Faculty of Technology

IMAT5314 MSc Project

**Project Guide**

**MSc Information Technology**

**MSc Computing**

**MSc Information Systems Management**

**MSc Software Engineering**

**MSc Computer Security**

**MSc Forensic Computing**

**MSc Intelligent Systems & Robotics**

**MSc Intelligent Systems**

**MSc Computer Games Programming**

**MSc Business Intelligence Systems & Data Mining**

July 2015

[**1** Introduction 1](#_Toc426709873)

[1.1 Project Aims 1](#_Toc426709874)

[1.2 Types of Project 1](#_Toc426709875)

[1.2.1 Development Projects 2](#_Toc426709876)

[1.2.2 Research Projects 2](#_Toc426709877)

[1.2.3 Literature Study Projects 2](#_Toc426709878)

[1.2.4 Consultancy Projects 3](#_Toc426709879)

[1.2.5 Data Analysis Projects 3](#_Toc426709880)

[1.2.6 Conceptual Analysis Projects 3](#_Toc426709881)

[1.3 BCS Standards 3](#_Toc426709882)

[1.3.1 Requirements for projects in BCS accredited degree programmes 3](#_Toc426709883)

[1.3.2 Standards for professional conduct 3](#_Toc426709884)

[**2** Submission Deadlines 4](#_Toc426709885)

[2.1 Full-Time Students 4](#_Toc426709886)

[2.2 Part-Time Students 4](#_Toc426709887)

[2.3 Resit projects 5](#_Toc426709888)

[2.4 The Standard Project Submission Deadlines 5](#_Toc426709889)

[2.5 The Viva Date 5](#_Toc426709890)

[2.6 Allowing for resits of taught modules 5](#_Toc426709891)

[2.7 Extensions, Deferrals and Interruptions of Study 6](#_Toc426709892)

[2.7.1 Extensions 6](#_Toc426709893)

[2.7.2 Deferrals 6](#_Toc426709894)

[2.7.3 Interruptions of Study 6](#_Toc426709895)

[2.8 Absences Abroad 7](#_Toc426709896)

[**3** Project Submission 8](#_Toc426709897)

[3.1 Terms of Reference and Ethical Review Form 8](#_Toc426709898)

[3.2 Project Report 8](#_Toc426709899)

[3.3 Project Files 8](#_Toc426709900)

[**4** Project Management 9](#_Toc426709901)

[4.1 Supervision 9](#_Toc426709902)

[4.1.1 Meetings with the Supervisor 9](#_Toc426709903)

[4.1.2 Progress Reports 10](#_Toc426709904)

[4.1.3 PMP Meetings 10](#_Toc426709905)

[4.2 Selecting a Project 11](#_Toc426709906)

[4.2.1 Sources of Project Proposals 11](#_Toc426709907)

[4.2.2 Part-Time and Distance Learning Students 12](#_Toc426709908)

[4.3 Agreeing a plan: Terms of Reference and Ethical Review 12](#_Toc426709909)

[**5** The Terms Of Reference and Ethical Review Form 13](#_Toc426709910)

[5.1 Structure of the Terms of Reference document 13](#_Toc426709911)

[5.2 Risk Assessment 14](#_Toc426709912)

[5.3 Ethical Review 15](#_Toc426709913)

[5.3.1 University policies and good practice for ethical research 15](#_Toc426709914)

[5.3.2 Ethical review procedure 16](#_Toc426709915)

[5.3.3 Completing the Ethical Review Form 17](#_Toc426709916)

[**6** Working On The Project 18](#_Toc426709917)

[6.1 Literature Survey or Fact Finding 18](#_Toc426709918)

[6.2 Presenting your Fact Finding 18](#_Toc426709919)

[6.3 Implementation Issues 18](#_Toc426709920)

[6.4 SVN Repository for code 19](#_Toc426709921)

[**7** Writing The Project Report 20](#_Toc426709922)

[7.1 Avoiding plagiarism and giving credit for other people’s work 20](#_Toc426709923)

[7.1.1 Plagiarism and Turnitin 20](#_Toc426709924)

[7.1.2 A note about quoting explanations 20](#_Toc426709925)

[7.2 Writing the Report 21](#_Toc426709926)

[7.3 The Deliverables 21](#_Toc426709927)

[7.4 Evidence of Research and Critical Analysis 22](#_Toc426709928)

[7.5 Critical Review 22](#_Toc426709929)

[7.6 Structure and Readability 22](#_Toc426709930)

[7.6.1 Style 22](#_Toc426709931)

[7.6.2 Sections 23](#_Toc426709932)

[7.6.3 Appendices 23](#_Toc426709933)

[7.6.4 Paragraphs 23](#_Toc426709934)

[7.6.5 English Language: Some Suggestions 23](#_Toc426709935)

[7.7 Abstract 24](#_Toc426709936)

[7.8 Quoting References 24](#_Toc426709937)

[7.8.1 Applying a standard reference format 24](#_Toc426709938)

[7.8.2 Choosing a standard reference format 25](#_Toc426709939)

[7.8.3 Citations in text 25](#_Toc426709940)

[7.8.4 References in the reference list 26](#_Toc426709941)

[7.9 Acknowledgements 27](#_Toc426709942)

[7.10 Presentation 27](#_Toc426709943)

[7.11 Copyright Protection 28](#_Toc426709944)

[7.12 Document Versioning under SVN 28](#_Toc426709945)

[**8** The Viva Voce 29](#_Toc426709946)

[8.1 Purposes of the viva voce examination 29](#_Toc426709947)

[8.2 The viva voce examination is mandatory 29](#_Toc426709948)

[8.3 Conducting the viva voce examination 29](#_Toc426709949)

[8.4 Preparing for the viva voce examination 29](#_Toc426709950)

[**9** Project Assessment 30](#_Toc426709951)

[9.1 The Assessment Process 30](#_Toc426709952)

[9.2 Assessment Criteria 30](#_Toc426709953)

[9.3 Audit Trail 31](#_Toc426709954)

[**10** Distribution of Project Reports 32](#_Toc426709955)

[10.1 Distribution by the student 32](#_Toc426709956)

[10.2 Distribution by De Montfort University 32](#_Toc426709957)

[10.3 Original copies 32](#_Toc426709958)

[Appendix I. Requirements of Masters Degrees 33](#_Toc426709959)

[Appendix II. BCS Requirements for projects 34](#_Toc426709960)

[Appendix III. BCS Code Of Conduct 36](#_Toc426709961)

[Appendix IV. Useful References 38](#_Toc426709962)

[Appendix V. Indicative Project Timetable - Full-Time 39](#_Toc426709963)

[Appendix VI. Indicative Project Timetable - Part-Time 40](#_Toc426709964)

[Appendix VII. Dissertation Page Layout 41](#_Toc426709965)

[Appendix VIII. IMAT 5314 Official Forms 42](#_Toc426709966)

[MSc Project Final Assessment Summary 43](#_Toc426709967)

[MSc Project Final Assessment – Resit Specification 44](#_Toc426709968)

[MSc Project Final Assessment Form 45](#_Toc426709969)

[MSc Project Final Assessment Form 47](#_Toc426709970)

[Demonstration / viva 51](#_Toc426709971)

1. Introduction

This document describes the operation of MSc projects, undertaken during the academic year 2014-2015, for the IMAT5314 project module.

The project forms an important element of the MSc course, and must be passed to obtain the degree. Further, the project must be passed at distinction level before an overall MSc with distinction award will be made, and similarly must be passed at merit level before an overall MSc with merit award will be made.

Note – the project is worth 60 credits, which makes it a third of your degree – this means that a good mark in this will have the same weight as 4 of the taught modules!

This document contains the following:

* Information for staff and students with regard to the supervision process
* Notes for guidance on the planning, preparation and submission of a MSc project report
* Requirements for postgraduate projects
* An explanation of what is expected from students and staff during the whole project life cycle.

This guide should be read in conjunction with the current version of the “Modular Scheme for Taught Postgraduate Courses: Handbook and Regulations” and any supplementary notes issued by the Course Leader or Project Co-ordinator.

* 1. Project Aims

The aim of the project is to provide the student with the opportunity to carry out an in-depth study involving critical analysis, and to demonstrate the application of skills acquired from the taught component of the course, to the solution of a particular problem.

The project should be a self-contained piece of work of considerably greater depth than can be accommodated within a taught module. It should include a substantial element of scholarly research and fact-finding so that (a) it demonstrates research and analysis skills appropriate to a masters degree, and (b) the creative work of the project is based on a solid foundation of knowledge and conceptual understanding of the problem.

The postgraduate nature of the project should be evident from the higher overall standard compared to an undergraduate project, in the depth of critical analysis, the insight required and the complexity of the task undertaken.

Students will be expected to demonstrate project management and presentation skills throughout the period of the project when liaising with their Supervisors and Project Management Panels (PMPs).

* 1. Types of Project

There are a number of different types of project. At the present time all of these are acceptable for any of the MSc degree programmes that include IMAT 5314 projects. The most common types are development projects and research projects. However one type of project may be more feasible given the skills developed by a particular degree programme, or more appropriate for meeting the educational objectives of a particular degree programme. If you are concerned about this, you should consult your tutors or your Programme Leader.

