Department of Computer and Information Sciences

PGT Dissertation Handbook

Academic Year 2016/2017

1. Introduction

Students who progress to the MSc project are required to complete a dissertation of around 20,000 words (+/- 10%) on a topic of their own choice, which has been approved by their proposed supervisor.

Dissertations embody a period of individual research and, within the time-scale available, should contain an element of original work. Originality may be expressed in various ways: a small-scale field study, a survey, development of a computer-based system, or an original analysis/critique of the literature (see later section on dissertation types).

The following guidelines deal with the general requirements for such dissertations including the style and layout of dissertations, which have to conform to certain standards in order to be acceptable to the Department. The requirements for specific types of dissertation will have been reviewed in the Research Methods class.

2. Time Scale

Students will be advised following the June Board of Examiners (normally the first week of June) as to whether they can proceed to the MSc project and, if so, will then have their supervisor confirmed. The dissertation submission date will normally be set for mid-August (you will be advised of the specific date by the course directorate and/or your supervisor). Please note that you cannot submit a request for an extension to the hand-in date. If a student misses the August deadline the earliest point at which their dissertation will be considered will be the June Exam Board of the following year.

3. Progress

University Regulations on postgraduate courses state that students are expected to be in attendance for the duration of this part of their course (refer to Section 8 of University procedures and guideline: postgraduate instructional programmes for information on the roles of the student and the supervisor).

You should maintain regular contact with your supervisor, and keep him or her informed of progress. This will usually be achieved by submitting completed chapters, summaries of work done, etc., and will also ensure that your research does not lose its focus; do not disappear for three months, and then return with 20,000 words, since it is unlikely that this would be an acceptable dissertation, nor could it be assessed in time for consideration by the Board of Examiners.

You may need to go away for visits, etc., in connection with your dissertation, but absence for any other reason (other than documented medical grounds or significant change in personal circumstances) cannot be used as the basis of a request for continuation of studies.

4. Ethics

The purpose of the Departmental and University Ethics Committees is to ensure that any investigations (regardless of subject domain) carried out by staff, or students that use human beings as participants are known to conform to the standards set by the professional bodies. These standards are aimed at ensuring that the rights, safety, and wellbeing of the participants is taken into account at all times.

4.1 Contact

The contact for any information related to ethical approval of studies is Dr Marc Roper for undergraduate and research students, and Professor Ian Ruthven for postgraduate instructional students.

4.2 What you need to do

It is important to realise that any investigation that involves human beings as participants - even something as apparently harmless as a questionnaire or simple user study being undertaken as part of a project or your research - has to be granted ethical approval. To gain this approval you need to provide a protocol describing how you plan to conduct your study via the Departmental Ethics Approval system at:

https://local.cis.strath.ac.uk/local/ethics/index.php

The protocol will be expected to cover the following points:

- How participants will be recruited (i.e. how you will obtain volunteers).
- How participants' consent will be obtained and demonstrated (this needs to be auditable).
- What participants will be told about the conduct of the research (i.e. they need to be briefed to be able to make an informed decision about whether to participate).
- What participants will be expected to do (in broad terms - see the point about content below). Please note that any participant must be able to freely withdraw from the study at any point (if they begin to feel stressed for example) and must not feel under any pressure or obligation to complete the study, answer any particular question, or undertake any particular task.
- How data will be stored (i.e. how the security of analogue and digital data will be maintained).
- How data will be processed (e.g. analysed, reported, visulaised, integrated with other data, etc., all of which must adhere to the Data Protection Act and take participant confidentiality into consideration).
- How and when data will be disposed of (i.e. comprehensive and secure destruction).

These points cover most studies carried out within the department, but you should read the extract below from Appendix 2 of from the University's Code of Practice on Investigations on Human Beings to make sure that there are not any other issues you should be considering. Note that for more substantial or unusual projects additional information may be required and closer reading of the full Code of Practice (available from the University Ethics Committee page) and discussions with the relevant departmental contact.

The Ethics Committee are not concerned with the content of any study (e.g. survey questions or task descriptions) - these are something that you need to discuss with your supervisor to make sure they are balanced, appropriate etc.

The protocol should be submitted to the relevant departmental contact well in advance of any planned study. Requests are normally processed within one working week, but may take longer than this for more complex studies.

You will be asked to declare whether ethics approval has been approved when you submit your dissertation, and any research which does not conform to Departmental and/or University requirements may be rejected by the Board of Examiners. Retrospective approval for ethics is not acceptable; you must obtain this in advance of carrying out any data collection etc., which

involves humans.

