



# College of Science

## 2008 Honours Handbook

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## 1. Introduction to Honours

Honours programs at the ANU take one academic year (full time). Honours aims to build on the knowledge and skills that you have learned in your undergraduate career. In doing so, Honours continues and rounds out a process begun in the study of your chosen field at an undergraduate level. However, Honours is much more than this. It is a time of social, professional and intellectual development in which students become better acquainted with some of the central features of academic life: seminars, workshops, presentation of work to colleagues, research design and communication of scientific findings.

Accordingly, students are generally given much more autonomy and responsibility for their own intellectual development during this year than previously. All Honours degrees at ANU are based on the model of developing your skills, under supervision, as an independent researcher and innovative thinker. Honours will also test your organisational skills; in particular, your ability to prepare, define, plan, carry out and report on research. As an Honours student in the College of Science, you will undertake your own empirical research on a topic you choose to study and your research should involve the creation of 'new' information and knowledge in your chosen field. You will prepare a thesis that presents the background for and describes and explains your research findings. Some Honours programs also involve a coursework component.

Therefore, Honours offers the opportunity to develop a level of learning and a suite of skills that add significant value to those gained during a Pass (Bachelor) degree. Consistent with this, the ANU Undergraduate Handbook states that completion of an Honours Degree attests to the following achievements:

- Greater depth and breadth of knowledge within the chosen field of study;
- Development of an independent approach to and ability in research and in academic communication;
- and**
- A superior academic ability, as judged by performance in second and third year units and in the Honours year.

Your year as an Honours student will probably be the most testing, but also the most rewarding, of your undergraduate career.

## 2. Application and Enrolment Information

A first step in gaining entry to Honours study in the College is to meet the entry requirements. The main requirement is a credit average in your undergraduate degree (in practice, higher marks may be required as Honours entry can be competitive). Some areas also require that you complete certain subjects or courses in your Undergraduate degree.

Enrolment for Honours involves both applying for admission to the School or Department and, once you have been accepted, taking the formal step of enrolling with the University. The College in which you are taking your degree has the authority to finalise your enrolment, subject to acceptance by the Head of School/Department. The timing of steps is set out in the *Honours Timeline* section of this Handbook. Current ANU Students need to complete the College of Science *Application for Current ANU Students for Admission to Honours Program* form available at <http://cos.anu.edu.au/Honours/index.php> and submit it to the Honours Convenor in the School or Department you intend to undertake the program. Students who completed their Undergraduate Degree at a different University, or ANU Graduates who completed prior to the current Semester without taking leave with need to complete the *Undergraduate Application for Local Students* or *Undergraduate Application for International Students* available at <http://www.anu.edu.au/sas/forms/index.php>.

It is advised (and considered essential in some areas) that you prepare for the particular topic you choose to study. You may consult Conveners and potential supervisors about the suitability of your courses and your research interests as you proceed towards Honours. When talking about your research interests with potential supervisors, you may wish to discuss:

- Their research interests and research plans for the coming year;
- Your own interests and ideas;
- Their preferred supervisory style (How often do they like to meet? Exactly how independent do they expect a student to be? Do they already have a specific project in mind?);
- What they expect of an Honours student.

Your application will be considered together with others, and you will be advised of the outcome as soon as possible. This will not be before outstanding examination results are available in late November or early December.

### **3. Scholarships**

Information regarding Scholarships open to Honours students can be found on the ANU Scholarships website <http://www.anu.edu.au/sas/scholarships/honours.php>. Additional scholarships may be offered by individual Schools/Departments. Please contact the relevant Honours Convenor for more information.

### **4. Expectations of Students and Supervisors**

As an Honours student, you are at a stage intermediate between undergraduate and graduate work. Formally, the University classifies you as an undergraduate. However, your work is more like that of a graduate student. In practice, Honours combines the best of both worlds. Honours is about training you as an independent researcher and you will experience some of the independence and self-direction required of graduate research students, but you also have close contact and direction from your supervisor(s).