For any MSc project, of any of these different types, a significant element of background research is required. This should result in the acquisition of sufficient and extensive knowledge to provide sound justifications for the methods used or the approaches employed in solving a given problem. The level of the research element should be defined when discussing the Terms of Reference with the PMP.

You must determine the type of project you will undertake. The choice you make will affect the deliverables, content, presentation and assessment of the project work. These categories are not rigid: the balance between literature survey, primary research, software development and other activities can be set to suit the demands of the project and the interests of the student, and adapted to fit the nature of the project as the student’s work progresses.

* + 1. Development Projects

In a *Development Project*, the student is normally expected to produce a working piece of software that serves a particular purpose, meeting a defined set of requirements. In some cases, the product may include self-designed and purpose-built hardware as well as software, for instance an innovative robotic system. The running system itself is normally the major deliverable, and is normally the most important factor in the assessment. However, the requirements analysis, the system design work, and the testing and evaluation of the software – and how they are documented and presented – are also important to the assessment of development projects. It is not essential to meet *all* the requirements to gain a pass level mark; it is normal and healthy to have realistic but ambitious plans so that a good piece of software for a successful project will do a lot of what is aimed for but not everything. In some cases, background research, requirements analysis and system design work of sufficient quality may justify giving a pass-level mark to a project that has an essentially unsuccessful piece of software.

* + 1. Research Projects

In a *Research Project*, the student is expected to carry out a thorough investigation of a particular topic, apply one or more theoretical frameworks for making sense of what is known about the topic, identify one or more unanswered research questions, and apply one or more research methodologies to gathering primary research data and analysing it to attempt to answer the research questions. The student is expected to produce a report detailing the research undertaken and its findings and implications, setting them in the context of related research and a clear conceptual framework. The benchmark for determining the degree of success in a research-based project will normally be whether or not the project and its report can form the basis of a publishable academic paper.

* + 1. Literature Study Projects

In a *Literature Study Project*, the student is expected to carry out a thorough investigation of a particular topic, looking at previous research literature and other published or publicly available documents or sources of information, to produce a novel and creative analysis that attempts to answer one or more unanswered (or perhaps wrongly answered) research questions. The student is expected to produce a report describing and critically evaluating existing documents and other sources of information, setting them in the context of a clear conceptual framework, and presenting a cogent analysis. Doing a literature study to the standard required for an MSc project requires both hard work and hard thinking, as a considerable degree of intellectual sophistication is needed to do this well. The benchmark for determining the degree of success in a literature study project will normally be whether or not the project and its report can form the basis of a publishable academic paper.

* + 1. Consultancy Projects

In a *Consultancy Project*, the student is normally expected to produce a consultancy-style report to meet a clearly defined need for a clearly defined client or audience, providing a detailed and sophisticated critical evaluation of existing techniques, approaches or systems, or how to solve a practical problem, with recommendations. The student should discuss with his/her Supervisor whether or not an implementation of any of the recommendations is required.

* + 1. Data Analysis Projects

In a *Data Analysis Project*, the student is expected to evaluate, select and apply computational techniques for data analysis and knowledge extraction, to solve a novel data analysis or knowledge extraction problem, or develop a novel technique for solving a particular data analysis problem, or develop a novel technique for presenting data or statistical information to support a particular human activity. The student is expected to demonstrate and illustrate the application of the technique and evaluate how well it solves the problem.

* + 1. Conceptual Analysis Projects

In a *Conceptual Analysis Project*, the student is expected to develop an analysis on paper of a system or of how to solve a problem. Such projects might involve developing an analysis of a working software system by applying one or more analytical techniques, for example for producing a usability evaluation; or analysing or modelling a process; or producing a notation or technique for describing a particular sort of information that a software system might generate or use; or devising a procedure for tackling a particular class of problem in software development. The student is expected to demonstrate and illustrate the application of the technique and evaluate how well it solves the problem.

* 1. BCS Standards

The BCS (formerly known as the British Computer Society) is the Chartered Institute for IT. It accredits our computer science degree programmes.

* + 1. Requirements for projects in BCS accredited degree programmes

The requirements for BCS accreditation for degree programmes specify standards that projects for computer science degrees must meet, both in terms of content and in terms of quality of work. Appendix II comprises Section 2.5 of the BCS document ‘Guidelines on Course Accreditation: Information for universities and colleges’ dated September 2010, updated for use from Autumn 2012, in which these requirements are stated.

* + 1. Standards for professional conduct

All students should, in their project work and elsewhere, seek to aspire to high professional standards. The professional standards the BCS expects of its members and other computing professionals are embodied in the BCS Code of Conduct, contained in Appendix III.

1. Submission Deadlines

Part of the challenge of doing an MSc project is getting it done on time. You have a deadline, and alterations to the deadline are not agreed lightly.

* 1. Full-Time Students

The normal duration of a project is **14 weeks of full-time work**. Full-time students are normally required to complete their projects within the normal period of full-time attendance i.e. within 12 months of initial enrolment on the course. For most, this means starting taught modules in October, finishing taught modules in May, starting the project in June (at the beginning of “Semester X”), submitting in September and having a viva before October.

**Full-time students** (usually starting in October) **finishing taught modules in May**

* *Start project in June*, finish September, duration 14 weeks (Semester X)

**Full-time students** (usually starting in February) **finishing taught modules in January**

* *Start project in February*, finish May, duration 14 weeks (Semester 2)
* Can allow: *Start project in June*, finish September, duration 14 weeks (between the two semesters of taught modules), provided all four modules have been passed.

Deadlines for students who do industrial placements between their taught modules and their projects will be determined on a case-by-case basis.

In all circumstances, full-time MSc students must submit within 3 years of initial enrolment on the course; otherwise their registrations time out and they are automatically terminated.

In some circumstances, full-time students may convert to part-time status, if they need to combine doing a project with employment or some other time-consuming activity. This requires the approval of the Programme Leader.

* 1. Part-Time Students

**Part-time and distance learning students** are normally expected to take three years to complete their degrees, and do their projects in the academic year after they complete their taught modules. The normal **duration of a part-time project is 11 months**, with another month for the viva and marking. However part-time students who finish taught modules in May and officially start their projects at the beginning of the next academic year in October may do unsupervised preliminary work on their projects over the summer.

**Part-time students finishing taught modules in May**

* *Start project in October*, finish September, duration 11 months.
* Can allow: *Start project in June*, finish May, duration 11 months.

**Part-time students finishing taught modules in September**

* *Start project in October*, finish September, duration 11 months.

**Part-time students finishing taught modules in January**

* *Start project in February*, finish January, duration 11 months.
* Can allow: *Start project in June*, finish May, duration 11 months.
* Can allow: *Start project in October*, finish September, duration 11 months.

Part-time students are welcome to complete their projects and get them assessed early, and when it is administratively possible we will process the mark and award the degree early, but students are strongly discouraged from committing to unnecessarily early deadlines.

In all circumstances, part-time MSc students must submit within 6 years of initial enrolment on the course; otherwise their registrations time out and they are automatically terminated.

* 1. Resit projects

Students who fail the project module get an opportunity to do another project. In certain circumstances students, at the discretion of the Supervisor and Programme Leader, may be allowed to revise and improve their projects if they are close to pass-standard. Otherwise the students need to do entirely new projects with new supervisors.

**Full-time students** are expected to do their resit projects in the semester after they get their result notifications. For students who originally submitted in September, this means doing the resit project in Semester Two and submitting it in May. Students will be encouraged to start as soon as they can and to submit early if they want to.

**Part-time students** are expected to do their resit projects in the academic year after their original project, and submit a year after their original submissions. For students who originally submitted in September, this means submitting in the following September.

* 1. The Standard Project Submission Deadlines

**The standard submission deadline** will be determined and announced for each year by the MSc Project Module Coordinator, but is likely to be on or near the first Friday in September.

For the 2015-2016 academic year, the **September** deadline will be **12:00** on **Friday 9 September 2016.**

The Semester One and Semester Two deadlines will be determined and announced for each year by the MSc Project Module Coordinator, but will normally be on the last day of teaching for the taught modules.

For the 2015-2016 academic year, the **January** deadline will be **12:00** on **Friday 15 January 2016**.

For the 2015-2016 academic year, the **May** deadline will be **12:00** on **Friday 13 May 2016**.

**Any other submission deadline** needs to be agreed at or before the beginning of the project, by the Student and the Student’s Supervisor and Programme Leader. The decision and primary responsibility for variations in deadlines rests with the Programme Leader.

* 1. The Viva Date

The **viva voce examination** is a mandatory component of the module – not having a viva counts as a non-submission of the project. The Student arranges a time for it that suits the Supervisor and Second Marker. This is normally after the submission deadline and in time for marking to be completed and marks to be processed and the degree awarded at the next Postgraduate Assessment Board.

