Academic Board policies and procedures for Higher Degrees by Research.

Part 5: Requirements

16 Degree requirements

- (1) To satisfy the requirements of the degree candidates must:
 - (a) Satisfactorily complete any specified requirements of admission or probation;
 - (b) Satisfactorily complete any prescribed units of study, or other studies, as required by the Head of Department. Completion is defined as demonstrating a level of knowledge or competency of skills appropriate and essential for satisfactory progress of the research project;
 - (c) conduct research on an approved topic; and
 - (d) submit a document embodying the results of the research as a thesis that passes the examination.

17 The thesis

- (1) A candidate shall produce a thesis that meets the requirements specified in the HDR Rule and Academic Board policies and procedures for examination of Higher Degrees by Research.
- (2) The required length of the thesis is a total upper limit of 50,000 words, as described in the Academic Board policies and procedures for examination of Higher Degrees by Research.

Part 6: Examination

18 Examination of the thesis

Examination of the thesis will be conducted in accordance with relevant Academic Board policies and procedures for Higher Degrees by Research.

19 Award of the degree

The degree is awarded at the Pass level only.

Part 7: Other

20 Transitional provisions

These course resolutions apply to students who commenced their candidature after 1 January, 2016.

Master of Clinical Psychology and 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 (Coursework) Rule 2014 (the 'Coursework Rule'), the Coursework Policy 2014, the Resolutions of the Faculty, the University of Sydney (Student Appeals against Academic Decisions) Rule 2006 (as amended), the Academic Honesty in Coursework Policy 2015 and the Academic Honesty Procedures 2016. Up to date versions of all such documents are available from the Policy Register: <http://sydney.edu.au/policies>.

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, 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 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, 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 academic referees' reports, as required by the Head of the School of Psychology.
- (4) Aboriginal and Torres Strait Islander applicants who wish to be considered for admission under the Cadigal Program must additionally apply through the University's Mana Yura Student Support Team. Eligible applicants may be given priority in ranking.
- (5) 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 Policy 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 to the University of Sydney (Higher Degree by Research) Rule 2011.

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.



9 Progression rules

- (1) Candidates for the award course must satisfactorily complete all units of study.
- (2) Candidates who fail to satisfactorily complete a practicum unit of study at the first attempt can, following remediation, make a second attempt at completing a practicum unit of study.
- (3) Candidates who fail to satisfactorily complete two practicum units of study will be deemed to fail to meet progression requirements and may be asked to show good cause why they should be permitted to re-enrol in the award course.
- (4) Coursework and research units of study will be dealt with under the Progression rules of the Coursework Policy 2014.

10 Transitional provisions

- (1) These resolutions apply to persons who commenced their candidature after 1 January, 2018 and persons who commenced their candidature prior to 1 January, 2018 who elect to proceed under these resolutions.
- (2) Candidates who commenced prior to 1 January, 2018 may complete the requirements in accordance with the resolutions in force at the time of their commencement, provided that requirements are completed by 1 January, 2023, or later date as the faculty may, in special circumstances, approve.

Course overview

The Master of Clinical Psychology and Doctor of Philosophy (MCP/PhD) is a double degree which trains psychology graduates in the professional specialisation of clinical psychology and provides doctoral level research training in a clinically relevant area. The MCP/PhD 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, Dialectical Behaviour Therapy, Systems and Child and Family therapy. The MCP/PhD double degree is awarded upon the successful completion of all coursework, clinical placement and research components for both degrees.

Course outcomes

Graduates will have a highly developed knowledge base and strong clinical skills necessary for both the practice of professional psychology and conducting psychological research.

Master of Clinical Psychology and Doctor of Philosophy

Sample Structure

Sample Full-Time Enrolment Sequence

	Sem	Unit of study 1 & credit points	Unit of study 2 & credit points	Unit of study 3 & credit points	Unit of study 4 & credit points	Total
Year 1	1	PSYC6078 6	PSYC6082 6	PSYC6083 6	PSYC6089 6	24
	2	PSYC6072 6	PSYC6079 6	PSYC6084 6	PSYC6085 6	24
Year 2	1	PSYC6073 6	PSYC6086 6	PhD Research		12
	2	PSYC6080 6	PSYC6087 6	PhD Research		12
Year 3	1	PSYC6076 6	PSYC6081 6	PhD Research		12
	2	PSYC6075 6	PSYC6077 6	PhD Research		12
Year 4	1	PhD Research				
	2	PhD Research				
Year 5	1	PhD Research				
	2	PhD Research				
Total credit points:						96



