

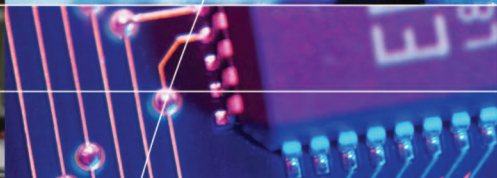
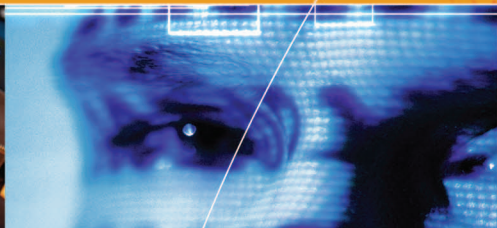


University College Dublin  
An Coláiste Ollscoile, Baile Átha Cliath

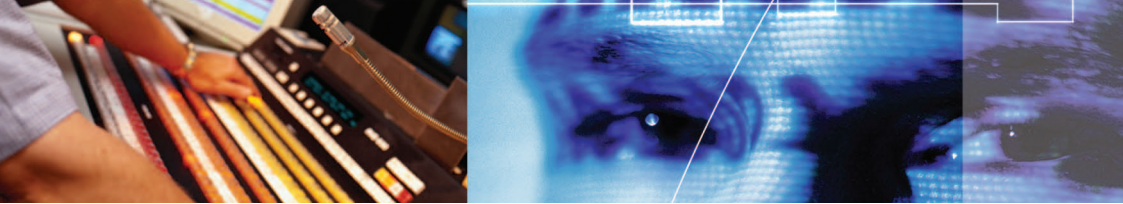
# PhD/MSc Research Student Handbook

## School of Computer Science and Informatics

March 2007







Welcome to the UCD-CSI PhD/MSc programme.

The Handbook describes the policies and requirements that apply to MSc and PhD students registered for postgraduate research degrees starting in September 2007.

Most of these policies apply only to PhD students.

Policies that apply to MSc students are highlighted in orange.

It is essential that each student be aware of these requirements and proactively plan his/her activities in order to satisfy them.

If you require clarification about these policies you should discuss them with your Doctoral Studies Panel, the Postgraduate Director or the Head of School.

## 1. Supervision

Prior to registration, you will have already selected your principal research supervisor.

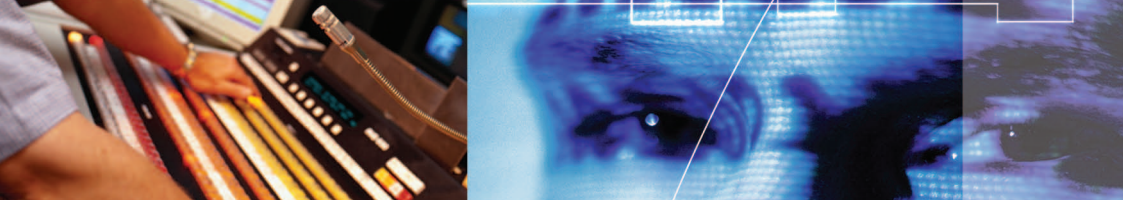
Shortly after registering, a second supervisor will be assigned to you by the school. The principal supervisor, the second supervisor and the school postgraduate director together constitute your Doctoral Studies Panel. The role of the Doctoral Studies Panel is to assist in monitoring and assessing your progress, and to provide technical expertise and advice as appropriate. The principal supervisor will be the main source of supervision and direction with assistance from the second supervisor. However in some circumstances, such as when the research is interdisciplinary, the second supervisor may also have an active role in supervision. The assistance of the school postgraduate director is available to you whenever issues arise.

Research students who join the school on a Thematic Doctoral Programme may be assigned a provisional supervisor initially and their principal supervisor will be assigned towards the end of their first year of study.

MSc students are supervised by one supervisor.