* 1. Allowing for resits of taught modules

Subject to the agreement of the Supervisor and Programme Leader, the project submission deadline may be adjusted to allow time for the completion of resits in parallel with the project according to the following policy.

* ***One*** *module resit*: Zero extension. The Student is expected to do this in parallel with the project.
* ***Two*** *module resits*: One week extension.
* ***Three*** *module resits*: Two weeks extension. However this will be regarded as good grounds for granting a four week deferral.
* ***Four*** *module resits*. Two weeks extension. However the Student will be **very strongly advised** to apply to **defer the project** until after the completion of the resits; for normal full-time students this will mean doing the project in Semester One with a January deadline.
	1. Extensions, Deferrals and Interruptions of Study

For students whose work is severely disrupted by unpredictable, unplanned-for events like serious illness, there are three mechanisms by which submission deadlines for assessments can be postponed. If you think you may need an *extension*, a *deferral,* or an *interruption of study*, **talk to your Supervisor** as soon as possible; if you can’t, talk to your Programme Leader as soon as possible.

The following is only a brief outline of university policy, which isn’t guaranteed to be up to date or sufficiently detailed; you should obtain fuller and more accurate information as quickly as possible if you are considering asking for an extension, a deferral, or an interruption of study.

DMU regulations and procedures are described on the DMU website, at <http://www.dmu.ac.uk/dmu-students/the-student-gateway/academic-support-office/deferral-of-assessments.aspx> – alternatively, google ‘DMU deferral’.

* + 1. Extensions

In the event of a temporary problem seriously disrupting your work, your Supervisor can authorize an *extension* of the submission deadline of up to *two weeks*, depending on the severity of the problem. You will need to fill in an official form and present documentary evidence of the problem. It is not possible to extend submission deadlines more than two weeks, so if this isn’t sufficient you need to apply for a deferral.

* + 1. Deferrals

In the event of an unforeseen major problem causing much more than the loss of two weeks’ work, that will make it very difficult or impossible to complete your project by the deadline, you may apply to *defer* the submission of your project to a later date. A deferral cannot be authorized by your Supervisor or your Programme Leader or the MSc Project Module Coordinator; a deferral application will need to go to the Faculty of Technology Deferral Panel and be supported by documentary evidence (confidential evidence will only be read by the chair of the panel). In exceptional circumstances deferrals can be granted retrospectively, but students are very strongly advised to apply as early as possible.

* + 1. Interruptions of Study

An interruption of study is a complete suspension of your enrolment in the course for an agreed period, usually exactly one year. Interruptions of study are only permitted to cater for forthcoming events, such as having to change jobs, having to accept new responsibilities at work, health problems, etc. As this is a whole-course matter you would need to discuss it with your Programme Leader as well as your Supervisor. Interruptions of study cannot be agreed retrospectively.

* 1. Absences Abroad

The Home Office requires De Montfort University by law to monitor overseas students’ attendance and participation in the course. Because of this, the university requires MSc students who wish to leave the UK temporarily in the course of their degrees to go through a bureaucratic procedure to (1) obtain permission to do so, and (2) register the permission with the university’s International Office. If the absence is during the project, the Supervisor can grant permission; otherwise, permission is required from the Programme Leader.

If you wish to go abroad to further your MSc project work, for instance to interview people in another country, or you wish to travel for urgent personal reasons, you should discuss the matter at soon as possible with your Supervisor. If your Supervisor is satisfied that the travel is justified, you should then download and complete the *Absence Request Form* (which is an editable PDF file available on Blackboard), get your Supervisor to sign it, and send it to the responsible Faculty of Technology administrator (currently Suffiyyah Mohammed at smohammed@dmu.ac.uk). In the absence of the Supervisor this can be done by the Programme Leader.

During your absence you must communicate with your supervisor **at least once every two weeks** to comply with the terms of your permission to be absent and the requirements of the university’s statutory obligation to monitor your participation in the course. Communicating more often than that would of course be desirable for maintaining your progress and making sure that your Supervisor knows what he or she needs to know about your situation.

1. Project Submission

Your project documents should be submitted in both hardcopy and electronic form. You are required to submit archive copies of your report and other documents, via the links in the ***Submission*** content area of the shell for **IMAT5314 MSc Project on *Blackboard***, at [**https://vle.dmu.ac.uk**](https://vle.dmu.ac.uk)

If you are a long way from DMU so that submitting hardcopy reports is infeasible, your Supervisor *may* at his or her discretion agree to accept documents in electronic form only, but this generates extra work for the Supervisor and other staff.

* 1. Terms of Reference and Ethical Review Form

You should complete your Terms of Reference document and your Ethical Review Form to the satisfaction of your Supervisor and Second Reader as quickly as possible. Your Supervisor may insist on revisions.

Once your Supervisor is content with your Terms of Reference document, you should submit a PDF or MS Word copy via the *Turnitin* link for **MSc Project Terms of Reference.** Once your Supervisor and Second Reader are satisfied with your Ethical Review Form, you should submit it using the *Turnitin* link for **MSc Project Ethical Review** form. These are for archiving purposes and for checking that everyone has done them, and don’t get checked for similarity to other documents.

* 1. Project Report

You **MUST** submit a copy of your project for similarity checking, in PDF format, through the *Turnitin* link for **MSc Project Report**. This is **MANDATORY**: failure to submit your report for plagiarism checking may be treated as non-submission of the project. It also provides us with an easily accessible electronic copy of your report. If you have problems doing this, contact your Supervisor and the MSc Project Module Coordinator at once.

Youmust also submit:

* **two bound copies** of the project report/dissertation
* **one copy on disc**, which should include a complete set of files including all code for development projects

These should be submitted to **FOTAC**, on the ground floor of Gateway House, for the attention of your Supervisor. Note that we do *not* want expensive hardcover bindings of the sort used for theses for research degrees, and that Faculty of Technology policy is to treat project reports as examination scripts and not return them under any circumstances.

* 1. Project Files

You should also submit a complete set of your project files, including source files for programs, in a ZIP file, using the *Turnitin* link for **MSc Project Files**. This is for archiving purposes, and the files will not be checked for similarity to other documents. This is NOT a substitute for submitting your report for checking using the *Turnitin* link for MSc Project Report.

We do *not* want enormous submissions including entire development environments. If your set of files is bigger than 20MB, ask advice about what you should and should not include.

1. Project Management

Successfully completing an MSc project involves several activities, and requires both careful planning and disciplined work, as well as regular contact with the project Supervisor. The student needs to take responsibility for project management, retaining an overview of where he or she is at and what still needs to be done, and giving enough attention early enough to producing the report.

As well as the agreed deliverables and the final report on the project, the student is also responsible for producing a Terms of Reference document and a completed Ethical Review Form. These are mandatory part of the project module. They are a vitally important part of setting the course of the project and making sure that it is appropriate, and need to be agreed early in the project life cycle. The Supervisor is responsible for making sure the Terms of Reference and the Ethical Review Form describe a clearly defined, feasible, appropriate, and ethically well-considered project, and may insist on revisions. The student is responsible for making sure that the Ethical Review Form is scrutinized and agreed by both the Supervisor and the Second Reader.

* 1. Supervision

Students will be allocated a ***Supervisor*** and ***Second Reader***. They will form the basis of the Project Management Panel (PMP). Under certain circumstances, the PMP may include someone else, such as the client, but this is not usual.

* + 1. Meetings with the Supervisor

The student is responsible for arranging and attending regular meetings with the Supervisor, and when appropriate, the Second Reader.

It is important to have regular contact with the Supervisor. Full-time students should aim to see their Supervisors at least once every two weeks, and part-time students should aim to see their Supervisors at least once every six weeks, more frequently when needed. Different Supervisors like to manage interactions with students differently, with some favouring regular timetabled meetings and others preferring more flexible arrangements. Especially during the summer, some Supervisors may be away from DMU for extended periods. However, a reasonable expectation is that the Supervisor will have six to eight half-hour meetings with the student, plus two or three more formal PMP meetings with the Second Reader, plus the presentation and viva at the end. The Second Reader should have two or three PMP meetings with the student and the Supervisor, plus the presentation and viva at the end.

You should discuss your Supervisor’s expectations for when and how you will schedule meetings at the beginning, and how you will work around times when the Supervisor is unavailable.

Where a Supervisor is away for some time during the project period, cover should be arranged with the Second Reader if possible. It is the student’s responsibility to find out when the Supervisor will be around, and ask advice on where to get additional support if it is needed. If the Second Reader is unavailable it is the Supervisor's responsibility to highlight the problem with the MSc Project Module Coordinator.

To make the most effective use of your Supervisor’s time you should always come prepared (though it’s better to turn up empty-handed than not come at all). You should have a list of key issues you wish to discuss and keep notes of any important decisions. Following the meeting let your Supervisor have a brief summary of the key points that were addressed including the decisions that were agreed.

Distance learning students may, by agreement with their Supervisor, conduct Supervisor meetings and PMP Meetings face-to-face, by telephone, or through the use of other communication technologies, such as Skype, as agreed between the student and the PMP. Where the student and PMP agree to the use of alternative technologies for the interview it is the responsibility of the student to provide and organize the appropriate resources required – note that this is not a requirement but an alternative option to face-to-face or telephone interviews.