All Honours students have a supervisor (in some areas, it may be possible for a student to be jointly supervised by two people). The relationship between supervisor and student involves obligations on the part of both parties. Your supervisor will assist you with advice, guidance and criticism and help you to achieve your personal academic goals. The supervisor is there to help you choose and design the research project, guide the research in a practical and productive way, and advise you on writing the best thesis of which you are capable. At the same time, your supervisor can only guide your efforts, and then only if you are receptive to advice. You must take the responsibility for the final results of your work.

We expect that you will:

- Maintain a close dialogue and constructive working relationship with your supervisor(s);
- Plan your research program and budget with your supervisor(s);
- Consider advice seriously. If advice is not taken, the supervisor should be informed and given the reasons for the decision;
- Consult regularly with your supervisor. Students should prepare in advance for consultations, by determining the help they require and the areas in which advice would be useful;
- Interact with other students and staff in accordance with the relevant University policies (e.g. Equity and Diversity Policies);
- Contribute to the academic life of the School/Department and Graduate Program, by attending all relevant seminars;
- Treat School and University facilities and resources with respect and care, and follow Occupational Health and Safety requirements;

- Observe the relevant University and School/Department rules and regulations (see Graduate Program and School/Department Handbooks);
- Complete the formal requirements for Honours, as described in this handbook;
- Complete, to the best of your ability, a well written, thorough and competent bound thesis of the highest standard.

Early in the year you need to establish an understanding of your skills and ability to carry out your research. Your supervisor is crucial in this process. In the early series of meetings with your supervisor you need to establish:

- An appreciation of your skills and competency for the project you propose to study (e.g. IT literacy and fluency, data analysis, your oral and written communication skills);
- Your work schedule and meeting times, including any times of absence from campus for you and supervisors;
- Resources and technical support available to you for the project;
- How to gain clearance of study with ethics committees;
- 'Terms of engagement'. Your supervisor(s), even if they already know you, will be developing a deeper understanding of who you are through the close relationships that develop in the course of a research project. You will also need to talk about how you will organise your year and arrange a schedule for your research (note that extensions *cannot* be granted for failure to plan in this way).

Throughout the year, your supervisor will expect to see drafts of your work as the project progresses. It is your responsibility to provide work to your supervisor(s) at mutually convenient times so that full consideration can be given in time for submission by the due date. In some Schools and Departments, there is a limit on how many times a supervisor can read sections of a student's thesis.

Students who encounter difficulties should first attempt to resolve them with their supervisor. If this does not produce satisfactory results, they should then consult the Honours Convener and then, if the matter remains unresolved, the Head of School/Department.

Your supervisor also has responsibilities. These are to:

- Assist you in selecting and defining the scope of a suitable thesis topic or problem; assist you in devising a schedule for the year's thesis work;
- Guide you in the selection and application of appropriate data collection and analysis procedures and advise on the solution of any difficulties that arise;
- Advise on matters of thesis content, organisation and writing, including the timely provision of comments, written and oral, on drafts or portions of the thesis;
- Meet frequently with you to discuss and evaluate each stage of the thesis project.
- Monitor your progress and advise you when progress is unsatisfactory;
- Assist you in gaining clearance from the ethics committee (see *Ethics in Research* below).

## 5. Ethics in Research

At the ANU, two research Ethics Committees oversee research on humans and other animals – the Human Research Ethics Committee and the Animal Experimentation Ethics Committee. All research projects involving humans and other animals must be approved by the relevant ANU Ethics Committee and data gathering cannot begin until approval is given.

Before undertaking research on humans or animals you must be familiar with the National Statement on Ethical Conduct in Research Involving Humans and the NHMRC Australian Code of Practice for the Care and Use of Animals for Scientific Purposes available from the Office of Research Integrity website [http://www.anu.edu.au/ro/ORI/ORI\\_index.php](http://www.anu.edu.au/ro/ORI/ORI_index.php). Application forms for ethics approval for work on humans and animals are also available from this site.

