

Faculty of Science

A Message from the Dean

We live in amazing times. Science and technology have extended the reach of our senses way beyond the edge of the map of human experience. We can now hear a single electron change orbit inside an atom. We can see into the outer reaches of the universe; feel movements deep inside the Earth's crust; reach back far into the ancient past and eavesdrop on events inside a living cell. And we can meet and interact with other people in virtual communities that exist in virtual worlds.

When you study science with us at UNSW, you will be at the leading edge of this exciting revolution. You will learn how to learn, how to follow your curiosity about the world and the way it ticks, and you will acquire a tool-kit of knowledge and skills to equip you to step out into what we hope will be a lifetime of satisfying work.

This section of the Handbook covers the courses and programs available for study in science and provides an outline of the rules and regulations. Staff in the schools of the Faculty and the Science Student Centre are available to help you with administrative matters, course selection and career directions, and with any difficulties you may encounter in your studies.

We encourage you to explore the full diversity of opportunities on offer, to specialise on the one hand and yet gain an appreciation of scholarship in other areas. It is important that you learn to think creatively and critically, and to work with others in order to resolve complex problems.

We wish you every success at UNSW. We hope that the time that you spend with us, as valued members of our community, will be happy, stimulating and productive and that in future years you will look back on "the UNSW experience" as one which set you on the path to fulfilling your career and lifestyle aspirations.

We believe that tomorrow's leaders will be drawn more and more from the ranks of science. We invite you to join us and let us help to make sense of this amazing world and prepare you to play your important part in a future that promises to be more amazing still.

Professor Michael Archer
Dean
Faculty of Science

Contents

Faculty Information and Assistance

Who Can Help?	223
The Faculty of Science Website	223
Admission Requirements	223
Computing Information	223
Course Descriptions	224
Enrolment Procedures	224

Summary of Programs

Program Rules and Information – Research Degrees

Doctor of Philosophy (PhD)	224
Master of Engineering (ME) and Master of Science (MSc)	225

Program Rules and Information – Coursework Degrees

Conditions for the Award of the Degree Master of Science and Technology (MScTech)	227
Conditions for the Award of the Graduate Diploma (GradDip)	227
Conditions for the Award of the Graduate Diploma by Research (GradDip)	228
Conditions for the Award of the Graduate Certificate (GradCert)	228

Department of Aviation

8738 Master of Science and Technology in Aviation	228
5678 Graduate Diploma in Aviation Management	229
7448 Graduate Certificate in Aviation Management	229

School of Biological, Earth and Environmental Sciences

Conservation Biology

8745 Master of Conservation Biology	229
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Groundwater Studies

8702 Master of Science and Technology in Groundwater Studies	230
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Spatial Information

8714 Master of Science and Technology in Spatial Information Systems	230
5693 Graduate Diploma in Spatial Information*	230
7714 Graduate Certificate in Spatial Information*	230

* Subject to final Council approval

Biological Science

5350 Graduate Diploma in Biological Science (Research)	231
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School of Biotechnology and Biomolecular Sciences

Biotechnology

8048 Master of Science in Biotechnology	231
5015 Graduate Diploma in Biotechnology	232

Biopharmaceuticals

8049 Master of Science in Biopharmaceuticals	232
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Biochemistry

5345 Graduate Diploma in Biochemistry (Research)	233
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Microbiology and Immunology

5355 Graduate Diploma in Microbiology and Immunology (Research)	233
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School of Chemistry

Chemical Analysis and Laboratory Management

8708 Master of Science and Technology in Chemical Analysis and Laboratory Management	234
5648 Graduate Diploma in Chemical Analysis and Laboratory Management	234
7428 Graduate Certificate in Chemical Analysis and Laboratory Management	234

Chemistry

5647 Graduate Diploma in Chemistry (Research)	235
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School of Materials Science and Engineering

8715	Master of Science and Technology in Engineering Materials	235
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School of Mathematics**Physical Oceanography**

5528	Graduate Diploma in Physical Oceanography (Research)	235
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Computation

8705	Master of Science and Technology in Computation	236
5645	Graduate Diploma in Computation	236

Statistics

8750	Master of Statistics	237
5659	Graduate Diploma in Statistics	237

Mathematics

8718	Master of Science and Technology in Mathematics	237
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School of Optometry and Vision Science

8760	Master of Optometry	238
5665	Graduate Diploma in Optometry	239
7435	Graduate Certificate in Optometry	239
5523	Graduate Diploma in Optometry (Research)	239

School of Physics**Optoelectronics and Photonics**

8722	Master of Science and Technology in Optoelectronics and Photonics	240
5662	Graduate Diploma in Optoelectronics and Photonics	240
7432	Graduate Certificate in Optoelectronics and Photonics	240

Physics

5533	Graduate Diploma in Physics (Research)	240
5663	Graduate Diploma in Physics Research Techniques (Research)	241

School of Psychology

5330	Graduate Diploma in Psychology (Research)	241
8256	Master of Psychology (Clinical)	241
8257	Master of Psychology (Forensic)	242
8258	Master of Psychology (Organisational)	243
1404	Combined Doctor of Philosophy/Master of Psychology (Clinical)	243
1405	Combined Doctor of Philosophy/Master of Psychology (Forensic)	245
1406	Combined Doctor of Philosophy/Master of Psychology (Organisational)	246

School of Safety Science**Environmental Science**

8735	Master of Science and Technology in Environmental Science	246
5675	Graduate Diploma in Environmental Science	247
7445	Graduate Certificate in Environmental Science	247

Industrial Safety

8727	Master of Science and Technology in Industrial Safety	248
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Risk Management

8728	Master of Science and Technology in Risk Management	248
5668	Graduate Diploma in Risk Management	249
7438	Graduate Certificate in Risk Management	249

Ergonomics

8729	Master of Science and Technology in Ergonomics	249
5669	Graduate Diploma in Ergonomics	250
7439	Graduate Certificate in Ergonomics	250

Safety Science

8671	Master of Safety Science	250
5672	Graduate Diploma in Safety Science	252
7442	Graduate Certificate in Safety Science	252

Occupational Health and Safety

8733	Master of Science and Technology in Occupational Health and Safety	252
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Occupational Medicine

8734	Master of Science and Technology in Occupational Medicine	253
5674	Graduate Diploma in Occupational Medicine	253

Faculty Information and Assistance

Coursework and research postgraduate programs in this part of the Handbook are divided into sections and are identified by school. All programs are offered within the Faculty of Science. These programs incorporate the Schools of Biological, Earth and Environmental Sciences; Biotechnology and Biomolecular Sciences; Chemistry; Materials Science and Engineering; Mathematics; Optometry and Vision Science; Physics; Psychology; Safety Science; and the Department of Aviation.

Who Can Help?

This section of the Handbook is designed as a detailed source of information in all matters related to the Faculty of Science.

For information and advice about course content and requirements, please refer to the Course Descriptions section of this Handbook or contact the appropriate schools/teaching units. The web addresses and contact details of the various schools appear under their listing.

For other general enquiries contact the Science Student Centre, Rm128, Robert Webster Bldg; tel: (02) 9385 6125, fax: (02) 9385 6127 or email: SSO@unsw.edu.au. The office is staffed during teaching weeks between 9am and 5pm from Monday to Fridays. This may vary during non-teaching periods.

The Faculty of Science Website

Please refer to the Faculty website for further information: www.science.unsw.edu.au

Admission Requirements

Graduates are advised to consult the Program Authority or Head of School or Department before making formal application for registration in any programs offered by the above schools.

For admission to all Masters degree programs (except Master of Statistics), candidates must have completed one of the following:

1. An approved degree of Bachelor with Honours.
2. An approved three-year program leading to the award of the degree of Bachelor plus an approved qualifying program. Suitable professional and/or research experience may be accepted in lieu of the qualifying program.
3. An approved four-year program leading to the award of the degree of Bachelor.

For admission to Graduate Diploma and Graduate Certificate programs, candidates must have completed one of the following:

1. An approved degree of Bachelor.
2. Academic and professional attainments as approved by the Postgraduate Coursework Committee of the Faculty.

The conditions governing these higher degrees are set out later in this Handbook.

In many cases, there are articulated programs whereby a student who performs satisfactorily in a Graduate Certificate or Graduate Diploma may be permitted to upgrade to a MScTech or Masters program in the same discipline. For further details students should consult their Director of Graduate Studies or Postgraduate Studies Coordinator.

Computing Information

Within the Faculty of Science, each of the schools manages or has access to undergraduate computing laboratories equipped with a combination of X-terminals, PCs and Macintoshes. These are connected through the campus-wide network and provide email access to all students.

Many of the schools also use computing extensively in research and postgraduate education. This is provided through local and, often, specialised facilities, and through access to regional and national centres. The systems accessible range is from PCs to supercomputers together with the associated peripherals and support personnel.

Further information on computing is available through each of the schools' web pages.

Course Descriptions

Descriptions of courses offered in 2006 can be found in alphabetical order by course code at the back of this Handbook or in the Online Handbook at www.handbook.unsw.edu.au

Enrolment Procedures

Students are advised to consult with the program authority or relevant school for enrolment information and procedures. Entrance for students for whom English is their second language will be dependent upon achieving an adequate standard of written and spoken English.

The academic year for UNSW consists of two sessions, commencing in late February/early March and mid-July, respectively. It is preferred that new students arrive 2–3 weeks prior to the beginning of the session, so that they can undertake orientation prior to the commencement of formal teaching.

Summary of Programs

Graduate Certificates are offered in Aviation Management, Chemical Analysis and Laboratory Management, Environmental Science, Ergonomics, Food Science and Technology, Optometry, Photonics and Optoelectronics, Risk Management, Safety Science and Spatial Information.

Graduate Diplomas are offered in Aviation Management, Biochemistry, Biological Science, Biotechnology, Chemical Analysis and Laboratory Management, Computation, Environmental Science, Ergonomics, Fire and Explosion Safety Management, Food Technology, Microbiology and Immunology, Occupational Medicine, Optometry, Photonics and Optoelectronics, Physics Research Techniques, Psychology, Remote Sensing, Risk Management, Safety Science, Spatial Information and Statistics.

Graduate Diplomas by Research are offered in Physical Oceanography, Physics, Chemistry, Optometry, Biochemistry, Biological Science, Microbiology and Psychology.

Master of Science and Technology is offered in Aviation, Chemical Analysis and Laboratory Management, Computation, Engineering Materials, Environmental Science, Ergonomics, Fire and Explosion Safety Management, Groundwater Studies, Industrial Safety, Mathematics, Occupational Health and Safety, Occupational Medicine, Optometry, Optoelectronics and Photonics, Spatial Information and Risk Management.

Master of Science by coursework is offered in Biopharmaceuticals and Biotechnology.

Other Postgraduate Programs: The degrees Master of Optometry, Master of Safety Science, Master of Psychology (Clinical, Forensic and Organisational), Master of Statistics and Master of Conservation Biology are also offered.

Graduates are advised to consult the Head of School or Department before making formal application for registration in any of the above programs.

Postgraduate Research Programs: Programs leading to degrees of Master by Research and PhD are available in all schools in the Faculty of Science. For details of entry requirements, available research areas and supervision arrangements, interested students should contact the relevant school directly. A combined PhD/Masters by coursework program is offered in Psychology (1404 Clinical; 1405 Forensic; 1406 Organisational).

More information and academic rules for programs currently offered within Science follow.

Program Rules and Information – Research Degrees

Doctor of Philosophy

PhD

The degree of Doctor of Philosophy is offered in the Faculty of Science in the following programs:

1000	Applied Geology
1900	Aviation
1410	Biochemistry and Molecular Genetics
1435	Biological Science
1036	Biotechnology
1870	Chemistry
1080	Geography
1045	Materials Science and Engineering
1880	Mathematics
1440	Microbiology and Immunology
1860	Optometry
1890	Physics
1400	Psychology
1665	Safety Science

Typical Duration

4 years

Minimum UOC for Award

144 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Doctor of Philosophy (PhD) degree is offered in all faculties of the University of New South Wales and encourages initiative and originality in research.

As a general guide, the UNSW entry requirements for the degree of Doctor of Philosophy are as follows:

- A candidate for the degree shall have been awarded an appropriate degree of Bachelor with Honours from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Research Committee of the appropriate Faculty.
- Candidates may be admitted to the PhD program after one year's full-time enrolment in a Masters by Research program, with the approval of the Faculty Postgraduate Affairs Committee.
- In exceptional cases an applicant who submits evidence of such other academic and professional qualifications as may be approved by the Committee may be permitted to enrol for the degree.

Program Objectives and Learning Outcomes

Students will make a significant contribution to knowledge in their field and will be competent to carry out research in their chosen area.

Program Structure

This program involves a minimum of three years full-time study. Students undertake supervised research leading to the production of the thesis.

The length of a doctoral thesis normally should not exceed 100,000 words of text and should be submitted for examination within 4 years of full-time study.

In some faculties advanced coursework is also prescribed.

Academic Rules

1. The degree of Doctor of Philosophy may be awarded by the Council on the recommendation of the Higher Degree Committee of the appropriate faculty or board (hereinafter referred to as the Committee) to a candidate who has made an original and significant contribution to knowledge.

Qualifications

2. (1) A candidate for the degree shall have been awarded an appropriate degree of Bachelor with Honours from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Committee.

(2) In exceptional cases an applicant who submits evidence of such other academic and professional qualifications as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment as a candidate for the degree.

Enrolment

3. (1) An application to enrol as a candidate for the degree shall be lodged with the Registrar at least one month prior to the date at which enrolment is to begin.

(2) In every case before making the offer of a place the Committee shall be satisfied that initial agreement has been reached between the School* and the applicant on the topic area, supervision arrangements, provision of adequate facilities and any coursework to be prescribed and that these are in accordance with the provisions of the guidelines for promoting postgraduate study within the University.

(3) The candidate shall be enrolled either as a full-time or a part-time student.

(4) A full-time candidate will present the thesis for examination no earlier than three years and no later than five years from the date of enrolment and a part-time candidate will present the thesis for examination no earlier than four years and no later than six years from the date of enrolment, except with the approval of the Committee.

(5) The candidate may undertake the research as an internal student i.e. at a campus, teaching hospital, or other research facility with which the University is associated, or as an external student not in attendance at the University except for periods as may be prescribed by the Committee.

(6) An internal candidate will normally carry out the research on a campus or at a teaching or research facility of the University except that the Committee may permit a candidate to spend a period in the field, within another institution or elsewhere away from the University provided that the work can be supervised in a manner satisfactory to the Committee. In such instances the Committee shall be satisfied that the location and period of time away from the University are necessary to the research program.

(7) The research shall be supervised by a supervisor and where possible a co-supervisor who are members of the academic staff of the School or under other appropriate supervision arrangements approved by the Committee. Normally an external candidate within another organisation or institution will have a co-supervisor at that institution.

Progression

4. The progress of the candidate shall be considered by the Committee following report from the School in accordance with the procedures established within the School and previously noted by the Committee.

(i) The research proposal will be reviewed as soon as feasible after enrolment. For a full-time student this will normally be during the first year of study, or immediately following a period of prescribed coursework. This review will focus on the viability of the research proposal.

(ii) Progress in the course will be reviewed within twelve months of the first review. As a result of either review the Committee may cancel enrolment or take such other action as it considers appropriate. Thereafter, the progress of the candidate will be reviewed annually.

Thesis

5. (1) On completing the program of study a candidate shall submit a thesis embodying the results of the investigation.

(2) The candidate shall give in writing to the Registrar two months notice of intention to submit the thesis.

(3) The thesis shall comply with the following requirements:

(a) it must be an original and significant contribution to knowledge of the subject;

(b) the greater proportion of the work described must have been completed subsequent to enrolment for the degree;

(c) it must be written in English except that a candidate in the Faculty of Arts and Social Sciences may be required by the Committee to write a thesis in an appropriate foreign language;

(d) it must reach a satisfactory standard of expression and presentation;

(e) it must consist of an account of the candidate's own research but in special cases work done conjointly with other persons may be accepted provided the Committee is satisfied about the extent of the candidate's part in the joint research.

(4) The candidate may not submit as the main content of the thesis any work or material which has previously been submitted for a university degree or other similar award, but may submit any work previously published whether or not such work is related to the thesis.

(5) Four copies of the thesis shall be presented in a form which complies with the requirements of the University for the preparation and submission of theses for higher degrees.

(6) It shall be understood that the University retains the four copies of the thesis submitted for examination and is free to allow the thesis to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968, the University may issue the thesis in whole or in part, in photostat or microfilm or other copying medium.

Examination

6. (1) There shall be not fewer than three examiners of the thesis, appointed by the Committee, at least two of whom shall be external to the University.

(2) At the conclusion of the examination each examiner shall submit to the Committee a concise report on the thesis and shall recommend to the Committee that one of the following:

(a) The thesis merits the award of the degree.

(b) The thesis merits the award of the degree subject to minor corrections as listed being made to the satisfaction of the head of school.

(c) The thesis requires further work on matters detailed in my report. Should performance in this further work be to the satisfaction of the higher degree Committee, the thesis would merit the award of the degree.

(d) The thesis does not merit the award of the degree in its present form and further work as described in my report is required. The revised thesis should be subject to re-examination.

(e) The thesis does not merit the award of the degree and does not demonstrate that resubmission would be likely to achieve that merit.

(3) If the performance in the further work recommended under (2)(c) above is not to the satisfaction of the Committee, the Committee may permit the candidate to submit the thesis for re-examination as determined by the Committee within a period determined by it but not exceeding eighteen months.

(4) After consideration of the examiners' reports and the results of any further examination of the thesis, the Committee may require the candidate to submit to written or oral examination before recommending whether or not the candidate be awarded the degree. If it is decided that the candidate be not awarded the degree, the Committee shall determine whether or not the candidate be permitted to resubmit the thesis after a further period of study and/or research.

Fees

7. A candidate shall pay such fees as may be determined from time to time by the Council.

**'School' is used here and elsewhere in these conditions to mean any teaching unit authorised to enrol research students and includes a department where that department is not within a school, a centre given approval by the Academic Board to enrol students, and an interdisciplinary unit within a faculty and under the control of the Dean of the Faculty. Enrolment is permitted in more than one such teaching unit.*

Further Information

If you are considering applying for a PhD at UNSW you will need to make contact with the relevant school or faculty. This is necessary in order to establish that your research interests and those of the school and faculty are aligned, and that there is a suitable supervisor for your particular area of research.

Prospective students are strongly advised to make contact with potential supervisors before applying for research study at the University.

Please refer to the UNSW website for further information on how to apply, scholarships, English language requirements, thesis preparation and other research related matters: www.unsw.edu.au/futurestudents/research

Master of Engineering (by Research)

ME

The degree of Master of Engineering by Research is offered in the Faculty of Science in the following programs:

2175 Materials Science and Engineering
2695 Safety Science

Master of Science (by Research)

MSc

The degree of Master of Science by Research is offered in the Faculty of Science in the following programs:

2000 Applied Geology
2905 Aviation*
2460 Biochemistry & Molecular Genetics
2485 Biological Science
2036 Biotechnology
2910 Chemistry
2040 Geography

2055	Materials Science and Engineering
2920	Mathematics
2490	Microbiology and Immunology
2900	Optometry
2930	Physics
2450	Psychology
2775	Safety Science

Typical Duration

2 years

Minimum UOC for Award

96 units of credit

Typical UOC per Session

24 units of credit

Academic Rules - Master of Engineering (ME) and Master of Science (MSc)

1. The degree of Master of Engineering or Master of Science by research may be awarded by the Council on recommendation of the Higher Degree Committee of the appropriate faculty (hereinafter referred to as the Committee) to a candidate who has demonstrated ability to undertake research by the submission of the thesis embodying the results of an original investigation.