* + 1. Progress Reports

One of the greatest dangers to the timely completion and submission of a project is the postponement of critical paths within the plan in favour of less critical work, or worse still, the continued neglect of the project work.

The procedure for monitoring the progress of the student should be agreed between the student and the PMP. It will normally involve both Progress Reports and periodic meetings with your PMP. You should discuss your Supervisor’s expectations at the beginning of the project.

Full-time students are normally required to submit three Progress Reports. Two of these should be submitted for your PMP meetings. For part-time and distance learning students the project has a longer duration, which increases the risk of the project becoming stalled or neglected. Consequently, these students are normally required to submit a minimum of six Progress Reports. The timings of these reports should be agreed with the Supervisor and clearly identified in the Schedule of Activities produced as part of the Terms of Reference.

Your regular progress reports to your PMP should clearly identify the work completed to date, deliverables already produced, and the plan forward. Failing to produce timely Progress Reports may result in the project management aspect of your project being marked down.

Your Supervisor will provide written comments on your progress and both your report and the Supervisor’s assessment will be forwarded to the Project Co-ordinator.

A Project Progress Report proforma is given in Appendix VIII, and is also available on the IMAT 5314 Blackboard shell.

* + 1. PMP Meetings

You should have two or three more formal PMP Meetings with your Supervisor and Second Reader, at which you describe what you are doing and how far you have got and what problems you have, primarily to the Second Reader who will be less familiar with your project than the Supervisor.

It is the student’s responsibility to arrange these PMP Meetings. Where possible, these should be scheduled well in advance and written into the student’s Schedule of Activities.

The PMP Meetings serve two purposes. One is to enable the student to get advice from the Second Reader, from a different perspective from the Supervisor, which is always helpful. The other is to serve as a progress checkpoint. The Supervisor and Second Reader should evaluate whether the student is on track, or is *Borderline* (in some danger of failing the project module) or *Unsatisfactory* (likely to fail the project module). If the student is *Borderline* or *Unsatisfactory*, the Supervisor should both warn the student, and notify the MSc Project Module Coordinator and the faculty office.

You should come well prepared for PMP Meetings. Your PMP will expect that you will provide evidence of progress and that you will have a clear idea of the next steps. Students who fail to provide Progress Reports or attend PMP Meetings may be assessed as *Unsatisfactory*. It is good practice to coordinate your Progress Reports with your PMP Meetings, producing reports to discuss at your PMP Meetings.

If you cannot meet your Supervisor and Second Reader together for a PMP Meeting, you should arrange to meet your Second Reader separately, so that your Second Reader can form a view of your progress (to discuss with your Supervisor), and can give you advice.

* 1. Selecting a Project

Students are responsible for investigating possible projects and discussing these with the Supervisor, and where possible the proposer and other stakeholders, and getting a clear agreement on the project with the Supervisor. Full time students are strongly advised to do this *before* starting full-time work on their projects after their second semester exams.

* + 1. Sources of Project Proposals

Ideas for projects may be

**Proposed by a member of staff**. The MSc Project Module Coordinator will make a collection of project proposals available on the Blackboard shell for IMAT 5314 on the DMU Intranet. You will have access to the Blackboard shell once you are registered on the module. The proposals will indicate how to contact the proposer if the proposer is at DMU; however the collection of proposals on Blackboard includes project proposal documents written by people who have now left DMU.

When possible the student should also discuss a project they want to do with the proposer as well as the Supervisor. Ideally, the proposer will also be the Supervisor. If you choose a project sufficiently early the MSc Project Module Coordinator or your Programme Leader may be able to allocate you the proposer as Supervisor, but this is frequently not possible.

**Proposed by an employer or other client**. Sometimes external clients suggest ideas for projects to students. We strongly encourage MSc projects that have real-life applications; however the Supervisor will need to ensure that the proposal is feasible and has sufficient depth and complexity to be an appropriate MSc project. There can be a conflict of interest between meeting the practical needs (or apparent or claimed practical needs) of the client and doing what will get a good mark, and the balance between these needs to be set sufficiently far towards prioritizing a successful MSc project. You should (anyway) keep your Supervisor sufficiently well informed about your requirements analysis and design work to get advice on this, and should ask advice if in any doubt.

Part-time and distance learning students normally find it convenient to undertake a project related to their employment. It can take some time to refine a work-based project and a few iterations may be needed to set up a project of appropriate level and duration for an MSc Course. You will therefore need to plan accordingly. You will need to meet with your Supervisor and the client as early as possible to define clearly the aims and boundaries of the project.

**Proposed by the student**. We encourage students to devise and put forward their own ideas for projects. Sometimes these may be inspired by suggestions for similar projects proposed by members of staff. If you intend to propose your own project you should provide your Supervisor or Project Module Coordinator with an outline proposal as soon as possible. The Supervisor will need to ensure that the proposal is feasible and has sufficient depth and complexity to be an appropriate MSc project, as we find that sometimes students’ ideas will involve doing too much content production and not enough computer science. If you produce a good idea sufficiently early, it may be possible for the MSc Project Module Coordinator or your Programme Leader to find you a Supervisor with a particular interest or expertise in the topic.

* + 1. Part-Time and Distance Learning Students

The study arrangements for part-time and distance learning students are very flexible. You may formally begin work on your project as soon as you have passed four taught modules and the Research Methods component. It is strongly recommended, however, that you pass all eight taught modules before beginning your project.

* 1. Agreeing a plan: Terms of Reference and Ethical Review

It is an essential requirement of the IMAT 5314 project module that the student produce a Terms of Reference document and an Ethical Review Form and get these agreed by the Supervisor and normally the Second Reader. You should do this as quickly as you can once you have agreed on a topic with the Supervisor. The Supervisor or Second Reader may insist on revisions before signing them off. These are discussed in more detail in Section 5.

1. The Terms Of Reference and Ethical Review Form

Once the topic of the project has been agreed by the student and the Supervisor, the project must be defined in more detail by the Terms of Reference produced by the student in conjunction with the Supervisor and the client. The aim is to get a clear and agreed understanding of what the project *is*, so that the Supervisor can ensure that the student has both objectives and plans for how to achieve them that are feasible and appropriate for an MSc project. The Terms of Reference and the agreed schedule of activities are critical elements of the project in that they determine a ‘metre stick’ against which the project will be assessed.

It is common for the topics for background research, the research questions, or the planned functionality of the system to shift as the project develops towards its agreed overall goals and you understand better what you can and can’t do. This is normally perfectly acceptable – you need to have clear objectives but they aren’t cast in concrete. What is not acceptable is to abandon a project and start doing another one. If you want to make major changes to the objectives of your project after agreeing your Terms of Reference, it is imperative that you consult your Supervisor as soon as possible.

You *must* complete an Ethical Review Form and get it agreed by your Supervisor and your Second Reader at the same time as the Terms of Reference. If the project changes (with the agreement of the Supervisor) so that it includes elements of human research not envisaged in the Terms of Reference, a new Ethical Review Form will be needed.

* 1. Structure of the Terms of Reference document

The Terms of Reference contain the following elements:

* Header
* Student Name & Course
* Project Title
* Client/Proposer
* Supervisor(s)
* Background to the Project
* Deliverables
* Academic Objectives
* Product Objectives
* Background Research Objectives
* Resources Required and Constraints
* Risk Assessment (see 4.2 below)

Appendices

* Schedule of Activities (including dates of Progress Reports and Submission date)
* Ethical Review Form (see 4.3 below)

The *Background to the Project* section should state what the problem *is* that you intend to tackle, how you intend to tackle it, and why what you are doing is needed and/or interesting. Half a page should be sufficient unless understanding the background or the nature of the project is not straightforward.

The *Deliverables* section states what documents and other artefacts you will produce for the project. This will normally be a bullet point list.

The *Academic Objectives* section should state what you want to learn from the experience of doing the project (i.e. in what ways you want to become a more skilled or educated person). It will normally be a brief bullet point list.

The *Product Objectives* section should state what your program if you are building one, or other deliverables, should *do*, i.e. what you are intending to *produce*, in enough detail to demonstrate that you have a good understanding of what the project will involve and plans that are both realistic and feasible and sufficiently ambitious. This will normally be a bullet point list; detail is good but only if going into detail doesn’t require you to make premature decisions. If you are doing a research based project, it is a good idea to provide as full a list as you can of the various research questions you want to consider within your topic (and there’s no harm in starting with too many and deciding which to discard later).

The *Background Research Objectives* section should state what you want to learn and write about as part of doing your project, beyond what you will study anyway for your taught modules (i.e. what you are going to investigate for the research element of your project, and write about in your report to provide a context for your own work and show that you have satisfied the requirement to do some research as part of your project). Learning about a particular topic may be one of your academic objectives. This will normally be a brief bullet point list, but detail won’t hurt.

It’s worth listing the *Resources Required* and the *Constraints* that affect the project, but this is only significant if they are non-standard or problematic in some way.

