Bachelor of Science (Degree with Honours) and Bachelor of Information Systems (Degree with Honours)

General faculty information about honours

Course overview

Honours is an extremely valuable year of study. It comprises advanced 400-level coursework and an individual research project designed to extend students' knowledge and skills. In particular, the honours programs offered by the Faculty of Science aim to enable students to define and solve problems relating to their speciality and to conduct research in the field.

Honours graduates possess the skills and qualifications needed to progress to a higher degree (eg. Master of Science or Doctor of Philosophy), or to enter the science and technology industries.

The faculty offers two honours courses:

- Bachelor of Science (Degree with Honours)
- Bachelor of Information Systems (Degree with Honours).

Bachelor of Science (Degree with Honours) disciplines available

The Faculty of Science offers Bachelor of Science (Degree with Honours) programs in a number of departments located on the Parkville campus. These departments include:

- Department of Anatomy and Cell Biology, see page 2
- School of Anthropology, Geography and Environmental Studies, see page 3
- Department of Biochemistry and Molecular Biology, see page 3
- School of Botany, see page 4
- School of Chemistry, see page 4
- Department of Computer Science and Software Engineering, see page 6
- School of Earth Sciences, see page 7
- Department of Genetics, see page 8
- Department of History and Philosophy of Science, see page 8
- Department of Mathematics and Statistics, see page 9
- Department of Microbiology and Immunology, see page 11
- Department of Optometry and Vision Sciences, see page 12
- Department of Pathology, see page 13
- Department of Pharmacology, see page 13
- School of Physics, see page 14
- Department of Physiology, see page 14
- Department of Psychology, see page 15
- Department of Zoology, see page 15.

Additional Bachelor of Science (Degree with Honours) programs in biological and biomedical disciplines are available within the following teaching departments of the University:

- Department of Clinical and Biomedical Sciences (Barwon Health), see page 17
- School of Dental Science, see page 17
- Department of Medical Biology (Walter and Eliza Hall Institute), see page 18
- Department of Medicine (Austin Health/Northern Health), see page 18
- Department of Medicine (Royal Melbourne Hospital), see page 19
- Department of Medicine (St Vincent's Hospital), see page 19
- Department of Otolaryngology, see page 19
- Department of Paediatrics (Royal Children's Hospital), see page 20
- School of Physiotherapy, see page 20
- Department of Psychiatry (Austin Health), see page 21
- Department of Surgery (Austin Health/Northern Health), see page 21.

Some combined programs and interdepartmental programs are also available.

Admission requirements

To be eligible to enter honours you must satisfy both the Faculty of Science entry requirements and the requirements of the department offering the honours program you wish to undertake. If you are interested in applying for an honours program it is critical to consider these requirements when planning your undergraduate course.

Faculty of Science entry requirements

Faculty requirements for the Bachelor of Science (Degree with Honours) program

There are two faculty entry requirements which must be satisfied:

1. Admission to the BSc (Honours) requires completion of the BSc, BBiomedSc, BASc or equivalent qualification recognised by the Faculty of Science.

   The only exception to the above is for those applicants currently enrolled in a BSc combined course at the University of Melbourne. These applicants need to have completed at least 300 course points, within which the science requirements of their combined course need to have been satisfied.
2. Graduates of the University of Melbourne must normally have a Science Honours Score of at least 65 percent, see *Faculty Honours Score*.

   Applicants who have completed their degree at other institutions must demonstrate that they have achieved an average of 65 percent for the third year science subjects they have studied.

Faculty requirements for the Bachelor of Information Systems (Degree with Honours) program

There are two faculty entry requirements which must be satisfied.

1. Admission to the BIS (Honours) requires the completion of a degree in information systems, or a related field that is recognised by the Faculty of Science.
2. Graduates of the University of Melbourne must normally have an Information Systems Honours Score of at least 65 percent, see *Faculty Honours Score*.

Applicants who have completed their degree at other institutions must demonstrate that they have achieved an average of 65 percent for the third year information systems subjects, or related subjects, they have studied.

Entry into the program is competitive and subject to Department supervision capacity.

Faculty Honours Score

To determine students' eligibility for admission to the honours programs of the Faculty of Science the faculty calculates a Science Honours Score (SHS) and/or an Information Systems Honours Score (ISHS). These scores are also used to rank students when awarding Melbourne Honours Scholarships for honours programs of the faculty.

The faculty honours score (SHS or ISHS depending on degree) is calculated as follows:

1. For graduates of the BSc single degree or the BBiomedSc, their SHS is the weighted average mark of their best 87.5 points of science study at 300-level.
2. For graduates of a BSc combined course or the BASc, or students who are still enrolled in a BSc combined course and have completed at least 300 points within which the requirements of the BSc have been satisfied, their SHS is the weighted average mark of completed science subjects at 300-level, or their best 87.5 points of science study at 300-level, whichever is greater.

   For students and graduates of the BASc and BA/BSc courses, History and Philosophy of Science subjects and Geography subjects must count towards the Arts component of their combined degree and therefore they are not considered in calculating their SHS. This also applies to all Psychology subjects where a student has nominated these to count towards the Arts component of a BASc or BA/BSc.

   For students and graduates of the BSc/BE (Software Engineering), a maximum of 37.5 points of science credited 300-level computer science subject can be included in the SHS.
3. For graduates of the BIS or a BIS combined course, their ISHS is the weighted average mark of their best 62.5 points of information Systems study at 300-level.

   Note that a SHS and ISHS will be calculated for graduates of the BSc/BIS who have applied for an honours program. The relevant honours score will depend on the program for which they have applied.

Departmental requirements

Departments usually require the completion of certain 300-level subjects, and/or a minimum number of 300-level points from a particular department, to be eligible for entry into their honours program. These requirements are specified in the departmental entries that follow.

Duration and commencement of the course

Honours usually involves one year of full-time study between February and November. Some departments offer a two-year part-time honours program and some offer mid-year commencement. Further details are provided in the departmental entries that follow.

Structure of the course

Bachelor of Science (Degree with Honours) program

The Bachelor of Science (Degree with Honours) program involves the completion of one or more advanced coursework subjects and a research project subject. The relative weighting of these subjects varies between departments.

Each advanced coursework subject may entail 400-level lectures and tutorials, journal clubs, literature reviews, oral presentations, and other departmental activities. In some departments students enrol in a number of advanced coursework subjects. The research project subject comprises a research project completed under the guidance of an academic who specialises in your area of interest.

Students' academic transcripts will record a separate result for each advanced coursework subject they undertake as part of the BSc (Honours) course, and the research project subject.

Refer to the departmental entries that follow for more information.

Bachelor of Information Systems (Degree with Honours) program

This honours program involves the completion of four equally weighted advanced coursework subjects and a research project subject. Student's academic transcripts will record individual results for the research project subject and the four advanced coursework subjects. Refer to the Department of Information Systems entry that follows for further details.

Course requirements

To qualify for the BSc (Honours) degree students must:

- pass 100 points at the honours level (or a level deemed appropriate for an honours student); and
- achieve an *overall* weighted average of at least 65 percent for their honours studies.

Some departments have hurdle requirements that must also be met. For further details, refer to the following departmental entries.

Students are not allowed to repeat an honours subject/component for which they have received a mark of less than 50 percent.

To qualify for the BIS (Honours) degree students must:

- pass 100 points at the honours level (or a level deemed appropriate for an honours student); and
- achieve a grade of at least 65 percent for each honours subject completed.

Variations to honours candidature

The critical dates and penalties (eg. HECS charges, withdrawn results etc.) that apply to enrolment changes are specified in the general introduction at the front of this Handbook.

Deferment

The Faculty of Science does not allow students who have been offered a place in honours to defer commencement of the course. Students will need to advise the relevant department in writing that they are unable to accept the course offer and reapply for a place in the honours program at a later stage.

Leave of absence

Leave from the honours program is possible in exceptional circumstances only.

Students wishing to apply for leave from the honours program must complete a variation to enrolment form (available from the Faculty of Science Office). The variation to enrolment form must:

- provide a valid reason for requesting leave (eg. illness) and supporting documentation where possible;
- be signed by the Head of Department in which the honours program is being undertaken.

The department will need to ensure that it will be possible for the student to continue with their honours program at the agreed time, by checking that appropriate supervision and coursework subjects will be available at the time the student wishes to return from leave.

The standard period of leave from honours is a minimum of one semester and a maximum of two semesters.

Extensions

Students are normally allowed only the equivalent to one year of full-time study to complete honours. In extenuating circumstances, such as documented illness, students can apply to the Associate Dean (Academic Programs) for an extension.

Application procedure

- Applicants for most departments' programs apply direct to the relevant department. Application forms are available from departments. Please contact the relevant department/s for the application closing dates.

  Applicants for Honours in Psychology must apply on-line: <http://www.services.unimelb.edu.au/admissions/>
- Domestic applicants will be advised by the Faculty of Science Office of the selection decision outcome of their applications for BSc (Honours).

  International applicants will be advised by the International Admissions Office of the selection decision outcome of their applications.
- The Faculty of Science Office will send an enrolment record and information about the enrolment procedure to all successful applicants who accept a place in the BSc (Honours) program.

Further information about honours programs

Additional information about honours programs is available on the Faculty of Science website at the URL:

<http://www.science.unimelb.edu.au/honours/>

Please contact the honours coordinator in the department/s of your choice for further information. The honours contacts for each department are specified in the honours entries that follow.

Note that departments generally hold an honours information session in September or October each year. Contact the honours coordinators for further details regarding the times and venues of these sessions.

Department of Anatomy and Cell Biology

Anatomy and cell biology honours program

Overview

Students undertake a research project supervised by a member of staff. Project topics are available from the departmental office on Level 7 or on the web site at <http://www.anatomy.unimelb.edu.au/postgraduate/Hons_projects.htm>. Students consult directly with supervisors to ensure suitability of project. Laboratory-based research is the main component of the honours program, culminating in the submission of a thesis and laboratory notebooks detailing experiments. This program offers the opportunity to acquire modern technical and theoretical skills. Students attend research seminars, journal clubs and orally defend their thesis.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the anatomy and cell biology honours program need to obtain an H3 or better for at least one 300-level anatomy and cell biology subject. This requirement may be waived by the Head of Department.

Honours coordinator

Associate Professor Colin Anderson

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in February and finishes in November. There is no mid-year intake.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the anatomy and cell biology honours program must also attend lectures, workshops and seminars.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Anatomy Research Project subject = 75 percent
- Anatomy Advanced Coursework subject = 25 percent

Advanced coursework

Students attend lectures, and workshops in a wide range of biomedical areas such as animal welfare, library resources, experimental design and statistical analysis, writing skills and seminar preparation; and seminars in biomedical research. Students will be assessed by a literature review (20 percent), a journal article review (20 percent), statistics assignments (20 percent) and an oral defence of the thesis (40 percent).

Research project

Students considering enrolling for the honours program in anatomy and cell biology should discuss their plans with a senior member of staff in the area of their special interest, or with the coordinator. Most of the subject is spent conducting an original, supervised research project. Students will give a talk on the aims and methods of the research project during the year. Assessment will consist of a written report (thesis) submitted at the end of the program (100 percent).

Further information

If you require further information about this honours program please contact:

- Associate Professor Colin Anderson
  Tel: +61 3 8344 5807
- Kim Williams (student administrator)
  Tel. +61 3 8344 5791

School of Anthropology, Geography and Environmental Studies

Geography honours program

Overview

For many students honours is the most exciting and valuable year at university. Working with individual supervision and following up their special interests enables students to develop their research and writing techniques and apply the knowledge gained in earlier years of undergraduate study to the solution of real problems.

The honours program in geography and environmental studies provides an opportunity for students to carry out a small individual research project under the supervision of a staff member who is an expert in a related part of the discipline. Examples of honours theses in recent years include an investigation of Aboriginal trails in East Gippsland; greenhouse gases and the paper industry; South Korean industrial development; paleoecological studies in Northern Tasmania; and the use of rainwater tanks in Melbourne.

During the honours program, students also complete advanced coursework and a review of the literature relevant to their research area, attend a series of seminars and workshops about the philosophy and scope of the discipline, and give a short presentation about their research findings.

At the end of the program, honours graduates can either seek employment, well equipped with the skills demanded by today's employers, or they can apply for a scholarship to enable them to proceed to postgraduate study at the University of Melbourne or other universities.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the geography honours program need to:

- have specialised in geography. This involves a minimum of 25 points of 100-level and 50 points of 300-level geography subjects;
- have achieved a minimum grade of 65 percent in five geography subjects.

Students who have completed a specialisation in environmental science may also be eligible for entry to the geography honours program.

Honours coordinator

Dr Barbara Downes

Duration and commencement of course

Honours in geography and environmental studies is undertaken on a full-time basis, and a mid-year intake is offered subject to the approval of the school. Part-time study of honours is only permitted under exceptional circumstances, subject to the approval of the head of school.