Qualifications

2. (1) A candidate for the degree shall have been awarded an appropriate degree of Bachelor from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Committee.

(2) An applicant who submits evidence of such other academic or professional attainment as may be approved by the Committee may be permitted to enrol for the degree.

(3) When the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant, before being permitted to enrol, to undergo such examination or carry out such work the Committee may prescribe.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least one calendar month before the commencement of the session in which enrolment is to begin.

(2) In every case, before permitting a candidate to enrol, the head of the school* in which the candidate intends to enrol shall be satisfied that adequate supervision and facilities are available.

(3) An approved candidate shall be enrolled in one of the following categories:

(a) full-time attendance at the University;

(b) part-time attendance at the University;

(c) external – not in regular attendance at the University and using research facilities external to the University.

(4) A candidate shall be required to undertake an original investigation on an approved topic. The candidate may also be required to undergo such examination and perform such other work as may be prescribed by the Committee.

(5) The work shall be carried out under the direction of a supervisor appointed from the full-time members of the University staff.

(6) The progress of a candidate shall be reviewed annually by the Committee following a report by the candidate, the supervisor and the head of the school* in which the candidate is enrolled and as a result of such review the Committee may cancel enrolment or take such other action as it considers appropriate.

(7) No candidate shall be granted the degree until the lapse of three academic sessions in the case of a full-time candidate or four academic sessions in the case of a part-time or external candidate from the date of enrolment. In the case of a candidate who has been awarded the degree of Bachelor with Honours or who had previous research experience the Committee may approve remission of up to one session for a full-time candidate and two sessions for a part-time or external candidate.

(8) A full-time candidate for the degree shall present for examination not later than six academic sessions from the date of enrolment. A part-time or external candidate for the degree shall present, for examination not later than ten academic sessions from the date of enrolment. In special cases an extension of these times may be granted by the Committee.

Thesis

4. (1) On completing the program of study a candidate shall submit a thesis embodying the results of the original investigation.

(2) The candidate shall give in writing two months notice of intention to submit the thesis.

(3) The thesis shall present an account of the candidate's own research. In special cases work done conjointly with other persons may be accepted, provided the Committee is satisfied about the extent of the candidate's part in the joint research.

(4) The candidate may also submit any work previously published whether or not such work is related to the thesis.

(5) Three copies of the thesis shall be presented in a form which complies with the requirements of the University for the preparation and submission of higher degree theses.

(6) It shall be understood that the University retains the three copies of the thesis submitted for examination and is free to allow the thesis to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968, the University may issue the thesis in whole or in part, in photostat or microfilm or other copying medium.

Examination

5. (1) There shall be not fewer than two examiners of the thesis, appointed by the Committee, at least one of whom shall be external to the University unless the Committee is satisfied that this is not practicable.

(2) At the conclusion of the examination each examiner shall submit to the Committee a concise report on the merits of the thesis and shall recommend to the Committee that:

(a) the candidate be awarded the degree without further examination; or

(b) the candidate be awarded the degree without further examination subject to minor corrections as listed being made to the satisfaction of the head of the school; or

(c) the candidate be awarded the degree subject to further examination on questions posed in the report, performance in this further examination being to the satisfaction of the Committee; or

(d) the candidate be not awarded the degree but be permitted to resubmit the thesis in a revised form after a further period of study and/or research; or

(e) the candidate be not awarded the degree and be not permitted to resubmit the thesis.

(3) If the performance at the further examination recommended under (2)(c) above is not to the satisfaction of the Committee, the Committee may permit the candidate to re-present the same thesis and submit to a further oral, practical or written examination within a period specified by it but not exceeding eighteen months.

(4) The Committee shall, after consideration of the examiners' reports and the reports of any oral or written or practical examination, recommend whether or not the candidate may be awarded the degree. If it is decided that the candidate be not awarded the degree the Committee shall determine whether or not the candidate may resubmit the thesis after a further period of study and/or research.

Fees

6. A candidate shall pay such fees as may be determined from time to time by the Council.

**'School' is used here and elsewhere in these conditions to mean any teaching unit authorised to enrol research students and includes a department where that department is not within a school, a centre given approval by the Academic Board to enrol students, and an interdisciplinary unit within a faculty and under the control of the Dean of the Faculty. Enrolment is permitted in more than one such teaching unit.*

Academic Rules - Master of Engineering (ME) and Master of Science (MSc) without supervision

1. The degree of Master of Engineering or Master of Science without supervision may be awarded by the Council on the recommendation of the Higher Degree Committee of the appropriate faculty (hereinafter referred to as the Committee) to a candidate who has demonstrated ability to undertake research by the submission of a thesis embodying the results of an original investigation.

Qualification

2. A candidate for the degree shall have been awarded an appropriate degree of Bachelor of the University of New South Wales with at least three years relevant standing in the case of Honours graduates and four years

relevant standing in the case of Pass graduates, and at a level acceptable to the Committee.

Enrolment and Progression

3. An application to enrol as candidate for the degree without supervision shall be made in the prescribed form which shall be lodged with the Registrar not less than six months before the intended date of submission of the thesis. A graduate who intends to apply in this way should, in his or her own interest, seek at an early stage the advice of the appropriate head of school (or department) with regard to the adequacy of the subject matter and its presentation for the degree. A synopsis of the work should be available.

Thesis

4. (1) A candidate shall submit a thesis embodying the results of the investigation.

(2) The candidate shall give in writing to the Registrar two months notice of intention to submit the thesis.

(3) The thesis shall present an account of the candidate's own research. In special cases work done conjointly with other persons may be accepted, provided the Committee is satisfied about the extent of the candidate's part in the joint research.

(4) The candidate may also submit any work previously published whether or not related to the thesis.

(5) Three copies of the thesis shall be presented in a form which complies with the requirements of the University for the preparation and submission of theses for higher degrees.

(6) It shall be understood that the University retains the three copies of the thesis submitted for examination and is free to allow the thesis to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968, the University may issue the thesis in whole or in part, in photostat or microfilm or other copying medium.

Examination

5. (1) There shall be not fewer than two examiners of the thesis, appointed by the Committee, at least one of whom shall be external to the University unless the Committee is satisfied that this is not practicable.

(2) Before the thesis is submitted to the examiners, the head of the school in which the candidate is enrolled shall certify that it is prima facie worthy of examination.

(3) At the conclusion of the examination each examiner shall submit to the Committee that:

(a) the candidate be awarded the degree without further examination; *or*

(b) the candidate be awarded the degree without further examination subject to minor corrections as listed being made to the satisfaction of the head of the school (or department); *or*

(c) the candidate be awarded the degree subject to a further examination on questions posed in the report, performance in this further examination being to the satisfaction of the Committee; *or*

(d) the candidate be not awarded the degree but be permitted to resubmit the thesis in a revised form after a further period of study and/or research; *or*

(e) the candidate be not awarded the degree and be not permitted to resubmit the thesis.

(4) If the performance at the further examination recommended under (3)(c) above is not to the satisfaction of the Committee, the Committee may permit the candidate to re-present the same thesis and submit to further examination as determined by the Committee within a period specified by it, but not exceeding eighteen months.

(5) The Committee shall, after consideration of the examiners' reports and the results of any further examination, recommend whether or not the candidate may be awarded the degree. If it is decided that the candidate be not awarded the degree the Committee shall determine whether or not the candidate may resubmit the thesis after a further period of study and/or research.

Fees

6. A candidate shall pay such fees as may be determined from time to time by the Council.

Program Rules and Information – Coursework Degrees

Following the academic rules for

Master of Science and Technology (MScTech)

Graduate Diploma by Research (GradDip)

Graduate Diploma (GradDip)

Graduate Certificate (GradCert)

detailed information about coursework programs offered within the Faculty of Science can be found under the appropriate school section.

Conditions for the Award of the Degree Master of Science and Technology (MScTech)

1. The degree of Master of Science and Technology by formal coursework may be awarded by the Council to a candidate who has satisfactorily complete a program of advanced study.

Qualifications

2. (1) A candidate for the degree shall:

(a) have been awarded an appropriate degree of Bachelor of four full-time years duration (or the part-time equivalent) from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Postgraduate Coursework Education Committee of the Faculty (hereinafter referred to as the Committee), *or*

(b)(i) have been awarded an appropriate degree of Bachelor of three full-time years duration (or the part-time equivalent) from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Committee and

(ii) have undertaken appropriate postgraduate studies of a full-time year's duration (or the part-time equivalent) at the University of New South Wales or studies considered equivalent from another university or tertiary institution at a level acceptable to the Committee.

(2) An applicant who submits evidence of such other academic or professional attainments as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.

(2) A candidate for the degree shall be required to undertake such formal courses including the submission of a report on a project, and pass such assessment as prescribed. The project shall be under the supervision of an academic staff member and shall be assessed by two examiners (for a major project).

(3) The progress of a candidate shall be reviewed at least once a year by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the degree until the lapse of two academic sessions from the date of enrolment in the case of a full-time candidate and four sessions in the case of a part-time candidate. The maximum period of candidature shall be four academic sessions from the date of enrolment for a full-time candidate, eight sessions for a part-time candidate, and ten sessions for an external candidate. In special cases an extension of these times may be granted by the Committee.

Fees

4. A candidate shall pay such fees as may be determined from time to time by the Council.

Conditions for the Award of the Graduate Diploma by Research

1. A Graduate Diploma by Research may be awarded by the Council to a candidate who has satisfactorily completed an approved program of study that includes the submission of a research report embodying the results of an original investigation and the completion of coursework.

Qualifications

2. (1) A candidate for the diploma shall have been awarded an appropriate degree of Bachelor from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Postgraduate Coursework Education Committee of the appropriate faculty (hereinafter referred to as the Committee).

(2) An applicant who submits evidence of such other academic or professional attainments as may be approved by the Committee may be permitted to enrol for the diploma.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the graduate award shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.

(2) In every case before making the offer of a place the Committee shall be satisfied that initial agreement has been reached between the School and the applicant on the topic area, supervision arrangements, provision of adequate facilities and any coursework to be prescribed and that these are in accordance with the provisions of the guidelines for promoting postgraduate study within the University.

(3) The normal duration of the program is two academic sessions from the date of enrolment in the case of a full-time candidate or four sessions in the case of a part-time candidate. In special circumstances a variation of these times may be approved by the head of school.

(4) The progress of a candidate shall be reviewed by the end of two sessions by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(5) The candidate may undertake the research as an internal student, i.e. at a campus, teaching hospital, or other research facility with which the University is associated, or as an external student not in attendance at the University except for periods as may be prescribed by the Committee.

(6) An internal candidate will normally carry out the research on a campus or at a teaching or research facility of the University except that the Committee may permit a candidate to spend a period in the field, within another institution or elsewhere away from the University provided that the work can be supervised in a manner satisfactory to the Committee. In such circumstances the Committee shall be satisfied that the location and period of time away from the University are necessary to the research program.

(7) The research shall be supervised by a supervisor or supervisors who are members of the academic staff of the School or under other appropriate supervision arrangements approved by the Committee. Normally an external candidate within another organisation or institution will have a co-supervisor at that institution.

Research Report

4. (1) On completing the program of study a candidate shall submit to the School a research report embodying the results of the original investigation.

(2) The research report shall present an account of the candidate's own research. In special cases, work done conjointly with other persons may be accepted, provided the Committee is satisfied as to the candidate's contribution to the joint research.

Coursework

5. The School shall specify, at the time of the candidate's acceptance into the program, any courses to be undertaken and the level of achievement required in each of the courses.

Fees

6. A candidate shall pay such fees as may be determined from time to time by the Council.

Conditions for the Award of the Graduate Diploma (GradDip)

1. A Graduate Diploma may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study.

Qualifications

2. (1) A candidate for the diploma shall have been awarded an appropriate degree of Bachelor from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Postgraduate Coursework Education Committee of the appropriate faculty (hereinafter referred to as the Committee).

(2) An applicant who submits evidence of such other academic or professional attainments as may be approved by the Committee may be permitted to enrol for the diploma.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such

assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the diploma shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.

(2) A candidate for the diploma shall be required to undertake such formal courses and pass such assessment as prescribed.

(3) The progress of a candidate shall be reviewed at least once annually by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the diploma until the lapse of two academic sessions from the date of enrolment in the case of a full-time candidate or four sessions in the case of a part-time candidate. The maximum period of candidature shall be four academic sessions from the date of enrolment for a full-time candidate and six sessions for a part-time candidate. In special cases, an extension of these times may be granted by the Committee.

Fees

4. A candidate shall pay such fees as may be determined from time to time by the Council.

Conditions for the Award of the Graduate Certificate (GradCert)

1. A Graduate Certificate may be awarded by the Council to a candidate who has satisfactorily completed an approved program of study.

Qualifications

2. (1) A candidate for the Graduate Certificate shall have been awarded an appropriate degree of Bachelor from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Postgraduate Coursework Education Committee of the Faculty (hereinafter referred to as the Committee).

(2) An applicant who submits evidence of such other academic and professional qualifications as may be approved by the Committee may be permitted to enrol for the Graduate Certificate.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the Graduate Certificate shall be made on the prescribed form which shall be lodged with the Registrar by the advertised closing date, which shall be set at least two calendar months before the commencement of the session in which enrolment is to begin.

(2) A candidate for the certificate shall be required to undertake courses and pass any assessment prescribed.

(3) The progress of a candidate shall be reviewed by the end of two sessions by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) The normal duration of the course is one academic session from the date of enrolment in the case of a full-time student or two sessions in the case of a part-time. For an open learning or external candidate the normal duration is two sessions from the date of enrolment. In special cases, a variation of these times may be approved by the head of school.

Fees

4. Candidates shall pay such fees as may be determined from time to time by Council.

Department of Aviation

Head of Department: Professor J Middleton

Postgraduate Coursework Coordinator: Mr R Robertson

Website: www.aviation.unsw.edu.au

8738 Master of Science and Technology in Aviation

MScTech

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session
24 units of credit

Program Description

The Master of Science and Technology in Aviation is a program designed for students who have a degree or equivalent qualification from a recognised university and relevant industry experience. Students are required to gain a total of 48 units of credit from the courses within the MScTech in Aviation program in order to complete the Masters degree. At least 6 courses (36 units of credit) must be AVIA5000 courses and a research project is compulsory. The MScTech in Aviation is offered through distance education and designed with industry input for professionals and managers working in aviation related environments.

Program Structure

Compulsory Course

AVIA5020	Aviation Research Project	(6 UOC)
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Available Courses

AVIA5001	Law and Regulation in Aviation	(6 UOC)
AVIA5003	Aviation and Security	(6 UOC)
AVIA5004	Aviation Safety and Accident Prevention	(6 UOC)
AVIA5005	Airline Operational Management	(6 UOC)
AVIA5006	Airport Planning	(6 UOC)
AVIA5007	Airport Management	(6 UOC)
AVIA5008	Air Traffic Management	(6 UOC)
AVIA5009	Airline Corporate Management	(6 UOC)
AVIA5018	Aviation Human Factors	(6 UOC)
AVIA5019	Management of Aviation Technical Operations and Maintenance	(6 UOC)
AVIA5022	Aircraft Accident Investigation Techniques	(6 UOC)
AVIA5024	Flight Deck Operations for Advanced Transport-Aircraft	(6 UOC)
AVIA5311	Inflight Services Management	(3 UOC)
AVIA5312	Airline Incident Investigation	(3 UOC)
AVIA5313	Aviation Ground Safety Investigation	(3 UOC)
AVIA5314	Aviation System Safety	(3 UOC)

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

5678 Graduate Diploma in Aviation Management

GradDip

Typical Duration
1 year

Minimum UOC for Award
36 units of credit

Typical UOC per Session
18 units of credit

Program Description

The Graduate Diploma in Aviation Management is designed for students who have an approved diploma from a recognised tertiary institution as well as two years of relevant professional experience. Six courses will be completed to a total of 36 units of credit. A credit average must be achieved to continue on to the Masters level. The Graduate Diploma is offered through distance education and designed with industry input for professionals and managers working in aviation-related environments. The program can be part-time or full-time and can be completed over 2 to 6 sessions. The program is further described on the School website at www.aviation.unsw.edu.au

Program Structure

Available courses are listed for the Master of Science and Technology in Aviation (program 8738).

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

7448 Graduate Certificate in Aviation Management

GradCert

Typical Duration
0.4 years

Minimum UOC for Award
18 units of credit

Typical UOC per Session
18 units of credit

Program Description

The Graduate Certificate in Aviation Management is designed for students who do not have tertiary qualifications but do have at least four years of relevant professional experience or two years experience and two years of advanced training (e.g. holder of an ATPL). Three courses will be completed to a total of 18 units of credit. A credit average must be achieved to continue on to the Graduate Diploma level. The Graduate Certificate is offered through distance education and designed with industry input for professionals and managers working in aviation related environments. The program can be part-time or full-time and can be completed over 2 to 3 sessions. The program is further described on the School website at www.aviation.unsw.edu.au

Program Structure

Available courses are listed for the Master of Science and Technology in Aviation (program 8738).

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Certificate** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

School of Biological, Earth and Environmental Sciences

Head of School: Associate Professor P Adam

Website: www.bees.unsw.edu.au

School Office: (02) 9385 2067

8745 Master of Conservation Biology

MConBio

Typical Duration
1 year

Minimum UOC for Award
48 units of credit

Typical UOC per Session
24 units of credit

Program Description

The program is aimed at international and Australian students interested in the field of conservation biology. The Master of Conservation Biology is a joint program between UNSW and Victoria University (Wellington, NZ). Students spend six months at each University.

Program Structure

At UNSW, students undertake three compulsory courses (24 units of credit). These can be taken in any order, full-time or part-time, internally or by distance. Much of the material is available online. In the other half of the program, at Victoria University, students take an equivalent number of units.

BIOS9211	World Conservation Biology	(6 UOC)
BIOS9221	Australasian Mammals & Conservation	(6 UOC)
BIOS9231	Conservation Project	(12 UOC)

Academic Rules

1. The degree of Master of Conservation Biology by formal coursework may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study.

Qualifications:

2 (1) A candidate for the degree shall:

(a) have been awarded an appropriate degree of Bachelor of four full-time years duration (or the part-time equivalent) from the University of

New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Postgraduate Coursework Education Committee of the Faculty (hereinafter referred to as the Committee), or

(b)(i) have been awarded an appropriate degree of Bachelor of three full-time years duration (or the part-time equivalent) from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Committee and (ii) have undertaken appropriate postgraduate studies of a full-time year's duration (or the part-time equivalent) at the University of New South Wales or studies considered equivalent from another university or tertiary institution at a level acceptable to the Committee.

(2) An applicant who submits evidence of such other academic or professional attainments as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

Enrolment and Progression:

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.

(2) A candidate for the degree shall be required to undertake such formal courses including the submission of a report on a project, and pass such assessment as prescribed. The project shall be under the supervision of an academic staff member and shall be assessed by two examiners (for a major project).

(3) The progress of a candidate shall be reviewed at least once a year by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the degree until the lapse of two academic sessions from the date of enrolment in the case of a full-time candidate and four sessions in the case of a part-time candidate. The maximum period of candidature shall be four academic sessions from the date of enrolment for a full-time candidate, eight sessions for a part-time candidate, and ten sessions for an external candidate. In special cases an extension of these times may be granted by the Committee.

8702 Master of Science and Technology in Groundwater Studies

MScTech

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Master of Science and Technology Program in Groundwater Studies is designed to give advanced training in this developing specialisation within the geological profession. The program is structured specifically for candidates from industry to take on a part-time basis.

Program Structure

This program is coordinated through the UNSW Groundwater Centre. Candidates are required to complete 48 units of credit, made up of core and elective courses, and may include a project. The degree may be taken internally on a full-time (normally 2 sessions) or a part-time (normally 4 sessions) basis.