It is essential to produce a detailed *Schedule of Activities*, i.e. a time plan stating what the different steps in your project are, what you expect to do when, and how long each activity will take. The time plan usually takes the form of a *Gantt Chart*.

If you are in any doubt about what to put in your Terms of Reference you should consult your Supervisor.

* 1. Risk Assessment

You are required to include a risk assessment in your Terms of Reference, naming the risks that might jeopardize the success of your project, assessing their likelihood and impact, and saying what you can do to minimize the likelihood that they will happen and mitigate their effects if they do happen.

The project is a major, largely self-managed, individual piece of academic work, and an important component of the Master’s programme – it is worth 60 credits out of a total of 180. Success in the project is vital, so you need to (1) take your risk assessment seriously and make sure that your assessment and proposals for managing risk are realistic and sensible, and (2) actually do the risk management.

Essentially risk is associated with uncertainty – an event, usually with negative outcomes, may or may not occur. A fundamental principle of risk management to be proactive – to identify and catalogue potential risks using a range of techniques; using prompt lists, or brainstorming with other project students, for example. Then two important properties of risks need to be considered:

Probability – the chances that a particular risk will occur (*%* or *P* or *high, medium, low*)

Impact – the consequences the project if the risk materialises (severity from *1 to 10*, or *high, medium, low*)

These can be combined to give an idea of the exposure of the project to the risk. While it will probably not be appropriate to express this in monetary terms for your project, you might calculate a numerical value, or classify exposure as “high, medium or low”. This should allow you to prioritize risks in order to allow you to manage the most important.

The following table is a simple example of how you might record risk management information, or you might use a more sophisticated approach, such as a risk register.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Risk identification** | **Probability** | **Impact** | **Assessment (i.e. combine probability and impact)** | **Risk monitoring, mitigation and management** |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

You are strongly recommended to carry out some independent research into good risk management approaches, such as Hughes and Cotterell (2009) in the reading list.

* 1. Ethical Review

As part of the Terms of Reference you *must* carry out an ethical review of your chosen project, and complete the Ethical Review Form and get it agreed and signed by your Supervisor and Second Reader. If it isn’t possible to get the form reviewed by the Second Reader, it should be reviewed and signed by the Project Module Coordinator. Every project must have a completed and agreed Ethical Review Form even if it has no element of human research or any other ethically relevant activity.

**Before doing so you must have viewed the lecture on “The Ethics of Emerging ICTs” by Bernd Stahl at http://www.youtube.com/watch?v=UWUI7UIoNbk**

* + 1. University policies and good practice for ethical research

The University has a policy to protect individuals who are the subjects of research. For the purpose of ethical review, your MSc project is “research”. It follows the guidelines of the Helsinki Declaration of Human Rights to assess all studies that involve human volunteers.

Ethical issues arise when the conduct of a student project involves the interests and rights of others. The project may impinge on the confidentiality, privacy, convenience, comfort or safety of others. Such threats constitute ethical problems.

In an ethically sound student project, the student must observe and protect the rights of would-be participants and systematically act to permit the participants to exercise those rights. Ethical practice in such cases requires that participants, at a minimum, be fully informed, volunteer freely without inducement, be free to opt-out without prejudice, and be fully protected in regard to safety to the limits of best practice.

Student projects often involve other people in various capacities, such as the client, the user of an existing system, and the recipient of the outcome of the project, as well as interviewees or test subjects in usability trials. These can be broadly termed the *human subjects* of the project. Human subjects can be affected by the project involving:

* Gathering information about human beings through: Interviewing, Surveying Questionnaires, Observation of human behaviour
* Using archived data in which individuals are identifiable
* Researching into illegal activities, activities at the margins of the law or activities that have a risk of injury

The University policy states that research (including student projects) involving human subjects should ensure:

* All participants volunteer**,** normally without inducement, and give their written consent to participation
* Written consent is given in the light of full awareness of the objectives of the teaching or research, the procedures to be followed, and the anticipated outcomes particularly in respect of publication of findings
* All participants be given a written description of their involvement in the project, the demands to be made, their rights and how their rights and interests will be protected, particularly in respect of confidentiality, privacy and safety
* All participants are made aware of their freedom to withdraw consent and discontinue participation at any time
* Appropriate documentation is designed to meet these objectives and to keep appropriate records, for example, information regarding the project should be given in writing and the participant should sign to acknowledge receipt of the material.

Students undertaking projects must abide by this policy.

* + 1. Ethical review procedure

For ethical compliance to be embraced and be effective, a procedure is adopted which is based on an escalation process dependent upon the severity of the ethical issue.

1. The student thinks carefully about how the research might involve or impact other people or have some other real-world consequence, and how to follow ethical good practice and avoid harm.
2. The student completes the Ethical Review Form, discusses it with the Supervisor, and revises it until it is satisfactory.
3. The student, Supervisor and Second Reader review and sign the Ethical Review Form.
4. If there are major ethical issues (which is uncommon for IMAT 5314 projects), the Ethical Review Form is submitted to the Chair of the Faculty of Technology Human Research Ethics Committee for further review. These projects cannot be taken beyond the Terms of Reference stage until the matter is resolved.

The outcome of the ethical review is recorded on the Ethical Review Form. There are four possible outcomes:

1. No ethical issues
2. Minor ethical issues which have been addressed and concerns resolved
3. Major ethical issues which have been addressed and concerns resolved
4. Ethical issues that have not been resolved

The Supervisor authorizes those projects with outcomes 1 or 2. Projects with outcomes 3 or 4 are submitted to the Faculty Human Research Ethics Committee for further review. These projects cannot be taken beyond the Terms of Reference stage until they have been reviewed by the full committee or by the chair of the committee or whoever he/she delegates authority to.

The student must keep the completed form duly signed. The student must give a copy of the form to the Supervisor who must keep it for reference. The form must be included in the project report when it is submitted for assessment.

* + 1. Completing the Ethical Review Form

The form can be downloaded from the IMAT 5314 Blackboard shell, or alternatively cut and pasted from the end of this document. Students are often in some doubt about how to complete the form. When in doubt, you should consult your Supervisor.

The section “Brief description of proposed research activity and its objectives” should contain a description of what the *activities* are within the project *that might have ethical implications*, such as carrying out interviews to elicit views on the usability of a particular e-commerce software system, or conducting user trials of your system. It is *not* a description of the whole of your project. However, introducing this with a brief sentence saying what your project is about won’t hurt. If you might do usability testing of your system, it’s worth listing this. If there are no plans to involve other human beings, you should write a sentence here to say so.

The section “Ethical Issues identified” should have a brief but thorough listing of possible issues – when it doubt include something – and the “How these will be addressed” section should have a statement of how each issue will be resolved. Take data confidentiality issues seriously. It’s sufficient to say for user trials that normal good practice will be observed – but you then have to do it!

1. Working On The Project

Once a programme of work has been established, in conjunction with your Supervisor, you should begin preliminary work on your project. Full-time students are expected to devote all their time (notionally 40 hours per week) to the project on completion of the Semester 2 examinations. Appendix IV lists some useful guides to carrying out a project.

* 1. Literature Survey or Fact Finding

This is the first major milestone of the project. In general, the process of fact finding (for development or consultancy projects) or literature survey (for research projects) aims at identifying what other work has been carried out in the same area and relating the objectives of the project to an understanding of the context. Fact-finding is more oriented towards defining the requirement of the project and can be a continuous process. This is particularly true for projects whose final deliverable is an *evaluation* of some kind (e.g. evaluating a given technology, existing software packages in a specific area, etc.). Literature survey is more oriented towards understanding and organizing previous knowledge, and identifying gaps that need to be filled.

Literature survey (or fact finding) is a crucial stage in the project life cycle and, therefore, its importance should not be under-estimated. The Supervisor is in a position to provide help and offer guidance to ensure that relevant references are reviewed and related sources of information are explored.

* 1. Presenting your Fact Finding

You should discuss the outcomes of your fact finding and literature analysis with your Supervisor, and with your Second Reader in PMP Meetings, and get feedback on how to improve what you have done as well as how to build on it in the later stages of your work.

Your fact finding and literature analysis will form an important part of what you deliver at the end of the project. For development projects, a thorough, persuasive and well-presented requirements analysis will add to the value of the project, while a poor one will fail to impress. When you read an academic paper or anything else that will contribute to your report, it is a good idea to write a paragraph about it quickly while it is fresh in your mind, that you can slot into your report or can adapt, without needing to read the paper again.

* 1. Implementation Issues

The project provides the opportunity to learn new skills and techniques. The time necessary to acquire such skills should be built into the preparation stage.

The implementation of a solution to the identified problems will be influenced by the choice of software and hardware. Although this choice should have been discussed during the generation of the Terms of Reference, new requirements that may have been identified during the analysis could lead to the need to use different software or hardware. If that is the case, you should discuss the situation with your Supervisor as soon as possible.

Caution: Always over-estimate the time needed for implementation. If in doubt, consult your Supervisor and/or PMP.