Honours students are strongly advised to commence discussions with their supervisor and to start work on their research projects as early as possible.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the geography honours program must:

- attend regular meetings with their supervisor to discuss work on the research project and the literature review;
- submit a statement of research problem early in the first semester of their honours study (due date to be advised);
- attend School of Anthropology, Geography and Environmental Studies research seminars; and
- present a short seminar about their research.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Geography Research Project subject = 50 percent
- Geography Advanced Coursework subject = 50 percent

Advanced coursework

The advanced coursework subject comprises the following:

- a course of lectures and seminars, held throughout the year, which addresses a range of issues related to contemporary research in geography and to the historical and philosophical evolution of the discipline;
- preparation of an extended review of the literature (6000 words) related to the subject matter of the student's individual thesis, covering both specific research in this area, and also the broader context within which the study is situated;
- research methodology lectures and practical exercises covering three methodology areas chosen from the following possible list; introduction to statistics, geographical information systems, survey design and analysis, qualitative research methods, experimental design and analysis, SPSS, writing skills for thesis students; library skills; managing your thesis; ethics in research; researching culture; using computers in research; research design; evaluation research; observation methods; painting as an entry to history; researching vulnerable groups; storytelling and narrative analysis; history and the new critical theory; geocomputing; the sociological intervention; planning a fourth-year research project; field methods, research for professional practice. (Assessment is practical work equivalent to 6000 words); and
- a 30-minute oral presentation of research project results.

Research project

The research project subject comprises original research on a problem selected in consultation with a supervisor and the head of the department, and involves regular meetings with the supervisor.

Students must submit a research report of up to 15 000 words (50 percent of the total mark for honours).

Further information

If you require further information about this honours program please contact:

Dr Barbara Downes
Tel: +61 3 8344 6781

Email: barbarad@unimelb.edu.au

A detailed information booklet is available from the School office [Tel. +61 3 8344 6339].

Department of Biochemistry and Molecular Biology

The Department of Biochemistry and Molecular Biology offers the following honours programs:

- biochemistry and molecular biology honours program (described below);
- combined biochemistry and chemistry (biochemistry coursework) honours program [described under *Combined biochemistry and chemistry (biochemistry coursework) honours program (p.4)*];
- combined chemistry and biochemistry (chemistry) honours program [described under *School of Chemistry (p.4)*].

Biochemistry and molecular biology honours program

Overview

By the end of the honours program in biochemistry and molecular biology the student should have:

- acquired the ability to define research problems in biochemistry and to propose and test appropriate hypotheses;
- developed the ability to think critically and independently and evaluate and analyse experimental biochemical data;
- developed skills in the use of modern equipment and techniques currently used in biochemistry and molecular biology; and
- developed the ability to present the research results both orally and in written form.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the biochemistry and molecular biology honours program need to have completed a minimum of 25 points of 300-level subjects in biochemistry and molecular biology. Provision is made for a limited number of exceptions to this entry requirement.

Honours coordinator

Professor Malcolm McConville

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in February and finishes in November. There may be a limited mid-year intake.

Assessment

Hurdle assessment requirements

Students must satisfy the honours *Course requirements (p.2)*.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Biochemistry Research Project subject = 75 percent
- Biochemistry Advanced Coursework subject = 25 percent

Advanced coursework

The advanced coursework subject accounts for 25 percent of the total assessment. It comprises four subjects of six lectures each. Assessment of these may be by assignment, oral presentation or open-book examination. The aim is to encourage a detailed and critical examination of recent advances in selected fields of biochemical and molecular biology research.

Research project

The research project subject accounts for 75 percent of the total assessment. It comprises a research report (65 percent) and presentation of a seminar (10 percent).

Further information

If you require further information about this honours program please contact:

- Professor Malcolm McConville
  Tel: +61 3 8344 5681
- Ms Monique Richardson
  Tel: +61 3 8344 5911

Combined biochemistry and chemistry (biochemistry coursework) honours program

Overview

This honours program in biochemistry and chemistry is designed to:

- increase the student's knowledge and understanding of biochemical and chemical science;
- develop the process and practice of biochemical and chemical research;
- develop individual investigative skills, critical thought and the ability to evaluate information and to analyse experimental data;
- promote the acquisition of experimental or theoretical skills in areas currently relevant to one of the research groups in the School of Chemistry or Biochemistry and Molecular Biology;
- develop the ability to present research results both orally and in the written form; and
- ensure that students receive essential training in laboratory safety procedures.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the chemistry and biochemistry honours program will normally need to have specialised in either biochemistry and molecular biology (300-level subjects) or chemistry (300-level subjects). Applicants who have specialised in chemistry will be considered on a case-by-case basis. The qualifications of Science students who do not formally have a chemistry major, BBiomedSc students, and applicants from other courses and institutions will be considered by the School of Chemistry Honours coordinator.

Selection into the combined honours program must be endorsed by both departments.

Honours coordinators

Professor Malcolm McConville (biochemistry and molecular biology)

Professor Richared O'Hair (chemistry)

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis, and a mid-year intake is offered. The program runs either from February to November *or* July to June.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the combined chemistry and biochemistry honours program must pass a 'Safety in the Laboratory' course.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Biochemistry/Chemistry Research Project subject = 75 percent
- Biochemistry Advanced Coursework subject = 25 percent

Advanced coursework

The advanced coursework subject accounts for 25 percent of the total assessment. It comprises four subjects of six lectures each. Assessment of these may be by assignment, oral presentation or open-book examination. The aim is to encourage a detailed and critical examination of recent advances in selected fields of biochemical and molecular biology research.

Research project

This subject comprises an original research project, supervised by one academic staff member from each of the Schools of Biochemistry and Chemistry. The research project continues throughout the year.

The research project subject accounts for 75 percent of the total assessment. It comprises a research report (65 percent) and presentation of a seminar (10 percent).

Further information

If you require further information about this honours program please contact:

- Professor Malcolm McConville
  Tel: +61 3 8344 5681
- Miss Vicki Burley (School of Chemistry)
  Te: +61 3 8344 6495

Department of Botany

Botany honours program

Overview

The honours program in botany involves:

- an original supervised research project;
- a minimum of 30 hours of lectures and seminars in the areas of cellular and molecular biology, systematics and evolution, plant ecology and physiology, marine botany, plant conservation biology, and fungi and plant pathology; and
- reading assignments, essay writing, and presentation of seminars.

The course provides students with skills in original research in plant science, develops capacity for critical thinking and evaluation of information, instills knowledge across wide areas of plant sciences, and enhances communication skills.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the botany honours program need to complete 50 or more points of 300-level botany, or equivalent in a related field (eg. plant biochemistry, plant genetics or environmental sciences). The Head of Department may waive the prerequisites or stipulate additional requirements.

Honours coordinator

Professor Alan Baker

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis, and a mid-year intake is offered. The program runs either from February to November *or* July to May.

Assessment

Hurdle assesment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the botany honours program must participate in other training courses as directed by the department.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Botany Research Project subject = 75 percent
- Botany Advanced Coursework subject = 25 percent

Advanced coursework

The advanced coursework subject accounts for 25 percent of the total assessment based on three components:

- a literature review (3500 words);
- two essays or written assignments focusing on topics presented in the series of advanced lectures (each item is less than 2500 words).

Research project

The research project subject comprises:

- a written report of up to 7500 words (60 percent of the total assessment);
- an oral examination concerning the research project (five percent of the total assessment);
- a 30-minute seminar (10 percent of the total assessment).

Further information

If you require further information about this honours program please contact:

- School of Botany
  Tel: +61 3 8344 5049
- Professor Alan Baker
  Tel: +61 3 8344 5055

School of Chemistry

The School of Chemistry offers the following honours programs:

- chemistry honours program (described below);

- combined chemistry and biochemistry (chemistry coursework) honours program (described below);
- combined chemistry and biochemistry (biochemistry coursework) honours program (described under *Combined biochemistry and chemistry (biochemistry coursework) honours program (p.4)*);
- combined chemistry and pharmacology honours program (described under *Combined chemistry and pharmacology honours program (p.6)*).

Chemistry honours program

Overview

The honours program in chemistry is designed to:

- increase the student's knowledge and understanding of chemical science;
- develop the process and practice of chemical research;
- encourage the development of individual investigative skills, critical thought and the ability to evaluate information and to analyse experimental data;
- promote the acquisition of experimental or theoretical skills in areas currently relevant to one of the research groups in the School of Chemistry;
- improve oral and written communication skills; and
- ensure that students receive essential training in laboratory safety procedures.

Generic skills

The honours programs in chemistry will provide students with the opportunity to establish/develop the following generic skills:

- an ability to evaluate scientific and professional literature;
- the ability to use conceptual models to rationalise experimental data;
- a capacity to articulate their knowledge and understanding in written and oral presentations;
- a capacity to manage competing demands on time, including self-directed experimental work;
- a capacity to enhance teamwork skills as required; and
- a respect for integrity in the conduct and reporting of scientific investigations.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the chemistry honours program should typically have a major in chemistry. Applications from Science students who do not formally have a chemistry major, BBiomedSc students, and applicants from other courses and institutions will be considered on a case-by-case basis by the Honours coordinator.

Honours coordinator

Professor Richard O'Hair

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis, and a mid-year intake is offered. Enrolment in the program is possible between either February and November *or* July and June.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the chemistry honours program must:

- obtain a pass in the 'Safety in the Laboratory' course. Students who fail this course will have to complete an additional study program and be reassessed. A pass in the 'Safety in the Laboratory' course is required before students begin their research and advanced coursework;
- submit a 1500-word research project outline during the first semester of enrolment.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Chemistry Research Project subject = 50 percent
- Chemistry Advanced Coursework subject = 50 percent

Advanced coursework

Students select five lecture subjects. Each of these subjects will be examined by formal written examination; examination and assignment; or assignment alone, and may be examined during or at the end of Semester 1. All five lecture subjects are of equal value, each one contributing up to one fifth of the total marks available for the advanced coursework subject.

Research project

The research project subject involves the completion of:

- a written report (thesis) submitted at the end of the subject. The thesis can be a maximum of 30 double-spaced A4 pages.
- an oral examination to be held following submission of the thesis. The thesis and oral examination will be assessed by a panel of examiners and together are worth 35 percent of the overall honours mark.
- a seminar of 20 minutes during the second semester of study. The research work will be discussed in terms of aims, accomplishments and future projections. The seminar contributes 2.5 percent to the overall honours mark; and
- application towards, and progress in, the achievement of the research objectives will be assessed by the research supervisor. This assessment accounts for 12.5 percent of the overall honours mark.

Further information

If you require further information about this honours program please contact:

Miss Vicki Burley
Tel: +61 3 8344 6495

Combined chemistry and biochemistry (chemistry coursework) honours program

Overview

This honours program in chemistry and biochemistry is designed to:

- increase the student's knowledge and understanding of biochemical and chemical science;
- develop the process and practice of biochemical and chemical research;
- develop individual investigative skills, critical thought and the ability to evaluate information and to analyse experimental data;
- promote the acquisition of experimental or theoretical skills in areas currently relevant to one of the research groups in the School of Chemistry or Biochemistry and Molecular Biology;
- develop the ability to present research results both orally and in the written form; and
- ensure that students receive essential training in laboratory safety procedures.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the combined chemistry and biochemistry honours program should typically have a major in chemistry. Applications from Science students who do not formally have a chemistry major, BBiomedSc students, and applicants from other courses and institutions will be considered on a case-by-case basis by the Honours coordinator.

Selection into the combined honours program must be endorsed by both departments.

Honours coordinators

Professor Richard O'Hair (chemistry)

Professor Malcolm McConville (biochemistry and molecular biology)

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis, and a mid-year intake is offered. The program runs either from February to November *or* July to June.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in this combined chemistry and biochemistry honours program must obtain a pass in the 'Safety in the Laboratory' course. Students who fail this course will have to complete an additional study program and be reassessed. A pass in the 'Safety in the Laboratory' course is required before students begin their research and advanced coursework.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects must be taken concurrently. Their relative weightings are as follows:

- Chemistry/Biochemistry Research Project subject = 50 percent
- Chemistry Advanced Coursework subject = 50 percent

Advanced coursework

Students select five lecture subjects. Each of these subjects will be examined by formal written examination; examination and assignment; or assignment alone, and may be examined during or at the end of Semester 1. All five lecture subjects are of equal value, each one contributing up to one-fifth of the total marks available for the advanced coursework subject.

Research project

This subject comprises an original research project, supervised by one academic staff member from each of the School of Chemistry and the Department of Biochemistry and Molecular Biology. The research project continues throughout the year.

The research project subject involves the completion of:

- a written report (thesis) submitted at the end of the subject. The thesis can be a maximum of 30 double-spaced A4 pages.
- an oral examination to be held following submission of the thesis. The thesis and oral examination will be assessed by a panel of examiners and together are worth 35 percent of the overall honours mark.
- a seminar of 20 minutes during the second semester of study. The research work will be discussed in terms of aims, accomplishments and future projections. The seminar contributes 2.5 percent to the overall honours mark; and
- application towards, and progress in, the achievement of the research objectives will be assessed by the research supervisor. This assessment accounts for 12.5 percent of the overall honours mark.

Further information

If you require further information about this honours program please contact:

- Professor Malcolm McConville
  Tel: +61 3 8344 5681
- Miss Vicki Burley (School of Chemistry)
  Te: +61 3 8344 6495

Combined chemistry and pharmacology honours program

Overview

This honours program in pharmacology and chemistry is designed to:

- increase the student's knowledge and understanding of pharmacology and chemistry;
- develop the process and practice of research in pharmacology and chemistry;
- provide an introduction to medicinal chemistry and drug design;
- develop individual investigative skills and the ability to evaluate information and to analyse experimental data;
- promote the acquisition of experimental and theoretical skills in areas currently of relevance to one of the research groups in the Department of Pharmacology or the School of Chemistry;
- develop the ability to present research results both orally and in written form; and
- ensure that students receive essential training in laboratory safety procedures.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in the combined pharmacology and chemistry honours program should typically have a major in chemistry. Applications from Science students who do not formally have a chemistry major, BBiomedSc students, and applicants from other courses and institutions will be considered on a case-by-case basis by the Honours coordinator.