Core courses

CVEN7807	Groundwater Hydrology	(3 UOC)
CVEN7808	Investigation of Groundwater Resources	(3 UOC)
CVEN7809	Geophysical Techniques in Groundwater and Geotechnical Studies	(3 UOC)
CVEN7823	Applied Groundwater Modelling	(3 UOC)
CVEN7830	Physical Aspects of Contaminated Groundwater	(3 UOC)
GEOL9053	Hydrogeochemistry	(3 UOC)
GEOL9054	Analysis and Interpretation of Hydrogeochemical Data	(3 UOC)

GEOL9055	Hydrogeochemical Modelling	(3 UOC)
GEOL9111	Groundwater Environments	(3 UOC)
GEOL9112	Investigation and Management of Salinity	(3 UOC)
GEOL9252	Groundwater Quality and Protection	(3 UOC)

Project

GEOL9124	Groundwater Project	(12 UOC)
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Elective courses

CVEN7800	Urban Hydrology and Stormwater	(3 UOC)
CVEN7805	Coastal Zone Management	(3 UOC)
CVEN7806	Catchment and Water Quality Management	(3 UOC)
CVEN7810	Electrical Methods in Groundwater Investigation	(3 UOC)
CVEN7819	Hydrological Processes	(3 UOC)
CVEN7824	Risk Analysis in Water Engineering	(3 UOC)
CVEN7825	Aquatic Chemistry for Engineering	(3 UOC)

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree: Master of Science and Technology (MScTech)** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

8714 Master of Science and Technology in Spatial Information

MScTech

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

5693 Graduate Diploma in Spatial Information*

GradDip

**This program is currently under review and subject to final Council approval.*

Typical Duration

1 year

Minimum UOC for Award

36 units of credit

Typical UOC per Session

24 units of credit

7714 Graduate Certificate in Spatial Information*

GradCert

**Subject to final Council approval*

Typical Duration

0.5 year

Minimum UOC for Award

24 units of credit

Typical UOC per Session

24 units of credit

Program Description

Entry requirements

Masters: Four-year degree from an approved university in environmental, surveying, computer science or related fields, or qualifications deemed appropriate by the Faculty Coursework Committee.

Graduate Diploma and Graduate Certificate: Three year degree from an approved university or qualifications deemed appropriate by the Faculty Coursework Committee.

Articulation, Course Credit and Advanced Standing

A candidate enrolled in the Graduate Certificate in Spatial Information who has not taken out their award and whose entry to the Graduate Diploma or Masters program has been approved, may carry completed units of credit from the Graduate Certificate program into the Graduate Diploma or Masters Program.

A candidate enrolled in the Graduate Diploma in Spatial Information who has not taken out their award and whose entry to the Masters program has been approved, may carry completed units of credit from the Graduate Diploma program into the Masters Program.

Advanced standing and course credit for completed degrees is as per the university rules.

Program Structure

For the Graduate Diploma, candidates are required to complete a program totalling 36 UOC comprised of 4 compulsory courses (24 UOC) and 12 UOC in electives. For the Graduate Certificate, candidates are required to complete a program totalling 24 UOC comprised of 4 compulsory courses. The Diploma will normally comprise one year of full-time study or two years of part-time study. The Certificate will normally comprise one session of full time study or one year of part time study. Courses may be delivered in normal semester mode or as winter or summer session short courses. Elective courses other than those listed below may be taken with the approval of the Program Authority. The 12 UOC project courses are normally only available to students enrolled in the MScTech SI program.

Compulsory Courses: 24 UOC

GMAT9600	Principles of Remote Sensing	(6 UOC)
GEOS9021	Image Analysis in Remote Sensing	(6 UOC)
GEOS9016	Principles of Geographic Information Systems	(6 UOC)
GMAT9205	Fundamentals of Geopositioning	(6 UOC)

Elective Courses: 24 UOC (MScTech), 12 UOC (Grad Dip)

GEOH/ or GMAT9107	Special Topic in Geography	(6 UOC)
or GMAT9107	Special Topic in Surveying and Spatial Information Systems	(6 UOC)
or GEOS9013	Directed Problems in Remote Sensing	(6 UOC)
GEOS9012	Remote sensing applications	(6 UOC)
GEOS 9017	Advanced Geographic Information Systems	(6 UOC)
GEOS0360	Hyperspectral Remote Sensing	(6 UOC)
GEOS0310	Image Processing in Geophysics	(6 UOC)
GMAT9212	Introduction to GPS Surveying	(6 UOC)
GMAT9606	Microwave Remote Sensing	(6 UOC)
GEOH9018	Transportation Applications of Geographical Information Systems	(6 UOC)
GMAT/ GEOS9023	Innovations in Spatial Information 1	(3 UOC)
GMAT/ GEOS9024	Innovations in Spatial Information 2	(3 UOC)

MScTech SI only:

GEOH/ or GEOL0114	Project in Geography	(12 UOC)
	Project in Geology	(12 UOC)

Academic Rules

For academic rules relating to these programs, please refer to 'Program Rules and Information – Coursework Degrees' in this Handbook.

5350 Graduate Diploma in Biological Science (Research)

GradDip

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The program is designed to meet the needs and objectives of individual students building on their particular competence and experience. It includes a formal coursework component and a research project which is carried out under the supervision of a member of the academic staff. Students receive advanced formal training to provide them with research and presentation skills relevant to their research project.

The School has a wide range of interests, and training and research are offered in both plant and animal sciences. Areas of biology in which facilities and appropriate supervision are available include: ecology, taxonomy, environmental physiology, marine and fisheries biology, genetics and evolution, mycology, ultrastructure, comparative physiology, mammalian studies.

Program Objectives and Learning Outcomes

This program provides specialised research training in particular disciplinary fields. It can be used as a higher degree qualifying program (for students who do not meet criteria for direct entry to MSc/PhD programs), to upgrade existing qualifications or to develop expertise in a new disciplinary area to that of the first degree. In this format, the course is a terminating one culminating in the award of the Diploma.

The program consists primarily of a research project, with literature review and report, carried out under the supervision of a member of academic staff. There is frequently a component of course work tailored to provide background information relevant to the research project. Applicants should contact the School, before applying for admission, in order to identify a research field and a potential supervisor. For further information on the research interests within the School, please refer to the School website: www.bees.unsw.edu.au/staff/research.html

Entrance Requirements: Bachelors degree, usually BSc. Where the first language is not English, evidence of a satisfactory standard of written and spoken English is required.

Program Structure

Please contact the School of BEES.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma by Research** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

School of Biotechnology and Biomolecular Sciences

Head of School: Professor Pauline Doran

Website: www.babs.unsw.edu.au

8048 Master of Science in Biotechnology

MSc

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

This Master of Science program includes advanced treatments of all areas of biotechnology. It is open to graduates with a four-year degree in biotechnology, biochemistry, microbiology or a related discipline, or who have, in the opinion of the Faculty Postgraduate Coursework Committee, acquired equivalent qualifications or experience.

The program teaches the scientific bases underscoring the development of recombinant biopharmaceuticals, combined with aspects of clinical trials, regulatory considerations, patent issues and licensing. The program content is incorporated in courses (modules) that can be delivered either in distance or on-campus mode, and comprises written text containing program materials, demonstrations and self-testing exercises. For distance students, one day of face-to-face teaching is provided per course. In addition, distance education students may complete the program in two years part-time.

The program consists of lectures, tutorials, practical sessions, case history studies and a supervised project.

The minimum period of registration before the award of the degree is two sessions for full-time students and four sessions for part-time students.

Program Structure

BIOT7070	Recombinant Protein Expression Systems	(6 UOC)
BIOT7071	Biochemical Engineering	(6 UOC)
BIOT7081	Environmental Biotechnology	(6 UOC)

BIOT7072	Eukaryotic Cell Physiol. & Stem Cell Biol.	(6 UOC)
BIOT7160	Genomics and Proteomics	(6 UOC)
BIOT7180	Biotechnology Research Project 1	(6 UOC)
BIOT7190	Biotechnology Research Project 2	(6 UOC)

Plus one of the following courses:

BIOT7080	Biopharmaceutical Production Process	(6 UOC)
BIOT7170	Therapeutic Modalities of Biopharmaceuticals	(6 UOC)
BINF9010	Bioinformatics Methods & Applications	(6 UOC)

Note: Students may be able to replace one of the above courses (6 units of credit) with a course of equivalent value from another department or school.

Elective Components

Elective courses may be selected from those offered by the School of Biotechnology and Biomolecular Sciences, or from those offered by other schools in the University subject to approval.

Each individual program would comprise:

1. A major strand of related material comprising approximately 75% of the total program, including a project comprising not more than 25% of the program.
2. A minor strand of broader based material comprising up to 25% of the total program.
3. At least 60% of the non-project component must be taken in the School of Biotechnology and Biomolecular Sciences unless otherwise approved by the Head of School. The remainder, subject to approval and availability, may be undertaken elsewhere in the University.

Academic Rules

Conditions for the Award of the Degree: Master of Science by Coursework (MSc) – Biotechnology/Biopharmaceuticals

1. The degree of Master of Science by formal coursework may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study.

Qualifications

2. (1) A candidate of the degree shall have been awarded an appropriate degree of Bachelor of four full-time years duration (or the part-time equivalent) from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Research Committee of the Faculty of Science (hereinafter referred to as the Committee), or
- (2) An applicant who submits evidence of such other academic or professional attainments as may be approved by the Committee may be permitted to enrol for the degree.
- (3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.
- (2) A candidate for the degree shall be required to undertake such formal courses and pass such assessment as prescribed.
- (3) The progress of a candidate shall be reviewed at least once annually by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.
- (4) No candidate shall be awarded the degree until the lapse of two academic sessions from the date of enrolment in the case of a full-time candidate or four sessions in the case of a part-time candidate. The maximum period of a candidate shall be four academic sessions from the date of enrolment for a full-time candidate and six sessions for a part-time candidate. In special cases an extension of this time may be granted by the Committee.

Fees

4. A candidate shall pay such fees as may be determined from time to time by the Council.

5015 Graduate Diploma in Biotechnology

GradDip

Typical Duration

1 year

Minimum UOC for Award

36 units of credit

Typical UOC per Session

18 units of credit

Program Description

The Graduate Diploma in Biotechnology program includes advanced treatments of all areas of biotechnology. It is open to graduates with a three-year degree in biotechnology or related discipline, or who have, in the opinion of the Faculty Postgraduate Committee, acquired qualification or experience.

The program consists of lectures, tutorials, practical sessions, case history studies and a supervised project.

The minimum period of registration before the award of the degree is two sessions for full-time students and four sessions for part-time students. Full time students must enrol in 18 units of credit per session.

Program Structure

A total of 36 Units of credit

BIOT7070	Recombinant Protein Expression Systems	(6 UOC)
BIOT7160	Genomics and Proteomics	(6 UOC)
BIOT7180	Biotechnology Research Project 1	(6 UOC)
BIOT7190	Biotechnology Research Project 2	(6 UOC)

Plus one of the following courses:

BIOT7081	Environmental Biotechnology	(6 UOC)
BIOT7072	Eukaryotic Cell Physiol. & Stem Cell Biol.	(6 UOC)

Plus one of the following courses:

BIOT7071	Biochemical Engineering	(6 UOC)
BIOT7080	Biopharmaceutical Production Process	(6 UOC)
BIOT7170	Therapeutic Modalities of Biopharmaceuticals	(6 UOC)
BINF9010	Bioinformatics Methods & Applications	(6 UOC)

Note: Students may replace one of the elective courses (6 UOC) with a course of equivalent value from another department or school with permission from the convenor and the Head of School of Biotechnology and Biomolecular Sciences.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma (GradDip)** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

8049 Master of Science in Biopharmaceuticals

MSc

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

This is an interdisciplinary program designed for graduates with backgrounds in either pharmacology or biotechnology who wish to obtain advanced training in both areas in order to gain expertise necessary for the development and use of the new generation of biopharmaceuticals which have been developed by, or result from, the application of molecular biology and recent developments in genomics and proteomics.

It is open to graduates with a four year degree in a related discipline or who have, in the opinion of the Faculty Postgraduate Coursework Committee, acquired equivalent qualifications or experience. **Prior study of biochemistry is required for the program.**

The program teaches the scientific bases underscoring the development of recombinant biopharmaceuticals, combined with aspects of clinical trials, regulatory considerations, patent issues and licensing. The program content is incorporated in courses that can be delivered either in distance or on campus mode. The courses are comprised of written text containing program materials, demonstrations and self-testing exercises. For distance students, one day of face-to-face teaching is provided per course. In addition, there is access to the course coordinators by phone, email and teleconferencing facilities and tutorials for on campus students.

Program Structure

The Master of Science in Biopharmaceuticals program calls for the completion of eight courses that is equivalent to 48 units of credit. The program is run in two twenty-week sessions and can be completed in one

year full-time. Part-time students can enrol in two courses per session, allowing the program to be completed in two years part-time.

Master of Science in Biopharmaceuticals (On Campus)

BIOT7070	Recombinant Protein Expression Systems	(6 UOC)
BIOT7080	Biopharmaceutical Production Process	(6 UOC)
BIOT7160	Genomics and Proteomics	(6 UOC)
BIOT7170	Therapeutic Modalities of Biopharmaceuticals	(6 UOC)
BIOT7180	Biotechnology Research Project 1	(6 UOC)
BIOT7190	Biotechnology Research Project 2	(6 UOC)
PHPH9100	Discovery and Pre-clinical Development of New Medicines	(6 UOC)
PHPH9101	Principles of Drug Action	(6 UOC)

Master of Science in Biopharmaceuticals (Distance)*

BIOT7070	Recombinant Protein Expression Systems	(6 UOC)
BIOT7080	Biopharmaceutical Production Process	(6 UOC)
BIOT7120	Commercial Considerations for Biopharmaceuticals	(6 UOC)
BIOT7160	Genomics and Proteomics	(6 UOC)
BIOT7170	Therapeutic Modalities of Biopharmaceuticals	(6 UOC)
PHPH9100	Discovery and Pre-clinical Development of New Medicines	(6 UOC)
PHPH9101	Principles of Drug Action	(6 UOC)
PHPH9120	Clinical Development of Medicines	(6 UOC)

**Note: Distance education mode is designed for students residing in Australia only.*

Academic Rules

Conditions for the Award of the Degree: Master of Science by Coursework (MSc) – Biotechnology/Biopharmaceuticals

1. The degree of Master of Science by formal coursework may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study.

Qualifications

2. (1) A candidate of the degree shall have been awarded an appropriate degree of Bachelor of four full-time years duration (or the part-time equivalent) from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Research Committee of the Faculty of Science (hereinafter referred to as the Committee), or

(2) An applicant who submits evidence of such other academic or professional attainments as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.

(2) A candidate for the degree shall be required to undertake such formal courses and pass such assessment as prescribed.

(3) The progress of a candidate shall be reviewed at least once annually by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the degree until the lapse of two academic sessions from the date of enrolment in the case of a full-time candidate or four sessions in the case of a part-time candidate. The maximum period of a candidate shall be four academic sessions from the date of enrolment for a full-time candidate and six sessions for a part-time candidate. In special cases an extension of this time may be granted by the Committee.

Fees

4. A candidate shall pay such fees as may be determined from time to time by the Council.

5345 Graduate Diploma in Biochemistry & Molecular Genetics (Research)

GradDip

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The program is tailored according to the background and requirements of the individual student. In most cases it would include advanced formal undergraduate training, including lectures in general and medical biochemistry, training in the use of modern biochemical techniques, e.g. scintillation counting, gas liquid chromatography (GLC), high performance liquid chromatography (HPLC), molecular biology, spectrophotometry, nuclear magnetic resonance (NMR) spectroscopy, and animal and plant cell culture. The student would also carry out a research project (or projects) in the laboratory of an academic member of staff and write a report on the project.

The School of Biotechnology and Biomolecular Sciences has a wide range of interests and can offer research projects in most areas of biochemistry. Specialised areas of research are molecular biology, marine biochemistry, parasite biochemistry and plant biochemistry.

Program Structure

Please contact the School of Biotechnology and Biomolecular Sciences for information.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma by Research** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

5355 Graduate Diploma in Microbiology and Immunology (Research)

GradDip

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The structure of the program would be decided after discussions with students, taking into account their particular background, interest and career goals. Usually students would attend two of the advanced third year courses in either microbial genetics, microbial physiology, environmental microbiology, immunology, medical bacteriology or virology. The rest of the year would be spent carrying out a research project supervised by a member of academic staff.

The School of Biotechnology and Biomolecular Sciences has a number of research teams working on a range of well-funded projects in microbiology, molecular biology and immunology. The diverse research interests of the School can be grouped into the areas of *Helicobacter pylori* and gastroduodenal disease, immunology of allergic responses, environmental microbiology and remediation, microbiology of extremophiles, water-borne viral pathogens, probiotics, molecular microbiology and genomics, bacterial communication systems, marine microbiology and biotechnology.

Program Structure

Please contact the School of Biotechnology and Biomolecular Sciences for information.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma by Research** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

School of Chemistry

Head of School: Professor R Lamb

Director of Graduate Studies: Professor DB Hibbert (contactable via Chemistry Student Office)

For further details contact: Chemistry Student Office, email
chemistry@unsw.edu.au

Website: www.chem.unsw.edu.au/

8708 Master of Science and Technology in Chemical Analysis & Laboratory Management

MScTech

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

This program offers training in advanced chemical analysis techniques and associated management issues. It allows students to select from a series of courses covering all aspects of modern chemical analysis, safety and occupational health issues, and people management. This program is particularly suited to new graduates or laboratory chemists and managers who wish to upgrade their qualification in and knowledge of chemical analysis and related topics.

The MScTech program will normally be completed within one year on a full-time basis, or over two years part-time.

Program Structure

Candidates are required to complete a total of 48 UOC selected from the available offerings with at least 6 UOC being selected from the management courses and at least 6 units of credit from the analysis courses:

Analysis Courses

CHEM7112	Analysis of Biological and Organic Materials	(6 UOC)
CHEM7113	Elemental Analysis	(6 UOC)
CHEM7114	Chromatography	(6 UOC)
CHEM7115	Treatment of Analytical Data	(6 UOC)
CHEM7116	Chromatography/Mass Spectrometry	(6 UOC)
CHEM7117	Molecular Analysis	(6 UOC)
CHEM7118	Surface Analysis of Materials	(6 UOC)

Management Courses

CHEM7111	Quality Assurance and Laboratory Practice	(6 UOC)
IROB5700	Management Work and Organisation	(6 UOC)
IROB5946	Managing Occupational Health and Safety	(6 UOC)
SESC9810	Toxicology	(3 UOC)
SESC9820	Chemical Safety and Toxicology	(3 UOC)
SESC9850	Management of Dangerous Materials	(3 UOC)

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

Further Information and Requirements

Admission Requirements

A four year BSc degree with a major in Chemistry or equivalent qualification or a three year BSc degree with at least one year of relevant experience in a laboratory-based career or a three year BSc degree and completion of the units of credit required by the Graduate Diploma in Chemical Analysis and Laboratory Management with at least a credit (65%) average mark and no failures.

Students who have completed and been awarded the Graduate Diploma in Chemical Analysis and Laboratory Management (with a credit average and no failures) and who wish to return to complete the MScTech will normally be granted 30 UOC advanced standing in the MScTech program. Students applying to return after completing and being awarded the Graduate Certificate can apply for advanced standing of up to 12 UOC in the MScTech.