The relevant administrative structures within UCD-CSI are:

- The Postgraduate Studies Committee meets on an ad-hoc basis in cases of (a) serious problems (e.g. personality conflicts) between a student and his/her supervisory committee; (b) to decide a course of action in case a student fails to satisfy any programme requirements.
- The Assessment Panel is appointed by the Postgraduate Studies Committee and oversees the process of upgrading / transferring students to Stage 2 of the PhD programme.
- Each PhD student has a Doctoral Studies Panel to monitor his/her progress. The Doctoral Studies Panel will advise the Assessment Panel on whether a student is ready to upgrade / transfer to Stage 2 of the PhD programme.
- On submission of a PhD thesis the Examination Committee is established by the University to examine the student and the submitted thesis and make a recommendation regarding the award of the degree.
- The Postgraduate Seminar Coordinator schedules and monitors attendance at the Postgraduate Seminar series.



## 2. Progress Monitoring

You are expected to use your Research and Professional Development Plan (RPDP) to monitor your research progress. Your RPDP will be monitored by your principal supervisor with the assistance of your second supervisor. In situations where difficulties arise you have access to the school postgraduate director to help resolve these difficulties.

A very important milestone in your progress as a research student is the Upgrade/Transfer Assessment prior to moving to Stage 2 of the structured PhD programme - the requirements for transfer are outlined in the next section.

## 3. Candidacy Requirements

The structured PhD programme has two stages. 'Structured' components designed to broaden student learning are concentrated in the first stage, this stage must be completed satisfactorily before upgrading to stage 2. The bulk of the research work is done in the second stage. In order to progress to the second stage each PhD student must satisfy Candidacy Requirements A and B described below.

There are no exemptions for requirement B. Students with an MSc or equivalent qualification are encouraged but not required to satisfy A.

Msc students are required to satisfy light versions of requirements A and B.

Progress toward achieving the two requirements is monitored by the **Doctoral Studies Panel**. The decision on whether to upgrade/transfer a student to stage 2 is made by the Assessment Panel on the advice of the Doctoral Studies Panel. If the Assessment Panel does not approve a transfer the alternative outcomes include: re-registration as an MSc student and completion of an MSc thesis, outright ejection from the school, or additional time permitted to re-attempt requirements. The decision of the Assessment Panel can be appealed to the Postgraduate Studies Committee.

### Candidacy Requirement A: Coursework

In order to enhance their breadth across the discipline of computer science, students must take at least 20 credits of advanced coursework. Each module must be “Level 3” or higher (i.e. postgraduate or advanced undergraduate), and students should obtain a grade of B or higher.

In consultation with the student, the Doctoral Studies Panel will agree a sequence of relevant modules. This sequence will normally consist of two modules per semester over the first academic year.

Students are also required to take the module on “Introduction to Core Research Skills” provided by the Graduate School; this course carries 5 credits.

**MSc students are required to take 10 credits of advanced coursework.**

At the discretion of Doctoral Studies Panel, 5 of the 20 credits may be replaced with a technical (e.g., programming or analysis) project lasting approximately 100 hours.

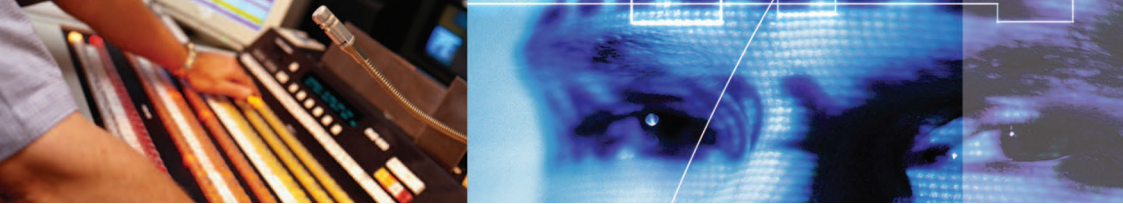
Note that, in addition to modules offered by UCD-CSI, the Doctoral Studies Panel may approve modules offered by other UCD schools.

Note that modules are generally offered just once per year and some modules are only offered sporadically. It is the student's responsibility to ensure that the selected modules are completed in a timely manner.

In the event that a student achieves a grade below B it will not be possible to repeat that module. The Doctoral Studies Panel may allow the student to take another module or a below par performance in the advanced coursework may be condoned if the transfer report shows significant research progress.