Selection into the combined honours program must be endorsed by both departments.

Honours coordinators

Professor Richard O'Hair (chemistry)

Dr Tony Hughes (pharmacology)

Duration and commencement of the course

This particular honours program can only be taken on a full-time basis. The program commences in February and normally finishes in November. Mid-year commencement (July to June) will be considered on a case-by-case basis, subject to approval by the heads of both departments.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in this combined chemistry and pharmacology honours program must attend and satisfactorily complete the 'Safety in the Laboratory' and 'Animal Ethics' courses, as well as any other preliminary requirements stipulated by either the School of Chemistry or the Department of Pharmacology. Students who do not reach the required standard will be required to complete an additional study program and reassessment. A pass in 'Safety in the Laboratory' course is required before any student can commence the research project and advanced lecture course.

Components of assessment

Honours comprises a research project and an advanced coursework subject. These subjects must be taken concurrently. Their relative weights are as follows:

- Chemistry/Pharmacology Research Project subject = 50 percent
- Chemistry/Pharmacology Advanced Coursework subject = 50 percent

Advanced coursework

Students are required to complete five lecture modules comprising two core pharmacology lecture modules, two chemistry lecture modules and a further pharmacology or chemistry module. In all cases, students will be required to undertake the two core modules Advanced Pharmacology and Advanced Methodology and Molecular Pharmacology. Each module will be examined by a formal written examination at the end of Semester 1, or by assignment. All five modules are of equal value, each one contributing one-fifth of the total marks available for the advanced coursework subject.

Research project

This subject comprises an original research project, supervised by two staff members, one from each of the School of Chemistry and the Department of Pharmacology. The research project continues throughout the year.

The research project subject involves completion of:

- a written report (thesis) submitted at the end of the subject. The thesis can be a maximum of 30 double-spaced A4 pages.
- an oral examination to be held following submission of the thesis. The thesis and oral examination will be assessed by a panel of examiners and together are worth 35 percent of the overall honours mark.
- a seminar of 20 minutes during the second semester of study. The research work will be discussed in terms of aims, accomplishments and future projections. The seminar contributes 2.5 percent to the overall honours mark; and
- application towards, and progress in, the achievement of the research objectives will be assessed by the research supervisor. This assessment accounts for 12.5 percent of the overall honours mark.

Further information

If you require further information about this honours program please contact:

- Miss Vicki Burley (School of Chemistry)
  Tel: +61 3 8344 6495
- Dr Tony Hughes
  Tel: +61 3 8344 8604

Department of Computer Science and Software Engineering

The Department of Computer Science and Software Engineering offers the following honours programs:

- computer science;
- *Combined mathematics and statistics/computer science honours program (p.11)*.

The computer science program is described below.

Computer science honours program

Overview

The honours program in computer science is designed to:

- provide an introduction to the process and practice of research in computer science;
- enable the acquisition of current research skills in specific areas;
- encourage the development of the ability to think critically and independently;
- consolidate and extend the student's understanding of a range of aspects of the discipline of computer science; and
- improve oral and written communication skills.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the computer science honours program must:

- have completed at least 50 points of 300-level computer science subjects;
- have passed the subject 433-255 Logic and Computation (or prior to 2000: 433-255 Models of Computation);
- have passed at least 25 points of 100-level mathematics or statistics subjects.

Applications will also be evaluated with regard to prerequisites for 400-level subjects, strength in areas related to research interests in the department, and overall academic strength.

While 50 points of 300-level study in computer science is the minimum for entry to BSc (Honours), students should note that the 400-level honours sub-

jects offered by the department have individual prerequisites that may not be satisfied by some combinations of 50 points of 300-level subjects. Students wishing to retain a wide range of options at the 400-level are advised to select at least four of: 433-303 Artificial Intelligence; 433-330 Theory of Computation; 433-341 Software Engineering Process and Practice; 433-351 Database Systems; 433-361 Programming Language Implementation; and 433-380 Graphics and Computation.

Study of mathematics or statistics at the second-year level is strongly recommended.

Students from other institutions and other backgrounds should contact the honours coordinator to determine their eligibility for entry to the BSc (Honours) course.

Honours coordinator

Dr Timothy Baldwin

Duration and commencement of course

The BSc (Honours) program in computer science can be undertaken on a full-time or part-time basis, commencing in late February each year. The program requires one year of full-time study, or two years of part-time study.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the computer science BSc (Honours) program must pass 100 points of approved subjects, including the Computer Science Research Project, and must have a weighted average mark of at least 65 percent.

Students enrolled in the computer science honours program are also expected to have a satisfactory level of attendance at departmental seminars.

Students will be advised of hurdle requirements for the individual coursework subjects at the commencement of each subject.

Components of assessment

Honours comprises a research project subject and five advanced coursework subjects. These subjects with their relative weightings are as follows:

- Computer Science Research Project subject = 37.5 percent
- Advanced Coursework subjects: five at 12.5 points each = 62.5 percent

The final honours grade is the weighted average mark over the 100 points included in these two components.

Advanced coursework

The advanced coursework component in the BSc (Honours) requires completion of five 12.5 point subjects, chosen from the following list:

400-level computer science science subjects		Sem.
433-421	Web Technologies and Applications *(p.20)*	1
433-431	Functional Programming *(p.21)*	N/A
433-433	Constraint Programming *(p.21)*	N/A
433-448	Applied Cryptography and Coding *(p.22)*	N/A
433-460	Human Language Technology *(p.22)*	N/A
433-461	High Performance Database Systems *(p.22)*	2
433-482	Software Agents *(p.23)*	N/A
433-483	Computer Vision and Image Processing *(p.23)*	2
433-484	Machine Learning *(p.24)*	2

Students may enrol in one 300-level subject and up to two 600-level subjects in computer science as part of their advanced coursework component, with the permission of the Honours coordinator.

For details of these subjects, see the Faculty of Engineering Postgraduate Handbook, contact the Department of Computer Science and Software Engineering, or visit the departmental web site at <http://www.cs.mu.oz.au>.

Students should note that in any given year the department may choose not to offer one or more of the pool of 400- and 600-level subjects. Students are advised to make contact with the department late in the previous year to determine if particular subjects will be available.

Students are reminded that to be awarded the BSc (Honours) they must complete 100 points of approved subjects including an honours research project, and must achieve a weighted average over those subjects of at least 65 percent.

Research project

In addition to the advanced coursework, students must complete a total of 37.5 points of enrolment in the Computer Science Research Project subject.

The Computer Science Research Project subject comprises a research report of up to 40 pages (20 000 words) and an oral presentation not exceeding 30 minutes. Students are required to obtain a mark of at least 65 percent in this subject.

Further information

If you require further information about this honours program please contact:

Dr Timothy Baldwin
Tel: +61 3 8344 1363
Email: tbaldwin@unimelb.edu.au

School of Earth Sciences

Earth sciences honours program

Overview

The honours program in earth sciences is designed to prepare students for industry employment and for further research. Emphasis is placed on individual research and professional presentation of results. The program includes at least twenty days of advanced coursework, a literature review of your chosen research field and a written and oral report about your research project.

The honours program offered by the School of Earth Sciences allows specialisation in the following areas: geology; atmosphere and ocean sciences; and environmental earth sciences. The departmental entry requirements for these areas differ (see the admission requirements section that follows for details).

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering honours programs in earth sciences disciplines must have achieved the following:

- geology: at least 50 points of 300-level geology;
- atmosphere and ocean sciences: at least 50 points in 300-level atmosphere and ocean sciences, or a science degree with a specialisation in physical or mathematical sciences. It is not necessary to have studied atmosphere and ocean sciences as an undergraduate; however, students commencing at the 400-level will be required to undertake appropriate 300-level atmosphere and ocean sciences subjects (at an advanced level). Students should discuss their plans with the head of school;
- environmental earth sciences: at least 50 points of 300-level earth science (atmosphere and ocean sciences, or geology courses) including 625-307 Hydrogeology and Environmental Management. Note that 25 points from the 600-series environmental science subjects is also required for students specialising in environmental science.

Honours coordinator

Dr Kevin Walsh

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in February and finishes in November. A mid-year intake is dependent on availability of supervisors and would generally begin in July-August and finish in March-April.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the earth sciences honours program must also attend information sessions, special lectures and relevant presentations in the school's seminar program.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Earth Sciences Research Project subject = 75 percent
- Earth Sciences Advanced Coursework subject = 25 percent

Advanced coursework

The advanced coursework subject comprises twenty days of specialist short courses chosen to complement the student's area of research. These advanced courses are chosen from the Victorian Institute of Earth and Planetary Science joint curriculum taught by the University of Melbourne and Monash University. Thirty courses are usually offered, ranging from two days to one week in duration.

Research project

The research project subject comprises a scientific research report, a literature review and an oral presentation. Students will devote considerable attention to the writing and presentation of the research. Clear identification of objectives, evaluation of the methodologies adopted and critical appraisal of the results obtained form important aspects of the report.

Further information

If you require further information about this honours program please contact:

Dr Kevin Walsh
Tel: +61 3 8344 6523
Email: kevin.walsh@unimelb.edu.au

Department of Genetics

Genetics honours program

Overview

Students enrolled in the honours program in the Department of Genetics complete a research project and advanced coursework. The program allows students to acquire skills in analysing and evaluating data, and communicating scientific information in both written and oral presentations.

Research projects cover a broad range of research from molecular to population and evolutionary genetics in micro-organisms, insects, plants and animals. The research project aims to develop a range of experimental and technical skills, a capacity to set goals and to design and plan experiments. Apart from the help and guidance from their supervisor(s) each student also has a committee which regularly meets with them and provides additional help and expertise. This committee is responsible for assessment of the research project subject.

The advanced coursework comprises an essay reviewing the literature related to the research area, sets of lectures in various areas of genetics, journal clubs where published papers are analysed and discussed, and written exercises. The course provides students with skills and knowledge for original research and enhanced written and oral communication skills.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, BSc or BSc combined degree students wishing to enter the genetics honours program need to complete at least 50 points of 300-level genetics subjects, including 652-304 Genetic Analysis *(p.2)*. However in special circumstances, particularly where relevant 300-level practical subjects in other biological disciplines have been completed, these requirements may be waived by the Head of Department.

BBiomedSc students wishing to enter the genetics honours program need to have completed 652-214 Principles of Genetics *(p.1)*, 652-216 Molecular & General Genetics Practical *(p.1)* and at least 25 points of 300-level genetics subjects.

Honours coordinator

Professor Jim Camakaris

Duration and commencement of course

This particular honours program is normally undertaken on a full-time basis. The program commences in February and finishes in November.

Assessment

Hurdle assessment requirements

Students must satisfy the honours *Course requirements (p.2)*.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Genetics Research Project subject = 62.5 percent
- Genetics Advanced Coursework subject = 37.5 percent

For information about the weighting of the components of assessment within the research project subject and within the advanced coursework subject, please contact the Department of Genetics at the start of the honours program.

Advanced coursework

The advanced coursework subject comprises a critical appraisal of the literature relevant to the research project (up to 3000 words) and written exercises based on the lecture topics.

Research project

The research project subject comprises a research report of 40 pages (excluding figures, tables and appendices), a research talk, and an assessment of research performance.

Further information

If you require further information about this honours program see <http://www.genetics.unimelb.edu.au/Honours/> or contact:

- Professor Jim Camakaris
  Tel: +61 3 8344 5138
  Email: j.camakaris@unimelb.edu.au
- Ms Poppy Gatsios
  Tel: +61 3 8344 6246

Department of History and Philosophy of Science

History and philosophy of science honours program.

Overview

Honours study in history and philosophy of science provides training at an advanced level in various aspects of the discipline, and prepares students with requisite background to proceed to postgraduate research.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the history and philosophy of science honours program need to complete:

- a minimum of 25 points of HPS subjects at 200-level;
- a minimum of 37.5 points of HPS subjects at 300-level;
- a grade average of H2B across five subjects in HPS at 200-level and 300-level.

Honours coordinator

Dr Rosemary Robins

Duration and commencement of course

This particular honours program may be undertaken on either a full-time or part-time basis, and a mid-year intake is offered. The program can be undertaken either between February and November *or* July and June. Students are advised to commence their supervised research projects during the non-instruction periods.

Students undertaking part-time study in HPS must complete the HPS thesis over two consecutive semesters.

Assessment

Hurdle assessment requirements

Students must satisfy the honours degree *Course requirements (p.2)*.

Components of assessment

Students undertaking Honours in HPS must complete the following:

- 136-529 HPS Thesis *(p.9)* (37.5 points)
- Five 12.5 point honours subjects in HPS (totalling 62.5 points)

Advanced coursework

The advanced coursework component requires completion of five 12.5 point honours/postgraduate subjects, chosen in consultation with the HPS Honours coordinator.