5. Dissertation types

There are five types of dissertation, which students can undertake each of which utilises a different weighting for the key criteria used to mark the dissertations.

Table 1. Dissertation Types

Dissertation type	1	2	3	4	5
Criterion	Weighting	Weighting	Weighting	Weighting	Weighting
Introduction and rationale	5%	5%	5%	5%	5%
Literature review	40%	30%	15%	15%	20%
Methodology	5%	10%	20%	30%	30%
Analysis	25%	30%	35% *	25%	20%
Conclusions and recommendations	15%	15%	15%	15%	15%
Structure, presentation and referencing	10%	10%	10%	10%	10%

* Including any systems documentation.

1. An extensive literature survey (i.e. desk based research exploring issues, analysing and comparing alternative approaches to addressing these issues, and forming recommendations and conclusions based on this analysis).

2. Case study based (i.e. identifying operational examples of how different approaches, solutions, methodologies, etc., have been applied, assessing the relative strengths and weaknesses of these approaches, and forming conclusions and recommendations based on this analysis).

3. Application based (i.e. analysing, specifying, building and evaluating a prototype application or demonstrator, and forming recommendations and conclusions on the relative merits of the technologies involved and the methodologies used).

4. Survey based (i.e. investigating opinion regarding a systems issue using a suitable survey instrument, analysing the data collected, and forming recommendations and conclusions based on this analysis).

5. Experimental (i.e. designing an experiment and associated software to test the performance of a system or system component(s), analysing the data collected, and forming recommendations and conclusions based on this analysis).

Note that students taking the MSc Advanced Computer Science, MSc Advanced Software Engineering, and MSc Enterprise Information Systems degrees must undertake a Type 3 (application based) dissertation.

6. Submission

A complete first draft should be submitted no later than the middle of July to allow time for it to be read by your supervisor, who may have further suggestions for improvement. These suggestions should be minor if you have maintained regular contact with your supervisor. You should consult with your supervisor to establish a mutually convenient date. The final bound copies of the dissertation should be submitted by the 18th August 2017, for consideration by the Board of Examiners. Two printed bound copies must be submitted. In addition the dissertation should be submitted through MyPlace, the electronic version will be automatically submitted to TurnItIn.

The copies should be bound, preferably with metal spiral binding and plastic covers ("Wire- O binding" from the Print Unit), with the title, your name and year clearly stated on the front cover. The Print Unit is located in the Colville Building:

> Print Services
> Room 4.17 4th Floor Colville Building
> 48 North Portland Street
> Glasgow G1 1XN
> Opening Hours: Mon - Fri, 9.30am - 4.30pm
> Tel: 0141 548 2829
> Email: print.enquiries@strath.ac.uk
> http://www.strath.ac.uk/printservices/

All dissertations will be read by a second member of staff and both your supervisor and this second reader will prepare a report and agree a mark for your dissertation for consideration by the Board of Examiners. In the event that a mark cannot be agreed the dissertation will be marked by a third member of staff and the Director of Postgraduate Instructional Courses will mediate to arrive at a final mark. Dissertations that are submitted after the deadline will normally be referred to the June, or later, Board of Examiners. If the Board of Examiners recommends the award of MSc, graduation will take place in November (you should register for graduation as soon as possible after knowing that you are eligible to progress to the MSc project, if you wish to avoid paying a late fee). Information on graduation, including enrolment forms and gown hire can be found at: http://www.strath.ac.uk/graduation/.

It may be possible to grant a continuation of study beyond the submission deadline but note that this will mean that the earliest point at which a student could graduate would be after the June Board of Examiners. A Continuation of study form (available from: http://www.strath.ac.uk/cis/localteaching/postgraduateforms/) must be submitted to the Board of Examiners via your supervisor, and will only be supported where there is evidence of satisfactory progress and/or documentary evidence of an interruption in your studies (e.g., due to illness). Satisfactory progress will normally be judged to be completion of the introductory chapter and literature review as a minimum.

If you fail to maintain regular contact with your supervisor, or fail to meet the deadlines set by the Department, the Board of Examiners can recommend to Senate via the Board of Study that you be withdrawn from the MSc programme and transferred to the Diploma course (in which event, the Diploma would be awarded immediately, since all requirements will have been met).