Research involving recombinant DNA must also be approved by the Office of the Gene Technology Regulator (OGTR) and the Institutional Biosafety Committee (IBC). Further information and application forms are available from <http://www.anu.edu.au/ro/ORI/dna.php>. You must use the latest version of all forms.

You will need to know quite a bit about your research project before you can fill in an ethics application form. However, you should aim to get your ethics form in as early as you can in the year, as approval can take over a month. All ethics applications must be looked at by your supervisor and must be approved by your Head of School/Department before being submitted.

Once you have received approval and begin your research, the onus is on you to behave in a way that is consistent with ethical research practice. Included in this is your behaviour towards your fellow researchers (other students and staff) as well as your human or animal participants. Failure to conduct your research in an ethical manner may jeopardise the university's entire research effort, as the university is bound by the bodies that fund its research to ensure that ethical practice is maintained at all times.

You should also read the ANU's documentation on responsible research practices at [http://info.anu.edu.au/Policies/DRO/Policies/Responsible\\_Research\\_Practice.asp](http://info.anu.edu.au/Policies/DRO/Policies/Responsible_Research_Practice.asp).

## 6. Occupational Health and Safety

The University will provide a workplace that is, as far as reasonably practicable: safe and healthy for staff, students, and visitors; and without risk to the environment, in compliance with the Occupational Health and Safety (Commonwealth Employment) Act 1991, other relevant legislation, national standards and codes of practice. Staff, students and visitors are required to do all that is reasonably practicable to ensure that their actions or omissions do not create or increase a risk to the health and safety of themselves or others. Safe work procedures must be observed at all times and equipment must be used in accordance with safe work instructions. Any incidents, exposures, hazards or OHS concerns within the workplace should be reported.

Occupational Health and Safety workshops are available for Honours students and may be compulsory in some areas.

For more information about Occupational Health and Safety go to: <http://info.anu.edu.au/hr/OHS/index.asp>

## 7. Intellectual Property

The ANU does not, in general, claim ownership of the intellectual property (IP) that Honours students generate. However, under some (rarely seen) circumstances it will ask individual students to sign an agreement assigning their ownership rights. These circumstances include where:

- The generation of this IP has required substantial use of University resources and/or services beyond that which is ordinarily provided to students; or
- The generation of IP has resulted from the use of pre-existing IP owned by, or existing within, the University; or
- The IP belongs to a body of IP generated by a team including members of staff of which the student is also a member; or
- The IP results from collaboration, either formal or informal, in a research project with staff; or
- The IP has been generated as a result of funding provided by or obtained through the University.

Where a student is involved in research that is likely to lead to the generation of IP, the University will take reasonable steps to protect students' rights to include their research in their thesis and to be able to publish papers and theses. For more information about the University's policy on IP, go to: [http://info.anu.edu.au/Policies/DRO/Policies/ANU\\_IP.asp](http://info.anu.edu.au/Policies/DRO/Policies/ANU_IP.asp)

## 8. Thesis Writing Guide

The process of writing your thesis is an exercise in scientific communication. Your thesis must 'tell a story', in the sense that it must have a beginning, middle and an end. The information you present must be logically structured and must give the reader the sense that they are progressing towards a greater understanding of the topic in general, and of your own research in particular. Your thesis must be analytical and critical in nature, not just descriptive. Your thesis must stand as evidence that you are a competent researcher and that you understand your field and identify strengths, weaknesses and gaps in knowledge or explanation or theory. Your study (hypotheses, design and method) must follow logically from your introduction. The questions you are asking in your research and the measures you are using must make sense in the context of what has gone before in the introduction. In general, your report should start out at a broad level, become narrower and focused in the presentation of your research, and then broaden out again by the end of your discussion.

Your thesis will be written according to a word limit that is defined by your School or Department. This limit is a maximum and you must not go above it. Excessive length will be penalised. In some Schools and Departments, theses that exceed the word limit are returned to the student for condensing, and late penalties apply.