HPS advanced coursework subjects		Sem.
136-442	Directed Study *(p.8)*	1 rep 2
136-505	Philosophical Problems in Statistics *(p.9)*	N/A
136-506	Pacific History, Environment & Science *(p.9)*	2
136-517	Science in the Classical World *(p.9)*	N/A
136-527	Ecology and Environmentalism *(p.9)*	1
136-528	Medicine, Biology and Culture *(p.9)*	2
136-531	Genetics in Society *(p.10)*	1
136-536	Realism, Relativism and Naturalism *(p.10)*	1
136-537	The Scientific Revolution *(p.10)*	2
136-540	Science, Conflict and Globalisation *(p.10)*	N/A
136-541	The Risk Society: Remaking Everyday Life *(p.10)*	N/A
136-543	The Ethics of Science *(p.10)*	N/A
136-544	Beyond the Spin:Technoscientific Failure *(p.10)*	2
136-566	Scepticism, Fallibilism and Relativism *(p.11)*	N/A

Thesis

The HPS Thesis subject requires completion of a 12,000-word thesis on an approved topic, carried out under the supervision of a member of the department. Students meet regularly with their supervisor over two consecutive semesters. The thesis is due at the end of the second semester of enrolment.

Further information

If you require further information about this honours program please contact:

Dr Rosemary Robins
Tel: +61 3 8344 8872

Department of Information Systems

Information systems honours program

Overview

The honours program in the Department of Information Systems is designed to:

- broaden students' knowledge of a range of more advanced topics in information systems;
- provide an introduction to the process and practice of research in information systems;
- enable the acquisition of research skills and current knowledge in specific areas of information systems;
- extend students' ability to think critically and independently;
- improve oral and written communication skills and other professional competencies; and
- provide a finishing year which is attractive to employers.

Admission requirements

Applications are invited from students who have undertaken a degree in information systems, or a related field, with a 65 percent average in at least 62.5 points (or five subjects) of 300-level information systems or an equivalent level of studies. These requirements may be waived by the faculty, on a case-by-case basis, after considering a rationale presented by the Head of Department. Admission is highly competitive and depends in part on the department's capacity for supervision. For University of Melbourne graduates, the standard path to the Bachelor of Information Systems (Degree with Honours) program is via either the Bachelor of Information Systems degree or a combined information systems degree.

Honours coordinator

Dr Wally Smith

Duration and commencement of course

This particular honours program is undertaken on a full-time basis. The program commences in February and finishes in November. Part-time enrolments or mid-year commencement may be possible, subject to the approval of the Honours coordinator.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the information systems honours program must also satisfy the hurdle assessment requirements listed for the Information Systems Research Project below.

Components of assessment

Honours comprises a research project subject and four advanced coursework subjects. These subjects with their relative weightings are as follows:

- Information Systems Research Project subject = 50 percent
- Advanced Coursework subjects: four at 12.5 points each = 50 percent

The marks achieved for the Information Systems Research Project subject and each of the advanced coursework subjects will be recorded on the student's academic transcript. Students will also receive an overall mark for the course.

Research project

This subject requires regular weekly meetings with a supervisor and the completion of a research project. The research project usually involves an empirical study.

An oral presentation providing a summary of research findings is a hurdle assessment requirement for the Information Systems Research Project.

The assessed item for the Information Systems Research Project is a written research report, of approximately 12,000 words, submitted at the end of the subject.

Advanced coursework

As mentioned above, students complete four advanced coursework subjects. Students will need to devote about seven hours per week for each subject to complete the required reading plus three hours class-time per week. Students will also need to allow additional time for the reading required for the Information Systems Research Project.

One of the four advanced coursework subjects is compulsory. The compulsory subject is 615-610 Research Methods in Information Systems. This subject increases the students' understanding of effective information systems research methodologies.

The remaining three advanced coursework subjects are chosen from a range of advanced coursework subjects. Information about these subjects is available on the web at <http://www.dis.unimelb.edu.au> or from the Department of Information Systems Office.

Course requirements

To qualify for the BIS (Honours) degree students must complete 100 points of the honours level and must achieve a grade of at least 65 percent for each honours subject completed.

Further information

If you require further information about this honours program please contact:

- Department of Information Systems Office
  Tel: +61 3 8344 1500

Department of Mathematics and Statistics

The Department of Mathematics and Statistics offers the following honours programs:

- mathematics and statistics;
- applied statistics;
- combined mathematics and statistics/computer science;
- combined mathematics and statistics/physics.

Information about these programs is provided below.

After completing honours, graduates wishing to pursue a non-academic career will have the advantage of the experience of project work and directed research not usually provided by a pass degree. Many employers view an honours degree as the minimal professional qualification. Students interested in further academic work will be well placed for entry into postgraduate programs at the University of Melbourne or other world-class institutions.

Mathematics and statistics honours program

Overview

The honours program in mathematics and statistics is designed to train graduates in advanced mathematics and statistics topics and to provide an opportunity for students to participate in research. The program involves completion of an advanced coursework subject and a research project subject.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the mathematics and statistics honours program need to have attained an H3 or better in at least four 300-level mathematics/statistics subjects. Students who do not meet these requirements, but who have achieved very good results in other areas, may be considered for entry to honours on the recommendation of the head of the Department of Mathematics and Statistics.

Prospective honours students should refer to the *Suggested 300-level specialisation subjects (p.9)* for guidance in selecting their 300-level mathematics/statistics subjects. It is strongly recommended that more than four 300-level mathematics/statistics subjects are taken, since the number of options available at the 400-level would be restricted if only four 300-level mathematics/statistics subjects had been completed. If only four 300-level mathematics/statistics subjects are taken, the subject 620-351 Number Theory should not be included and at most one of 620-352 Graph Theory and 620-381 Computational Mathematics should be included.

To retain the widest possible choice of honours options, students are recommended to include the following subjects in second year: 620-221 Real and Complex Analysis or 620-252 Analysis, 620-231 Vector Analysis or 620-233 Vector Analysis (Advanced), and at least two of 620-201 Probability, 620-202 Statistics, 620-222 Linear and Abstract Algebra, 620-232 Mathematical Methods, 620-234 Mathematical Methods (Advanced), 620-261 Introduction to Operations Research.

Suggested 300-level specialisation subjects

The following is a list of suggested 300-level subjects to be taken in order to do honours in one or more research streams in the Department of Mathematics and Statistics.

Algebra: To do honours in algebra, a student is required to do 620-321 and should normally have done 620-322. (Students missing one or both of these courses but interested in taking a course in the algebra stream should discuss possibilities with the appropriate lecturer well before the start of semester.) It is also recommended that students do 620-311, 620-312 and 620-351.

Analysis: To do honours in analysis, a student is required to do 620-311 and 620-312.

Discrete Mathematics: To do honours in discrete mathematics and combinatorics, usually a student is required to do 620-221 or 620-252, 620-352 and 620-353. It is suggested that 620-301, 620-321, and 620-351 make good supplementary subjects.

Geometry and Topology: To do honours in geometry and topology, a student is required to do 620-322 and normally should have done 620-311 and 620-321. Students without these units should talk to the appropriate lecturers in the Honours courses.

Mathematical Physics and Statistical Mechanics: To do honours in mathematical physics and statistical mechanics, usually a student is required to do 620-221 or 620-252 and 620-331. The subject 620-332 is also highly recommended.

Methods and Modeling: To do honours in methods and modeling, usually a student is required to do 620-331 and 620-342. It is suggested that 620-332 and 620-381 make good supplementary subjects.

Probability and Stochastic Processes: To do honours in probability and stochastic processes, usually a student is required to do 620-301 and 620-302. It is also recommended that students do 620-312, 620-361 and 620-371.

Operations Research: To do honours in operations research, usually a student is required to do 620-361 and 620-362. It is also recommended that students do 620-301, 620-352 and 620-381.

Statistics: To do honours in statistics, usually a student is required to do 620-301, 620-371 and 620-372. It is also recommended that students do 620-302 and 620-374.

Honours coordinators

Associate Professor Felisa Vázquez-Abad

Dr Sanming Zhou

Duration and commencement of course

This particular honours program can be undertaken on a full-time or part-time basis, and a mid-year intake is offered. The program can be undertaken either between February and November *or* July and June.

Assessment

Hurdle assessment requirements

Students must satisfy the honours degree *Course requirements (p.2)*.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Mathematics/Statistics Research Project subject = 25 percent
- Mathematics/Statistics Advanced Coursework subject = 75 percent

Advanced coursework

All mathematics and statistics honours students must complete six of the modules listed in the Mathematics and Statistics Honours Guide (honours advanced coursework modules). The Honours Guide is updated every year and is available from the Department of Mathematics and Statistics Office.

Each honours module is one semester in length and comprises 24 contact hours (usually two lectures per week), some or all of which may consist of seminars, guided reading or project work. Full-time students usually undertake four honours advanced coursework modules in the first semester and two subjects in the second semester.

The advanced coursework modules are clustered in nine streams: algebra, analysis, discrete mathematics, geometry and topology, mathematical physics and statistical mechanics, methods and modeling, probability and stochastic processes, operations research, statistics. Usually each stream offers three modules, two of which will usually be available in Semester 1 and one in Semester 2. Students usually take at least two modules from two different streams, one of which will normally be in the same stream as that of the research project.

For all modules, up to 40 pages of written assignments and up to three hours of written and/or oral examinations are required. Any student may, with permission, study and be assessed in more than six modules. In determining the final grade, only the best six honours advanced coursework modules will be considered.

Students wishing to take advantage of the intensive summer courses/modules run by the Australian Mathematical Sciences Institute (AMSI) may replace one honours advanced coursework module with either one full length course/module (20 days contact in total) or two short courses/modules (10 days contact in total). Only one honours advanced coursework module may be substituted in this way.

Research project

Honours students are required to conduct research under the supervision of their supervisors. A list of the research interests of the department is outlined in the departmental research report available from the Department of Mathematics and Statistics office. Intending honours students should approach individual staff members to discuss possible research projects. Any difficulties in reaching decisions about research topics should be discussed with the honours coordinator. Preliminary reading should commence in the first month of the program, with the bulk of the project being completed in the second half of the program.

Assessment of the research project will consider: clarity and exposition; mathematical accuracy; mathematical insight displayed; coverage of the field and references, and may be complemented by one or more of the following: description of the application and/or business context; mathematical modelling; presentation and analysis of numerical results.

Honours students will be required to give two seminars before their results are finalized, including one presentation towards the end of the program. Honours students should consider themselves a part of the research strength of the department and view departmental seminars as a method of broadening their knowledge. It is therefore expected that students will attend all research seminars in the broad area of their chosen field.

Further information

If you require further information about this honours program please contact the honours coordinators:

Department of Mathematics and Statistics
Tel: +61 3 8344 5550

Applied statistics honours program

Overview

The honours program in applied statistics is designed to train graduates in applications of statistical methods, with supporting studies in theoretical statistics and stochastic processes. The program also aims to:

- encourage the development of the abilities to think critically and independently;
- provide an introduction to the process and practice of statistical research; and
- improve oral and written communication skills.

The applied statistics honours program is more accessible than the honours program in mathematics and statistics to students who have a restricted mathematics background, but have some experience at 200-level or 300-level in economics and commerce, biological sciences, or social sciences.

The program involves completion of an advanced coursework subject and a research project subject.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, entry usually requires an H3 or better in at least four third-year subjects offered by the Department of Mathematics and Statistics. These subjects must include 620-371 Linear Models and 620-372 Applied Statistical Inference.

Students who do not meet the requirements, but who have achieved very good results in other areas, may be considered for entry on the recommendation of the coordinator and the head of the Department of Mathematics and Statistics.

Suggested 300-level specialisation subjects

Applied Statistics: To do honours in applied statistics, usually a student is required to do 620-371, 620-372 and 620-374.

Honours coordinator

Associate Professor Felisa Vázquez-Abad

Duration and commencement of course

This particular honours program can be undertaken on a full-time or part-time basis, and a mid-year intake is offered. The program can be undertaken either between February and November *or* July and June.

Assessment

Hurdle assessment requirements

Students must satisfy the honours degree *Course requirements (p.2)*.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Applied Statistics Research Project subject = 25 percent
- Applied Statistics Advanced Coursework subject = 75 percent

Advanced coursework

Students select six of the subjects offered through the Key Centre for Statistical Sciences (KCSS) at La Trobe University, Monash University, RMIT and the University of Melbourne. Each subject comprises a total of 24 hours of lectures, presented in one 2-hour session per week, during either Semester 1 or 2. The subjects are detailed in the KCSS booklet available from the Department of Mathematics and Statistics office.

Subject selection requires departmental approval. In some cases, approval may be given to substitute subjects of comparable standard from other areas such as mathematics and statistics, economics and computer science.

The assessment of the advanced coursework subject entails assignments (up to 50 pages) and a two-hour written exam for each of the seven KCSS subjects. Examinations are held at the end of each semester. All KCSS subjects are of equal weight.

Research project

This subject comprises a research project completed under the supervision of a staff member in an area of statistics approved by the subject coordinator. Students are expected to submit a detailed outline of their research project by the end of their first semester of honours level study.

The assessment comprises:

- the submission of a written report at the end of the program. The report is up to 15 000 words and accounts for 90 percent of the mark for the research project subject.

- a 30-minute talk, including a five-minute discussion, towards the end of the program. This accounts for 10 percent of the mark for the research project subject.

Honours students should consider themselves a part of the research strength of the department and view departmental seminars as a method of broadening their knowledge. They are therefore expected to attend all research seminars in the broad area of their chosen field.

Further information

If you require further information about this honours program please contact the honours coordinator:

Department of Mathematics and Statistics
Tel: +61 3 8344 5550

Combined mathematics and statistics/physics honours program

Overview

This honours program is available only in consultation with the honours coordinators of both mathematics/statistics and physics. It is designed to train graduates in advanced mathematics/statistics and physics topics, and to provide an opportunity for students to participate in research.