5648 Graduate Diploma in Chemical Analysis & Laboratory Management

GradDip

Typical Duration

1 year

Minimum UOC for Award

36 units of credit

Typical UOC per Session

18 units of credit

Program Description

This program offers training in advanced chemical analysis techniques and associated management issues. It allows students to select from a series of modules covering all aspects of modern chemical analysis, safety and occupational health issues, and people management. The program will normally be completed within one year on a full-time basis, or over two years part-time. It is particularly suited to new graduates or laboratory chemists and managers who wish to upgrade their qualifications in and knowledge of chemical analysis and related topics. This is the second stage in a fully articulated program of Graduate Certificate, Graduate Diploma and Master of Science and Technology in Chemical Analysis and Laboratory Management.

Program Structure

Candidates are required to complete a total of 36 units of credit selected from the following offerings with at least 6 units of credit being selected from the analysis courses and at least 6 units of credit from the management courses:

Analysis Courses

CHEM7112	Analysis of Biological and Organic Materials	(6 UOC)
CHEM7113	Elemental Analysis	(6 UOC)
CHEM7114	Chromatography	(6 UOC)
CHEM7115	Treatment of Analytical Data	(6 UOC)
CHEM7116	Chromatography/Mass Spectrometry	(6 UOC)
CHEM7117	Molecular Analysis	(6 UOC)
CHEM7118	Surface Analysis of Materials	(6 UOC)

Management Courses

CHEM7111	Quality Assurance and Laboratory Practice	(6 UOC)
IROB5700	Management Work and Organisation	(6 UOC)
IROB5946	Managing Occupational Health and Safety	(6 UOC)
SESC9020	Occupational Health and Safety Law 1	(3 UOC)
SESC9810	Toxicology	(3 UOC)
SESC9820	Chemical Safety and Toxicology	(3 UOC)
SESC9850	Management of Dangerous Materials	(3 UOC)

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

Admission Requirements

Students must have completed a BSc degree with a major in Chemistry or equivalent qualification.

7428 Graduate Certificate in Chemical Analysis and Laboratory Management

GradCert

Typical Duration

0.4 years

Minimum UOC for Award

18 units of credit

Typical UOC per Session

18 units of credit

Program Description

The GradCert program will normally be completed within one year on a part-time basis. This is the first stage in a fully articulated program of Graduate Certificate, Graduate Diploma and Master of Science and Technology in Chemical Analysis and Laboratory Management.

Program Structure

Candidates are required to complete a total of 18 UOC selected from the following offerings with at least 6 UOC being selected from the analysis courses and at least 6 UOC from the management courses:

Analysis Courses

CHEM7112	Analysis of Biological and Organic Materials	(6 UOC)
CHEM7113	Elemental Analysis	(6 UOC)
CHEM7114	Chromatography	(6 UOC)

CHEM7115	Treatment of Analytical Data	(6 UOC)
CHEM7116	Chromatography/Mass Spectrometry	(6 UOC)
CHEM7117	Molecular Analysis	(6 UOC)
CHEM7118	Surface Analysis of Materials	(6 UOC)

Management Courses

CHEM7111	Quality Assurance and Laboratory Practice	(6 UOC)
IROB5700	Management Work and Organisation	(6 UOC)
IROB5946	Managing Occupational Health and Safety	(6 UOC)
SESC9020	Occupational Health and Safety Law 1	(3 UOC)
SESC9810	Toxicology	(3 UOC)
SESC9820	Chemical Safety and Toxicology	(3 UOC)
SESC9850	Management of Dangerous Materials	(3 UOC)

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Certificate** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

Admission Requirements

BSc degree with a major in Chemistry or equivalent qualification.

5647 Graduate Diploma in Chemistry (Research)

GradDip(Research)

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Graduate Diploma in Chemistry (Research) offers an advanced training program for graduates who wish to update their knowledge of Chemistry and/or satisfy requirements for admission to a research degree in Chemistry. The GradDip(Research) program will normally be completed in one year on a full-time basis, or two year part-time.

Entry Qualifications

A three- or four-year BSc degree with a major in Chemistry or equivalent qualification. Students qualified to enrol in the Honours program would be expected to enrol in that program rather than enrol in this Graduate Diploma program.

Program Structure

Program Requirements

Candidates are required to complete 48 UOC, consisting of research project work totalling 24 UOC (two projects, each 12 UOC, or one project comprising 24 UOC) and postgraduate level courses totalling 24 UOC. These courses must include CHEM7119 (Research Skills) and a further 18 UOC of which 12 must come from Chemistry courses that are listed above under program 7428, the Graduate Certificate in Chemical Analysis and Laboratory Management. Students wishing to proceed to a higher degree should consult with their potential supervisor on their choice of courses.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma by Research** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

School of Materials Science and Engineering

Head of School: Professor O Ostrovski

Postgraduate Coordinator: Professor CC Sorrell

Website: www.materials.unsw.edu.au

8715 Master of Science and Technology in Engineering Materials

MScTech

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The MScTech program in Engineering Materials provides a comprehensive yet flexible study of the full range of materials, including ceramics, composites, metals, and polymers. It is designed for graduates wishing to acquire expertise in the design, selection, use, and performance of modern materials. The program is designed for several types of postgraduate students:

- Graduates with Science, Engineering, Technology, or related backgrounds who seek to broaden their ranges of expertise
- Graduates with Materials Science or Materials Engineering backgrounds who seek to extend specific aspects of their expertise
- Graduates with Materials Science or Materials Engineering backgrounds who seek to update their expertise.

The program consists of one year of full-time study (two sessions) or two years of part-time study (four sessions). This comprises 36 units of credit of formal coursework plus 12 units of credit of experimental and/or design project work (MATS6695 Materials Project). Initial enrolment in Session 1 is preferred, although entrance in Session 2 is permitted. All formal coursework is taught during work hours, although the project work may be undertaken with considerable flexibility in terms of time and location. Enrolment in formal coursework offered by Schools other than the School of Materials Science and Engineering is permitted, subject to the approval of the Head of School.

Program Structure

Course Selection

MATS6605	Professional Communication and Presentation	(6 UOC: 3 UOC per session over 2 sessions)
MATS6615	Materials Design	(6 UOC)
MATS6625	Materials Processing	(6 UOC)
MATS6635	Materials Properties & Behaviour	(6 UOC)
MATS6645	Materials Characterisation	(6 UOC)
MATS6655	Advanced Materials Characterisation	(6 UOC)
MATS6665	Materials Applications & Performance	(6 UOC)
MATS6675	Materials Modelling	(6 UOC)
MATS6685	Management	(6 UOC)
MATS6695	Materials Project	(12 UOC: 6 UOC per session over 2 sessions)

Students must enrol in:

MATS6605	Professional Communication and Presentation	(6 UOC: 3 UOC per session over 2 sessions)
MATS6695	Materials Project	(12 UOC: 6 UOC per session over 2 sessions)

plus a balance of 30 units of credit of formal coursework, consisting of five of the above remaining eight courses (and selected offerings from the School of Materials Science and Engineering and/or other schools if desired).

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

School of Mathematics

Head of School: Professor M G Cowling

Director of Graduate Studies: Associate Professor J Du

Website: www.maths.unsw.edu.au

5528 Graduate Diploma in Physical Oceanography (Research)

GradDip

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Graduate Diploma in Physical Oceanography develops skills in planning and execution of oceanographic experiments, the applications and limitations of oceanographic equipment and of commonly used data analysis techniques. Marine Science is a rapidly developing field and people with the kind of training provided by this diploma are in high demand.

Program Objectives and Learning Outcomes

The program also provides excellent training for further research degrees in oceanography.

Program Structure

The program requires 48 units of credit (UOC) for completion and consists of a major project (OCEA5115) worth 50% of the total credit load, and courses as described below. Each candidate's program of study must be approved by the Head of School.

Compulsory Courses

OCEA5115	Experimental Project in Physical Oceanography	(24 UOC)
OCEA5125	Geophysical Fluid Dynamics	(6 UOC)
OCEA5145	Applied Data Analysis	(6 UOC)

Elective Courses

CVEN7802	Coastal Dynamics	(3 UOC)
CVEN7803	Coastal and Beach Processes	(3 UOC)
CVEN7813	Estuarine Processes	(3 UOC)
CVEN7819	Hydrological Processes	(3 UOC)
GEO59012	Remote Sensing Applications	(6 UOC)
GEO59021	Image Analysis in Remote Sensing	(6 UOC)
GMAT9606	Microwave Remote Sensing	(6 UOC)
MATH5285	Ocean Modelling	(6 UOC)
OCEA5155	Theoretical Project in Physical Oceanography	(12 UOC)

Note: Not all courses are necessarily offered every year.

Other appropriate courses within Mathematics, Physics or Engineering may be taken with permission of the Head of School.

Further information can be obtained from the School of Mathematics.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma by Research** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

8705 Master of Science and Technology in Computation

MScTech

Typical Duration
1 year

Minimum UOC for Award
48 units of credit

Typical UOC per Session
24 units of credit

Program Description

The MScTech degree program in Computation will provide thorough training in modern computational techniques in the areas of computational fluid mechanics and environmental modelling through course work and a focused project in your major field. Admission to the program requires the equivalent of a four-year degree in Science, Engineering or other mathematically-based discipline at a satisfactory level. Candidates must have adequate higher-level language (preferably Fortran) programming skills. The program can be completed in one year of full-time study or two years of part-time study.

Students are required to complete a small research project, worth 12 units of credit, two compulsory courses and four elective courses, chosen from the list below. A total of 48 units of credit are required for the completion of the degree. All the courses below are worth 6 units of credit each. With the approval of the Head of School, a student may take graduate level courses, up to 12 units of credit, which are not on the list below. The project will be supervised by academic members of the Faculty of Science or academic members of the Faculty of Engineering. The student's proposed program requires the approval of the Head of School.

Program Structure

Compulsory Courses

MATH5305	Finite Difference Methods for PDE	(6 UOC)
MATH5315	High Performance Numerical Computing	(6 UOC)

Elective Courses

MATH5115	Finite Element Methods	(6 UOC)
MATH5245	Computational Fluid Dynamics	(6 UOC)
MATH5275	Applied Data Analysis	(6 UOC)
MATH5285	Ocean Modelling	(6 UOC)
MATH5295	Atmospheric Modelling	(6 UOC)
MATH5325	Computational Mesh Generation and Data Visualization	(6 UOC)
MECH9620	Computational Fluid Dynamics	(6 UOC)
MECH9730	Two Phase Flow and Heat Transfer	(6 UOC)

Note: Not all courses are necessarily offered every year.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

5645 Graduate Diploma in Computation

GradDip

Typical Duration
1 year

Minimum UOC for Award
36 units of credit

Typical UOC per Session
18 units of credit

Program Description

The Graduate Diploma will provide thorough training in modern computational techniques in the areas of computational fluid mechanics and environmental modelling.

A student may upgrade to the MScTech program in Computation, following the Faculty articulation rules.

Program Structure

Students are required to complete two compulsory courses and four elective courses, chosen from the list below, to give a total of 36 units of credit. All the courses below are worth 6 units of credit each. With the approval of the Director of Graduate Studies, a student may take graduate level courses, up to 12 units of credit, which are not on the list below. The student's proposed program requires the approval of the Director of Graduate Studies.

Core Courses

MATH5305	Finite Difference Methods for PDE	(6 UOC)
MATH5315	High Performance Numerical Computing	(6 UOC)

Elective Courses

MATH5115	Finite Element Methods	(6 UOC)
MATH5245	Computational Fluid Dynamics	(6 UOC)
MATH5275	Applied Data Analysis	(6 UOC)
MATH5285	Ocean Modelling	(6 UOC)
MATH5295	Atmospheric Modelling	(6 UOC)
MATH5325	Computational Mesh Generation and Data Visualization	(6 UOC)
MECH9620	Computational Fluid Dynamics	(6 UOC)
MECH9730	Two Phase Flow and Heat Transfer	(6 UOC)

Note: Not all courses are necessarily offered every year.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma (GradDip)** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

Admission Requirements

Admission to the Graduate Diploma program requires the student to have at least a Pass degree in Science, Engineering or other mathematically based discipline. The program can be completed in one year of full-time study, or over two years for part-time students.

8750 Master of Statistics

MStats

Typical Duration

1.5 years

Minimum UOC for Award

72 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Master of Statistics Program covers a wide range of statistical theory and practice and provides advanced training for practising statisticians. The program may be completed in three sessions of full-time or three years of part-time study, and it is available to graduates with a Pass degree in statistics or an Honours degree in a related field (commonly mathematics) with supporting studies in statistics. Honours graduates in statistics may be exempted from up to 30 units of credit.

Program Structure

The academic requirement for the degree is 72 units of credit. Unless otherwise noted, all courses listed below are 6 units of credit each, while courses offered by other schools may vary in value. A project, worth 12 units of credit, is a compulsory component of the program.

Each candidate's program of study must be approved by the Head of the School.

Compulsory Courses (offered every year)

MATH5835	Stochastic Processes	(6 UOC)
MATH5905	Statistical Inference	(6 UOC)
MATH5925	Project	(12 UOC)
MATH5935	Statistical Consultancy	(6 UOC)

Elective Courses

MATH5806	Applied Regression Analysis	(6 UOC)
MATH5815	Experimental Design	(6 UOC)
MATH5816	Continuous Time Financial Modelling	(6 UOC)
MATH5826	Statistical Methods in Epidemiology	(6 UOC)
MATH5836	Data Mining and its Business Applications	(6 UOC)
MATH5845	Time Series	(6 UOC)
MATH5855	Multivariate Analysis 1	(6 UOC)
MATH5865	Multivariate Analysis 2	(6 UOC)
MATH5875	Sample Survey Design	(6 UOC)
MATH5885	Longitudinal Data Analysis	(6 UOC)
MATH5895	Nonparametric Statistics	(6 UOC)
MATH5915	Medical Statistics	(6 UOC)
MATH5945	Categorical Data Analysis	(6 UOC)
MATH5955	Statistical Quality Control	(6 UOC)
MATH5965	Discrete Time Financial Modelling	(6 UOC)
MATH5995	Special Topics in Financial Mathematics	(6 UOC)

Up to 24 units of credit may be taken in graduate courses offered by other departments or schools within the University, subject to the approval of the Head of School.

Note: MATH5816 has the prerequisite MATH5965.

Academic Rules

Conditions for the Award of the Degree: Master of Statistics (MStats)

1. The degree of Master of Statistics by formal coursework may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study.

Qualifications

2. (1) A candidate for the degree shall have been awarded a degree of Bachelor with major studies in statistics from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Postgraduate Coursework Education Committee of the Faculty of Science (hereinafter referred to as the Committee).

(2) In exceptional cases, an applicant who submits evidence of such other academic and professional qualifications as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.

(2) A candidate for the degree shall be required to undertake such formal courses and pass such assessment as is prescribed.

(3) The progress of a candidate shall be reviewed at least once annually by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the degree until the lapse of three academic sessions from the date of enrolment in the case of a full-time candidate or six sessions in the case of a part-time candidate. In the case of a candidate who has been awarded a degree of Bachelor with Honours in Statistics the Committee may approve remissions of up to one session for a full-time candidate and two sessions for a part-time candidate. The maximum period of candidature shall be four academic sessions from the date of enrolment for a full-time candidate and eight sessions for a part-time candidate. In special cases, an extension of these times may be granted by the Committee.

Fees

4. A candidate shall pay such fees as may be determined from time to time by the Council.

5659 Graduate Diploma in Statistics

GradDip

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

This Graduate Diploma is intended for Statistics graduates wishing to further develop their knowledge and skills in statistical science. In particular, it provides an opportunity for advanced training in topics relevant to Medical Statistics and Financial Mathematics.

Program Structure

The program may be taken over one year full-time or on a part-time basis. The total number of units of credit is 48, six for each course.

The program consists of eight courses from the MStats program (excluding MATH5925 and MATH5935). At most two courses may be selected from those offered by other departments or schools within the University.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

Admission Requirements

Basic entry qualifications for this program are a degree in Statistics or Econometrics or a degree in Commerce with a major in Business Statistics or an approved equivalent.

8718 Master of Science and Technology in Mathematics

MScTech

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Master of Science and Technology in Mathematics degree program is intended for suitably qualified graduates in applied mathematics, pure mathematics or statistics, but others may be admitted after completing a qualifying program. The program may be completed in one year of

full-time or two years of part-time study. The program may be taken as a preliminary step towards enrolment in the PhD program in mathematics. It also provides advanced training for persons specialising in the teaching of mathematics in tertiary institutions. In addition an appropriate program may provide training for those employed or seeking employment in the area of industrial mathematics.

Program Structure

The program consists of seven approved lecture courses, each worth six units of credit, and a compulsory project also worth six units of credit. The total number of units of credit required for the program is 48 units of credit. With the approval of the Head of the School of Mathematics a student may substitute for one or more of the lecture courses a reading course supervised by a member of staff. Again with this approval a student may substitute for at most three of the graduate courses offered in a relevant discipline outside the School of Mathematics. The project consists of either a critical review of the literature in a specific field of mathematics, or a short research project supervised by a staff member. Students are also required to participate in relevant departmental seminars. There are no compulsory courses and students may choose from a wide variety of courses within the School of Mathematics or elsewhere within the university. The courses to be offered in any particular year will be described on the School's website, www.maths.unsw.edu.au. Each candidate's proposed program of study requires the approval of the Head of the School of Mathematics.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

School of Optometry and Vision Science

Head of School: Associate Professor S Dain
Postgraduate Studies Coordinator: Dr C Suttle
Website: www.optom.unsw.edu.au

The postgraduate programs in Optometry and Vision Science provide advanced training in clinical and theoretical aspects of optometry and vision science, with opportunities for specialisation in fields such as contact lenses, occupational optometry and behavioural optometry.

Please note that all courses offered will only be conducted if there is sufficient demand. For information about courses offered in the current session, please refer to the School website www.optom.unsw.edu.au

8760 Master of Optometry

MOptom

Typical Duration
1 year

Minimum UOC for Award
48 units of credit

Typical UOC per Session
24 units of credit

Program Description

The Master of Optometry program consists of a selection of courses from the electives listed below. Up to 15 units of credit may be taken elsewhere in the University subject to the approval of the Head of School. Each course comprises 3, 6 or 12 units of credit, which count towards the total of 48 units of credit required for this degree. A number of the courses have prerequisites, corequisites or exclusions, as indicated in the course descriptions. The program may be completed in one year of full-time study or in two or more years of part-time study. The program provides advanced training in clinical and theoretical aspects of optometry, with opportunities for specialisation in fields such as contact lenses, occupational optometry, and behavioural optometry.

All courses offered will only be conducted if there is sufficient demand. For information about courses offered in the current session, please refer to the School website www.optom.unsw.edu.au

Program Objectives and Learning Outcomes

The Master of Optometry is intended as a suite of courses that allow optometrists to increase and update their understanding of a range of issues related to Optometry and Vision Science. It is anticipated that

knowledge and understanding gained during the MOptom will be useful for optometrists in clinical practice. The program aims to stimulate participants' interest in current optometry and vision science issues, such that optometrists graduating from this program will continue in the long term to update and question their understanding of relevant issues and topics. Further, the MOptom program aims to generate and stimulate critical thinking ability, providing graduates with the tools needed to evaluate critically and the confidence to question the basis of new products and techniques introduced to clinical optometry, and optometric findings discussed in the literature.