Where the project consists of significant software development you should conduct thorough testing and analysis of the test results, and document this thoroughly in the report. A properly conducted and documented user trial can add considerable value to a development project.

* 1. SVN Repository for code

All software development projects ***may*** use the faculty’s SVN version control server as the source code repository. If you request it, you will be given your own repository to which you have read/write access and tutors have read access. More information on this is provided in a separate handout, *Version Control with SVN*, which is available on in the IMAT 5314 MSc Project module shell on Blackboard.

1. Writing The Project Report

The written report constitutes the principal deliverable of the MSc project. Careful attention should be given to its preparation. Appendix IV lists some useful guides to writing reports and dissertations.

**A note on terminology**: In this document we refer to the main written document about the project as the *report*. This implies that it is a document *about* something else, usually a piece of software or a research activity, which is the primary product of the project. However, the main product of a research degree such as an MPhil or PhD is a *thesis* or *dissertation* – this is a document that *is* the scholarly contribution, and everything else is just supporting evidence or documentation. (The words *thesis* and *dissertation* are essentially synonyms, but in British usage a thesis is bigger than a dissertation, and in American usage the opposite is true. The word *thesis* is also used for a claim to be investigated and supported or refuted.) For research-type projects your report is usually a research dissertation similar in character to an MPhil or PhD thesis.

* 1. Avoiding plagiarism and giving credit for other people’s work

The most important requirement of the project is that it is *your work*. But all scholarly work uses and builds on the contributions of others. It is absolutely essential that you distinguish absolutely clearly between your own work and ideas and your own text, and the words and ideas of others. You need to give due credit – *honestly*, *clearly* and *accurately* – for any text, ideas or information that are not your own. Failure to do so constitutes plagiarism.

* + 1. Plagiarism and Turnitin

Serious cases of plagiarism can result in expulsion from the university and automatic failure of the degree course.

As well as deliberate cheating, failing to be sufficiently careful about showing what text in your report is yours and what is second hand is also plagiarism. This can result – and has – in students who have worked hard and done their own projects being punished for an academic offence and having their projects failed or severely marked down. In order to avoid any unwanted occurrences of plagiarism, it is important that your work is correctly referenced (see section 7.8).

You must submit a copy of your project report through *Turnitin* (see section 3). *Turnitin* checks for originality and generates a report showing the percentage of your submitted work which matches material found in other sources. Your report will be added to the *Turnitin* database.

Remember that a high *Turnitin* score will get the attention of your Supervisor and the MSc Project Module Coordinator, but it isn’t a problem provided the relationship between what you have written and what you have borrowed from your sources is shown both honestly and clearly.

* + 1. A note about quoting explanations

What you *should* do is write explanations in your own words, summarizing and synthesizing the information you’ve taken from your sources. What you *should not* do is quote chunks of other people’s text, presenting them as yours – this is plagiarism. Paraphrasing large pieces of text, changing words here and there to avoid copying sentences unaltered, impresses no one. This is easily spotted by *Turnitin*, and will be regarded as plagiarism.

However, it is quite common to want to include extensive definitions and explanations in your report that you have taken from one source and don’t want to summarize or rewrite – the author has written exactly what you want to say in your report, and you can’t improve it. This isn’t ideal – we want *your* writing – but is legitimate and acceptable provided you make clear both *what* you are quoting, and *where* you are quoting it from. Second-hand sentences introduced with phrases like “Alshammari and Howley (2012) claim that…” or “Carter and Ahmadi (2012) define…” don’t need special treatment, though quotation marks aid understanding by showing that the sentence is an exact quotation not a summary or a paraphrase. Sentences quoted verbatim with a reference at the end should be in quotation marks. For larger chunks, you should use quotation marks or indented paragraphs to make quotations visually distinct.

The same principles apply to citing or quoting work that you have written yourself, for instance in assignments for your taught modules. For projects that draw on and extend work done for taught modules, it is essential to show what comes from the earlier work and what is new.

* 1. Writing the Report

It is a mistake to try to write the report all at once at the end of the project. By then you will be running short of time and will have forgotten why particular decisions have been made or why certain things were done in a particular way. Instead, you are advised to keep a record of your work as progress is made, and write it up steadily throughout the project life cycle. Writing up much of the exploratory work early is a good way of keeping a succinct record of the initial work associated with the project and can be a useful reference source in the later stages of the project.

It’s also a good idea to write notes, or paragraphs for your report, or descriptions of the paragraphs that you’re going to write, on journal articles and other documents *when you read them*, so you don’t need to reread them later to write your report.

You should agree with your Supervisor how your writing will be structured and monitored and agree on a timetable for producing the dissertation. You should ask your Supervisor’s advice *early* about what to include in the report and how to organize it. The best advice this handbook can give you is to write the report your Supervisor wants you to write.

* 1. The Deliverables

You should agree with your Supervisor what the deliverables of the project are going to be, preferably when agreeing the Terms of Reference, and certainly before you do much report writing.

For most development projects, the central part of the work is the production of a piece of software, and the essential deliverables are the piece of software, and a report that describes both the software and its development process, which should have appendices containing all the required documentation of the requirements analysis, design and testing.

For other types of projects, where the aim of the project is to produce some sort of document, there are different models.

One approach is to produce a single document – a dissertation – plus appendices, that combines a presentation of your research and findings (whether a literature analysis, or a research study involving the collection of primary data, or a data analysis project, or a consultancy report on a practical problem) with an account and critical review of how you have carried out the project.

The other approach is to produce two documents: one is the key product, comparable to the piece of software in a development project – a consultancy report for the client or a paper on your research; the other is a report – comparable to the report on a development project – on how you have carried out the project, describing everything that needs to be discussed that doesn’t belong in the consultancy report or research paper, including the critical review of the project.

* 1. Evidence of Research and Critical Analysis

Whether the project is of a research-based or a professional type, the report must exhibit evidence of a thoughtful investigation about the problem in hand. A project with a significant research component should provide a well explained review of published research related to the topic, and a critical analysis of your approach. This is likely to form one or more major sections of your report.

**A poor or non-existent critical analysis is likely to lead to failure of the project.** You must provide evidence both of research into the problem (typically by reading and writing about journal articles, books and other information sources) and of critical analysis and integration of what you have read. It should be noted that any statement made has to be justified. Phrases such as: “*this method is better than*...” or “*this technique has been used in this project*” should be explained. Alternatively, the reader should be referred to another text where the explanation can be found.

* 1. Critical Review

You need to have a critical review of both your program or other product, and of your project as a whole. This should be a major section of your report, or two if you choose to split these. You should discuss the extent to which the original objectives were met and explain any shortcomings. You should neither over-estimate the achievements nor under-play the shortcomings. It is important that you identify points of weakness in your work and suggest possible ways of overcoming them. Your Supervisor and Second Reader want to see evidence of intelligent thought: they will be far more impressed by a shrewd, sophisticated and frank analysis of what you’ve done and haven’t done than by lack of awareness of problems they can see clearly themselves.

* 1. Structure and Readability

When preparing a report or dissertation, you should remember that it is intended not only for your Supervisor and Second Reader but other readers as well. The other readers may be IT literate but their knowledge of the project itself may be minimal. Therefore, you should pay particular attention to a clear statement of your objectives in the introduction of the report. Any technical terms and abbreviations used should be clearly defined, and you should not assume that the reader has spent the same amount of time on the project as you did.

Of crucial importance is the critical analysis throughout. You must, when reading and writing about other people’s material not merely report their work, but provide your own analysis of the content. When evaluating the software you develop, you need to *test* it: you need to ensure that everything works, or if it doesn’t, report this honestly and accurately.

* + 1. Style

Above all, your report should be *clear*. Say exactly what you mean as simply as possible. Do not use long or fancy words when plain words will do. Do not write in an artificially stuffy style.

Guides to academic writing (including some previous versions of this MSc project guide) often state that “You must write in the third person”. You shouldn’t treat this as an absolute rule, but your project report (and other academic writing) should be impersonal except when it is important that these are *your* experiences or opinions. If you want, you can compromise on the “The author…”

* + 1. Sections

There is no single right way to structure reports, unless the report is an instance of a defined class of reports that serve a very specific purpose and have precisely defined contents. (For MSc projects, this is true of the whole submission, see section 7.10, but not of the report itself – projects are far too varied for a one-size-fits-all approach.) You should think carefully about what structure suits your project and meets your needs and those of your readers. You should agree the structure of your report with your Supervisor.

However, the following general principles apply:

* You need to have numbered sections and subsections. (The introduction is section 1. Anything before the introduction, like table of contents, list of figures, abstract, etc, is not *part* of the report, and doesn’t get a section number; similarly the reference list, and acknowledgements if you have them, after the report don’t have section numbers. Appendices need to be numbered separately.)
* An *Introduction* should give a brief overview of the project and explain the aims and objectives of your work.
* Later sections will provide more details about previous work, your particular objectives in relation to that work and the methods and/or techniques you have used to attain your objectives.
* If your product is a program, you need to give a section to saying what the program as built actually does.
* You must ensure that a smooth flow is maintained between sections.
* Choose titles for sections and subsections that tell as much of the story as they reasonably can, without being too wordy.
	+ 1. Appendices

Your report should tell a readable linear story, and your appendices should have everything in them that you ought to include in your project submission. Include any diagrams, pictures or tables that you need to support your story in your report, in the places where they are referred to. You should only have a figure once in the report, but you shouldn’t be afraid to repeat them in the appendices in order to have complete sets of things in one place.