The program involves completion of an advanced coursework subject and a research project subject.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students should plan a course of study that is approved by both the mathematics/statistics and physics honours coordinators. An H3 average will be required in the subjects that are prerequisites for the honours level subjects the student plans to study.

Selection into the combined honours program must be endorsed by both departments.

Honours coordinators

Dr Sanming Zhou (mathematics and statistics)

Associate Professor Chris Chantler (physics)

Duration and commencement of course

This particular honours program can be undertaken on a full-time or part-time basis commencing at the start of semester 1. Subject to the approval of both departments, an applicant who is able to devise an appropriate course plan in conjunction with both departments may be considered for mid-year entry.

Assessment

Hurdle assessment requirements

Students enrolled in honours need to obtain a minimum of 65 percent for both the research project subject and the advanced coursework subject.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Maths/Stats and Physics Research Project subject = 25 percent
- Maths/Stats and Physics Advanced Coursework subject = 75 percent

Advanced coursework

Students should establish with the honours coordinators the relative weighting of each piece of mathematics/statistics or physics work that is required for this subject.

Research project

The research project is marked by two examiners appointed by the coordinators. Assessment of the research project will consider: clarity and exposition; mathematical accuracy; mathematical insight displayed; coverage of the field and references, and may be complemented by one or more of the following: description of the application and/or business context; mathematical modelling; presentation and analysis of numerical results.

Students are expected to submit a detailed outline of their research project by the end of their first semester of honours study. They are also required to give two seminars before their results are finalised, including one presentation towards the end of the program.

Honours students should consider themselves a part of the research strength of the departments and view departmental seminars as a method of broadening their knowledge. They are therefore expected to attend all research seminars in the broad area of their chosen field.

Further information

If you require further information about this honours program please contact the honours coordinators:

Department of Mathematics and Statistics
Tel: +61 3 8344 5550

Combined mathematics and statistics/computer science honours program

Overview

This honours program is available only in consultation with the honours coordinators of both mathematics/statistics and computer science. It is designed to train graduates in advanced mathematics/statistics and computer science topics, and to provide an opportunity for students to participate in research.

The program involves completion of an advanced coursework subject and a research project subject.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students should plan a course of study that is approved by both the mathematics/statistics and computer science honours coordinators and have completed the prerequisite subjects with at least an H3 average.

Selection into the combined honours program must be endorsed by both departments.

Honours coordinators

Dr Sanming Zhou (mathematics and statistics)

Dr Timothy Baldwin (computer science)

Duration of course and commencement of course

This particular honours program can be undertaken on a full-time or part-time basis commencing at the start of semester 1. Subject to the approval of both departments, an applicant who is able to devise an appropriate course plan in conjunction with both departments may be considered for mid-year entry.

Assessment

Hurdle assessment requirements

Students must satisfy the honours degree *Course requirements (p.2)*.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Maths/Stats and Computer Science Research Project subject = 25 percent
- Maths/Stats and Computer Science Advanced Coursework subject = 75 percent

Advanced coursework

Students should establish, with the honours coordinators, the relative weighting of each piece of mathematics and statistics or computer science work that is required for this subject.

Research project

The research project is marked by two examiners appointed by the coordinators. Assessment of the research project will consider: clarity and exposition; mathematical accuracy; mathematical insight displayed; coverage of the field and references, and may be complemented by one or more of the following: description of the application and/or business context; mathematical modelling; presentation and analysis of numerical results.

Students are expected to submit a detailed outline of their research project by the end of their first semester of honours level study. They are also required to give two seminars before their results are finalised, including one presentation towards the end of the program.

Honours students should consider themselves a part of the research strength of the departments and view departmental seminars as a method of broadening their knowledge. They are therefore expected to attend all research seminars in the broad area of their chosen field.

Further information

If you require further information about this honours program please contact the honours coordinators:

Department of Mathematics and Statistics
Tel: +61 3 8344 5550

Department of Microbiology and Immunology

Microbiology and immunology honours program

Overview

The Department of Microbiology and Immunology honours program aims to:

- train students to plan and carry out original experiments and to rigorously interpret results;
- facilitate students' ability to analyse and communicate scientific results and ideas, both those generated by their own work and those reported by others;
- engender an enthusiasm for scientific enquiry; and

- encourage each individual to develop skills requiring both analytical and creative thought.

The advanced coursework topics are chosen to acquaint students with a broad range of microbiology and immunology topics to supplement the in-depth experience of a specialised field which they will gain from their research project. As far as possible the subject areas bridge across disciplines so that all students are on an equal footing.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, applicants for the microbiology and immunology honours program should ideally have completed a significant component of microbiology and/or immunology at the 300 level. Equivalent studies in biochemistry and molecular biology, genetics and/or pathology may be acceptable for those undertaking research in areas such as biotechnology, molecular genetics or immunology respectively.

Honours coordinators

Dr Mike Dyall-Smith

Dr Helen Billman-Jacobe

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in late February and finishes in November. Mid-year intake will be considered under some circumstances, commencing in August and finishing in May the following year. In this case the coursework component will be completed in Semester 1 of the year following commencement.

By arrangement with supervisors, students may start laboratory work in early February.

Assessment

Hurdle assessment requirements

Students must satisfy the honours degree *Course requirements (p.2)*.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Microbiology Research Project subject = 75 percent
- Microbiology Advanced Coursework subject = 25 percent

(Both an oral and written presentation of the research work will be required and assessed.)

Information about these subjects is available from the department.

Further information

If you require further information about this honours program please contact:

- Department of Microbiology and Immunology
  Tel: +61 3 8344 5679
- Dr Mike Dyall-Smith
  Email: mlds@unimelb.edu.au
- Dr Helen Billman-Jacobe
  Email: hbj@unimelb.edu.au

Department of Optometry and Vision Sciences

Vision sciences honours program

Overview

The honours program offered by the Department of Optometry and Vision Sciences involves advanced coursework and a research project. Students are encouraged to develop the ability to define and solve problems and to learn how to conduct research in vision sciences or optics.

Admission requirements

In addition to satisfying the Faculty of Science entry requirements, see *Admission requirements (p.1)*, students must have a major study in at least one of biochemistry, mathematics, neuroscience, physiology, pharmacology, physics, psychology, vision sciences or zoology. Majors in other areas from related disciplines will be considered.

Honours coordinator

Dr Michael Pianta

Duration and commencement of course

This honours program is normally only available on a full-time basis. Students may commence:

- in the first week of February (completing in November), or
- mid-year at the commencement of semester two in late July (completing in the following June).

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the vision sciences honours program are required to attend and participate in departmental seminars, including the Vision Science Seminar Series and Journal Club. A 15-minute oral presentation at two honours mini-symposia during the course is also a hurdle requirement.

Components of assessment

The Honours program comprises a research project subject and an advanced coursework subject. These subjects, and their relative weightings in the 100-point course, are as follows:

- Vision Science Research Project subject = 75 percent
- Vision Science Advanced Coursework subject = 25 percent

Research project

Under the supervision of an academic staff member, students conduct research and prepare a report in the form of a thesis not exceeding 15,000 words.

A list of the research interests of the Department is available in the document, *Research Areas in Optometry and Vision Sciences*, from the Department Office or on the Department's website (<http://www.optometry.unimelb.edu.au/dept/dept.html>). Potential Honours students should approach the Honours Coordinator or specific academic staff in the areas of research interest to discuss possible research projects. Further guidelines for thesis formatting, etc., are provided in the Department's Honours manual distributed at the commencement of the course.

The thesis is normally due for submission in the last week of October (for students who commenced at the beginning of the year), or in the first week of May (for students who commenced mid-year). The student's supervisor will provide a mark (7.5% of the total Honours mark) that reflects the student's performance in the laboratory. The examiners will normally include the Honours Coordinator and one other member of the Department's academic staff, and they will provide a mark for the thesis (60% of the total Honours mark). The thesis examiners will also assess a student's oral presentation made after the thesis has been submitted (7.5% of the total Honours mark).

Advanced coursework

Students are required to undertake the compulsory Advanced Research Methods seminar plus one other elective module (each component contributes 12.5% to the total Honours mark):

- *(semester two, compulsory)* Advanced Research Methods: a seminar series run in conjunction with the Department's Journal Club. Students will attend seminars directly after Journal Club meetings and will be led by an academic staff member in discussion, focussing upon related issues of research practice or methodology. Students will also be required to present a paper assigned by their supervisor in these seminars. Assessment will include an exam (10% of the total Honours mark) and a mark for the presentation (2.5% of the total Honours mark);
- Plus one of the following two alternatives:
  - *(semester one or two)* An elective subject, normally chosen from the Department's coursework listings at 300-level or above. Assessment for each subject is specified in the Handbook. This is particularly suitable for students who have not previously studied vision science or optics.
  - *(semester one)* A literature-based assignment not exceeding 4,000 words. The assignment topic, which is to be decided upon in consultation with the student's supervisor and the Honours coordinator, is to be drawn from a different but possibly related area to the research project. The student's supervisor and one other member of the Department's academic staff will assess the assignment.

Further information

Information about departmental research areas is available on the Department's website (<http://www.optometry.unimelb.edu.au/dept/dept.html>).

If you require further information about this honours program please contact:

- The Department of Optometry and Vision Sciences Office
  Tel: +61 3 8344 7012
  Email: admin@optometry.unimelb.edu.au
- Dr Michael Pianta
  Honours Coordinator
  Tel: +61 3 8344 7013
  Email: mpianta@optometry.unimelb.edu.au

Department of Pathology

Pathology honours program

Overview

The honours program offered by the Department of Pathology is designed to provide an environment where students can learn the theoretical and practical aspects of undertaking research about a wide range of disease processes at the cellular and molecular level. The department has a major emphasis in the investigation of neurological disorders including Alzheimer's disease, liver disease, disordered growth and immunopathology. The department is also affiliated with research institutions including the Austin Research Institute, Peter MacCallum Cancer Institute, Royal Melbourne Hospital, St Vincent's Hospital and Royal Children's Hospital. Bachelor of Science honours projects administered through the department are offered at these locations. A wide range of research projects are offered in the areas of regulation of inflammatory processes; immunology; transplantation; and cellular and genetic strategies for control and detection of neoplasia.

Research projects and the advanced coursework offered in pathology enable students to:

- develop an understanding of scientific investigation as part of a research team;
- understand the principles of hypothesis formation;
- design experiments to test hypotheses;
- develop an understanding of, and practical expertise in, complex laboratory techniques;
- use scientific literature, information and protein and DNA sequence databases;
- communicate experimental findings logically and coherently in both oral and written forms;
- become familiar with statistical analyses of experimental data; and
- develop skills in the interpretation and critical analysis of experimental data and scientific literature.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the pathology honours program need to have completed at least 50 points of 300-level pathology subjects, or at least 50 points of 300-level biomedical science subjects.

Honours coordinators

Dr John R Underwood (coordinator)

Dr Margaret Ayers (deputy coordinator)

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in February and finishes in November. A limited mid-year intake will be considered, commencing in July and finishing in May the following year.

Assessment

Hurdle assessment requirements

Students must satisfy the honours degree *Course requirements (p.2)*.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Pathology Research Project subject = 75 percent
- Pathology Advanced Coursework subject = 25 percent

Advanced coursework

The advanced coursework subject includes two three-hour data assessment examinations. These examinations are designed to assess the capacity of students to interpret previously unseen research data which is based on information provided in the undergraduate pathology course, lectures delivered during the honours year, and data published in high quality scientific journals.

Research project

The research project subject includes the completion of a novel research project under the supervision of academic or research staff within, or affiliated with, the Department of Pathology. An introductory seminar outlining the project hypothesis, aims and methods to be used is presented early in the year. A critical review of literature relevant to the research project (3000-5000 words) is to be submitted mid-year. The honours report based on work undertaken in this project is prepared as a thesis and submitted in early November. A defence-of-thesis seminar is to be delivered to the department after submission of the thesis.

The research project subject assessment comprises the following:

- an introductory seminar (five percent of overall honours mark);
- a literature review (10 percent of overall honours mark);
- a project thesis (50 percent of overall honours mark);
- a defence-of-thesis seminar (10 percent of overall honours mark).

Further information

If you require further information about this honours program please contact:

- Dr John R Underwood
  Tel: +61 3 8344 4292
- Dr Margaret Ayers
  Tel: +61 3 8344 5876

Department of Pharmacology

The Department of Pharmacology offers the following honours programs:

- pharmacology honours program (described below);
- combined chemistry and pharmacology honours program (described under *Combined chemistry and pharmacology honours program (p.6)*).

Pharmacology honours program

Overview

The Department of Pharmacology honours program provides a grounding in advanced research pharmacology and tutorial sessions cover topics in analytical pharmacology, cutting edge research techniques in drug design and molecular pharmacology, and in evaluating mechanisms of drug action at the molecular level through to integrated systems. Students will learn how to communicate their science in oral presentations, abstract and thesis writing and how to evaluate a scientific paper and search data bases. Students undergo extensive research training with their own research project acquiring skills in experimental design, technical expertise, thinking, analysis, and communication. It is a concentrated year for the committed student who wishes to test their capacity and ability in research.

Admission requirements

Applicants must satisfy the *Faculty of Science entry requirements (p.1)*, and should generally have satisfactorily completed at least 50 points of Pharmacology subjects at the 300-level.