Students may select from the advanced modules offered by CSI, including 4th year undergraduate modules, and modules associated with the taught MSc programmes. While the exact details will change, the following is a sample of the modules that may be available:

- Adaptive Personalisation (G. O'Hare)
- Advanced Computer Architecture (D. Dalton)
- Advanced Computer Graphics (H. Carr)
- Advanced Operating Systems (T. Kechadi)
- Agent-Oriented and Distributed Software Systems (E. Mangina)
- Agent Systems (G. O'Hare) [short intensive module]
- Agile Processes (S. Dobson) [short intensive module]
- AI for Games and Puzzles (A. Cater)



Autonomic Systems (S. Dobson and P. Nixon) [short intensive module]  
Bioinformatics (G. Pollastri)  
Case Studies in Computational Science (N. Hurley)  
Cognitive Modelling (F. Costello)  
Cognitive Psychology (F. Cummins)  
Concurrent Programming (F. Geiselbrechtinger)  
Connectionism and Dynamical Systems (F. Cummins)  
Connectionist Computing (G. Pollastri)  
Context Sensitive Service Delivery (M. O'Grady)  
Contextual Systems (S. Dobson)  
Data Mining (J. Carthy and T. Kechadi)  
Distributed Systems (P. Nixon)  
Experimental Design and Statistics (F. Cummins)  
Finite Element Methods (M. Gilchrist, Mechanical Engineering)  
Geophysics (C. Bean, Geology)  
Heterogenous and Grid Computing (A. Lastovetsky)  
Information Systems II (A. Cater)  
Language Engineering (J. Berndsen)  
Machine Learning (P. Cunningham)  
Mathematical Modelling/Case Studies in Computational Science II  
(Z. Neufeld, Mathematical Physics)  
Mathematical Methods (Z. Neufeld, Mathematical Physics)  
Multi-Agent Systems (G. O'Hare)  
Multimedia Graphics and Visualisation (A. Quigley)  
Multimedia Security and Data-Hiding (G. Silvestre)  
Natural Computing (M. O'Neill)  
Numerical Algorithms (D. O'Connor, Mathematical Physics)  
Object-Oriented Design (M. Ó Cinnéide)  
Parallel Algorithms (N. Hurley)  
Parallel Programming Systems (A. Lastovetsky)  
Program Design and Verification II (H. McLoughlin)  
Scientific and Information Visualisation (H. Carr)  
Signal Processing (C. Bleakley)  
Software Systems Performance (J. Murphy & L. Murphy)  
Spatial Information Systems (M. Bertolotto)  
Systems and Specification (F. Geiselbrechtinger)

### Candidacy Requirement B: Seminar participation

In order to foster a spirit of curiosity and scholarship, all students are required to participate in the School's research student seminar series. Participation and presentation at the research seminar series is worth 5 credits.

All PhD students will be required to **give** a seminal paper survey presentation and all students are required to regularly **attend** the seminar series.

MSc students must attend the seminars but are not required to give one.

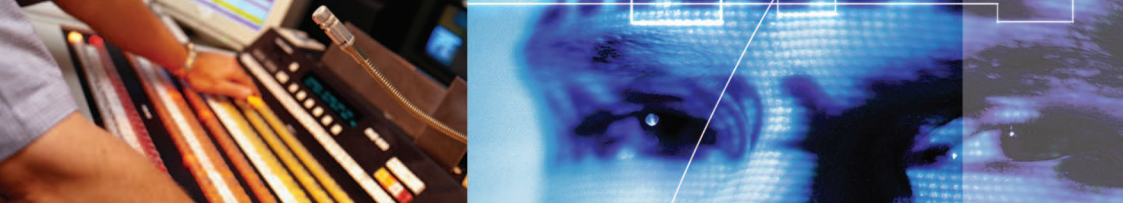
The principal supervisor and the student will agree a set of 2-4 important research publications in a specific research area. The student will prepare a presentation synthesising the contributions of these papers. The presentation should not be a mere summary of the papers but must present a detailed technical analysis of the topic and how the selected papers relate to one another.

A student's presentation will be evaluated by the Postgraduate Seminar Coordinator in conjunction with the principal supervisor.

In addition to presenting a seminar, all students are required to attend at least two-thirds of the seminars presented during their candidacy period.