When you are writing your thesis, it is advisable that you look at theses written by previous Honours students in your area. Most Schools and Departments have a library of past theses that you are able to borrow for short periods.

## 9. Data Fabrication & Plagiarism

The falsification of results gained during the course of your Honours work is a serious offence and will not be tolerated. It is essential that students maintain a careful written record of experimental procedures and results. The copying or summarising of another person's results or ideas as if they were one's own is a form of theft and will not be tolerated. The source of such material must always be cited in the text and bibliographies of your written work.

University rules concerning data falsification and plagiarism are covered by the 'Discipline Rules 2007' (<http://www.anu.edu.au/cabs/rules/>), the 'Code of Practice for Teaching and Learning' ([http://info.anu.edu.au/Policies/DVC/Policies/Code\\_of\\_Practice\\_for\\_Teaching\\_and\\_Learning.asp](http://info.anu.edu.au/Policies/DVC/Policies/Code_of_Practice_for_Teaching_and_Learning.asp)) and 'Academic Honesty and Plagiarism' (<http://academichonesty.anu.edu.au/>).

Penalties for such offences may include suspension or termination of a student's course of study.

## 10. Extensions Policy

In the College of Science, extensions to thesis (and assignment) deadlines will only be granted for health reasons or for unforeseen circumstances (i.e. that arose due to factors beyond the student's control). Extensions will not be granted for work reasons or due to circumstances that should have been anticipated by you, the student. Extensions to thesis deadlines require careful and complete documentation of the causes and demonstration that the circumstances were beyond the control of

the student. Such applications should be discussed with the supervisor, and, following this, with the Honours Convener. The Head of School/Department must approve any extension of up to two weeks. Extension of time to submit beyond two weeks after the College of Science completion date will be subject to the approval of the Dean or Deputy Dean on the recommendation of the Head of School/Department.

## **11. Grading Criteria**

The following criteria are used to assess the quality of theses and to assign grades. Departments will ask the supervisors to comment on whether the students have demonstrated some of these characteristics; while the judgement on other characteristics will rely purely on the thesis.

### **11.1 Honours III 50-59:**

- The student has demonstrated some knowledge of the relevant background literature, but with serious gaps, and limited understanding;
- The student applied relevant techniques and carried out research work, but needed considerable assistance and showed limited understanding of the procedures employed;
- The student presented their results, though in a somewhat muddled and/or incomplete way.

### **11.2 Honours IIB 60-69:**

As for Honours III, but in addition:

- The student has demonstrated a reasonable knowledge of the relevant background literature, with only a few gaps, albeit in a somewhat uncritical way;
- The student demonstrated that they had learned many of the relevant skills (which might include laboratory techniques, computer programming and statistical analysis);
- The student presented their results in an appropriate format, and communicated them effectively.

### **11.3 Honours IIA 70-79%:**

As for Honours IIB, but in addition:

- The student has demonstrated a thorough knowledge of the relevant background literature, though still with limited critical appreciation;
- The student demonstrated reasonable technical mastery of all the relevant skills;
- The student worked hard, efficiently and carefully;
- The student presented their results and/or data clearly and succinctly.

### **11.4 Honours I 80-89%:**

As for Honours IIA, but in addition:

- The student has critically analysed the relevant background literature rather than merely summarising it;
- The thesis demonstrates a clear appreciation of how their work fits in to the larger field of research;
- The student demonstrated considerable technical mastery of all the relevant skills;
- They showed some appreciation of the limitations of the experimental design or techniques used and have outlined future research directions that are feasible;

- The student put forward their own useful and valid ideas relating to the project;
- The student further demonstrated the ability to see, and take, the logical next step without excessive 'prodding', the ability to act independently of the supervisor's immediate direction and presence, but the maturity to know when the supervisor's help is necessary;
- The student demonstrated the persistence and ability to carry on under difficulty;
- They picked up new concepts and skills rapidly;
- They showed the ability to work effectively in the presence of others.