In some cases points from 516-307 can be counted towards the 50 points; prospective approval from the Head of Department should be obtained.

BBiomedSc students completing the streams Therapeutics or Drug Technology are eligible for entry into Pharmacology honours. Other BBiomedSc students may require an exemption from the requirement for 50 points in Pharmacology subjects from the Head of Department.

Honours coordinator

Dr Tony Hughes

Duration of course and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in February and finishes in November normally. There is no mid-year intake. Part-time candidature may be considered under exceptional circumstances.

Assessment

Hurdle assessment requirements

Students must satisfy the honours degree *Course requirements (p.2)*.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Pharmacology Research Project subject = 62.5 percent
- Pharmacology Advanced Coursework subject = 37.5 percent

Advanced coursework

The advanced coursework subject comprises 29 hours of examinable lectures and 33 hours of tutorials in pharmacology in the first half of the year. There is one theory examination (20 percent), a manuscript evaluation (10 percent) and one seminar on a topic of your choice in pharmacology (7.5 percent). Total: 37.5 percent.

Research project

The research project comprises two research seminars (12.5 percent) and a written thesis of maximum 20 pages excluding figures, tables and references (50 percent). Total: 62.5 percent.

Further information

If you require further information about this honours program please contact:

Dr Tony Hughes
Tel: +61 3 8344 8604

Email: rahughes@unimelb.edu.au

School of Physics

The School of Physics offers the following honours programs:

- physics honours program;
- Combined mathematics and statistics/physics honours program (described under *Combined mathematics and statistics/physics honours program (p.11)*);

The physics program is described below.

Physics honours program

Overview

The honours program in physics is designed to:

- enhance students' knowledge of physics on a broad front and to a professional level, and to allow students to develop their abilities to an international level for all career paths;
- introduce students to current research literature in specialised areas; and
- engage students in their own research by participation in the activities of a research group in the school.

On completion of the physics honours program, students will be able to:

- demonstrate a knowledge and understanding of physics at a superior level;
- demonstrate an understanding of the process and practice of physics research;
- demonstrate individual and collaborative investigative skills;
- think critically, evaluate information and interpret experimental data and/or theoretical results;
- present research results both orally and in the written form; and
- understand and apply laboratory safety procedures.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the physics honours program must have completed the four core 300-level physics subjects:

640-321 Quantum Mechanics (Advanced) [or 640-341 Quantum Mechanics]

640-322 Thermal Physics (Advanced) [or 640-342 Thermal Physics]

640-323 Electrodynamics (Advanced) [or 640-343 Electrodynamics]

640-353 Atomic, Molecular and Solid State Physics

PLUS completion of one of the following additional conditions:

1. 25 points of 300-level physics laboratory work; or
2. 12.5 points of 300-level physics laboratory work (ie. 640-393 or 640-394) and 25 points of 300-level mathematics selected from the following: 620-311 Metric Spaces, 620-312 Linear Analysis, 620-321 Algebra, 620-322 Topology, 620-331 Applied Partial Differential Equations, 620-332 Integral Transforms and Asymptotics, [03]620-341 Dynamical Systems and Chaos and 620-342 Industrial and Applied Mathematics;
3. 12.5 points of 200-level physics laboratory work (ie. 640-299) and 50 points of 300-level mathematics subjects selected from 620-311 Metric Spaces, 620-312 Linear Analysis, 620-321 Algebra, 620-322 Topology, 620-331 Applied Partial Differential Equations, 620-332 Integral Transforms and Asymptotics, [03]620-341 Dynamical Systems and Chaos and 620-342 Industrial and Applied Mathematics.

Note that undertaking the third means of satisfying the entry requirements is recommended for only those students with a strong background and genuine interest in mathematics. All students are urged to consult the School of Physics for advice regarding their 300-level course plans. Students entering honours in any of the above ways may apply to join any of the research groups within the School of Physics.

The Head of the School of Physics has the discretion to waive any of the above departmental requirements in special cases.

Honours coordinator

Associate Professor Chris Chantler

Duration and commencement of course

This particular honours program can be undertaken on a full-time or part-time basis. The program commences in February and finishes in November. There is no mid-year intake.

Assessment

Hurdle assessment requirements

Students must satisfy the honours degree *Course requirements (p.2)*.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Physics Research Project subject = 50 percent
- Physics Advanced Coursework subject = 50 percent

Research project

The research project subject comprises an original, supervised research project (experimental and/or theoretical) in one of the school's current fields: pure and applied nuclear physics (including photonuclear reactions, proton microprobe and microanalysis), gravitation, astrophysics, optics (with light, X-rays, neutrons, atoms), particle physics, atomic physics or solid state physics (including high-resolution electron microscopy and physics of materials).

The assessment is based on a written report (main text of the order of 20 pages) and a 15-minute talk on the research done during the year. The talk will be presented to the School of Physics shortly after the report has been submitted.

Advanced coursework

Students need to complete six advanced coursework subjects. These must include the two subjects: Quantum Mechanics A and Quantum Mechanics B. The four other subjects may be selected from electives offered by the School and subjects from other disciplines (eg. mathematics and statistics) which are approved by the Head of the School of Physics. Elective subjects taught by the School cover topics in:

- quantum field theory;
- quantum and advanced optics;
- particle physics;
- statistical mechanics;
- condensed matter physics;
- general relativity;
- extragalactic astrophysics and cosmology;
- quantum structures; and
- scattering and imaging.

Information about these subjects can be found on the web at <http://www.ph.unimelb.edu.au/student/honours/>

Further information

If you require further information about this honours program please contact:

Associate Professor C T Chantler
Tel: +61 3 8344 5437

Email: c.chantler@physics.unimelb.edu.au

Department of Physiology

Physiology honours program

Overview

The honours program in the Department of Physiology is designed to:

- develop competency in problem solving and experimental research;
- instill competency in:
  - computing and numeracy;
  - skills and techniques relevant to the discipline of physiology;
  - skills in accessing databases and literature;
  - the critical analysis and evaluation of data and events;
- encourage ethical attitudes to:
  - originality of effort;
  - perceptions of science in the community;
  - the use of animals in science; and
- develop the ability to propose hypotheses for testing.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students must have a Faculty Honours Score of at least 70, or an equivalent level of studies.

Acceptance is subject to the availability of suitable topics and supervisors, and placement is competitive. Applicants should discuss their interests with the honours coordinators or Head of Department.

Honours coordinators

Dr Glenn McConell and Prof Mark Hargreaves

Duration and commencement of course

This particular honours program can be undertaken on a full-time or part-time basis. The program commences in February and finishes in November. There is no mid-year intake.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the physiology honours program are required to attend departmental lectures and seminars, and participate in an ethics workshop series.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Physiology Research Project subject = 75 percent
- Physiology Advanced Coursework subject = 25 percent

Advanced coursework

The advanced coursework subject comprises the following:

- literature review;
- statistics assignments;
- ethics assignment; and
- attendance and participation in departmental seminars, ethics seminars and statistics lectures.

The exact weighting of each component of assessment will be announced in the first week of semester.

Research project

The assessed items for the research project subject include:

- a written report (thesis) to be submitted at the end of the program, not exceeding 10 000 words;
- two oral presentations; and
- supervisor's assessment of student's research performance.

The exact weighting of each component of assessment will be announced in the first week of semester.

Further information

If you require further information about this honours program please contact:

- Dr Glenn McConell
  Tel: +61 3 8344 5844
  Email: mcconell@unimelb.edu.au
- Professor Mark Hargreaves
  Tel: +61 3 8344 8007
  Email: m.hargreaves@unimelb.edu.au

Department of Psychology

Psychology honours program

Overview

The Department of Psychology offers an innovative fourth-year program that has been designed to provide students with flexibility and choice in coursework areas, as well as a significant research component.

The objective of the fourth-year program is to help students acquire the knowledge, skills, and scholarship necessary for achieving excellence in psychology. More specifically, the fourth-year program is designed to provide students with the opportunities to learn the intellectual background, ethical principles, and content areas of psychology as a scientific discipline, and to acquire the general skills for:

- critically analysing the existing knowledge about a research topic prior to one's own research (eg. sophisticated conceptual analysis of relevant content area/literature/intervention program etc., critical appraisal of one's own and others' research, generation of productive research questions);
- constructing a research plan (eg. research design, methods of observation) to address one's research question;
- executing one's research plan adequately to obtain data;
- analysing the data so as to address the research question appropriately; and
- discussing the implications of the results coherently within the context of the existing knowledge relevant to the research topic.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the psychology honours program need to have completed an Australian Psychological Society accredited three-year sequence in psychology with at least a weighted average grade of H2B in subjects specified by the Department of Psychology. Please refer to the section *Honours in psychology (p.10)* for more detailed information on entry requirements.

Honours coordinator

Dr Nick Haslam

Duration and commencement of course

This course is normally undertaken on a full-time basis, and is completed within a year. There is, however, provision for part-time enrolment over two years. In this case, students must complete the entire coursework component in the first year and the thesis in the second year. Transfer from full-time enrolment to part-time enrolment will not be permitted after the commencement of the first semester. Students commence studies in February. Mid-year entry is not possible.

Assessment requirements

Students must satisfy the honours degree *Course requirements (p.2)*. Students will be advised of other hurdle requirements for each subject when classes commence.

Components of assessment

Honours comprises a research project and advanced coursework. The relative weight of these components is:

- Advanced Coursework subjects: four at 12.5 points each = 50 percent
- Psychology Research Project subject = 50 percent

Advanced coursework

Please refer to *Honours in psychology (p.10)* which provides information about the program.

Research project

Please refer to *Honours in psychology (p.10)* which provides information about the program.

Department of Zoology

Zoology honours program

Overview

The honours program in the Department of Zoology is offered in two streams: discovery and links.

The streams are equivalent in merit, academic rigour and intellectual content. Both can lead to higher degree study. The emphasis in the discovery stream is on development of the ability to identify research questions and make original discoveries in science. In the links stream, the emphasis is on the ability to use the scientific method in an industrial or applied context. Students select a project offered in one stream or the other in consultation with a department supervisor and remain in that stream for the duration of the course.

Discovery stream

The honours program in the discovery stream in the Department of Zoology is designed to:

- induct students into the processes and practice of research in zoology;
- provide students with personal experience of the philosophy and methods used for identifying research questions and making original discoveries in science;
- enable students to acquire current research skills in specific areas;
- enhance students' understanding of biological sciences across a wide area;
- introduce students to grant writing and evaluation methodology;
- encourage students to develop the ability to think critically and independently, evaluate information and analyse biological data;
- improve oral and written communication skills; and
- participate in the production of research communications and publications.

The program comprises a major, original, supervised research project, and a series of lectures and workshops covering design of experiments in biology, statistical analysis of biological data. It emphasises the development of organisational skills, particularly in scientific writing and oral presentation.

Links stream

The honours program in the links stream in the Department of Zoology is designed to:

- provide an introduction to the processes and practice of research in zoology;
- provide students with personal experience of the application of the scientific method in an industrial or applied context;
- enable students to extend their scientific skills in specific areas;
- encourage students to develop the ability to think critically and independently;
- develop the ability of students to approach externally generated biological data sets and to systematise and evaluate them;
- enhance students' understanding applications of biological sciences across a wide area;
- improve oral and written communication skills;

- develop the ability of students to write clear and concise reports for industry, government agencies and other users of biological information and technology; and
- develop an understanding of how biological training is utilised by industry, government agencies and other users of biological information and technology and to develop links with such bodies.

The program comprises a minor project linked to, co-supervised by, or designed to be of practical value to industry, a government agency or other user of biological information and technology, workshops on handling and evaluating biological data sets, a series of lectures and workshops covering design of experiments in biology, and a statistical analysis of biological data. It emphasises oral and written communication across the boundaries between the biological sciences and other spheres of activity such as business or government and the ability to operate in group and team environments and to meet deadlines.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the zoology honours program need to complete at least 50 points of 300-level zoology, or relevant 300-level subjects in other biological disciplines. BBiomedSc or environmental science students wishing to enter the zoology honours streams need to complete at least 25 points of 300-level zoology subjects in addition to BBiomedSc or environmental science core 300-level subjects and other 300-level subjects selected according to the regulations for their bachelors degree. In special circumstances, the Head of Department may waive these prerequisites. Admission is also subject to the availability of suitable topics and supervisors, and placement is competitive.

Honours coordinators

Dr G M Coulson

Dr L Parry

Duration and commencement of course

Subject to the availability of projects, both streams of the honours program in the Department of Zoology can be undertaken on a full-time or part-time basis.

The course involves the equivalent of two semesters of full-time study and, subject to negotiation with the supervisor, may be commenced in Semester 1 or Semester 2. Students are required to be available for the first meeting of their semester group which is normally held in the first week of semester.

Assessment: Discovery stream

Hurdle assessment requirements

Students enrolled in honours need to obtain a minimum of 65% in the research project subject and advanced coursework subject of their course.

Some research project subjects involve the use of animals in experiments. Students should ascertain which projects require such experimentation as exemption is not possible where it is essential to the project.

Components of assessment

The discovery stream of honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Zoology (Discovery) Research Project subject = 75 percent
- Zoology (Discovery) Advanced Coursework subject = 25 cent

Advanced coursework

The advanced coursework subject entails the following work.