Attendance will be monitored by the Postgraduate Seminar Coordinator.

*Note that this postgraduate seminar series is distinct from the Friday invited speaker seminar series. Naturally, all students are strongly encouraged to attend the Friday seminars as well, but this doesn't satisfy Candidacy Requirement B.*



## 4. Thesis proposal

All PhD students will prepare a written Thesis Proposal.

The **Thesis Proposal** must be written to a high scholarly standard. The requirements will vary by area, but a typical thesis proposal will define precisely the problem being addressed, the proposed solution, the preliminary results which demonstrate that the produced solution is viable and a detailed plan for completion. Typically, the Thesis Proposal will be about 15-20 pages (5-7 pages for problem statement and discussion of related work; 3-5 pages for a description of the proposed solution; 3-5 pages for a summary of progress to date; and 2-4 pages for future work and completion plan).

The Thesis Proposal will be presented to the Assessment Panel.

The decision on whether to upgrade/ transfer a student to stage 2 of the PhD programme will be made by the Assessment Panel. It will be based on:

- The quality of the Thesis Proposal
- Performance in the taught modules and
- Contribution to the Research Seminar Series.

## 5. Examination

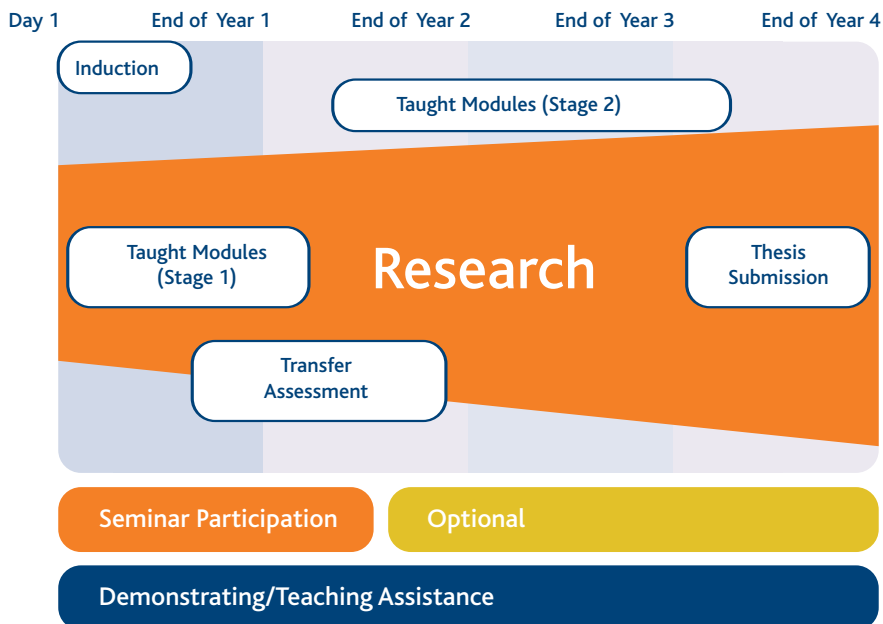
Prior to thesis submission, students must have upgraded/transferred to stage 2 of the structured PhD programme, satisfied the Candidacy Requirements, made satisfactory progress as attested in their Annual Reports and successfully defended their Thesis Proposal.

Thesis Examination is governed by the regulations of the UCD Examinations Office. In summary, the thesis is evaluated by both an external and internal examiner. The internal examiner may not be the principal supervisor, though the secondary supervisor may be appointed to serve in this capacity.

There is no thesis proposal requirement for MSc students.

## 6. Approximate schedule

Under the normal course of events, PhD students progress roughly as shown in the Figure.



This schedule is for illustrative purposes only: the precise timing may vary by research area. Ultimately the Doctoral Studies Panel will set deadlines by which the requirements must be passed.

Requirement A (Coursework) is normally completed in the first year but may spill into the second year depending on the specific courses chosen.

Requirement B (Seminars): Attendance continues throughout your time at UCD; your own presentation will normally happen within the first 6-18 months.

During your first year, your research activity will grow rapidly, so that you are in a position to prepare and defend your Thesis Proposal sometime between months 8 and 24.

We anticipate that most students will have submitted their thesis within four years.





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