Master of Clinical Psychology and Doctor of Philosophy

Units of study table

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
First Year			
Semester 1			
PSYC6078 Clinical Skills and Placement 1A	6	<i>Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.</i>	Semester 1
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	<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
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			
PSYC6080 External Placement 1	6	P PSYC6079 <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
Third Year			
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
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
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>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



Master of Clinical Psychology and Doctor of Philosophy

Unit of study descriptions

PSYC6072

Case and Research Seminars 1 Science

Credit points: 6 **Session:** Semester 2 **Classes:** 3-hour weekly seminars
Assessment: Attendance at case and research seminars; Attendance at the School of Psychology Colloquium, PSYCHFEST Research proposal presentation (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 PSYC6089 Research, Ethics and Professional Practice. All students are required to attend and contribute to discussion of case and research seminar presentations throughout the semester, and are expected to attend the School Colloquium. All students will prepare a written case report. Students are required to complete one adult therapy, one child assessment or therapy, and one assessment case report across all case and research seminars units of study. Students will present their research and submit their ethics application, as necessary.

PSYC6073

Case and Research Seminars 2 Science

Credit points: 6 **Session:** Semester 1 **Classes:** 3-hour weekly seminars
Assessment: Case presentation; Case reports; 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 PSYC6072 Case and Research Seminars 1. All students are required to attend and contribute to discussion of case and research seminar presentations throughout the semester, and are expected to attend the School Colloquium. All students will present a clinical case and prepare written case report(s). Students are required to complete one adult therapy, one child assessment or therapy, and one assessment case report across all case and research seminars units of study.

PSYC6075

Case and Research Seminars 3 Science

Credit points: 6 **Session:** Semester 2 **Classes:** 3-hour weekly seminars
Assessment: Case presentation; Case reports; PsychFest research progress presentation (MCP) (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: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

This unit of study will continue the case and research seminars introduced in PSYC6073 Case and Research Seminars 2. All students are required to attend and contribute to discussion of case and research seminar presentations throughout the semester, and are expected to attend the School Colloquium. Students will prepare case reports written up from an external placement. Students are required to complete one adult therapy, one child assessment or therapy, and

one assessment case report across all case and research seminars units of study. MCP students will present their research.

Textbooks

None

PSYC6076

Research Project 1 Science

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** Practical work
Prerequisites: PSYC6089 **Assessment:** Research report (MCP) or Systematic Review (MCP/PhD) (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: 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. MCP students are to complete a research report comprising a literature review including their research question, method section, analytic plan and research timeline including relevant details of their research. The total length of this initial project report must be no less than 2000 words. MCP/PhD students will complete a systematic review prepared as a manuscript for submission, including introduction and aims, method, results and discussion sections. The length of the systematic review will be determined by the area reviewed and journal guidelines, but should be at least 3000 words. These assessments will facilitate the write up of the thesis.

Textbooks

None

PSYC6077

Research Project 2 Science

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** Practical work
Prerequisites: PSYC6089 **Assessment:** Research thesis (MCP) or Literature Review (MCP/PhD) (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: Department permission required for enrolment. Note: Enrolment is restricted to students enrolled in the Master of Clinical Psychology degree at the University of Sydney.

MCP students will conduct analysis and interpretation of the data they have collected for their empirical research project. They will write up a completed study, which will be in the form of a manuscript ready for submission to a peer reviewed journal. This paper can, but does not have to be, submitted to a journal prior to being included in the project report. A concise review of the relevant literature needs to precede the manuscript. The total length of the project report must be no less than 5000 words. MCP/PhD students will complete a review of the relevant literature and write this up as a chapter for inclusion in their thesis. The length of the substantive literature review will typically fall in the range of 8,000-12,000 words.

Textbooks

None

PSYC6078

Clinical Skills and Placement 1A Science

Credit points: 6 **Session:** Semester 1 **Classes:** 3-hour weekly workshops; Clinical placement: 5 weeks, 1 day / week **Assessment:** Clinical Viva (Adult Therapy); Clinical Skills tape; Placement Contract (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: 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 **Session:** Semester 1, Semester 2 **Classes:** Clinical placement: 24 weeks, 1.5-2 days / week **Assessment:** Contract, mid-placement review, clinical log (compulsory requirements for accreditation) end-of-placement review (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: 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 **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%). 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: 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 hospitals and community health settings. One external placement is required to be adults and one with children/adolescents and families.

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 **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%). 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: 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 hospitals and community health settings. One external placement is required to be adults and one with children/adolescents and families. 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 **Session:** Semester 1 **Classes:** 3-hour weekly lectures **Assessment:** Clinical role play (Video); Clinical role play (Written self-critique); Open book exam (two-hour) (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: 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.