Hurdle requirements that must be completed satisfactorily but do not contribute directly to the assessment include:

- attendance at designated lectures;
- participation in a series of honours workshops;
- development of and participation in a Discovery Day presentation in which the student's or research group's science is communicated to the public; and
- participation in an experimental design and statistics workshop.

Requirements that contribute to assessment:

- a literature review (10 percent of the total honours mark);
- a second written assignment (10 percent of the total honours mark); and
- a formal seminar presenting original results (five percent of the total honours mark).

Research project

The research project subject entails the work noted below.

Hurdle requirements that must be completed satistfactorily but do not contribute directly to the assessment include:

- preparation of a grant proposal justifying, costing and explaining the methodology for carrying out the honours research project;
- participation in peer review panels to evaluate and allocate limited resources to the grant proposals;
- a seminar presentation outlining the research proposal; and
- participation in workshops on the preparation and presentation of scientific seminars and papers.

Requirements that contribute to assessment:

- a written thesis not exceeding 10 000 words submitted at the end of the program (75 percent of the total honours mark); and
- students will be invited to discuss their report with an examining committee, which may take the discussion into account in their assessment.

Assessment: Links stream

Hurdle assessment requirements

Students enrolled in honours need to obtain a minimum of 65 percent in the research project subject and advanced coursework subject of their course.

Some research project subjects involve the use of animals in experiments. Students should ascertain which projects require such experimentation as exemption is not possible where it is essential to the project.

Components of assessment

The links stream of honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Zoology (Links) Research Project subject = 50 percent
- Zoology (Links) Advanced Coursework subject = 50 percent

Advanced coursework

The advanced coursework subject entails the following work.

Hurdle requirements that must be completed satisfactorily but do not contribute directly to assessment, include:

- attendance at designated lectures;
- participation in a series of honours workshops;
- development of and participation in a Discovery Day presentation in which the linkage project is communicated to the public;
- participation in workshops on the analysis and reporting of complex data sets and an assignment;
- participation in workshops on report writing; and
- participation in workshops led by representatives from industry, government agencies or other users of biological information on various aspects of their activities and policy.

Requirements that contribute to assessment:

- a review of a body of literature associated with the linked project and a report of its implications for the industry, government agency or other user of biological information (15 percent of the total honours mark);
- participation in an experimental design and statistics course and performance on a designated analytical problem (15 percent of the total honours mark);
- preparation of a formal project brief for the industry partner (15 percent of the total honours mark); and
- a formal oral presentation (to the industry partner) communicating the outcomes of the linked project (five percent of the total honours mark).

Reseach project

The research project subject entails the following work.

Hurdle requirements that must be completed satistfactorily but do not contribute directly to the assessment include:

- a written evaluation of part or all of the designated linked project; and
- participation in an oral presentation justifying and explaining the methodology for carrying out the designated linked project.

Requirements that contribute to assessment:

- a written report or individual contribution to a group report not exceeding 7000 words, including an executive summary, submitted at the end of the program (50 percent of the total honours mark); and
- students will be invited to discuss their report with an examining committee, which may take the discussion into account in their assessment.

Further information

If you require further information about this honours program please contact:

- Dr Graeme Coulson
  Tel: +61 3 8344 4857
  Email: gcoulson@unimelb.edu.au
- Dr Laura Parry
  Tel: +61 3 8344 5341
  Email: ljparry@unimelb.edu.au

Department of Clinical and Biomedical Sciences (Barwon Health)

Department of Clinical and Biomedical Sciences (Barwon Health) honours program

Overview

The honours program in the Department of Clinical and Biomedical Sciences (Barwon Health) involves advanced coursework and a research project.

The course aims to provide advanced training in biomedical research in an active multidisciplinary research environment. Skills will be obtained in experimental design, modern laboratory techniques, data analysis and interpretation. Particular attention will also be given to the development of written and presentation skills.

Additional key objectives are to complete a research project under the guidance of a nominated supervisor and completion of advanced coursework which will relate to theoretical and technical aspects of the project's research field.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the honours program in the Department of Clinical and Biomedical Sciences need to have completed 300-level science subjects relevant to biomedical research (eg. anatomy, biochemistry and molecular biology, biostatistics, genetics, microbiology and immunology, pathology, pharmacology, physiology, psychology, zoology).

Honours coordinator

Dr Seetal Dodd

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program normally commences in February and finishes in November. A mid-year intake may be considered.

Assessment

Components of assessment

Honours comprises a research project and an advanced coursework subject. These subjects with their relative ratings are as follows:

- Clinical and Biomedical Sciences Research Project subject = 75 percent
- Clinical and Biomedical Sciences Advanced Coursework subject = 25 percent

For information about the weighting of components of assessment within the research project and the advanced coursework, please contact the department.

Research project

An original research project will be carried out, supervised by an expert in the field of biomedical research. A minor thesis documenting the research will be submitted for examination by three independent internal experts.

Two department seminars will be presented: one as an introduction to the project and the other as a summary of project outcomes associated with the thesis presentation. Internal assessment will be conducted by senior researchers.

Advanced coursework

This component of the program comprises:

- a six-week statistics course designed to develop skills pertinent to data analysis,
- a seminar series addressing broad aspects of medical research and specific areas of research undertaken at the Geelong Hospital, and
- a series of workshops designed to develop academic communication skills.

Components of advanced coursework will be assessed by written examination.

Further information

If you require further information about this honours program please contact:

Dr Seetal Dodd
Tel: +61 3 5226 7666

Email: seetald@barwonhealth.org.au

School of Dental Science

Oral biology honours program

Overview

We offer research within a multidisciplinary environment. Hence we welcome students from a variety of backgrounds including chemistry, biochemistry, biophysics, molecular biology, microbiology, immunology, genetics and anatomy. The research component offers students the opportunity to use state-of-the-art techniques in protein chemistry, molecular biology, microbiology, immunobiology, mass spectrometry, NMR spectroscopy, molecular modelling, skeletal biology, histomorphometry, aging of the skeleton and image analysis.

Web site: <http://www.dent.unimelb.edu.au/dsweb/postgrad_programs/honours.html>.

Admission requirements

Students must satisfy the *Faculty of Science entry requirements (p.1)*. Information about the departmental entry requirements can be obtained from the department.

Honours coordinators

Dr Laila Huq (academic)

Ms Kim Hanson (administrative)

Duration and commencement of course

This particular honours program can be undertaken on a full-time or part-time basis. The program commences in February and finishes in November.

Assessment

Hurdle assessment requirements

Students must satisfy the honours degree *Course requirements (p.2)*.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Dental Science: Oral Biology Research Project subject = 75 percent
- Dental Science: Oral Biology Advanced Coursework subject = 25 percent

Research project

Students conduct an original research project supervised by a member of staff in one of the four research units within the School of Dental Science.

Current areas of major research activity with the school include the molecular biology of oral diseases and microbial pathogens, the cell biology and development of oral tissues, dental epidemiology, and the evaluation and development of novel dental restorative materials.

Students prepare a report (thesis) at the end of the period not exceeding 10,000 words

Advanced coursework

Students undertake:

- lectures and seminars on selected topics of oral biology including oral molecular biology, oral microbiology, growth and development, oral biochemistry, biomaterials and biostatistics;
- lectures or workshops on the critical analysis of a scientific paper, library resources, research design, and writing and communication skills;
- participation in the school and research unit's research seminars;
- an oral presentation of the aims and methods of the research project during the period, and a seminar to the school on the research project at the end of the period;
- an essay of not more than 2000 words on a selected topic of dental science;
- a written assignment (scientific critique of a journal article) of not more than 2000 words; and
- written assignments based on the lecture series.

Assessment:

- attendance at no less than 75 percent of lectures, workshops and seminars;
- oral presentation of aims and methods of research project;
- essay;
- written assignments; and
- seminar presentation of 15 minutes at the end of the research period.

Further information

If you require further information about this honours program please contact:

- Dr Laila Huq
  Tel: +61 3 9341 0821
  Email: l.huq@dent.unimelb.edu.au
- Ms Kim Hanson
  Tel: +61 3 9341 1507
  Email: khanson@unimelb.edu.au

Department of Medical Biology (Walter and Eliza Hall Institute)

Department of Medical Biology honours program

Overview

The Department of Medical Biology honours program is designed to:

- enhance students' knowledge of medical biology in the areas of cancer and haematology, the molecular genetics of cancer, immunology, autoimmunity and transplantation, infectious diseases and immunity, development and neurobiology, or genetics and bioinformatics;
- introduce students to the current literature in specialised areas; and
- introduce students to scientific writing and evaluation of scientific literature.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the medical biology honours program need to obtain high H2A grades or better in 300-level science subjects relevant to medical research.

Honours coordinator

Professor Doug Hilton

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in February and finishes in November. There is no mid-year intake.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the medical biology honours program must:

- submit a literature review on the research project in June;
- submit an essay related to the postgraduate student lecture series in August;
- attend postgraduate student lectures and the formal weekly institute seminar;
- attend division/laboratory meetings;
- deliver a presentation to the division/laboratory.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Medical Biology (WEHI) Research Project subject = 75 percent
- Medical Biology (WEHI) Advanced Coursework subject = 25 percent

Advanced coursework

The advanced coursework subject comprises:

- the Department of Medical Biology postgraduate student lecture series;
- division and specialist lectures;
- division/laboratory journal clubs;
- an essay of between 1000-2000 words related to the postgraduate student lecture series.

Research project

The research project subject comprises:

- a written report (thesis), of up to 10,000 words, including literature review (50 percent of total honours mark). This is due in November;
- literature review (7.5 percent of total honours mark) which forms part of the thesis but is marked separately;
- an oral presentation on the research project at the end of the year (10 percent of total honours mark);
- an assessment of laboratory skills (7.5 percent of total honours mark).

Further information

If you require further information about this honours program please contact:

- Mr Frank Draffen, (Academic Administration)
  Tel: +61 3 9345 2555
  Email: draffen@wehi.edu.au
- Professor Doug Hilton
  Email: hilton@wehi.edu.au

Department of Medicine (Austin Health/ Northern Health)

Department of Medicine (Austin Health/Northern Health) honours program

Overview

This honours program in the Department of Medicine (Austin Health/Northern Health) is designed to:

- provide an introduction to the process and practice of biomedical research;
- encourage a broad understanding of biomedical science in addition to the acquisition of specific research skills; and
- ensure a critical understanding of experimental scientific information in the literature and data.

Admission requirements

Students need to satisfy the *Faculty of Science entry requirements (p.1)*.

Honours coordinators

Dr Rachel Davey (academic)

Ms Joan Lambiase (administrative)

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in February and finishes in November. There is no mid-year intake.

Assessment

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Department of Medicine (AH/NH) Research Project subject = 75 percent
- Department of Medicine (AH/NH) Advanced Coursework subject = 25 percent

Research project

This subject aims to provide opportunities for students to gain an understanding in, and extend the practice of biomedical research. Students are required to complete a research project under the guidance of a supervisor. Students are required to produce a written thesis, and give an oral seminar presentation that discusses planning of experiments, the methods used and analysis of results obtained during the course of the research project.

Assessment consists of a written thesis, a departmental seminar presentation and a supervisor/coordinator report.

Advanced coursework

This subject aims to extend the student's education and intellectual development in a field of biomedical science not pertaining to the subject of their research project. Students are required to attend Departmental 'Research In Progress' Seminars and participate in a Continuing Education program that consists of a series of lectures and workshops that cover a wide range of topics.

Assessment consists of a literature review in the area of the project under study, a written assignment based on a nominated advanced area of biomedical research and an abstract and poster presentation describing the findings of the research project.

For information about the weighting of components of assessment within the research project subject and the advanced coursework subject, please contact the department.

Further information

If you require further information about this honours program please contact:

- Ms Joan Lambiase
  Tel: +61 3 9496 3598
  Email: lambiase@unimelb.edu.au
- Dr Rachel Davey
  Tel: +61 3 9496 5507

Department of Medicine (Royal Melbourne Hospital and Western Hospital)

Department of Medicine (Royal Melbourne Hospital and Western Hospital) honours program

Overview

The honours program in the Department of Medicine (Royal Melbourne Hospital and Western Hospital) involves advanced coursework and a research project.

The advanced coursework subject consists of a lecture/seminar series held during March, April and May, which aims to give a broad exposure to the various approaches and methods used to address questions of biomedical importance.

The research project subject requires students to undertake an original supervised project aimed at gaining first-hand experience in designing, executing and presenting original biomedical research.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the Department of Medicine (Royal Melbourne Hospital and Western Hospital) honours program need to have completed 300-level science subjects relevant to biomedical research (eg. anatomy, biochemistry and molecular biology, genetics, microbiology and immunology, pathology, pharmacology, physiology, zoology).

Honours coordinator

Professor Gary Anderson (academic)

Mrs Heather Saunders (administrative)

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in February and finishes in November. There is no mid-year intake.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the Department of Medicine (Royal Melbourne Hospital and Western Hospital) honours program must also give an oral critique of two journal articles and two presentations about the research project at research group meetings, and submit a literature review on the research project by the end of July.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Department of Medicine (RMH) Research Project subject = 75 percent
- Department of Medicine (RMH) Advanced Coursework subject = 25 percent

Advanced coursework

The advanced coursework subject is assessed by a three-hour short answer examination based upon the lecture series. This examination is held in June.

Research project

The research project subject comprises the following:

- a thesis (research report) of up to 12,000 words to be submitted early November (60 percent of overall honours mark);
- an oral presentation of the research project (15 minutes plus a discussion of up to 15 minutes) following submission of thesis (15 percent of overall honours mark).