Program Structure

Courses

OPTM7103	Behavioural Optometry 1	(6 UOC)
OPTM7104	Advanced Contact Lens Studies 1	(6 UOC)
OPTM7106	Occupational Optometry 1	(6 UOC)
OPTM7108	Small Research Project	(6 UOC)
OPTM7110	Public Health Optometry	(6 UOC)
OPTM7111	Pathophysiology of Ocular Disease 1	(3 UOC)
OPTM7112	Pathophysiology of Ocular Disease 2	(3 UOC)
OPTM7113	Human Visual Development	(6 UOC)
OPTM7114	Rehabilitation of the Partially Sighted	(6 UOC)
OPTM7115	Visual Neuroscience	(6 UOC)
OPTM7203	Behavioural Optometry 2	(6 UOC)
OPTM7204	Advanced Contact Lens Studies 2	(6 UOC)
OPTM7206	Occupational Optometry 2	(6 UOC)
OPTM7211	Pathophysiology of Ocular Disease 3	(3 UOC)
OPTM7212	Pathophysiology of Ocular Disease 4	(3 UOC)
OPTM7301	Advanced Clinical Optometry	(12 UOC)
OPTM7307	Clinical Imaging	(6 UOC)
OPTM7308	Research Project	(12 UOC)
OPTM7309	Ocular Therapy	(12 UOC)

Academic Rules

Conditions for the Award of the Degree: Master of Optometry (MOptom)

1. The degree of Master of Optometry by formal coursework may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study.

Qualifications

2. (1) A candidate for the degree shall have been awarded an appropriate degree of Bachelor of four full-time year's duration (or the part-time equivalent) from The University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Postgraduate Coursework Education Committee of the Faculty of Science (hereinafter referred to as the Committee).

(2) In exceptional cases, an applicant who submits evidence of such other academic and professional qualifications as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undertake such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar two calendar months before the commencement of the session in which enrolment is to begin.

(2) A candidate for the degree shall be required to undertake such formal courses and pass such assessment as prescribed.

(3) The progress of a candidate shall be reviewed at least once annually by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the degree until the lapse of two academic sessions from the date of enrolment in the case of a full-time candidate or four sessions in the case of a part-time candidate. The maximum period of a candidature shall be four academic sessions in the case of a full-time candidate and eight sessions for a part-time candidate. In special cases an extension of this time may be granted by the Committee.

Fees

4. A candidate shall pay such fees as may be determined from time to time by the Council.

5665 Graduate Diploma in Optometry

GradDip

Typical Duration

1 year

Minimum UOC for Award

36 units of credit

Typical UOC per Session

18 units of credit

Program Description

The Graduate Diploma in Optometry program consists of a selection of courses from the electives listed for the MOptom. Up to 12 units of credit may be taken from elsewhere in the University, subject to the approval of the Head of School. Courses comprise 3, 6 or 12 units of credit, which count towards the total of 36 units of credit required for this graduate award. A number of the courses have prerequisites, corequisites or exclusions, as indicated in the course descriptions. The program may be completed in one year of full-time study, or in two or more years of part-time study. The program provides advanced training in clinical and theoretical aspects of optometry, with opportunities for specialisation in fields such as contact lenses, occupational optometry and behavioural optometry.

On successful completion of the GradDip, the student may decide to continue with postgraduate study at the MOptom level. The student may choose not to accept the GradDip award and instead use all 36 units of credit towards an MOptom degree. Alternatively, if the GradDip is awarded, 30 units of credit may be used in this way. Thus the postgraduate student may progress towards a higher degree at a level of their choice. This system is intended to make postgraduate study accessible to optometrists with time constraints.

All courses offered will only be conducted if there is sufficient demand. For information about courses offered in the current session, please refer to the School website www.optom.unsw.edu.au

Program Objectives and Learning Outcomes

Objectives of the Graduate Diploma program are as those for the MOptom program. This program is on a smaller scale than the MOptom, and offers an opportunity to increase and update understanding of a smaller range of topics, within a shorter period. In addition, the Graduate Diploma provides a stepping-stone toward the MOptom, for optometrists with an undergraduate degree in Optometry of less than four years' duration.

Program Structure

Available courses are as listed for the Master of Optometry (8760).

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

7435 Graduate Certificate in Optometry

GradCert

Typical Duration

0.4 years

Minimum UOC for Award

18 units of credit

Typical UOC per Session

18 units of credit

Program Description

The Graduate Certificate in Optometry program consists of a selection of courses from the electives listed for the MOptom. Up to 6 units of credit may be taken from elsewhere in the University, subject to the approval of the Head of School. Courses comprise 3, 6 or 12 units of credit, which count towards the total of 18 units of credit required for this graduate award. A number of the courses have prerequisites, corequisites or exclusions, as indicated in the course descriptions. The program may be completed in one session of full-time study, or in two or more sessions of part-time study. The program provides advanced training in clinical and theoretical aspects of optometry, with opportunities for specialisation in fields such as contact lenses, occupational optometry and behavioural optometry.

On successful completion of the GradCert, the student may decide to continue with postgraduate study at a higher level. Some or all of the units of credit achieved in the GradCert program may be counted towards a GradDip or MOptom degree. The student may use all 18 units of credit in this way if the GradCert is not awarded, or 12 units of credit if the degree is awarded. The introduction of the GradCert and GradDip programs in optometry is intended to allow the postgraduate student to take progressive steps towards a higher degree at a level of their choice and to appeal to practising optometrists with time constraints.

All courses offered will only be conducted if there is sufficient demand. For information about courses offered in the current session, please refer to the School website www.optom.unsw.edu.au

Program Objectives and Learning Outcomes

Objectives of the Graduate Certificate program are as those for the MOptom program. As for the Graduate Diploma, this program is on a smaller scale than the MOptom, and offers an opportunity to increase and update understanding of a smaller range of topics, within a shorter period. In addition, the Graduate Certificate provides a stepping-stone toward the Graduate Diploma and the MOptom, for optometrists with an undergraduate degree in Optometry of less than four years' duration.

Program Structure

Available courses are as listed for the Master of Optometry (8760).

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Certificate** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

5523 Graduate Diploma in Optometry (Research)

GradDip(Research)

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Graduate Diploma by Research in Optometry offers graduates, with at least a three-year Optometry degree, training and experience in scientific research and specialised training in aspects of Optometry. The program comprises 48 units of credit, 24 of which are to be gained by completion of a research project (OPTM7116 and OPTM7117), and 24 by coursework. It is expected that the Diploma will allow entry to a higher research degree program for those students without an Honours degree. Candidates anticipating progression to a higher research degree should consult with their supervisor to ensure an appropriate choice of courses for their chosen field of study. The range of courses available is identical to those offered in the MOptom program. The program may be completed on a full-time (two sessions duration) or part-time (four sessions duration) basis. Candidates must be based on campus.

Program Objectives and Learning Outcomes

The Graduate Diploma by Research in Optometry was introduced to offer optometrists who have not taken an Honours year an opportunity to gain experience of research in optometry and vision science, at the same time as increasing understanding of a range of issues in these areas. The program aims to update and increase knowledge in these areas, and to generate critical thinking ability, and to provide skills in scientific research. It is anticipated that graduates from this program will progress to a higher research degree.

Program Structure

Available courses are as listed for the MOptom except OPTM7108 and OPTM7308.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma by Research** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

School of Physics

Head of School: Professor W Couch

Postgraduate Director: Professor M Gal

Website: www.phys.unsw.edu.au

8722 Master of Science and Technology in Optoelectronics and Photonics

MScTech

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

This MScTech by coursework degree program aims to provide a broad, advanced and interdisciplinary education in the field of photonics and optoelectronics. The program may be completed in two sessions of full-time study or longer as a part-time student. Most of the courses in the program may also be completed by distance education. The laboratory-based courses are only available at the UNSW campus. Students who are unable to attend the laboratory classes will only be able to complete the Graduate Diploma. Course requirements include a total of 48 UOC from a combination of core (36 UOC) and elective (12 UOC) courses.

Program Structure

36 units of credit from the following core courses:

PHYS9310	Physics of Solid State Devices	(6 UOC)
ELEC9350	Optical Fibres	(6 UOC)
PHYS9761	Optoelectronics Laboratory 1	(6 UOC)
PHYS9762	Optoelectronics Laboratory 2	(6 UOC)
PHYS9710	Lasers and Applications	(6 UOC)
ELEC9355	Optical Communications Systems	(6 UOC)

12 units of credit from the following electives:

ELEC9502	VLSI Technology	(6 UOC)
PHYS9060	Advanced Optics	(6 UOC)
ELEC9505	Microsystems Technology: Design and Microfabrication	(6 UOC)

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

5662 Graduate Diploma in Optoelectronics and Photonics

GradDip

Typical Duration

0.8 years

Minimum UOC for Award

36 units of credit

Typical UOC per Session

18 units of credit

Program Description

This Graduate Diploma provides students with the opportunity to study the basic sciences and technologies that underlie the field of optoelectronics. The names 'optoelectronics' and 'photonics' typically cover areas such as optical communications and various applications of lasers and optics in modern industrial and medical settings. This program offers theoretical and practical training in the areas that form the foundation of these strongly growing and fast changing technologies.

This program may be completed in two sessions full-time, or longer as a part-time student. It may also be completed by distance education. The laboratory-based courses are only available at the UNSW campus.

Program Structure

Program requirements include a total of 36 units of credit from a combination of core (24 units of credit) and elective (12 units of credit) courses.

Core Courses (24UOC)

ELEC9350	Optical Fibres	(6 UOC)
ELEC9355	Optical Communications Systems	(6 UOC)
PHYS9310	Physics of Solid State Devices	(6 UOC)
PHYS9710	Lasers and Applications	(6 UOC)

Elective Courses (12UOC)

ELEC9502	VLSI Technology	(6 UOC)
ELEC9505	Microsystems Technology: Design and Microfabrication	(6 UOC)
PHYS9060	Advanced Optics	(6 UOC)
PHYS9761	Optoelectronics Laboratory 1	(6 UOC)
PHYS9762	Optoelectronics Laboratory 2	(6 UOC)

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

Admission Requirements

Entry requirements are a BSc degree with a major in Physics or equivalent qualifications. Advanced standing or substitution of up to 12 units of credit may be granted where prior knowledge can be demonstrated on consultation with the program authority.

7432 Graduate Certificate in Optoelectronics and Photonics

GradCert

Typical Duration

0.4 years

Minimum UOC for Award

18 units of credit

Typical UOC per Session

18 units of credit

Program Description

This Graduate Certificate program provides students with the opportunity to study the fundamentals of photonics and optoelectronics. The names 'optoelectronics' and 'photonics' typically cover areas such as optical communications and various applications of lasers and optics. This program offers theoretical and practical training in some of the disciplines that underlie these strongly growing and fast changing technologies.

The program may be completed in one session full-time or longer as a part-time student. The program may also be completed by distance education. The laboratory-based courses are only available at the UNSW campus.

Program Structure

Course requirements include a total of 18 units of credit (UOC) from a combination of core courses (12 UOC) and one elective (6 UOC).

12 UOC from the following core courses:

PHYS9710	Lasers and Applications	(6 UOC)
PHYS9720	Optoelectronics	(6 UOC)

6 UOC from the following elective courses:

PHYS9060	Advanced Optics	(6 UOC)
PHYS9310	Physics of Solid State Devices	(6 UOC)
PHYS9761	Optoelectronics Laboratory 1	(6 UOC)
PHYS9762	Optoelectronics Laboratory 2	(6 UOC)

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Certificate** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

Admission Requirements

BSc degree with a major in Physics or equivalent qualifications. Advanced standing or substitution of up to 6 units of credit may be granted where prior knowledge can be demonstrated on consultation with the program authority.

5533 Graduate Diploma in Physics (Research)

GradDip

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The GradDip by Research in Physics will be offered with program work and research project requirements similar to Physics Level IV, with substitutions if required to be approved by the School Postgraduate Coordinator. The program involves two sessions full-time study or four sessions part-time study comprising a total of 24 units of credit, plus a single research project over the period of study or two different research projects, one in each half of the period of study (total 24 units of credit). All students normally take programs in quantum mechanics, statistical mechanics, electromagnetism and solid state physics. Other lecture programs and the research projects are offered in general areas of Physics including Astrophysics, Biophysics, Condensed Matter Physics and Theoretical Physics.

More details may be found on the School website at www.phys.unsw.edu.au

Program Objectives and Learning Outcomes

The Graduate Diploma in Physics offers an advanced training program for graduates from overseas universities who wish to obtain specialised training in Physics. The program is also available to graduates from Australian universities who have not done an Honours program and who wish to pursue postgraduate study in Physics. Students qualified to enrol in the Honours program would be expected to do so rather than to enrol in this GradDip program. For suitably qualified students the expectation is that the program would allow entrance to a higher degree research program provided suitable supervision and facilities were available.

Program Structure

Please contact the School of Physics for information.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma by Research** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

5663 Graduate Diploma in Physics Research Techniques (Research)

GradDip**Typical Duration**

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Graduate Diploma in Physics Research Techniques offers an advanced training program for graduates who wish to update their knowledge of physics and/or satisfy requirements for admission to a research degree in physics. The program involves two sessions full-time study or four sessions part-time study and consists of courses at Level III/IV totalling 30 units of credit and a research project (18 units of credit). The choice of courses is very flexible. Most courses selected should be from the School of Physics but courses from other schools may be included. Students wishing to proceed to a research degree should consult with their potential supervisor on their choice of courses.

Details of physics courses available may be found on the School website at www.phys.unsw.edu.au

Program Structure

Please contact the School of Physics for information.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma by Research** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

School of Psychology

Head of School: Prof P Lovibond

Website: www.psy.unsw.edu.au

5330 Graduate Diploma in Psychology (Research)

GradDip**Typical Duration**

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Graduate Diploma is designed as a one year full-time period of study and research in Psychology. It is intended primarily as an advanced training program for graduates from overseas universities who wish to obtain specialised training in Psychology. The expectation is that for suitably qualified students, the program would allow entrance to a higher degree program (MSc or PhD) provided suitable supervision and facilities were available. The program is also available to students who have completed an Honours first degree at an Australian university in an area other than Psychology and who wish to pursue graduate research (MSc or PhD) study in Psychology which links to their first degree e.g. a student may have completed an Honours degree in Zoology and wishes to undertake graduate research in animal behaviour.

The Graduate Diploma does not satisfy the requirements for an accredited Fourth Year as defined by the Australian Psychological Society and Government Registration Board. To meet these requirements, students who have completed a Pass Science degree in Psychology from another Australian university would need to apply for admission to the Fourth Year Honours program in Psychology. Students who are admitted to and complete this one-year full-time program are awarded a Bachelor of Science Honours degree.

Program Objectives and Learning Outcomes

The Graduate Diploma program is adapted to suit the needs and objectives of each student, taking into account the areas of psychology in which they have already demonstrated competence. It comprises formal teaching in an approved set of courses drawn from the following areas: research methods and statistics, perception, learning, cognitive psychology, psycholinguistics, social psychology, clinical psychology, developmental psychology, personality, physiological psychology, abnormal psychology, and applied psychology. Both lectures and practical work will be given.

Students normally also carry out a research project under the supervision of a member of the academic staff of the School. Active research programs exist in most areas including abnormal and clinical psychology, behavioural neuroscience, cognitive science, cognition and perception, data analysis and psychometrics, industrial and organisational, psychometrics, and social, personality and developmental psychology. Particular attention is paid to the interrelationship between scientific theory and the practical application of psychological knowledge.

Program Structure

Please contact the School of Psychology for information.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma by Research** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

8256 Master of Psychology (Clinical)

MPsychol(Clin)**Typical Duration**

2 years

Minimum UOC for Award

96 units of credit

Typical UOC per Session

24 units of credit

Program Description

The program consists of three components, all of which are compulsory:

1. coursework (weekly lectures and seminars with associated written forms of assessment);

2. professional practice (completion of a minimum of 1,000 hours of supervised clinical practice within the School Clinic and in field clinical settings, weekly Clinical meetings and Skills Training Workshops);
3. a research thesis.

The three components total 96 units of credit (48 in each stage).

Program Objectives and Learning Outcomes

This program provides graduate training for psychologists who intend to work as clinicians in hospitals, community health and other settings where they might be engaged in health promotion and the diagnosis, assessment and treatment of people with a range of psychological problems or disabilities. It is accredited as fifth and sixth years of study leading to full membership of the Australian Psychological Society and to its College of Clinical Psychologists, and registration as a psychologist in New South Wales.

Program Structure

Stage 1

PSYC7000	Research and Evaluation Methods	(6 UOC)
PSYC7001	Psychological Assessment 1	(6 UOC)
PSYC7204	Child Clinical Psychology	(6 UOC)
PSYC7210	Human Neuropsychology	(6 UOC)
PSYC7212	Experimental Clinical Psychology 1	(6 UOC)
PSYC7221	Experimental Clinical Psychology 2	(6 UOC)
PSYC7223	Professional and Ethical Practice (Clinical) 1	(6 UOC)
PSYC7224	Professional and Ethical Practice (Clinical) 2	(6 UOC)

Stage 2

PSYC7220	Psychology of Health and Illness	(6 UOC)
PSYC7222	Experimental Clinical Psychology 3	(6 UOC)
PSYC7225	Professional and Ethical Practice (Clinical) 3	(6 UOC)
PSYC7226	Professional and Ethical Practice (Clinical) 4	(6 UOC)
PSYC7227	Research Thesis (Clinical) 1	(12 UOC)
PSYC7228	Research Thesis (Clinical) 2	(12 UOC)

PSYC7227 and PSYC7228 together contribute 25 per cent to the overall grading for the degree.

Academic Rules

Conditions for the Award of the Degree Master of Psychology (Clinical) (MPsychol(Clin)), Master of Psychology (Forensic) (MPsychol(For)) and Master of Psychology (Organisational) (MPsychol(Org))

1. The degree of Master of Psychology (Clinical), Master of Psychology (Forensic) or Master of Psychology (Organisational) by formal coursework and thesis may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study. The degree shall be awarded at the Pass level or with the grade of Honours Class 1 or with the grade of Honours Class 2 (two divisions).

Qualifications

2. (1) A candidate for the degree shall have been awarded an appropriate degree of Bachelor with Honours in Psychology from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution, at a level acceptable to the Higher Degree Committee of the Faculty of Science (hereinafter referred to as the Committee).

(2) In exceptional cases, an applicant who submits evidence of such other academic and professional qualifications as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least four calendar months before the commencement of the session in which enrolment is to begin.

(2) A candidate for the degree shall be required to undertake such formal courses and pass such assessment as prescribed.

(3) The progress of a candidate shall be reviewed at least once annually by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the degree until the lapse of four academic sessions from the date of enrolment in the case of a full-time candidate or six sessions in the case of a part-time candidate. The maximum period of candidature shall be six academic sessions from the date of enrolment for a full-time candidate and ten sessions for a part-time candidate. In special cases a variation of these times may be granted by the Committee.

Fees

4. A candidate shall pay such fees as may be determined from time to time by the Council.

Admission Requirements

The normal entrance requirement is completion of an Honours Class 1 or Class 2 degree in Psychology from the University of New South Wales or a qualification considered equivalent.

Selection is based on academic qualifications for the program. As the number of places is limited, entry into the program is competitive. Referees reports will be sought for applicants who are short listed and an interview may be required.

Applicants who do not satisfy these entrance requirements may in exceptional circumstances be admitted, depending upon their knowledge, experience, occupation and the nature of their undergraduate training. Students applying under these provisions will usually be required to complete a qualifying program before they are admitted.

Further Information

Duration: It should be noted that the program extends over two calendar years (rather than four academic sessions with vacation breaks).

The minimum period of registration before the award of the degree is four sessions for full-time students and six sessions for part-time students. Students with advanced standing may have the minimum period reduced by up to one half of the program i.e. a reduction of one session if a student has completed a PhD in an approved area of Psychology and one session if a student has completed part of the coursework program.

Part-time students: Part-time students normally are expected to take half the full-time program in any one session.