7. Plagiarism

The University regards academic dishonesty as a serious offence. Allegations of academic

dishonesty will be fairly assessed and appropriate action will then be taken. An allegation that has been dismissed as a disciplinary offence may still incur an academic penalty for poor scholarship. A record will be kept of any formal allegations and the outcome of their assessment. The University Calendar (Regulation 5.2: Offences Related to Academic Dishonesty) provides details of the procedures to be followed and penalties, which may arise in cases of academic dishonesty.

Copying material from other authors without acknowledging their work, and failing to clearly identify quotations and other material from original sources represents poor scholarship and is not consistent with the aim of demonstrating understanding. When you take material from a book, an article or web site, you should consider it, and fashion it, in order to support your argument or to highlight a key theme or approach. You may use quotations, facts, ideas, etc., but they must be related to your work and must be attributed. Copying material verbatim or copying significant portions of material with only minor alterations both count as plagiarism.

Where plagiarism occurs a formal warning will be given and the Department, in assessing the merit of a dissertation, may decide that the extent of plagiarism is such that the dissertation contains nothing of the student's own effort and therefore attracts a mark of zero. The case may also be referred to the Senate Discipline Committee. In less extreme cases the plagiarised sections will be set aside and the dissertation marked only on those parts, which do follow normal conventions. When you submit the dissertation you will be required to sign a declaration that it embodies your own work, that it has been composed by yourself, and that you have made due acknowledgement to the works of others.

8. Style and Layout

8.1 Font
Submissions should use an 11 or 12 point font, 1.5 line spacing and have either indented paragraphs, or paragraphs separated by a single line or equivalent spacing. Leave a good margin all round. Use a font that is clear and easy on the eye (e.g. sans-serif fonts such as Ariel, Calibri and Verdana), and avoid exotic fonts such as those that represent handwriting.

8.2 Length of Dissertation
Dissertations should be approximately 20,000 words (+/- 10%) in length.

8.3 Structure
Dissertations should consist of the following parts, in the order given:

Title page	see example below
Declaration	signed and dated, see example below
Abstract	see advice below
Acknowledgements	see advice below
Table of contents	see example below
List of illustrations	see advice below
Dissertation proper	see Table 1 for marking criteria, and advice below
References	see advice below
Appendices	if appropriate

Exceptionally, for type 3 (application) and possibly type 5 projects (experimental), where there is also an application component to consider, a lower word count of no less than 15,000 words may be acceptable; however, this must be discussed and agreed with your supervisor prior to submission.

8.4 Abstract

The abstract is a short (up to one page) summary of the dissertation, its conclusions, findings, etc. It should not be a chapter by chapter description. An example of an abstract is attached.

8.5 Acknowledgements

It is appropriate to acknowledge any special assistance received in the course of preparing your dissertation, particularly if assistance came from outside organisations or individuals, but acknowledgements should be kept to the minimum necessary.

8.6 Dissertation proper

It is anticipated that most dissertations will contain the following chapters:

Introduction Literature review Research methods Analysis Recommendations and conclusions

Guidance on the content of these chapters will have been provided in the Research Methods class, and copies of slides will have been posted to MyPlace. Chapters may be subdivided into sections and sub-sections, but should not normally be subdivided any further (e.g. Chapter 2, Section 2.3, Sub-Section 2.3.3).

8.7 References

References should be made to any quotations given in the work, and to any concepts, ideas, facts, data, etc., which you derive from the work of others, whether in the form of quotation or not. References in the text should follow the guidelines in the student handbook (i.e. Harvard style). References which do not conform to an acceptable standard may need to be resubmitted with the necessary corrections and, as this could delay your graduation, you should get into the habit of citing in this way from the start. There are many online guides that you can consult if you need advice on referencing specific types of sources.

Provide details of the author(s), date, in brackets at the point of citation, with the page number if the reference is to a monograph, e.g.:

> The call for a free flow of information between nations is laudable, but in reality the flow is often dictated or controlled by the most wealthy countries and commercial organisations (Usher, 2006, p.52)

or:
> As Usher (2006, p.52) has pointed out, the call for a free flow of information between nations is laudable, but in reality the flow is often dictated or controlled by the most wealthy countries and commercial organisations.

Both citation styles are acceptable, but choose one and be consistent in its application. You should provide a single alphabetically ordered list of works consulted or cited, with inclusive page numbers for articles, etc.

8.8 Quotations

Short quotations (up to 2 lines) should be included in the text, in double quote marks. Longer quotations should be placed as a separate paragraph, without quote marks, and indented, e.g.:

Short quotation

Drybrough (2002) suggests that "merely documenting procedures is insufficient; you must also have proof that you do what you say."