### **Honours I >90:**

As above, but in addition:

- The student obtained concepts and procedures independently from the literature and at least discussed a use for them in the study;
- The student demonstrated impressive technical mastery of all the relevant skills;
- They demonstrate a good understanding not only of the techniques they employed, but other alternative techniques and the reasons for choosing between them;
- They have outlined possible future directions which are not merely feasible but which show considerable originality;
- The student not only put forward useful and valid ideas relating to the project, but also demonstrated the ability to critically evaluate and act upon such ideas.

## **12. Minimum Requirements for Assessment**

- There should be at least two examiners, the examining panel, for every thesis;
- The examining panel should not include a supervisor (except in cases where the Dean has approved the inclusion of a supervisor as failure to do so could affect the expertise of the assessment);
- At least one examiner should not be a specialist in the topic of the thesis;
- Students must have had written descriptors of the marking criteria that will be used to assess their thesis;
- There must be a clear and objective link between the written descriptors and the grades assigned;
- Examiners must use the College grade descriptors in providing a mark;
- The examining panel will construct a brief written report on each thesis;
- The examining panel will attempt to arrive at a consensus grade recommendation for the thesis;
- Supervisors will be duly consulted by the examining panel or the examiners. The final recommendation on a grade by the panel should be made without the supervisor present (except in cases where the Dean has approved the inclusion of a supervisor as failure to do so could affect the expertise of the assessment);
- Final marks for an overall Honours grade and the components are arrived at in a meeting with all examiners present;
- Special consideration of individual student circumstances is undertaken and documented according to University and College policy (<http://online.anu.edu.au/cabs/rules/ExamsRules.pdf> and <http://cos.anu.edu.au/StaffDirectory/RulesPolicies/Policies/>);
- There should be some feedback to the student on the progress of the thesis by the mid point of their project.

### 13. Honours Timeline

The following table summarises the important dates leading to and during the course of your Honours year. The dates and deadlines may vary from one School/Department to another. Contact your Honours Convenor or your supervisor to confirm each date.

Honours Timeline				
	Event	Due Dates		Other Information
		Program Commencement		
		Semester 1	Semester 2	
P R E V I O U S  Y E A R	ANU Honours Scholarship - Application closing date	31st October	Not available	
	Admission Application closing date			<b>Applications submitted after the advertised closing date will be assessed at the discretion of the Honours Convenor.</b>
	Internal applications	24th December	Last Friday in June	
	External applications	1st Friday in December	27th June (2008)	
	Department of Psychology <i>* Both Internal and External Applications</i>	31st October	31st May	
Starting Date	Early February	Early July	Please note starting dates vary between Schools/ Departments. Some programs may commence up to 3 weeks prior to the start of Semester.	
H O N O U R S  Y E A R	Course enrolment deadline	Second Friday of Semester 1 teaching period	Second Friday of Semester 2 teaching period	
	Mid-year seminar (not in all areas)	June	To be advised	A mid-year report and or seminar is required for some programs; others require the presentation of an end of year seminar either before or after the thesis is submitted.
	Mid-year report (not in all areas)	July	To be advised	
	End of year seminar	October	May	
	PhD/Scholarship application closing date			Students with H1 Honours will be guaranteed a PhD Scholarship from the College of Science. Information about centrally funded Scholarships can be found at <a href="http://www.anu.edu.au/graduate/scholarships/index.php">http://www.anu.edu.au/graduate/scholarships/index.php</a> For mid year applications please contact the area of interest for scholarship options.
	Domestic applications	31st October		
	International applications	31st August	No fixed date	
Thesis due	Last Friday of Semester 2 teaching period	Approximately 2nd week in May	This deadline will vary with each School/Department depending on when your Honours program commenced. Please check the date with the relevant Honours Convenor.	
Release of results	First Monday in December	First Monday in July		