PSYC6083 Assessment Across the Lifespan Science

Credit points: 6 **Session:** Semester 1 **Classes:** 3-hour weekly lectures **Assessment:** Clinical viva (WAIS-IV); Clinical viva (WISC-IV); Adult report writing assignment; Child report summary assignment (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: 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 **Session:** Semester 2 **Classes:** 4-hour weekly seminars
Prerequisites: PSYC6083 **Assessment:** Written assignment (2500 words) (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 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 improving adherence to treatment, facilitating medical decision-making, 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 concepts in most common disorders that involve the central nervous system. The course aims to develop students' understanding of functional brain organisation, recovery of function, core neuropsychological syndromes and rehabilitation. Lectures will include theoretical components, case presentations and discussions.

PSYC6085

Specialised Areas of Practice

Science

Credit points: 6 **Session:** Semester 2 **Classes:** 3-hour weekly seminars
Assessment: Two written assignments (1500 words) (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: 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.

PSYC6086

Reflective Practice and Placement 2

Science

Credit points: 6 **Session:** Semester 1, Semester 2 **Classes:** 3-hour weekly lectures
Prerequisites: PSYC6079 **Assessment:** Two written assignments (1500-2000 words); Contract, mid-placement review, clinical log (compulsory requirements for accreditation), end-of-placement review (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: 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 patient, in the therapeutic relationship and in the internal dialogue of the

clinician. Further exploration of critical and philosophical issues will be offered explored to enable students to contextualize the therapies they provide and reflect on them from a wider perspective. 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.

PSYC6087

Advanced Models and Seminars

Science

Credit points: 6 **Session:** Semester 2 **Classes:** 3-hour weekly seminars
Prerequisites: PSYC6082 **Assessment:** Two written assignments (1500 words); Class participation (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: 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 **Session:** Semester 1 **Classes:** 3-hour weekly lectures
Assessment: Clinical viva (Ethics); Preliminary research proposal (1-page) (MCP) or Research plan (2000 words) (MCP/PhD) (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: 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. All students are required to attend and contribute to discussion of case and research seminar presentations throughout the semester, and are expected to attend the School Colloquium.

Master of Veterinary Clinical Studies

Graduates holding the degree of Bachelor of Veterinary Science may apply for admission to candidature for the degree of Master of Veterinary Clinical Studies.

Graduates in veterinary science from other universities may also, with the approval of the faculty and the Academic Board, be admitted as candidates. Candidates shall be registrable by the New South Wales Veterinary Practitioners Board, unless exempted by the faculty.

A candidate for this degree shall, for at least two years, engage in full-time supervised advanced veterinary clinical study and research and submit a thesis embodying the results of an original investigation.

Please note, students undertaking this course, must concurrently enrol in the Master of Veterinary Studies program.

Master of Veterinary Clinical Studies

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

Course resolutions

Part 1: Preliminary

1 Course codes

Code	Course title
RMVETCLS-01	Master of Veterinary Clinical Studies

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:
 - (a) hold or have completed the requirements for the degree of Bachelor of Veterinary Science from the University of Sydney; and
 - (b) be registrable by the New south Wales Veterinary Practitioners Board, unless exempted by the Dean or Associate Dean.
- (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:
 - (a) holds a qualification or qualifications that, in the opinion of the Faculty Postgraduate Education and Research Training Committee, are equivalent to those prescribed in sub-clause (1); and
 - (b) is eligible for limited registration with the New South Wales Veterinary Practitioners Board.

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 Associate Dean Postgraduate Studies and the Associate Dean Clinical Services; 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.
- (2) In addition, an applicant for admission to part-time candidature must submit a statement that he or she will have sufficient time available to complete the requirements of the degree in accordance with these resolutions.

4 Credit transfer

The HDR Rule specifies the conditions for the granting of credit for previous studies, including the effect on completion times.

Part 3: Candidature

5 Appointment of supervisor

The Associate Dean Postgraduate Studies in consultation with the Associate Dean Clinical Services will appoint a supervisor and associate supervisor for each candidate in accordance with the HDR Rule and Academic Board policies for 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 advanced clinical components;
- (c) conduct research on the 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 the HDR Rule.
- (2) The thesis should not normally exceed 40,000 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 a specified research methods unit of study if prescribed by the Faculty;
 - (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

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.

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 Postgraduate Education and Research Training Committee will act in place of the HDR Examinations 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 Dean or Associate Dean may specify a later date for completion or specify alternative requirements for completion of candidatures that extend beyond this time.

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