8257 Master of Psychology (Forensic)

MPsychol(For)

Typical Duration

2 years

Minimum UOC for Award

96 units of credit

Typical UOC per Session

24 units of credit

Program Description

The program consists of three components, all of which are compulsory:

1. coursework (weekly lectures and seminars with associated written forms of assessment);
2. professional practice (completion of a minimum of 1000 hours of supervised practice in forensic settings, weekly Forensic Psychology meetings, and Skills Training Workshops);
3. a research thesis.

The three components total 96 units of credit (48 in each stage).

Program Objectives and Learning Outcomes

This program provides graduate training for psychologists who intend to pursue employment within a setting associated with the legal system - police, courts, prisons, probation and parole, guardianship, child protection, statutory review tribunals (e.g. mental health), worker compensation, licensing of special programs and community services, public policy and legislative review. Graduates will be trained in the assessment of people with a range of psychological disorders, disabilities and/or special needs, be equipped with advanced interviewing and counselling skills for dealing with such clients, and familiar with statutory and common law provisions and procedures and government policies and programs relevant to different forensic settings. It is accredited as fifth and sixth years of study leading to full membership of the Australian

Psychological Society and to its College of Forensic Psychologists, and registration as a psychologist in New South Wales.

Program Structure

Stage 1

LAWS9800	Law for Psychologists 1	(6 UOC)
PSYC7000	Research and Evaluation Methods	(6 UOC)
PSYC7001	Psychological Assessment 1	(6 UOC)
PSYC7400	Interventions in Forensic Psychology 1	(6 UOC)
PSYC7401	Interventions in Forensic Psychology 2	(6 UOC)
PSYC7402	Applications of Forensic Psychology	(6 UOC)
PSYC7409	Professional and Ethical Practice (Forensic) 1	(6 UOC)
PSYC7410	Professional and Ethical Practice (Forensic) 2	(6 UOC)

Stage 2

LAWS9810	Law for Psychologists 2	(6 UOC)
PSYC7403	Experimental Psychology and Law	(6 UOC)
PSYC7411	Professional and Ethical Practice (Forensic) 3	(6 UOC)
PSYC7412	Professional and Ethical Practice (Forensic) 4	(6 UOC)
PSYC7413	Research Thesis (Forensic) 1	(12 UOC)
PSYC7414	Research Thesis (Forensic) 2	(12 UOC)

Note that PSYC7413 and PSYC7414 together contribute 25 per cent to the overall grading for the degree.

Academic Rules

For academic rules relating to this program, please refer to the 'Conditions for the Award of the Degree: Master of Psychology' under Academic Rules in the program entry for 8256 Master of Psychology (Clinical).

Admission Requirements

The normal entrance requirement is completion of an Honours Class 1 or Class 2 degree in Psychology from the University of New South Wales or a qualification considered equivalent.

Selection is based on academic qualifications for the program. As the number of places is limited, entry into the program is competitive. Referees reports will be sought for applicants who are shortlisted and an interview may be required.

Applicants who do not satisfy these entrance requirements may in exceptional circumstances be admitted, depending upon their knowledge, experience, occupation and the nature of their undergraduate training. Students applying under these provisions will usually be required to complete a qualifying program before they are admitted.

Further Information

Duration: The minimum period of registration before the award of the degree is four sessions for full-time students and six sessions for part-time students. Students with advanced standing may have the minimum period reduced by up to one half of the program, i.e. a reduction of one session if a student has completed a PhD in an approved area of Psychology and one session if a student has completed part of the coursework program.

Part-time students: Part-time students normally are expected to take half the full-time program in any one session.

8258 Master of Psychology (Organisational)

MPsychol(Org)

Typical Duration

2 years

Minimum UOC for Award

96 units of credit

Typical UOC per Session

24 units of credit

Program Description

This program consists of three components, all of which are compulsory:

1. coursework (weekly lectures and seminars with associated written forms of assessment)
2. professional practice (completion of a minimum of 1,000 hours of supervised organisational practice in organisational field settings, weekly Organisational meetings and Career Development Workshops)
3. a research thesis.

The three components total 96 units of credit (48 in each stage).

Program Objectives and Learning Outcomes

This program provides graduate training for psychologists who intend to work in industry, commerce, consulting practice, service organisations, trade unions, or the public service. The program focuses on the theories, practice, and research in industrial and organisational psychology and in human factors. It is accredited as fifth and sixth years of study leading to full membership of the Australian Psychological Society and to its College of Organisational Psychologists, and registration as a psychologist in New South Wales.

Program Structure

Stage 1

PSYC7000	Research and Evaluation Methods	(6 UOC)
PSYC7001	Psychological Assessment 1	(6 UOC)
PSYC7100	Psychology of Organisations 1	(6 UOC)
PSYC7101	Psychology of Organisations 2	(6 UOC)
PSYC7102	Learning, Training and Development	(6 UOC)
PSYC7115	Career Choice and Development	(6 UOC)
PSYC7122	Professional and Ethical Practice (Organisational) 1	(6 UOC)
PSYC7123	Professional and Ethical Practice (Organisational) 2	(6 UOC)

Stage 2

PSYC7002	Psychological Assessment 2	(6 UOC)
PSYC7117	Advanced Topics in Organisational Psychology	(6 UOC)
PSYC7124	Professional and Ethical Practice (Organisational) 3	(6 UOC)
PSYC7125	Professional and Ethical Practice (Organisational) 4	(6 UOC)
PSYC7126	Research Thesis (Organisational) 1	(12 UOC)
PSYC7127	Research Thesis (Organisational) 2	(12 UOC)

Note that PSYC7126 and PSYC7127 together contribute 25 per cent to the overall grading for the degree.

Academic Rules

For academic rules relating to this program, please refer to the 'Conditions for the Award of the Degree: Master of Psychology' under Academic Rules in the program entry for 8256 Master of Psychology (Clinical).

Admission Requirements

The normal entrance requirement for this program is completion of an Honours Class 1 or Class 2 degree in Psychology from the University of New South Wales or a qualification considered equivalent.

Selection is based on academic qualifications for the program. As the number of places is limited, entry into the program is competitive. Referees reports will be sought for applicants who are shortlisted and an interview may be required.

Applicants who do not satisfy these entrance requirements may in exceptional circumstances be admitted, depending upon their knowledge, experience, occupation and the nature of their undergraduate training. Students applying under these provisions will usually be required to complete a qualifying program before they are admitted.

Further Information

Duration: The minimum period of registration before the award of the degree is four sessions for full-time students and six sessions for part time students. Students with advanced standing may have the minimum period reduced by up to one half of the program i.e. a reduction of one session if a student has completed a PhD in an approved area of Psychology and one session if a student has completed part of the coursework program.

Part-time students: Part-time students normally are expected to take half the full-time program in any one session.

1404 Combined Doctor of Philosophy/Master of Psychology (Clinical)

PhD MPsychol(Clin)

Typical Duration

4 years

Minimum UOC for Award

144 units of credit (PhD component only)

Typical UOC per Session

24 units of credit

Program Description

The combined Doctor of Philosophy/Master of Psychology (Clinical) degree program has an emphasis on research training in clinical fields. The combined degree program requires a minimum of four full-time years to complete, and offers advanced training in research skills that are particularly relevant to clinical areas. It is accredited as fifth and sixth years of study leading to full membership of the Australian Psychological Society and to its College of Clinical Psychologists, and registration as a psychologist in NSW.

Program Objectives and Learning Outcomes

The Doctor of Philosophy (PhD) degree encourages initiative and originality in research. Students will make a significant contribution to knowledge in their field and will be competent to carry out research in their chosen area.

Program Structure

The combined program consists of two components which are compulsory:

- (1) a research project (PhD), and
- (2) a coursework component (MPsychol(Clin)).

The research project should be original, and lead to a significant contribution to our knowledge of the nature of psychological processes, particularly in the field of clinical psychology. The program structure requires students to work on their research project during the entire candidature until submission, and the same research-related requirements as for the regular PhD degree (program code 1400) will apply for the first two years of this program. University regulations and guidelines for good practice in postgraduate research supervision will apply to this program.

Students will concurrently undertake a compulsory coursework component, which is set out below. There are twelve courses and students will normally complete these by taking three courses in each of the four years. In the first year only one course may be taken in Session 1. The coursework program focuses on training in the diagnosis, assessment and treatment of people with a range of psychological problems or disabilities, and the training stems from a strong theoretical and empirical background in experimental clinical psychology.

PSYC7000	Research and Evaluation Methods	(6 UOC)
PSYC7001	Psychological Assessment 1	(6 UOC)
PSYC7204	Child Clinical Psychology	(6 UOC)
PSYC7210	Human Neuropsychology	(6 UOC)
PSYC7212	Experimental Clinical Psychology 1	(6 UOC)
PSYC7220	Psychology of Health and Illness	(6 UOC)
PSYC7221	Experimental Clinical Psychology 2	(6 UOC)
PSYC7222	Experimental Clinical Psychology 3	(6 UOC)
PSYC7223	Professional and Ethical Practice (Clinical) 1	(6 UOC)
PSYC7224	Professional and Ethical Practice (Clinical) 2	(6 UOC)
PSYC7225	Professional and Ethical Practice (Clinical) 3	(6 UOC)
PSYC7226	Professional and Ethical Practice (Clinical) 4	(6 UOC)

Academic Rules

Conditions for the Award of the Degree Doctor of Philosophy Master of Psychology (Clinical) (PhD MPsychol(Clin)), Doctor of Philosophy Master of Psychology (Forensic) (PhD MPsychol(For)) and Doctor of Philosophy Master of Psychology (Organisational) (PhD MPsychol(Org))

1. The combined degrees of Doctor of Philosophy/Master of Psychology (Clinical), Doctor of Philosophy/Master of Psychology (Forensic) and Doctor of Philosophy/Master of Psychology (Organisational) by thesis and formal coursework may be awarded by the Council on the recommendation of the Research Committee of the Faculty of Science (hereinafter referred to as the Committee) to a candidate who has made an original and significant contribution to knowledge, and who has satisfactorily completed a program of advanced study.

Qualifications

2. (1) A candidate for the combined degrees shall have been awarded an appropriate degree of Bachelor with Honours Class 1 in Psychology from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Committee.
- (2) In exceptional cases an applicant who submits evidence of such other academic and professional qualifications as may be approved by the Committee may be permitted to enrol for the combined degrees.
- (3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such

assessment or carry out such work as the Committee may prescribe, before permitting enrolment as a candidate for the combined degrees.

Enrolment

3. (1) An application to enrol as a candidate for the combined degrees shall be made on the prescribed form which shall be lodged with the Registrar at least one month before the commencement of session in which enrolment is to begin.

(2) In every case before making the offer of a place the Committee shall be satisfied that initial agreement has been reached between the School and the applicant on the PhD topic area, supervision arrangements, provision of adequate facilities and coursework and that these are in accordance with the provisions of the guidelines for promoting postgraduate study within the University.

(3) The candidate shall be enrolled as a full-time student only.

(4) The candidate will present the PhD thesis for examination no earlier than three years and no later than five years from the date of enrolment, except with the approval of the Committee.

(5) A candidate for the award of the degree of Doctor of Philosophy as part of a combined program shall not be eligible to be awarded that degree until they have completed the additional requirements applicable to the other degree in such combined program.

(6) The candidate shall undertake the PhD research only as an internal student i.e. at a campus, teaching hospital, or other research facility with which the University is associated.

(7) The candidate will normally carry out the PhD research on a campus or at a teaching or research facility of the University except that the Committee may permit a candidate to spend a period in the field, within another institution or elsewhere away from the University provided that the work can be supervised in a manner satisfactory to the Committee. In such instances the Committee shall be satisfied that the location and period of time away from the University are necessary to the research program.

(8) The PhD research shall be supervised by a supervisor and where possible a co-supervisor who are members of the academic staff of the School or under other appropriate supervision arrangements approved by the Committee.

(9) A candidate for the combined degrees shall be required to undertake such formal courses and pass such assessment as prescribed. The order in which the formal courses are taken must be approved by the School of Psychology.

Progression

4. The progress of the candidate shall be considered by the Committee following report from the School in accordance with the procedures established within the School and previously noted by the Committee.

(i) The research proposal will be reviewed as soon as feasible after enrolment. This will be during the first year of study. This review will focus on the viability of the research proposal.

(ii) Progress in the combined program will be reviewed within twelve months of the first review. As a result of either review the Committee may cancel enrolment or take such other action as it considers appropriate. Thereafter, the progress of the candidate will be reviewed annually.

PhD Thesis

5. (1) On completing the program of study a candidate shall submit a thesis embodying the results of the investigation.

(2) The candidate shall give in writing to the Registrar two months notice of intention to submit the thesis.

(3) The thesis shall comply with the following requirements:

(a) it must be an original and significant contribution to knowledge of the subject;

(b) the greater proportion of the work described must have been completed subsequent to enrolment for the degree;

(c) it must be written in English;

(d) it must reach a satisfactory standard of expression and presentation;

(e) it must consist of an account of the candidate's own research but in special cases work done conjointly with other persons may be accepted provided the Committee is satisfied about the extent of the candidate's part in the joint research.

(4) The candidate may not submit as the main content of the thesis any work or material which has previously been submitted for a university degree or other similar award but may submit any work previously published whether or not such work is related to the thesis.

(5) Four copies of the thesis shall be presented in a form which complies with the requirements of the University for the preparation and submission of theses for higher degrees.

(6) It shall be understood that the University retains the four copies of the thesis submitted for examination and is free to allow the thesis to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968, the University may issue the thesis in whole or in part, in photostat or microfilm or other copying medium.

PhD Examination

6. (1) There shall be not fewer than three examiners of the thesis, appointed by the Committee, at least two of whom shall be external to the University.

(2) At the conclusion of the examination each examiner shall submit to the Committee a concise report on the thesis and shall recommend to the Committee that one of the following:

- (a) The thesis merits the award of the degree.
- (b) The thesis merits the award of the degree course to minor corrections as listed being made to the satisfaction of the head of school.
- (c) The thesis requires further work on matters detailed in the examiner's report. Should performance in this further work be to the satisfaction of the Committee, the thesis would merit the award of the degree.

(d) The thesis does not merit the award of the degree in its present form and further work as described in the examiner's report is required. The revised thesis should be course to re-examination.

(e) The thesis does not merit the award of the degree and does not demonstrate that resubmission would be likely to achieve that merit.

(3) If the performance in the further work recommended under (2)(c) above is not to the satisfaction of the Committee, the Committee may permit the candidate to submit the thesis for re-examination as determined by the Committee within a period determined by it but not exceeding eighteen months.

(4) After consideration of the examiners' reports and the results of any further examination of the thesis, the Committee may require the candidate to submit to written or oral examination before recommending whether or not the candidate be awarded the degree. If it is decided that the candidate be not awarded the degree, the Committee shall determine whether or not the candidate be permitted to resubmit the thesis after a further period of study and/or research.

Fees

7. A candidate shall pay such fees as may be determined from time to time by the Council.

Admission

The normal entrance requirements are (1) completion of an Honours Class 1 degree in Psychology from UNSW or a qualification deemed equivalent, and (2) the availability of adequate supervision and research infrastructure. As the number of places is limited, entry into the combined program is competitive. Referees reports will be sought for applicants who are short-listed and an interview may be required. Students may apply for advanced standing, credit transfer or exemption of coursework components. The minimum period of registration before the award of the degrees is eight sessions.

Further Information

If you are considering applying for a PhD at UNSW you will need to make contact with the relevant school or faculty. This is necessary in order to establish that your research interests and those of the school and faculty are aligned, and that there is a suitable supervisor for your particular area of research.

Prospective students are strongly advised to make contact with potential supervisors before applying for research study at the University.

Please refer to the Faculty website for contact details of schools and departments.

Please refer to the UNSW website for further information on how to apply, scholarships, English language requirements, thesis preparation and other research related matters: www.unsw.edu.au/futurestudents/research

1405 Combined Doctor of Philosophy/Master of Psychology (Forensic)

PhD MPsycol(For)

Typical Duration

4 years

Minimum UOC for Award

144 units of credit (PhD component only)

Typical UOC per Session

24 units of credit

Program Description

The combined Doctor of Philosophy/Master of Psychology (Forensic) degree program has an emphasis on research training in forensic fields. The combined degree program requires a minimum of four full-time years to complete, and offers advanced training in research skills that are particularly relevant to forensic areas. It is accredited as fifth and sixth years of study leading to full membership of the Australian Psychological Society and to its College of Forensic Psychologists, and registration as a psychologist in NSW.

Program Objectives and Learning Outcomes

The Doctor of Philosophy (PhD) degree encourages initiative and originality in research. Students will make a significant contribution to knowledge in their field and will be competent to carry out research in their chosen area.

Program Structure

The combined program consists of two components which are compulsory: (1) a research project (PhD), and (2) a coursework component (MPsycol(For)). The research project should be original, and lead to a significant contribution to our knowledge of the nature of psychological processes, particularly in the field of forensic psychology. The program structure requires students to work on their research project during the entire candidature until submission, and the same research-related requirements as for the regular PhD degree (Program code 1400) will apply for the first two years of this program. University regulations and guidelines for good practice in postgraduate research supervision will apply to this program.

Students will concurrently undertake a compulsory coursework component, which is set out below. There are twelve courses and students will normally complete these by taking three courses in each of the four years. In the first year only one course may be taken in Session 1. The coursework program focuses on training in the assessment of people with a range of psychological disorders, disabilities and/or special needs, advanced interviewing and counselling skills for dealing with such clients, familiarity with statutory and common law provisions and procedures and government policies and programs relevant to different forensic settings.

LAWS9800	Law for Psychologists 1	(6 UOC)
LAWS9810	Law for Psychologists 2	(6 UOC)
PSYC7000	Research and Evaluation Methods	(6 UOC)
PSYC7001	Psychological Assessment 1	(6 UOC)
PSYC7400	Interventions in Forensic Psychology 1	(6 UOC)
PSYC7401	Interventions in Forensic Psychology 2	(6 UOC)
PSYC7402	Applications of Forensic Psychology	(6 UOC)
PSYC7403	Experimental Psychology and Law	(6 UOC)
PSYC7409	Professional and Ethical Practice (Forensic) 1	(6 UOC)
PSYC7410	Professional and Ethical Practice (Forensic) 2	(6 UOC)
PSYC7411	Professional and Ethical Practice (Forensic) 3	(6 UOC)
PSYC7412	Professional and Ethical Practice (Forensic) 4	(6 UOC)

Academic Rules

For academic rules relating to this program, please refer to 'Conditions for the Award of the Degree: Doctor of Philosophy Master of Psychology' under Academic Rules in the program entry for 1404 Combined Doctor of Philosophy/Master of Psychology (Clinical).

Admission

The normal entrance requirements are (1) completion of an Honours Class 1 degree in Psychology from UNSW or a qualification deemed equivalent, and (2) the availability of adequate supervision and research infrastructure. As the number of places is limited, entry into the combined program is competitive. Referees reports will be sought for applicants who are short-listed and an interview may be required. Students may apply for advanced standing, credit transfer or exemption of coursework components. The minimum period of registration before the award of the degrees is eight sessions.

Further Information

If you are considering applying for a PhD at UNSW you will need to make contact with the relevant school or faculty. This is necessary in order to establish that your research interests and those of the school

and faculty are aligned, and that there is a suitable supervisor for your particular area of research.

Prospective students are strongly advised to make contact with potential supervisors before applying for research study at the University.

Please refer to the Faculty website for contact details of schools and departments.

Please refer to the UNSW website for further information on how to apply, scholarships, English language requirements, thesis preparation and other research related matters: www.unsw.edu.au/futurestudents/research

1406 Combined Doctor of Philosophy/Master of Psychology (Organisational)

PhD MPsychol(Org)

Typical Duration

4 years

Minimum UOC for Award

144 units of credit (PhD component only)

Typical UOC per Session

24 units of credit

Program Description

The combined Doctor of Philosophy/Master of Psychology (Organisational) degree program has an emphasis on research training in organisational fields. The combined degree program requires a minimum of four full-time years to complete, and offers advanced training in research skills that are particularly relevant to organisational areas. It is accredited as fifth and sixth years of study leading to full membership of the Australian Psychological Society and to its College of Organisational Psychologists, and registration as a psychologist in NSW.