* + 1. Paragraphs

Paragraphs should be used sensibly. A new train of argument requires a new paragraph. With long paragraphs the reader will have difficulty finding the salient points in the argument. Each paragraph contains a group of closely related sentences. Typically, the first sentence introduces the subject of the paragraph and the last sentence concludes it.

* + 1. English Language: Some Suggestions
* Although the length of sentences should be variable, most sentences should be kept short. An average of 12 words per sentence should work.
* Contracted forms such as *“isn’t” “can’t”, “haven’t*” should be avoided.
* Run the spell-checker to eliminate obvious spelling mistakes.
* Technical terms and abbreviations should be explained when they first appear.
* A glossary and/or a list of symbols should be provided as an appendix if necessary.
* It is recommended to have the report checked by a native English speaker (or a more experienced writer) as it progresses.
* Have a look at the list of useful references on report writing (available from the library). They contain useful tips and guidance for preparing and writing a good dissertation.
* If you can, allow several days between writing a draft and proof-reading your own work.
	1. Abstract

The abstract is a brief summary of the report itself and is placed just before the introductory chapter. In general, dissertation abstracts are about 250 words in length and contain short statements summarising the project objectives, the method and techniques used to work towards these objectives, and the results achieved and conclusions made. It should give a reader sufficient information to decide whether or not to read the rest of the report.

The abstract is important, because it is this section of the dissertation that is generally stored in electronic format for future reference, and turns up in literature searches. Thus the abstract must accurately reflect the content of the dissertation and should be written in a clear and concise manner. It’s a summary, not an introduction or a teaser.

* 1. Quoting References

It is important that you distinguish your work from that of other people. Any previous work that has been used during the course of the project should be clearly referenced within the text. Any document cited in the text has to appear in the list of references. Any reference in the list of references must be cited in the text.

However it is good practice to list books, journal articles, and so on, that you have used to generally support your project in a Bibliography, separate from the reference list; these do not need to be cited in the text.

* + 1. Applying a standard reference format

For any scholarly work, *applying a standard reference format absolutely consistently* is extremely important for making your work look competent, as well as enabling people to use your reference list. Rewriting references into exactly the right format can get very tedious, but it is absolutely essential as failing to do so creates an impression of careless, shoddy, incompetent work.

It helps to use an automated reference generation tool to put references into the right format for you. There is a reference generator built into *MS Word 2013* which works well, though you need to check the box offering any expanded range of fields to get at the volume number of journal articles. You can keep and import your own reference collection but not search from a large database. *RefMe* ([www.refme.com](http://www.refme.com)) works well, and has a very wide range of reference formats, as well as a good search facility that will save you a lot of typing, but you’ll need to manually correct automatically generated listings. *Zotero* ([www.zotero.org](http://www.zotero.org)) is another good choice. DMU Library recommends *RefWorks* and *Mendeley* for generating references.

* + 1. Choosing a standard reference format

If writing for publication, use the reference format of the journal (or whatever). If not, pick a standard reference format, and stick to it.

There are two main types of reference format: (a) Numbered references, where the references are listed and numbered in order of citation in the text, and are referred to in the text by their numbers. This has the advantage of brevity. (b) Name and date references, also called parenthetical references, where the references are listed alphabetically by the names of the authors and the year of publication, and are referred to in the text by the names of the authors and the year of publication. This has the advantage that the readers can often recognize the citations if they are familiar with the field, and find it easier to see when the same work is cited in different places.

DMU requires the use of the *Harvard Referencing System*. This is the most famous name and date referencing ‘system’. The trouble is that there is no such thing as ‘the’ Harvard System: there are a lot of guides that have slight variations on the rules. De Montfort University has its own flavour of ‘DMU-Harvard’ referencing, and DMU Library offers a guide to it at <http://www.library.dmu.ac.uk/Images/Selfstudy/Harvard.pdf> (accessed 9.10.2014). In practice, if you use a sensible name-and-date format absolutely consistently, no one at DMU will complain too loudly.

By far the most popular properly defined name and date referencing system is the ***American Psychological Association* format**, which is a little bit different from the most common variants of the Harvard System. This is the format we recommend using. Purdue University has a good guide to APA referencing at <https://owl.english.purdue.edu/owl/resource/560/01/> (accessed 9.10.2014). The University of Southern Queensland also has a good guide to APA referencing at <http://www.usq.edu.au/library/referencing/apa-referencing-guide> (accessed 10.10.2014).

* + 1. Citations in text

Indicate references in the text by showing the author’s name and the year of publication, in brackets at the appropriate point “… (Shneiderman, 2002)”. For two authors, give both names “… (Newell and Simon, 1972)”; for three or more, give the first author’s name followed by ‘et al’ “… (Jakobson et al, 1999).” APA Style wants three to five authors listed, rather than abbreviated to ‘et al’, but you can regard this as overkill – just be consistent. If you want to refer to something at a particular point in a text, include the page number if you can “… (Russell and Norvig, 2010, p. 1023)”.

If the authors’ names form part of the sentence, put the year in brackets after the names, like this: “Stahl (2011) claimed that…” If the sentence refers to the book or paper itself rather than the author, use the author name with the year in brackets “In Jakobson et al (1999), UML is used…” If the paper or the author isn’t referred to in the sentence, but is just the source of the assertion, then the name and year in brackets go at the end of the sentence or after the point they support. “Use cases form an essential part of the Unified Method (Jakobson et al, 1999).” Separate citations to works by the same author with commas, as in “… (Eckert, 1997, 2001).” Separate citations to works by different authors with semi-colons, thus “The cognitive dimensions framework can be used to analyse usability trade-offs (Green, 1989; Green and Petre, 1996).” Use “(n.d.)” if there is no publication date, but you shouldn’t use author and date referencing for the Bible, ancient classics, Shakespeare, etc, unless the edition matters.

To cite conversations and private messages such as letters and emails sent to you, write “personal communication” with the year. “Martin Stacey (personal communication, 2014) recommended using the APA reference format.” Personal communications should not appear in the reference list.

* + 1. References in the reference list

The list of references consists of all publications cited in the text, in alphabetical order by author and date. The references should have *hanging indentation* – all lines after the first should be indented a bit.

There are rules for a very wide range of types of publication: consult a guide.

Names of authors should be written *surname, comma, initials* (if possible, all the initials), *comma* (except for the last author), with an *ampersand* to separate the last author, followed by the *year of publication in brackets*, followed by a *dot*. You may put the authors in bold face if you wish, but this isn’t standard. Put “(Ed.).” or “(Eds.).” after the names for edited books.

**Newell, A. & Simon, H.A. (1972).**  …

Titles of books and names of journals should be in *italics*, with important words Capitalized – maintain the punctuation and capitalization they use in their titles. Harvard Style favours using some standard abbreviations for names of journals, for instance “Int J Product Development” “Phys. Rev.” but most publications using APA Style aren’t keen on this. Pick a policy and be consistent.

**Newell, A. & Simon, H.A. (1972).** *Human Information Processing* …

For **Books**, the *title* should be in italics followed by a *dot*, then *place-of-publication colon publisher dot*. (The place of publication should name the country or US state, except for major publishing cities like London, New York or Paris.)

**Newell, A. & Simon, H.A. (1972).** *Human Information Processing*. Englewood Cliffs, NJ: Prentice Hall.

For articles in journals, magazines, etc, or in conference proceedings, or chapters in edited books, the titles of the individual articles should only capitalize the first word and proper names, and not be in italics.

**Turing, A. (1936).** On computable numbers, with an application to the Entscheidungsproblem. …

For **papers in academic journals or other periodicals**, the *title of the paper* should be followed by a *dot*, then the *name of the publication in italics*, comma, the *volume number in italics*, comma, the *pages occupied by the paper, dot*. Only include the issue number within the volume (in brackets, not in italics) if the pages of the periodical are numbered by issue not by volume.

**Turing, A. (1936).** On computable numbers, with an application to the Entscheidungsproblem. *Proceedings of the London Mathematical Society, 2nd series*, 42, 230-265.

**Scruton, R. (1996).** The eclipse of listening. *The New Criterion, 15*(3), 5-13.

Include the *Digital Object Identifier* (DOI) if there is one, for any type of publication, at the end.

**Radford, M. (2001).** Aesthetic and religious awareness among pupils: Similarities and differences. *British Journal of Music Education, 18*, 151-159. doi:10.1017/s0265051701000249

References to **chapters in edited books** should include the editors of the book, but references to papers in **conference proceedings** generally don’t. Page numbers for books include “pp.” but page numbers for journals don’t.

