

Guidelines for COMP 47200 Dissertation within the MSc Computer Science by Negotiated Learning programme

Document History:

Draft version 0.1, October 12, 2017, Fred Cummins

0.2 November 16, 2017, Damian Dalton

Version 0.3, amended for typos etc., Fred Cummins. For presentation at NL board, 17/11/2017

Version 1.0, amended to reflect deliberations of the NL programme board, 17/11/2017

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COMP 47200 Dissertation: Executive Summary

This is one of three possible routes to complete a 30 credit research requirement within the Negotiated Learning programme. The other two are the Team Software Project (COMP 47250) and the Industry Internship (COMP 47220).

Students seeking to complete a dissertation must reach an agreement with a potential supervisor. The supervisor should read this document in its entirety. An initial project proposal must be approved by the dissertation module coordinator.

To qualify for the dissertation, students must obtain an overall GPA in Semester 1 (or Year 1 for part time students) of 3.68 (1st class honours) and be accepted by the supervisor. The supervisor must be a member of the academic staff of the School of Computer Science. Exceptions to this requirement may be waived at the discretion of the programme directors, and upon presentation of a letter of support from the proposed supervisor.

Students are expected to meet regularly with their supervisor and are entitled to receive feedback on their progress.

There are two deliverables and a conduct mark. All components are graded by letter grade, A+, A, A-, B+, etc. Written deliverables will be submitted through the Computer Science Moodle system.

The first deliverable is a literature review and a proposal covering the research to be conducted. This is limited to 10 pages of content. The literature review is worth 35% of the total grade.

The second deliverable is a final report describing the research conducted. This report should rarely be larger than 20 pages of content. It should be formatted as an academic paper suitable for submission to a professional conference. The final report should be formatted in accordance with Springer's LNCS formatting instructions, available at <http://www.springer.com/gp/computer-science/lncs/conference-proceedings-guidelines>.

The final report is due in mid-August. The exact date for submission will be agreed with the supervisor in advance but should not be later than August 18th in any given year. This report is worth 50% of the total grade.

A conduct mark worth 15% of the total will be awarded by the supervisor alone upon completion of the project.

The two written deliverables will each be read and graded by two staff members, one of whom will be the supervisor. If the grades suggested differ by 5 or more grade subdivisions (e.g C to B+ = 5 grade subdivisions), a third reader will be employed, and a final grade will be agreed by negotiation among all three readers. Otherwise the average of the two grades will be awarded. Details are provided within.

COMP 47200 Dissertation. General Remarks

Students within the MSc Computer Science by Negotiated Learning programme typically complete a single 30 credit research component. This requirement can be satisfied in three ways:

Most students will take part in a Team Software Project (COMP 47250). This is the default option for all students, unless other arrangements are made. The module starts mid-May and runs until mid-August. Full details are provided in February and teams are formed by April.

Some students will apply for industry internships. There is a limited number of such places, and securing a place will be done through a competitive application process. Most such internships run for 3 months from the end of May to the end of August. Some may run longer by prior arrangement.

Full information about all options is provided on the CS Moodle platform under the Negotiated Learning programme for each year.

The dissertation is a third option which some students may choose. Students pursuing this route must themselves identify and communicate with a supervisor who is willing to supervise a bespoke project in an area of shared interest. It is advisable to begin looking for potential supervisors during the Autumn semester, in order to allow sufficient time for the necessary conversations and agreement.

Qualification requirements for selecting the dissertation option

Students will only be allowed to choose the dissertation option if they have achieved a grade point average of 3.68 (1st class honours) after their first semester (or after their first year, for part-time students) and are adequately proficient in technical English writing to produce a thesis with the normal level of assistance from a supervisor. If a student intends to conduct a dissertation but fails to achieve this level of academic performance, they will be automatically enrolled in the Team Software Project instead.

The requirement of a GPA of 3.68 may be waived in exceptional circumstances. Any request for a waiver of the requirement must be accompanied by a letter of support from the potential project supervisor.

Students selecting the dissertation option should be aware that this requires good English writing skills. Poor writing in a dissertation may be penalised in assessment.

While not required, it would be advantageous for any student pursuing a dissertation to take a module in technical communication (see MEEN 40670/MEEN 40820).

Selecting a supervisor

Supervisors must be academic members of the School of Computer Science. External supervision, including supervision by staff in other schools, is not permitted.

Supervisors should have competence in the area of research the student is interested in. A successful research project will reflect the interests of both the student and the supervisor. It is expected that supervisors will be available for consultation by the students on a regular basis for the bulk of the research period. If a supervisor is unable to commit to such a schedule they should not consider supervising a project.

An initial research proposal that sets out the topic of the research and the expected means by which research is to be conducted should be drafted by the student and the supervisor together. This proposal must be approved by the module coordinator of the dissertation module. This document may be short and informal. Typically one or two A4 pages will suffice.

Final approval to conduct a dissertation can only be granted when the GPA after the first semester (or first year, for part-time students) is known.

Conduct of research

Students pursuing a research project by dissertation should be capable of working largely independently. Regular meetings with the supervisor should be held, but students remain responsible for their own conduct.