Long quotation

In discussing the relationship between society and information technologies, Hamelink has pointed out that:

> The question arises whether the historical process in which informatisation evolves from mechanisation implies fundamental changes in the social structures in which it takes place. To answer this it is helpful to go back to that earlier phase in history which is commonly referred to as the industrial revolution (Hamelink, 1999, p.172).

In the case of long quotations, the reference should always be placed in brackets at the end of the quotation.

8.9 Page Numbering

Preliminary pages should be numbered in Roman numerals. Arabic numbering should begin on the first page of the dissertation proper, i.e. the Introduction. Page numbers should be placed at the bottom centre of the page.

8.10 Figures, illustrations, etc.

Any illustrations, figures, charts or diagrams should be placed in the text as close as possible to the first point at which they are mentioned. They should be drawn clearly and each type of illustration should be numbered consecutively throughout the dissertation, e.g. Figure 1.1 - Figure 10.3, Table 1.1 - Table 6.4. Try to ensure, where possible, that illustrations and tables fit onto one page, and take care that they do not run over from the bottom of a page to the top of the next. The source of illustrations (if taken from other works) should be given under the illustration, in the same style as references. Exceptionally, a large number of illustrations, each of which occupies a page, can be gathered together into an appendix at the end of the dissertation. They should still be numbered consecutively, and the appendix should also be numbered.

Appendix 1 - Title Page

THE ORGANISATIONAL IMPACT OF INFORMATION TECHNOLOGY:
EFFECTS ON THE QUALITY OF WORKLIFE

HORACE BROON

This dissertation was submitted in part fulfilment of requirements for the degree of MSc
Information and Library Studies

DEPT. OF COMPUTER AND INFORMATION SCIENCES
UNIVERSITY OF STRATHCLYDE

SEPTEMBER 2012

Appendix 2 - Declaration

DECLARATION

This dissertation is submitted in part fulfilment of the requirements for the degree of MSc of the University of Strathclyde.

I declare that this dissertation embodies the results of my own work and that it has been composed by myself. Following normal academic conventions, I have made due acknowledgement to the work of others.

I declare that I have sought, and received, ethics approval via the Departmental Ethics Committee as appropriate to my research.

I give permission to the University of Strathclyde, Department of Computer and Information Sciences, to provide copies of the dissertation, at cost, to those who may in the future request a copy of the dissertation for private study or research.

I give permission to the University of Strathclyde, Department of Computer and Information Sciences, to place a copy of the dissertation in a publicly available archive.

(please tick)   Yes   [   ]   No [   ]

I declare that the word count for this dissertation (excluding title page, declaration, abstract, acknowledgements, table of contents, list of illustrations, references and appendices is .

I confirm that I wish this to be assessed as a Type   1   2   3   4   5

Dissertation (please circle)

Signature:

Date:

Appendix 3 – Abstract

ABSTRACT

In acknowledgement of the fact that people often experience a change in work values where new technology is concerned, this research examines the effects that IT based systems have had upon users' feelings of job satisfaction. The organisation forming the context for the research is JLM whose Information Services Section at Harding, in Cumbria, has recently introduced two very different IT based systems.

The aim of the research is to make a study of work values at both an organisational and individual level, to assess what it is that people expect to gain from satisfying work and to consider how these values alter, if at all, with the introduction of new technology. The discussion examines the importance of integrating social organisational policies with technical policies in the management of future technology.

It was discovered that a significant number of employees did experience an increase in job satisfaction following the introduction of the systems concerned. In some cases this was directly related to use of the systems, in others to the resultant change in the nature of the work and its requirements of the individual. The increase in job satisfaction is attributed to the existence or fulfilment of certain work values and is found to occur most frequently where a certain number of employees' work values exist or are enhanced by the nature of the work. Thus technology, by bringing about change in the organisational social structure, is able to bring about change in the quality of worklife.

Appendix 4 – Table of Contents
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Appendix 5 – Paragraph Layout

A5.1 Indented format

CHAPTER 1: EXPERT SYSTEMS: AN OVERVIEW

1.1 Introduction

The last few years have witnessed a dramatic growth of interest in the applications of expert systems (ES) across a wide spectrum of disciplines and professions...

 Expert systems have risen to prominence as a result of four major inter-related factors...

1.1.1 ES application areas

Expert systems have been applied in a wide range of areas in many subjects and disciplines...

A5.2 Block format

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