Further information

If you require further information about this honours program please contact:

- Professor Gary Anderson
  Tel: +61 3 8344 8602
- Mrs Heather Saunders
  Tel: +61 3 8344 5479

Department of Medicine (St Vincent's Hospital)

Department of Medicine (St Vincent's Hospital) honours program

Overview

The honours program in the Department of Medicine (St Vincent's Hospital) involves advanced coursework and a research project.

The course aims to provide advanced training in biomedical research in an active multidisciplinary research environment. Skills will be obtained in experimental design, modern laboratory techniques, data analysis and interpretation. Particular attention will also be given to the development of written and presentation skills.

Additional key objectives are to complete a research project under the guidance of a nominated supervisor and completion of advanced coursework which will relate to theoretical and technical aspects of the project's research field.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the Department of Medicine (St Vincent's Hospital) honours program need to have completed 300-level science subjects relevant to biomedical research (eg. anatomy, biochemistry and molecular biology, genetics, microbiology and immunology, pathology, pharmacology, physiology, zoology).

Honours coordinators

Associate Professor Darren Kelly

Dr Sue Rogers

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in February and finishes in November. There is no mid-year intake.

Assessment

Components of assessment

Honours comprises a research project and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Department of Medicine (St Vincent's Hospital) Research Project subject = 75 percent
- Department of Medicine (St Vincent's Hospital) Advanced Coursework subject = 25 percent

For information about the weighting of components of assessment within the research project subject and the advanced coursework subject, please contact the department.

Research project

An original research project will be carried out supervised by an expert in the field of biomedical research. A minor thesis documenting the research will be submitted for examination by two independent internal experts.

Assessment will consist of:

- a 10,000 word thesis (55 percent of the total assessment);
- a literature review and project plan (15 percent of the total assessment); and
- a research grant (five percent of the total assessment).

Advanced coursework

Attendance at a minimum of 20 lectures selected to address broad aspects of the research project being undertaken. A critical review of specified topics covered by the lectures will be submitted for examination.

Assessment will consist of:

- oral presentations: a 10-minute literature review and project plan, a 15-minute Journal Club presentation, and a final 15-minute presentation (10 percent of the total assessment);
- biomedical statistics (7.5 percent of the total assessment); and
- supervisor assessment and laboratory competence (7.5 percent of the total assessment).

Further information

If you require information about this honours program please contact:

Associate Professor Darren Kelly / Dr Sue Rogers
Tel: +61 3 9288 3206

Email: enquiries@medstv.unimelb.edu.au

Or visit the Department's Honours website: <http://www.medstv.unimelb.edu.au/Prospective/Honours/>

Department of Otolaryngology

Hearing sciences honours program

Overview

The honours program in otolaryngology aims to provide students with the skills required to carry out research related to the function of the auditory system. In achieving this objective, students should develop abilities to critically analyse research literature, formulate research plans based on hypotheses and

statistical requirements, present and defend research results and write a coherent research thesis.

Admission requirements

In addition to satisfying the Faculty of Science entry requirements, students should have completed an undergraduate degree in a relevant area including, but not restricted to, anatomy, biochemistry, genetics, histology, physiology, psychology, physics or mathematics.

Honours coordinator

Dr Gary Rance

Duration and commencement of course

The honours program can only be undertaken on a full-time basis, which commences in February and finishes in November. There is no mid-year intake.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the otolaryngology honours program are required to attend weekly departmental seminars.

Components of assessment

Honours comprises an advanced coursework subject and a research project subject. The relative weightings of these subjects are as follows:

- Otolaryngology: Hearing Sciences Research Project subject = 75 percent
- Otolaryngology: Hearing Sciences Advanced Coursework subject = 25 percent

Advanced coursework

The advanced coursework subject comprises two subjects: Research Methods in Communication Science, which will be examined by written examination and oral presentation; and Introduction to Hearing Science which will be examined by written examination. The latter subject will have components chosen to be relevant to the student's research project area, and may include anatomy and physiology, perception of sound and speech, acoustics or other relevent topics (25 percent).

Research project

The research project subject comprises completion of a supervised research project, for which an oral presentation of the aims and methods is to be given during the year and an oral presentation to the department on the results of this project to be given near the completion of the project (12.5 percent). A written report (thesis) is required at the completion of the project (62.5 percent).

Further information

If further information is required about this honours program please contact:

Dr Gary Rance
Tel: +61 3 9929 8745

Email: grance@unimelb.edu.au

Department of Paediatrics

Department of Paediatrics honours program

Overview

The honours program in the Department of Paediatrics focuses on the molecular biology of human development and disease. The program, which consists of advanced lectures and supervised scientific biomedical research, is designed to:

- provide an introduction to biomedical research;
- foster the development of research skills and allow students to develop a line of research through hypothesis testing, experimental design and practical experimentation;
- develop oral and written communication skills;
- encourage the development of independent thinking and critical analysis of the scientific literature; and
- enhance students' understanding of the broader areas of contemporary biomedical science.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the paediatrics honours program need to have successfully completed at least 50 points at 300-level science subjects relevant to biomedical or biological research chosen from biochemistry and molecular biology, genetics or microbiology and immunology.

Acceptance is subject to availability of suitable topics and supervisors, and placement is competitive. Students should discuss their interests with the honours coordinator.

Honours coordinator

A/Prof Amanda Fosang

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in February and finishes in November. There is no mid-year intake.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students enrolled in the paediatrics honours program must:

- attend research group meetings and relevant departmental seminars;
- attend at least 80 percent of lectures.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Department of Paediatrics (RCH) Research Project subject = 75 percent
- Department of Paediatrics (RCH) Advanced Coursework subject = 25 percent

Advanced coursework

The advanced coursework subject comprises advanced lectures and seminars on recent concepts and techniques in the molecular biology of human growth, development and disease.

Students will be assessed by the following methods:

- a written three-hour examination on the content of the advanced lecture course (20 percent of the overall honours result);
- a written, individualised bioinformatics assignment (5 percent of the overall honours result).

Research project

The research project subject comprises completion of an original, supervised research project and the submission of a literature review (up to 1500 words) relating to the research project.

Students will be assessed by the following methods:

- a written report (thesis) of 10,000 to 12,000 words submitted at the end of the year (60 percent of the overall honours result);
- two seminar presentations on the research project (10 percent of the overall honours result);
- supervisor's report on the student's overall research ability (five percent of the overall honours result).

Further information

If you require further information about the honours program please contact:

A/Prof Amanda Fosang
Tel: +61 3 9345-6628

Email: amanda.fosang@mcri.edu.au

School of Physiotherapy

Movement science honours program

Overview

This honours program provides science students with opportunities to undertake research projects that expose them to the importance of conservative strategies to improve health, particularly in the musculoskeletal and neurological areas.

Admission requirements

Applicants must satisfy the *Faculty of Science entry requirements (p.1)*.

Honours coordinator

Professor Kim Bennell

Duration and commencment of course

This particular honours program can only be undertaken on a full-time basis. The program commences in March and concludes in November. There is no mid-year intake.

Estimated total time commitment

A minimum of 48 hours per week. Most students will spend more than the minimum time on their project in their commitment to perform at the highest possible standard in the Honours year.

Assessment

Hurdle assessment requirements

In addition to the honours degree *Course requirements (p.2)*, students must attend at least 90% of the student subject program.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Movement Science Research Project subject = 75 percent
- Movement Science Advanced Coursework subject = 25 percent

Research project

A research project will be conducted under the supervision of research staff at the School of Physiotherapy. Students will undertake structured and independent learning appropriate to the project and will learn written and oral methods of research dissemination.

Formal assessment is as follows: One 30 minute oral presentation (20%) due mid semester 2, one 10,000-word thesis (70%) due at the end of semester 2 and supervisor's assessment of performance (10%).

Advanced coursework

Structured and independent learning aiming to extend student's education in the fields of health, exercise, sports medicine, neuroscience or rehabilitation research and to enhance critical analysis skills. This subject will cover basic concepts of research methodology, design, and statistical analysis used in research. It will also comprise advanced learning in relation to specific relevant topics. Students will be required to locate and utilise information available in the scientific and medical literature. As part of this subject, students will attend (i) a 10-15 hour SPSS module to develop skills in using a statistical analysis computer package, (ii) an endnote workshop, (iii) weekly journal club and research seminars (iv) a tutorial program (approximately 10 x 1 hr sessions).

Formal assessment is as follows: One 30 minute oral presentation (20%) held mid semester 1, one written assignment of 2000 words (40%) due at the end of semester 1 and one 2 hour written examination (40%) held mid-semester 2.

Further information

If you require further information about this honours program please contact:

Professor Kim Bennell
Tel: +61 3 8344 4135

Email: k.bennell@unimelb.edu.au

Department of Psychiatry (Austin Health)

Department of Psychiatry (Austin Health) honours program

Overview

The honours program at the Department of Psychiatry (Austin Hospital) focuses on psychopharmacology, and involves advanced coursework and a research project. The advanced coursework subject consists of a lecture series held during March, April and May which is designed to provide the student with an understanding of a range of biological concepts central to the understanding and treatment of various psychiatric disorders. The research project subject requires the students to undertake an original supervised project providing the student with valuable research skills.

Admission requirements

In addition to satisfying the *Faculty of Science entry requirements (p.1)*, students interested in entering the psychiatry honours program need to obtain a high H2A grade or better in 300-level science subjects relevant to medical research. Subjects from the following departments are deemed suitable: Bio-Chemistry and Molecular Biology, Pharmacology, Chemistry, Physiology and Psychology. Contact one of the honours coordinators for further guidance.

Honours coordinators

Associate Professor Trevor Norman

Dr Caroline McGrath

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in February and finishes in November. There is no mid-year intake.

Assessment

Hurdle assessment requirements

Students must satisfy the honours degree *Course requirements (p.2)*.

Components of assessment

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Department of Psychiatry (AH) Advanced Coursework subject = 25 percent
- Department of Psychiatry (AH) Research Project subject = 75 percent

Advanced coursework

The advanced coursework subject comprises the following:

- short-answer examination based on lecture series (10 percent of honours mark) to be held in June;
- an essay of up to 5000 words based on a specific area (15 percent of honours mark) (submitted in August).

Research project

The assessed items for the research project subject include:

- a thesis (research report) of up to 10,000 words to be submitted early November (40 percent of total honours mark);
- literature review (20 percent of honours mark) which forms part of the thesis but is marked separately (to be submitted in May);
- an oral presentation of the research project (15 mins followed by 10 mins of question time) (10 percent of honours mark); and
- a 30-minute oral examination in defence of the thesis (five percent of honours mark).

Further information

If you require further information about this honours program please contact:

- Associate Professor Trevor Norman
  Tel: +61 3 9496 5511
- Dr Caroline McGrath
  Tel: +61 3 9496 5694

Department of Surgery (Austin Health/ Northern Health)

Department of Surgery (Austin Health/Northern Health) honours program

Overview

This honours program provides a clinical environment in a surgical department for advanced coursework and research training of BSc (Honours) students. The Department of Surgery is in a unique position to support research projects in liver transplantation and hepatobiliary (HPB) research. These projects provide opportunities to link established pre-clinical research with surgical clinical research. There is an emphasis on microvascular techniques, which are used at both the basic science and clinical level. The department also allows students to be involved in new forms of treatment in cancer research including hyperbaric oxygen therapy and laser therapy. A key objective is to complete a research project under the guidance of a nominated supervisor and completion of advanced coursework which will relate to theoretical and technical aspects of the biomedical research.

Admission requirements

Students need to satisfy the Faculty of Science entry requirements.

Honours coordinators

Professor Christopher Christophi

Mrs Cathy Malcontenti-Wilson

Duration and commencement of course

This particular honours program can only be undertaken on a full-time basis. The program commences in March and concludes in November. There is no mid-year intake.

Estimated total time commitment

A minimum of 45 hours per week. Most students will spend more than the minimum time on their project in their commitment to perform at the highest possible standard in the Honours year.

Assessment

Components of assessement

Honours comprises a research project subject and an advanced coursework subject. These subjects with their relative weightings are as follows:

- Department of Surgery (AH/NH) Research Project subject = 75 percent
- Department of Surgery (AH/NH) Advanced Coursework subject = 25 percent

Advanced coursework

Students are required to attend departmental seminars including Research in Progress seminars and participate in a Continuing Education program consisting of lecture series and workshops covering a wide area of biomedical science. Components of this subject are distributed throughout the year and students are required to attend each component. Formal assessment is as follows:

- literature review in the area of project under study (maximum 10 pages) 40%;

- a 3000-word written assignment on an advanced area of biomedical research 40%;
- a research seminar abstract of the oral presentation (maximum one A4 page text) 20%.

Research project

The honours program aims to provide opportunities for students to gain an understanding in and extend the practice of biomedical research. Students are expected to complete a written thesis and give an oral presentation, discussing planning of experiments, methods used and analysis of results obtained during the Honours year. Formal assessment is as follows:

- a written thesis (maximum 40 text pages) 80%;
- seminar presentation 7%;
- supervisor's report 13%.

Further information

If you require further information about this honours program please contact:

- Mrs Cathy Malcontenti-Wilson
  Tel: +61 3 9496 5492
  Email: c.malcontenti-wilson@unimelb.edu.au
- Professor Christopher Christophi
  Tel: +61 3 9496 5466
  Email: surgery-armc@unimelb.edu.au