Program Objectives and Learning Outcomes

The Doctor of Philosophy (PhD) degree encourages initiative and originality in research. Students will make a significant contribution to knowledge in their field and will be competent to carry out research in their chosen area.

Program Structure

The combined program consists of two components which are compulsory: (1) a research project (PhD), and (2) a coursework component (MPsychol(Org)). The research project should be original, and lead to a significant contribution to our knowledge of the nature of psychological processes, particularly in the field of organisational psychology. The program structure requires students to work on their research project during the entire candidature until submission, and the same research-related requirements as for the regular PhD degree (Program code 1400) will apply for the first two years of this program. University regulations and guidelines for good practice in postgraduate research supervision will apply to this program.

Students will concurrently undertake a compulsory coursework component, which is set out below. There are twelve courses and students will normally complete these by taking three courses in each of the four years. In the first year only one course may be taken in Session 1. The coursework program focuses on theories, practice and research in industrial and organisational psychology and in human factors.

PSYC7000	Research and Evaluation Methods	(6 UOC)
PSYC7001	Psychological Assessment 1	(6 UOC)
PSYC7002	Psychological Assessment 2	(6 UOC)
PSYC7100	Psychology of Organisations 1	(6 UOC)
PSYC7101	Psychology of Organisations 2	(6 UOC)
PSYC7102	Learning, Training and Development	(6 UOC)
PSYC7115	Career Choice and Development	(6 UOC)
PSYC7117	Advanced Topics in Organisational Psychology	(6 UOC)
PSYC7122	Professional and Ethical Practice (Organisational) 1	(6 UOC)
PSYC7123	Professional and Ethical Practice (Organisational) 2	(6 UOC)
PSYC7124	Professional and Ethical Practice (Organisational) 3	(6 UOC)
PSYC7125	Professional and Ethical Practice (Organisational) 4	(6 UOC)

Academic Rules

For academic rules relating to this program, please refer to 'Conditions for the Award of the Degree: Doctor of Philosophy Master of Psychology'

under Academic Rules in the program entry for 1404 Combined Doctor of Philosophy/Master of Psychology (Clinical).

Admission

The normal entrance requirements are (1) completion of an Honours Class 1 degree in Psychology from UNSW or a qualification deemed equivalent, and (2) the availability of adequate supervision and research infrastructure. As the number of places is limited, entry into the combined program is competitive. Referees reports will be sought for applicants who are short-listed and an interview may be required. Students may apply for advanced standing, credit transfer or exemption of coursework components. The minimum period of registration before the award of the degrees is eight sessions.

Further Information

If you are considering applying for a PhD at UNSW you will need to make contact with the relevant school or faculty. This is necessary in order to establish that your research interests and those of the school and faculty are aligned, and that there is a suitable supervisor for your particular area of research.

Prospective students are strongly advised to make contact with potential supervisors before applying for research study at the University.

Please refer to the relevant faculty homepage for contact details of schools and departments.

Please refer to the UNSW website for further information on how to apply, scholarships, English language requirements, thesis preparation and other research related matters: www.unsw.edu.au/futurestudents/research

School of Safety Science

Head of School: Prof J Cross

Postgraduate Studies Coordinator: A/Prof C Winder

Website: www.safesci.unsw.edu.au

8735 Master of Science and Technology in Environmental Science

MScTech

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The MScTech in Environmental Science program is a specialist graduate program of one year full-time (or equivalent part-time) study chosen from faculty-wide environmental courses. Specialisation is achieved by undertaking study in one or two environmental streams of the program, although some flexibility in courses may be permitted at the discretion of the program authority.

The program is designed to study the nature of environmental problems and the methodology of their evaluation and management. Emphasis is placed on the development of relevant skills in environmental analysis and planning. The program is primarily intended for students with a background in science or engineering, however, students with other degrees who have undertaken undergraduate level environmental courses and/or have professional experience in an environmental area may apply for entry.

Program Structure

Program requirements

Candidates are required to complete a program of study totalling 48 units of credit where 6 units of credit are a core course and the remaining 42 units of credit may optionally include a project of 6 or 12 units of credit. Where students select the option of a 12 units of credit project they must also complete SESC9900 Project Methods unless they can demonstrate prior knowledge.

Compulsory Course:

SESC9751 Introduction to Environmental Science (6 UOC)

Elective Streams:**Science of the Environment**

BIOS9001	Fundamental Knowledge in Environmental Management: Ecology	(6 UOC)
BIOS9002	Management of Biodiversity	(3 UOC)
GEOL9053	Hydrogeochemistry	(3 UOC)
GEOL9055	Hydrogeochemical Modelling	(3 UOC)
GEOL9111	Groundwater Environments	(3 UOC)
MSCI5004	Oceanographic Processes	(6 UOC)

Pollution Issues

CHEM7300	Fundamental Knowledge in Environmental Management - Physical Science	(6 UOC)
CVEN9872	Solid Waste Management	(6 UOC)
CVEN9881	Hazardous Waste Management	(6 UOC)
CVEN9895	Fundamental Knowledge in Environmental Management: Engineering	(6 UOC)
GEOL9112	Investigation and Management of Salinity	(3 UOC)
GEOL9252	Groundwater Quality and Protection	(3 UOC)
GEOS4721	Soil Degradation & Conservation	(6 UOC)
MATS5394	Pollution Control in Materials Processing	(3 UOC)
SESC9581	Industrial Pollution Control	(6 UOC)

Environmental Planning and Management

CVEN9888	Environmental Management	(6 UOC)
GEOH9011	Environmental Impact Assessment	(6 UOC)
SESC9091	Safety, Health and Environmental Practice	(6 UOC)
SESC9211	Risk Management	(6 UOC)
SESC9741	Environmental Management Systems	(6 UOC)
SESC9761	Environmental Auditing	(6 UOC)

Human Health

GEOH9015	Population Health and Environment	(6 UOC)
MATH5826	Statistical Methods in Epidemiology	(6 UOC)
SESC9130	Noise Management	(3 UOC)
SESC9140	Radiation Protection	(3 UOC)
SESC9510	Occupational Hygiene Hazards	(3 UOC)
SESC9550	Occupational Hygiene Controls	(3 UOC)
SESC9721	Environment and Medicine	(6 UOC)
or		
PHCM9612	Environmental Health	(4 UOC)
SESC9810	Toxicology	(3 UOC)
SESC9820	Chemical Safety and Toxicology	(3 UOC)
SESC9850	Management of Dangerous Materials	(3 UOC)

Remote Sensing and GIS

GEOS9012	Remote Sensing Applications	(6 UOC)
GEOS9016	Principles of Geographic Information Systems and Science	(6 UOC)
GEOS9021	Image Analysis in Remote Sensing	(6 UOC)

Environmental Assessment and Modelling

GEOH9011	Environmental Impact Assessment	(6 UOC)
GEOL9055	Hydrogeochemical Modelling	(3 UOC)
GEOL9252	Groundwater Quality and Protection	(3 UOC)
GEOS9016	Principles of Geographic Information Systems and Science	(6 UOC)
GEOS9017	Advanced Geographic Information Systems and Science	(6 UOC)
SESC9261	Introduction to Environmental Risk Assessment	(6 UOC)
SESC9761	Environmental Auditing	(6 UOC)

Oceanography and Meteorology

MATH5245	Computational Fluid Dynamics	(6 UOC)
MATH5255	Hydrodynamic Stability	(6 UOC)
MATH5285	Ocean Modelling	(6 UOC)
MATH5295	Atmospheric Modelling	(6 UOC)
MSCI6300	Coastal Environmental Assessment	(6 UOC)
OCEA5125	Geophysical Fluid Dynamics	(6 UOC)
OCEA5145	Applied Data Analysis	(6 UOC)
OCEA5155	Theoretical Project in Physical Oceanography	(12 UOC)

Analytical Methods and Data Processing

CHEM7111	Quality Assurance and Laboratory Practice	(6 UOC)
CHEM7112	Analysis of Biological and Organic Materials	(6 UOC)
CHEM7113	Elemental Analysis	(6 UOC)
CHEM7115	Treatment of Analytical Data	(6 UOC)
CHEM7116	Chromatography/Mass Spectrometry	(6 UOC)
CHEM7117	Molecular Analysis	(6 UOC)
CHEM7118	Surface Analysis of Materials	(6 UOC)

GEOL9054	Analysis and Interpretation of Hydrogeochemical Data	(3 UOC)
MATH5275	Applied Data Analysis	(6 UOC)
SESC9871	Environmental and Toxicological Laboratory Science	(6 UOC)

Project

Students may undertake a project on a topic relevant to the program, of 6 or 12 units of credit. Students may enrol in SESC9906 or SESC9912 or may enrol directly into the appropriate project courses offered by any school of the Faculty of Science.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

5675 Graduate Diploma in Environmental Science

GradDip**Typical Duration**

1 year

Minimum UOC for Award

36 units of credit

Typical UOC per Session

18 units of credit

Program Description

The Graduate Diploma in Environmental Science program is a specialist graduate program of one year full time (or equivalent) study chosen from faculty-wide environmental courses. Specialisation is achieved by undertaking study in one or two environmental streams of the program, although some flexibility in courses may be permitted at the discretion of the program authority.

Program Structure

Candidates are required to complete a program of study totalling 36 units of credit: 6 units of credit are the core course and the remaining 30 units of credit include courses from the Master of Science and Technology in Environmental Science elective streams.

Compulsory Course

SESC9751	Introduction to Environmental Science	(6 UOC)
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Elective Courses

Up to 30 units of credit of electives from specialist streams of courses offered in program 8735 MScTech in Environmental Science.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

7445 Graduate Certificate in Environmental Science

GradCert**Typical Duration**

0.4 years

Minimum UOC for Award

18 units of credit

Typical UOC per Session

18 units of credit

Program Description

The Environmental Science Programs are designed to study the nature of environmental problems and the methodology of their evaluation and management. Emphasis is placed on the development of relevant skills in environmental analysis modelling and planning. The programs are primarily intended for students with a background in science or engineering; however, students with other degrees who have undertaken undergraduate level environmental courses and/or have professional experience in an environmental area may apply for entry.

The Graduate Certificate in Environmental Science is a specialist graduate program of half year full-time (or equivalent) study chosen from Faculty-wide environmental courses. Specialisation is achieved by undertaking study in one environmental stream of the program, although some flexibility in courses may be permitted at the discretion of the program authority.

Program Structure

Candidates are required to complete a program of study totalling 18 UOC where 6 UOC are a core course and the remaining 12 UOC include courses from the Master of Science and Technology Environmental Science elective streams.

Compulsory Course

SESC9751 Introduction to Environmental Science (6 UOC)

Elective Courses

Students are required to select up to 12 UOC of electives from specialist streams of courses offered in program 8735 MScTech in Environmental Science.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Certificate** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

8727 Master of Science and Technology in Industrial Safety

MScTech

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

This program is designed as a specialist program that builds on a previous four-year Bachelor degree in engineering or a related discipline. It is suitable for people who manage safety as part of their line management role and wish to extend their learning in their base discipline in addition to gaining a grounding in safety. It is also suitable for people looking for a specialist program building on a first degree in safety. In addition to the core there is a wide choice of elective courses to suit students from widely varying backgrounds. No fundamental knowledge courses are required for this program as the specialist area chosen must be based on the discipline of the student's first degree. The program requires 48 units of credit and is normally completed in one year of full-time (or equivalent part-time) study, and is available in on-campus or off-campus learning mode.

Program Structure

Core courses - 12 UOC

SESC9010	Research Methods	(3 UOC)
SESC9201	Safety Risk Management	(6 UOC)
SESC9300	Effective Behaviour in Organisations	(3 UOC)

Exemption but not necessarily Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses. Where necessary, other approved postgraduate courses may be substituted.

Project courses - 15 UOC

SESC9900	Project Methods	(3 UOC)
SESC9912	Project	(12 UOC)

Elective courses - 21 UOC

Elective courses may be taken from any areas in Science and Technology within the Faculty of Science or Engineering, subject to the agreement of the head of relevant school and the Head of the School of Safety Science. This enables students to extend their specialist knowledge in their own discipline, to undertake additional general management courses or to focus on courses relating to safety science.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

8728 Master of Science and Technology in Risk Management

MScTech

Typical Duration

1.5 years

Minimum UOC for Award

72 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Master of Science and Technology in Risk Management is a program in integrated risk management which provides a general introduction to risk management principles as they are applied across all disciplines, then allows students to specialise in one or more risk areas. Courses for the program are offered by the faculties of Science, Engineering and Commerce. Students may select either a financial or a technical focus.

Program Structure

The program requires 72 units of credit and is normally completed in one and a half years of full-time (or equivalent part-time) study. Students may receive advanced standing in the fundamental knowledge courses on the basis of prior studies providing they can demonstrate the prerequisite knowledge for the core courses. Advanced standing is not given for core courses.

Fundamental Knowledge Courses - 18 UOC

Internal:

ECON5103	Business Economics	(6 UOC)
FINS5511	Corporate Finance	(6 UOC)

External equivalents:

ECON5109	Business Economics	(6 UOC)
FINS5560	Fundamentals of Corporate Finance	(6 UOC)

and either:

ECON5203 (Internal)	Statistics for Business	(6 UOC)
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or

SESC6010 (External)	Descriptive Statistics	(3 UOC)
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and

SESC9010 (External)	Research Methods	(3 UOC)
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Core Courses - 24 UOC

FINS5531	Risk and Insurance	(6 UOC)
SESC9211	Risk Management	(6 UOC)
SESC9231	Risk Analysis	(6 UOC)
SESC9906	Report	(6 UOC)

Elective Courses - 30 UOC

Students may select courses from any faculty providing they can demonstrate to the program authority the relevance of the course to risk management. A list of possible electives is shown below.

Financial Risk Courses

ACCT5908	Auditing and Assurance Services	(6 UOC)
ACCT5996	Business Processes: Analysis and Improvement	(6 UOC)
FINS5512	Financial Markets and Institutions	(6 UOC)
FINS5513	Investments and Portfolio Selection	(6 UOC)
FINS5517	Applied Portfolio Management and Modelling	(6 UOC)
FINS5535	Derivatives and Risk Management Techniques	(6 UOC)
FINS5551	International Insurance Management	(6 UOC)
FINS5574	Foundations of Financial Decision Making Under Uncertainty	(6 UOC)

OH&S Courses

SESC9020	Occupational Health and Safety Law 1	(3 UOC)
SESC9030	Occupational Health and Safety Law 2	(3 UOC)
SESC9121	Fire and Explosion	(6 UOC)
SESC9201	Safety Risk Management	(6 UOC)
SESC9221	Major Hazards Management	(6 UOC)
SESC9411	Principles of Ergonomics	(6 UOC)
SESC9810	Toxicology	(3 UOC)
SESC9820	Chemical Safety and Toxicology	(3 UOC)
SESC9850	Management of Dangerous Materials	(3 UOC)

Environmental Risk Courses

CVEN9888	Environmental Management	(6 UOC)
GEOH9011	Environmental Impact Assessment	(6 UOC)
GEOH9015	Population Health and Environment	(6 UOC)
MATH5285	Ocean Modelling	(6 UOC)
MATH5295	Atmospheric Modelling	(6 UOC)
SESC9261	Introduction to Environmental Risk Assessment	(6 UOC)
SESC9741	Environmental Management Systems	(6 UOC)
SESC9751	Introduction to Environmental Science	(6 UOC)

Technical Risk Management Courses

CVEN8720	Problem Solving and Decision Making	(6 UOC)
CVEN9701	Engineering Economics and Financial Management	(6 UOC)
CVEN9702	Project Planning and Control	(6 UOC)
CVEN9703	Quality and Quality Systems	(6 UOC)
CVEN9707	Contracts Management	(6 UOC)
CVEN9718	Strategic Management for Engineering	(6 UOC)
CVEN9881	Hazardous Waste Management	(6 UOC)
GBAT9107	Asset Management	(6 UOC)
INFS5984	Information Systems Security	(6 UOC)
SESC9060	Principles of Safety, Health and Environmental Auditing	(3 UOC)
SESC9320	Effective Management	(3 UOC)
SESC9340	OHS Management Systems	(3 UOC)

Courses from the AGSM may also be taken by agreement.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

5668 Graduate Diploma in Risk Management**GradDip****Typical Duration**

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Graduate Diploma in Risk Management is a postgraduate program in integrated risk management. Courses for the program are offered by the Faculties of Science, Engineering, and Commerce. The program requires 48 units of credit and is normally completed in one year of full-time (or equivalent part-time) study. Students may be exempted from the fundamental knowledge courses where these topics have been studied during previous studies.

Program Structure**Fundamental Knowledge Courses (12 UOC)**

FINS5511	Corporate Finance	(6 UOC)
or		
FINS5560	Fundamentals of Corporate Finance	(6 UOC)
And either:		
ECON5203	Statistics for Business	(6 UOC)
or		
SESC6010	Descriptive Statistics	(3 UOC)
and		
SESC9010	Research Methods	(3 UOC)

Core Courses (18 UOC)

FINS5531	Risk and Insurance	(6 UOC)
SESC9211	Risk Management	(6 UOC)
SESC9231	Risk Analysis	(6 UOC)

Elective Courses

Students may select courses (12 units of credit) from any faculty providing they can demonstrate to the program authority the relevance of the course to risk management. A list of possible electives is given with the description of the Master of Science and Technology in Risk Management.

FINS5511 & ECON5203 are internal, and FINS5560 is external.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

7438 Graduate Certificate in Risk Management**GradCert****Typical Duration**

0.5 years

Minimum UOC for Award

24 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Graduate Certificate in Risk Management provides students with the opportunity to study risk management related courses to meet specific vocational needs or individual interests. The program requires 24 units of credit and is normally completed in one year of part-time study. It is the first stage in an articulated sequence of Graduate Certificate, Graduate Diploma and Master of Science and Technology programs in risk management.

Program Structure**Fundamental Knowledge Courses - 6 UOC**

ECON5203	Statistics for Business	(6 UOC)
or		
SESC6010	Descriptive Statistics	(3 UOC)
and		
SESC9010	Research Methods	(3 UOC)

Core Course - 6 UOC

SESC9211	Risk Management	(6 UOC)
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Elective courses - 12 UOC

12 UOC of other courses from the core or electives listed for the MScTech in Risk Management. Students may be prevented from taking courses that would duplicate prior studies.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Certificate** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

8729 Master of Science and Technology in Ergonomics**MScTech****Typical Duration**

1.5 years

Minimum UOC for Award

72 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Master of Science and Technology in Ergonomics is a graduate program intended for students wishing to become professional ergonomists. It provides students with the competencies to identify ergonomics hazards in human-technology-environment systems, to assess their associated risks and to use a user-centred, systems approach to develop controls for the hazards. In addition it provides students with the competencies to plan and conduct an ergonomics research or design project in a scientific manner and to disseminate the results. It is the third stage in a fully articulated sequence of Graduate Certificate, Graduate Diploma and Master of Science and Technology programs in ergonomics. The program requires 72 units of credit and is normally completed in one and a half years of full-time (or equivalent part-time) study.

Program Structure

Fundamental knowledge courses - 6 UOC

ANAT6151	Introductory Functional Anatomy	(3 UOC)
SESC6110	Physical Principles of Safety 1	(3 UOC)

Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses.