While different research areas will make different demands on the student, the following general points will be generally applicable:

The initial stages of the project will involve the preparation of a literature review. This means that the student will need to acquaint themselves with the state of the art in the chosen domain by reading recent and up-to-date articles from relevant conferences and journals.

Students should learn to make informal assessment of the literature they encounter. Most articles will not need to be read in full. Learning to form a view of an article from the abstract alone is an essential means of filtering the amount to be read.

Students should develop the habit of taking notes when reading. These notes should allow information to be re-found at a later date, so the notes should always include basic bibliography information. A bibliography tool such as EndNote (Windows/MS Word) or Bibtex (LaTeX) is an essential element of any such programme of research.

Research supports of many kinds are available at the university. In particular, students should familiarise themselves with those resources and tools available through UCD library.

Supervision process

Students should meet regularly with supervisors. At the early stages of a research project, meetings might be held weekly, while less frequent meetings would be normal during the Summer months. Supervisors should be available during the final two weeks prior to project completion.

Any expected and protracted period of absence of the supervisor from UCD should be flagged at the start of the project. No project should be supervised *in absentia*.

Students should keep notes from meetings with their supervisor. As well as acting as helpful reminders of content, such notes may be important in rare cases of dispute or difficulty that may arise.

Deliverables

There are two principal deliverables for the project.

The first deliverable is a literature review and project specification. 1. The review will commence after exams in May and conclude with a project specification one month later. The review should outline the state of the art in the chosen area. It should draw on and reference the main antecedents, both in theory and practice.

Care should be taken to cite prior work appropriately. A single standard style should be used for citation. Online works should only be cited if no archival printed source is available. If citing online sources, the citation should include the date of access. Under no circumstances should Wikipedia, or any other highly volatile online reference work be cited.

The literature review should also include a specification of the remaining research that the student intends to carry out. This specification should include methods and milestones, where possible.

The literature review and project specification should be no more than 10 content pages, including references. The review and specification counts for 35% of the total project grade.

The second deliverable is a final project report formatted as a submission to a professional conference. This report should describe the research conducted. The size of the final report should be appropriate to the project goals, and should be discussed with the supervisor. Under most circumstances, a report size of 20 content pages or less would be appropriate. Appendices, such as code listings, are not included in this count. As with the literature review, care must be taken to cite prior work appropriately and consistently.

The final report should be formatted as an academic paper suitable for submission to a professional conference. The final report should be formatted in accordance with Springer's LNCS formatting instructions, available at <http://www.springer.com/gp/computer-science/lncs/conference-proceedings-guidelines>.

Students preparing any documents for assessment should be familiar with the school's and UCD's policies on plagiarism. In particular, it should be noted that these regulations do not distinguish between accidental and deliberate plagiarism, so that plagiarism may arise simply by failing to cite other people's work. For further information on plagiarism, and advice on citation, the library has prepared extensive resources that are available at <http://libguides.ucd.ie/academicintegrity>. The school's plagiarism policy is available from the school webpage, under "Quick Links."

The final project report counts for 50% of the project total.

Writing standards

More so than any of the other options, the dissertation module demands a high standard of technical writing ability in the student. A writing centre is available in Link Space 2 of the main James Joyce library. This service offers both pre-booked and walk-in advice on writing, including how to make an argument, how to edit your own writing, how to proofread your writing, identify common grammar and style problems, and how to solicit and understand feedback. Students with limited writing experience are strongly encouraged to make use of this service.

The writing centre does not provide help with English as a foreign language, and it does not offer to edit or proofread your work. You must take on this responsibility.

Learning to conduct research

There is no one way to conduct research. Depending on the field you are working in, your work may involve writing code, analysing systems or code, conducting experiments using software, conducting experiments using humans, evaluating interfaces, assessing usability, mathematical modeling, software modeling, prototyping, and more. Each research area comes with its own standard practices and tools. As you review prior work in your chosen area, you will become familiar with some of these. Your supervisor will also be in a position to help you orient yourself with respect to the area you have chosen.

Any research involving human subjects will require approval from UCD's institutional ethical review board. If you are planning on conducting research with humans, even if you think this is entirely uncontroversial research, you should consider the need for approval at an early stage. Projects requiring full ethical review may be held up by several months if this is not done early. Many projects will be sufficiently innocuous not to need full ethical review. In these cases, an application for exemption from full review still has to be made (Form 8). This is a much faster procedure. Full information can be found at the UCD Office of Research Ethics (<http://www.ucd.ie/researchethics/>).

Assessment

Each of the two written deliverables will be read by two readers, one of which is the project supervisor. Readers will suggest grades independently of each other. All grades will be letter grades, with three subdivisions per major grade (i.e. A+, A, A-, etc).

Where the two suggested grades diverge by no more than 4 grade subdivisions, an average of the two grades will be rewarded, with any ambiguities judged in favour of the student.

Where the two suggested grades diverge by 5 or more grade subdivisions, a third reader will be employed. The third reader will independently assess the work, and after suggesting a grade, a final grade will be agreed by negotiation among the three readers.

Examples:

Reader 1: B-; Reader 2: B+; result: B (simple average)

Reader 1: C+; Reader 2: B+; result B (average decided in favour of student)

Reader 1: C; Reader 2: B+; third reader required