Students with no statistics in their background will have to do the following course in addition to the above load:

SESC6010	Descriptive Statistics	(3 UOC)
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Core Courses - 57 UOC

SESC9010	Research Methods	(3 UOC)
SESC9201	Safety Risk Management	(6 UOC)
SESC9300	Effective Behaviour in Organisations	(3 UOC)
SESC9411	Principles of Ergonomics	(6 UOC)
SESC9421	Applied Ergonomics	(6 UOC)
SESC9431	Physical Ergonomics	(6 UOC)
SESC9441	Ergonomics and New Technology	(6 UOC)
SESC9451	Experimental Biomechanics	(6 UOC)
SESC9900	Project Methods	(3 UOC)
SESC9912	Project	(12 UOC)

Exemption but not necessarily Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses. Where necessary other approved postgraduate courses may be substituted.

Electives - 9 UOC

Elective courses may be selected from those offered by the School of Safety Science in its other programs, e.g. Master of Safety Science, and Master of Science and Technology in OHS or Industrial Safety. Students may take courses available from other schools within the University subject to the approval of both the relevant program coordinator and the Ergonomics Program Coordinator.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

5669 Graduate Diploma in Ergonomics

GradDip

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Graduate Diploma in Ergonomics is intended for students wishing to become professional ergonomists. It provides students with the competencies to identify ergonomics hazards in human-technology-environment systems, to assess their associated risks and to use a user-centred, systems approach to develop controls for the hazards. It is the second stage in a fully articulated sequence of Graduate Certificate, Graduate Diploma and Master of Science and Technology programs in ergonomics. The program requires 48 units of credit and is normally completed in one year of full-time (or equivalent part-time) study.

Program Structure

Fundamental Knowledge Courses – 6 UOC

ANAT6151	Introductory Functional Anatomy	(3 UOC)
SESC6110	Physical Principles of Safety 1	(3 UOC)

Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses.

Core Courses – 42 UOC

SESC9010	Research Methods	(3 UOC)
SESC9201	Safety Risk Management	(6 UOC)
SESC9300	Effective Behaviour in Organisations	(3 UOC)
SESC9411	Principles of Ergonomics	(6 UOC)
SESC9421	Applied Ergonomics	(6 UOC)
SESC9431	Physical Ergonomics	(6 UOC)
SESC9441	Ergonomics and New Technology	(6 UOC)
SESC9541	Assessment of Workplace Environment	(6 UOC)

Exemption but not necessarily Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses. Where necessary other approved courses may be substituted.

Note: Students with no statistics in their background will have to do SESC6010 - Descriptive Statistics (3 UOC) in addition to the above load.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

7439 Graduate Certificate in Ergonomics

GradCert

Typical Duration

0.5 year

Minimum UOC for Award

24 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Graduate Certificate in Ergonomics is intended to provide professionals from other disciplines with an awareness of the principles of ergonomics sufficient for them to be able to identify ergonomics problems in human-technology-environment systems and to be able to recommend a user-centred, systems approach to their assessment and control. It is the first stage in a fully articulated sequence of Graduate Certificate, Graduate Diploma and Master of Science & Technology programs in ergonomics. The program requires 24 units of credit and is normally completed in six months of full-time (or equivalent part-time) study, and is available in on-campus or off-campus learning mode.

Program Structure

Fundamental knowledge courses - 6 UOC

ANAT6151	Introductory Functional Anatomy	(3 UOC)
SESC6110	Physical Principles of Safety 1	(3 UOC)

Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses.

Students with no statistics in their background will have to do the following course in addition to the above load:

SESC6010	Descriptive Statistics	(3 UOC)
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Core courses - 18 UOC

SESC9010	Research Methods	(3 UOC)
SESC9201	Safety Risk Management	(6 UOC)
SESC9300	Effective Behaviour in Organisations	(3 UOC)
SESC9411	Principles of Ergonomics	(6 UOC)

Exemption but not necessarily Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses. Where necessary other approved postgraduate courses may be substituted.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Certificate** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

8671 Master of Safety Science

MSafetySc

Typical Duration

2 years

Minimum UOC for Award

96 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Master of Safety Science is a graduate program for students wanting a broad-based understanding of safety engineering, occupational health, environmental science, risk management and ergonomics to become safety, health and environmental professionals.

The program requires 96 units of credit and is usually completed in two years of full-time (or equivalent part-time) study. It is available in on-campus or off-campus learning mode.

Program Structure

Fundamental knowledge courses - 12 UOC

ANAT6151	Introductory Functional Anatomy	(3 UOC)
SESC6010	Descriptive Statistics	(3 UOC)
SESC6110	Physical Principles of Safety 1	(3 UOC)
SESC6800	Fundamentals of Toxicology	(3 UOC)

Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses.

Core courses - 30 UOC

SESC9010	Research Methods	(3 UOC)
SESC9020	Occupational Health and Safety Law 1	(3 UOC)
SESC9201	Safety Risk Management	(6 UOC)
SESC9300	Effective Behaviour in Organisations	(3 UOC)
SESC9400	Ergonomics 1	(3 UOC)
SESC9600	Occupational Health	(3 UOC)
SESC9751	Introduction to Environmental Science	(6 UOC)
SESC9810	Toxicology	(3 UOC)

Exemption but not necessarily Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses. Where necessary, other approved postgraduate courses may be substituted.

Project courses - 15 UOC

SESC9900	Project Methods	(3 UOC)
SESC9912	Project	(12 UOC)

Elective courses - 39 UOC

Note: Not all courses are necessarily offered every year:

BIOM9541	Mechanics of the Human Body	(6 UOC)
MGMT5690	Strategic People Management	(6 UOC)
MGMT5700	Management Work and Organisation	(6 UOC)
SESC9030	Occupational Health and Safety Law 2	(3 UOC)
SESC9060	Principles of Safety, Health and Environmental Auditing	(3 UOC)
SESC9091	Safety, Health and Environmental Practice	(6 UOC)
SESC9121	Fire and Explosion	(6 UOC)
SESC9130	Noise Management	(3 UOC)
SESC9160	Safety, Health and Environment in the Construction Industry	(3 UOC)
SESC9211	Risk Management	(6 UOC)
SESC9221	Major Hazards Management	(6 UOC)
SESC9231	Risk Analysis	(6 UOC)
SESC9241	Introduction to Injury Risk Management	(6 UOC)
SESC9261	Introduction to Environmental Risk Assessment	(6 UOC)
SESC9340	OHS Management Systems	(3 UOC)
SESC9361	Industrial Safety Management Systems	(6 UOC)
SESC9410	Ergonomics 2	(3 UOC)
SESC9421	Applied Ergonomics	(6 UOC)
SESC9431	Physical Ergonomics	(6 UOC)
SESC9441	Ergonomics and New Technology	(6 UOC)
SESC9451	Experimental Biomechanics	(6 UOC)
SESC9460	Biomechanics of Impact Injury	(3 UOC)
SESC9510	Occupational Hygiene Hazards	(3 UOC)
SESC9530	Personal Protective Equipment	(3 UOC)
SESC9541	Assessment of Workplace Environment	(6 UOC)
SESC9550	Occupational Hygiene Controls	(3 UOC)
SESC9620	Occupational Diseases and Injuries	(3 UOC)
SESC9651	Occupational Rehabilitation	(6 UOC)
SESC9741	Environmental Management Systems	(6 UOC)
SESC9751	Introduction to Environmental Science	(6 UOC)
SESC9761	Environmental Auditing	(6 UOC)
SESC9820	Chemical Safety and Toxicology	(3 UOC)
SESC9850	Management of Dangerous Materials	(3 UOC)
SESC9871	Environmental and Toxicological Laboratory Science	(6 UOC)

Academic Rules

Conditions for the Award of the Degree: Master of Safety Science (MSafetySc)

1. The degree of Master of Safety Science may be awarded by the Council to a candidate who has satisfactorily completed a program of advanced study.

Qualifications

2. (1) A candidate for the degree shall have been awarded an appropriate degree of Bachelor from the University of New South Wales or a qualification considered equivalent from another university or tertiary institution at a level acceptable to the Postgraduate Coursework Education Committee of the Faculty of Science (hereinafter referred to as the Committee).

(2) In exceptional cases an applicant who submits evidence of such other academic and professional qualifications as may be approved by the Committee may be permitted to enrol for the degree.

(3) If the Committee is not satisfied with the qualifications submitted by an applicant the Committee may require the applicant to undergo such assessment or carry out such work as the Committee may prescribe, before permitting enrolment.

Enrolment and Progression

3. (1) An application to enrol as a candidate for the degree shall be made on the prescribed form which shall be lodged with the Registrar at least two calendar months before the commencement of the session in which enrolment is to begin.

(2) A candidate for the degree shall be required to undertake such formal courses and pass such assessment as prescribed. The program of advanced study shall total a minimum of 45 units of credit. The number of credits allocated for each course shall be determined by the Committee on the recommendation of the Course Director (hereinafter referred to as the head of the school).

(3) The progress of a candidate shall be reviewed at least once annually by the Committee and as a result of its review the Committee may cancel enrolment or take such other action as it considers appropriate.

(4) No candidate shall be awarded the degree until the lapse of two academic sessions from the date of enrolment in the case of a full-time candidate or four sessions in the case of a part-time candidate. The maximum period of candidature shall be six academic sessions from the date of enrolment for a full-time candidate and ten sessions for a part-time candidate. In special cases an extension of these times may be granted by the Committee.

Project Report

4. (1) The program of advanced study may include a 48 units of credit project on an approved topic.

(2) The work shall be carried out under the direction of a supervisor appointed from the full-time academic members of the University staff.

(3) The candidate shall give in writing to the Registrar two months notice of intention to submit a report on the project.

(4) Three copies of the project report shall be presented in a form which complies with the requirements of the University for the preparation and submission of project reports for higher degrees.

(5) It shall be understood that the University retains the three copies of the project report submitted for examination and is free to allow the project report to be consulted or borrowed. Subject to the provisions of the Copyright Act, 1968, the University may issue the project report in whole or in part, in microfilm or other copying medium.

Examination of Project Report

5. (1) There shall be not fewer than two examiners of the project report, appointed by the Committee.

(2) At the conclusion of the examination each examiner shall submit to the Committee a concise report on the project and shall recommend to the Committee that:

- (a) the project report be noted as satisfactory; or
- (b) the project report be noted as satisfactory subject to minor corrections being made to the satisfaction of the head of the school; or
- (c) the project report be noted as unsatisfactory but that the candidate be permitted to resubmit it in a revised form after a further period of study and/or research; or
- (d) the project report be noted as unsatisfactory and that the candidate be not permitted to resubmit it.

(3) The Committee shall, after considering the examiners' reports and the candidate's results of assessment in the prescribed formal coursework, recommend whether or not the candidate may be awarded the degree. If it is decided that the project report is unsatisfactory the Committee shall determine whether or not the candidate may resubmit it after a further period of study and/or research.

Fees

6. A candidate shall pay such fees as may be determined from time to time by the Council.

5672 Graduate Diploma in Safety Science

GradDip

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Graduate Diploma in Safety Science is a graduate program of study for students with a health and safety background intending to become safety professionals. It is the second stage in a fully articulated sequence of Graduate Certificate, Graduate Diploma and Master of Science and Technology programs in safety science or occupational health and safety. The program requires 48 units of credit, is normally completed in one year of full-time (or equivalent part-time) study and is available in on campus and off campus study modes.

Program Structure

Fundamental Knowledge Courses - 12 UOC

(Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses).

ANAT6151	Introductory Functional Anatomy	(3 UOC)
SESC6010	Descriptive Statistics	(3 UOC)
SESC6110	Physical Principles of Safety 1	(3 UOC)
SESC6800	Fundamentals of Toxicology	(3 UOC)

Core Courses - 24 UOC

SESC9010	Research Methods	(3 UOC)
SESC9020	Occupational Health and Safety Law 1	(3 UOC)
SESC9201	Safety Risk Management	(6 UOC)
SESC9300	Effective Behaviour in Organisations	(3 UOC)
SESC9400	Ergonomics 1	(3 UOC)
SESC9600	Occupational Health	(3 UOC)
SESC9810	Toxicology	(3 UOC)

Note: SESC9400 requires Fundamental Knowledge Course or equivalent as assumed knowledge.

Elective courses - 12 UOC

Electives may be chosen from the elective courses offered in the Master of Safety Science program, or from other Schools within the University, subject to the approval of both the relevant program authorities. The range of electives available in off-campus mode is more restricted than for internal students.

Exemption but not necessarily Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses. Where necessary other, approved postgraduate courses may be substituted.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

7442 Graduate Certificate in Safety Science

GradCert

Typical Duration

1 year

Minimum UOC for Award

24 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Graduate Certificate is the first stage of an articulated series of Graduate Certificate, Graduate Diploma and Masters programs. The program requires 24 UOC and is normally completed in 6 months full-time or 12 months part-time. It is available in person or distance delivery modes.

Students enter this program from diverse backgrounds and may lack assumed knowledge for core courses. The school therefore offers a set of Fundamental Knowledge courses to provide this background.

Students in the Graduate Certificate may complete up to 6 UOC of Fundamental Knowledge courses as part of their program. Students then complete 18 UOC from one of the academic plans (specialisations) listed below.

Program Structure

Fundamental Knowledge Courses

ANAT6151	Introductory Functional Anatomy	(3 UOC)
SESC6010	Descriptive Statistics	(3 UOC)
SESC6110	Physical Principles of Safety 1	(3 UOC)
SESC6800	Fundamentals of Toxicology	(3 UOC)

SESCDS7442 Safety Science

6 UOC of Fundamental Knowledge Courses

18 additional UOC from the core and the electives of the Master of Safety Science program.

SESCKS7442 OHS Management

6 UOC of Fundamental Knowledge Courses

SESC9060	Principles of Safety, Health and Environmental Auditing	(3 UOC)
SESC9201	Safety Risk Management	(6 UOC)
SESC9300	Effective Behaviour in Organisations	(3 UOC)
SESC9340	OHS Management Systems	(3 UOC)

3 additional UOC from the core and the electives of the Master of Safety Science program.

Note: SESC9201 requires Fundamental Knowledge course or equivalent as assumed knowledge.

SESCES7442 Occupational Rehabilitation

6 UOC of Fundamental Knowledge Courses

SESC9630	Occupational Medicine	(3 UOC)
SESC9651	Occupational Rehabilitation	(6 UOC)

6 additional UOC from the core and the electives of the Master of Safety Science program.

Note: Advanced Standing for Fundamental Knowledge courses may be awarded to students who can establish that they have equivalent knowledge in these courses by reason of previous tertiary study or completion of an exemption test. Other courses may be substituted for Fundamental Knowledge courses subject to the permission of the program authority.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Certificate (GradCert)** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

Master of Safety Science Courses

For Master of Safety Science core and elective courses, please refer to the program entry for 8671 Master of Safety Science.

8733 Master of Science and Technology in Occupational Health and Safety

MScTech

Typical Duration

1.5 years

Minimum UOC for Award

72 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Master of Science and Technology in Occupational Health and Safety is a graduate program of study for students with a health and safety background intending to become occupational health and safety professionals. It is the third stage in a fully-articulated sequence of Graduate Certificate, Graduate Diploma and Master of Science and Technology programs in occupational health and safety or Master of Safety Science.

The program requires 72 units of credit and is normally completed in one and a half years of full-time (or equivalent part-time) study, and is available in on-campus or off-campus learning modes.

Program Structure

Fundamental knowledge courses - 12 UOC

ANAT6151	Introductory Functional Anatomy	(3 UOC)
SESC6010	Descriptive Statistics	(3 UOC)
SESC6110	Physical Principles of Safety 1	(3 UOC)
SESC6800	Fundamentals of Toxicology	(3 UOC)

Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses.

Core courses - 24 UOC

SESC9010	Research Methods	(3 UOC)
SESC9020	Occupational Health and Safety Law 1	(3 UOC)
SESC9201	Safety Risk Management	(6 UOC)
SESC9300	Effective Behaviour in Organisations	(3 UOC)
SESC9400	Ergonomics 1	(3 UOC)
SESC9600	Occupational Health	(3 UOC)
SESC9810	Toxicology	(3 UOC)

Exemption but not necessarily Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses. Where necessary other, approved postgraduate courses may be substituted.

Project courses - 15 UOC

SESC9900	Project Methods	(3 UOC)
SESC9912	Project (12 Units of Credit)	(12 UOC)

Elective courses - 21 UOC

Elective courses may be chosen from the elective courses offered in the Master of Safety Science program, or from other schools within the University, subject to the approval of both the relevant program authorities. The range of electives available in off-campus mode is more restricted than for internal students.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

8734 Master of Science and Technology in Occupational Medicine

MScTech

Typical Duration

1 year

Minimum UOC for Award

48 units of credit

Typical UOC per Session

24 units of credit

Program Description

The Master of Science and Technology in Occupational Medicine is a graduate program for medical graduates intending to become occupational physicians. It is the third stage in an articulated sequence of Graduate Certificate in Occupational Rehabilitation, and Graduate Diploma and Master of Science and Technology programs in Occupational Medicine. The Master of Science and Technology in Occupational Medicine is available in on-campus and off-campus study modes. This program is suitable for occupational physician trainees of the Australasian Faculty of Occupational Medicine of the Royal Australasian College of Physicians. The program requires 48 UOC where 15 UOC are core courses and 33 UOC may include a project of 12 UOC. The program is normally completed in one year of full-time (or equivalent part-time) study, and is available in on-campus or off-campus learning mode.

Program Structure

Core courses - 15 UOC

SESC9620	Occupational Diseases and Injuries	(3 UOC)
SESC9630	Occupational Medicine	(3 UOC)
SESC9640	Occupational Epidemiology	(3 UOC)
SESC9651	Occupational Rehabilitation	(6 UOC)

Exemption but not necessarily Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses. Where necessary, other approved postgraduate courses may be substituted.

Project Courses (Optional)

SESC9912	Project (12 Units of Credit)	(12 UOC)
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Elective courses - to a maximum of 33 units of credit

Elective courses may be chosen from other courses offered by the School of Safety Science with the approval of the program authority. The range of electives available in off-campus mode is more restricted than for internal students.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Degree Master of Science and Technology** under 'Program Rules and Information – Coursework Degrees' in this Handbook.

5674 Graduate Diploma in Occupational Medicine

GradDip

Typical Duration

1 year

Minimum UOC for Award

36 units of credit

Typical UOC per Session

18 units of credit

Program Description

The Graduate Diploma in Occupational Medicine is a graduate program for medical graduates intending to become occupational physicians. The program requires 36 units of credit and is normally completed in one year of full-time (or equivalent part-time) study, and is available in on campus or off campus learning mode. It is the second stage in an articulated sequence of Graduate Certificate in Occupational Rehabilitation, and Graduate Diploma and Master of Science and Technology programs in Occupational Medicine. This program is suitable for occupational physician trainees of the Australasian Faculty of Occupational Medicine of the Royal Australasian College of Physicians.

Program Structure

Core Courses - 15 UOC

SESC9620	Occupational Diseases and Injuries	(3 UOC)
SESC9630	Occupational Medicine	(3 UOC)
SESC9640	Occupational Epidemiology	(3 UOC)
SESC9651	Occupational Rehabilitation	(6 UOC)

Exemption but not necessarily Advanced Standing may be awarded to students who can establish that they have equivalent knowledge in these courses. Where necessary, other approved postgraduate courses may be substituted.

Electives - 21 UOC

Electives may be chosen from the elective courses offered in the Master of Safety Science program, or from other Schools within the University, subject to the approval of both the relevant program authorities. The range of electives available in off-campus mode is more restricted than for internal students.

Academic Rules

For academic rules relating to this program, please refer to the **Conditions for the Award of the Graduate Diploma** under 'Program Rules and Information – Coursework Degrees' in this Handbook.