**Treasure, D.C., Lemyre, P.N., Kuczka, K.K., & Standage, M. (2007).** Motivation in elite sport: A self-determination perspective. In M.S. Hagger & N.L. Chatzisarantis (Eds.), *Intrinsic motivation and self-determination in exercise and sport* (pp. 153-166). Champaign, IL: Human Kinetics.

**Eckert, C.M. & Stacey, M.K. (2001).** Dimensions of Communication in Design. In *Proceedings of the 13th International Conference on Engineering Design: Design Management – Process and Information Issues* (pp. 473-480). Glasgow: Professional Engineering Publishing.

For **online sources**, give the URL; include a retrieval date if the content is likely to change. Treat online publications in the same way as print publications. You don’t need to worry about web retrieval of documents that are published on paper. If the work has an author and publication date, treat it like a regular reference.

**Allen, D. (2004).** Dealing with your meeting notes. Retrieved from http://www.effectivemeetings.com/meetingbasics/notes.asp

If an organization acts as an author, treat it as an author.

**Australian Institute of Health and Welfare (2011).** Australia's health 2004. Retrieved from http://www.aihw.gov.au/publications/index.cfm/title/10014

* 1. Acknowledgements

It is a good practice to acknowledge help from individuals and organisations. This includes any members of staff or fellow students who provided help or support during the course of the project. For dissertations, it is customary to put acknowledgements at the beginning before the report, with a heading that is unnumbered but formatted like a major section heading. For research publications, it is customary to put acknowledgements at the end, after the conclusions but before the references, with a header formatted like the reference list header.

* 1. Presentation

Project reports should be printed single sided, one and a half or double-spaced, with margins as shown in Appendix VII. The Faculty will provide front and back covers. The following order of sections is recommended:

* Front Cover
* Title Page
* Abstract
* Acknowledgements
* Table of Contents
* List of Figures (where applicable)
* List of Tables (where applicable)
* List of Acronyms
* THE REPORT ITSELF
* References (& Bibliography)
* Appendices
* Back Cover

The appendices may be bound separately if they are bulky. We recommend this for reports where understanding the technical details involves frequent reference to the appendices. However the report should include the figures needed to understand it in the places where they are needed, if these aren’t too numerous.

The detailed requirements for the report page layout is given in Appendix VII

* 1. Copyright Protection

All material which has an original copyright, including work of students which comprises part of a formal University project, should bear the following copyright marking:

*Copyright © 20xx De Montfort University. All rights reserved.*

* 1. Document Versioning under SVN

All projects ***may*** use the faculty’s version control server as the repository for the emerging project report and its accompanying documentation. Software development projects may already be using the repository for source code control. If you wish, you will be given your own repository to which you have read/write access and tutors have read access. Guidance about using your repository is detailed in a separate handout, *Version Control with SVN*.

1. The Viva Voce

In addition to the assessment of a written report, all projects will include a viva voce examination which may or may not include the demonstration of some project artefacts.

* 1. Purposes of the viva voce examination

The purposes of a viva voce are:

1. To establish that the submitted work is that of the Student
2. To give the Student the opportunity to explain and defend the direction, structure, methods, procedures, analysis and conclusions of the work
3. To explore with the Student any particular issues in the submitted work which require clarification or development
	1. The viva voce examination is mandatory

**The viva voce examination is a “must pass” element of the overall project assessment!**

If the viva voce examination is seriously unsatisfactory, the project will get an overall fail mark regardless of the quality of the product and report.

Not having a viva voce examination constitutes non-submission of the project.

* 1. Conducting the viva voce examination

The Student should agree the format that the viva voce will take with the Supervisor, and arrange a time and a place that suits the Supervisor and Second Reader.

It will typically include a presentation by the Student outlining the project and its results. If the project involved producing a program, the viva voce will include a demonstration of the program; the assessors will want to test the program and may wish to examine the code.

It may be possible to hold the viva voce examination remotely using Skype or other communication technology, if this is feasible and the Supervisor and Second Reader are willing to do this.

* 1. Preparing for the viva voce examination

You should expect the viva voce to last between 30 and 60 minutes, but in some circumstances this may be exceeded. You should attend prepared to discuss any aspect of your work.

If you are giving a prepared presentation, which is expected for nearly all projects, you should prepare a PowerPoint presentation. If you would prefer to use a different approach, you should consult your supervisor in advance.

You should focus on *your* research questions, and what *you* have done and found, and what *your* system does, and say very little if anything about the structure of the project module, or general information about procedure and methodology unless you have done something non-standard. You shouldn’t have too many words on a PowerPoint slide – these words should provide real content, not describe the structure of your talk. Talk to the assessors – don’t just read your slides unless you’re quoting something. If you can, find a volunteer to listen to your presentation and give you feedback before the viva voce. Your friend may spot where you’re waffling or being vague, or need to pause. A good run-through will give you confidence, but you should remember that slick talking is a *very* minor aspect of your project assessment.

1. Project Assessment

There is a standard procedure for arriving at a final mark that can be released to the Student.

* 1. The Assessment Process

The Supervisor and Second Reader will each complete the standard marking form (in Appendix VIII) and arrive at an independent overall mark for the project, expressed as a percentage. This depends on the assessors’ considered academic judgement; projects are not and cannot be marked according to any kind of formula. The assessors then meet and agree a mark for the project – this need not be an average of the two marks.

In order to ensure that consistent marking standards are applied across the diverse range of computing-related MSc projects produced for IMAT 5314, some of the projects are *moderated*. This means that another academic assessor looks at the project report to see if the mark and its justification seem appropriate for the level of achievement of the deliverables and the report. Any queries the moderator has are then discussed with the Supervisor and Second Reader; this can occasionally result in a modification of the mark. Ordinarily, the projects that are moderated are all fails, plus borderline passes, very high marks, ones where the assessors ask for moderation, and a sample of others. Some projects will also be scrutinized by the External Examiners, who may sometimes suggest alterations to marks.

The mark only becomes official when it is ratified at a meeting of the Postgraduate Assessment Board, at which degrees are awarded. At this point, students can be notified of their results. Supervisors and other members of staff will not discuss marks with Students before they are officially released.

* 1. Assessment Criteria

The assessment criteria are flexible, as projects are diverse and each needs to be judged on its own overall merits. However the assessors are expected to consider and comment on the following aspects, which are listed on the standard marking form (in Appendix VIII), together with the standard Requirements for Masters Degrees (as detailed in Appendix I). The assessors are *not* required or expected to give an individual mark or any explicit weighting to these different aspects, and will only do so if they find it helpful for themselves.

**Understanding of Problem & Requirements**. This is how well the student has understood and described the nature of the problem tackled by the project and what the program or the research or other products should achieve.

**Quality of research fact-finding and analysis**. This is the quality of the literature survey and/or fact-finding about aspects of the problem that sets the context for the Student’s own contribution. Some element of research is an essential requirement for all MSc projects, so it is essential that it is considered in the marking process (see section 7.4).

**Project Development**. This is the scope, sophistication and quality of the software system or other product or contribution, as well as the analysis and development work and research that went into it. This includes evidence of skills in critical analysis, design and research, and the choice and application of appropriate methodologies. This by far the most important aspect of the assessment.

**Critical evaluation of project deliverables and project process**. This is the quality and sophistication of the assessment of the strengths and weaknesses of the system, the research or other work, and what went well or badly in the project or might have been done differently (see section 7.5).

**Report**. This is the quality of the report itself, including how clearly and completely it explains the work and argues its points, the quality of the writing and presentation (see section 7.6), and how well referencing is done (see section 7.8).

**Documentation**. This is the quality, thoroughness and appropriateness of the documentation of the research, requirements analysis, system design, testing, and so on, presented in appendices to the report.

**Oral Presentation/Demonstration & Viva**. This is how well the Student presents, explains and defends the work, demonstrates understanding, and handles questions, at the viva voce examination.

**Project management**. This is how well the Student has taken ownership of the project, managed his or her own work throughout the course of the project, including managing time and other resources, proactively organizing meetings with the Supervisor, keeping the Supervisor informed, managing relationships with other people when appropriate, and so on.

* 1. Audit Trail

It is essential that assessors provide adequate justification of the mark awarded for the project and an audit trail for the Postgraduate Assessment Board, External Examiners and possible appeals.

Assessors should therefore provide comments under each of the headings identified on the Project Mark Sheet (The "aspects" described above).

1. Distribution of Project Reports

Some students may wish to publish their MSc project reports or have them available to readers via the World Wide Web

* 1. Distribution by the student

De Montfort University will not discourage students’ efforts to make their project reports available, or to produce research publications based on their MSc project work, provided that the work conforms to appropriate standards of research ethics, does not violate agreements or reasonable expectations of confidentiality, and does not contain significant violations of copyright.

Students distributing their work themselves or publishing it need to ensure that they have obtained permission to reproduce any copyrighted material. Note that publishers’ policies differ enormously on when they charge fees for this; some publishers want to charge for reproductions of figures or diagrams from research papers whose authors would gladly give them for free.

* 1. Distribution by De Montfort University

The university would like to make some MSc project reports available to future MSc students, inexperienced supervisors, and other interested parties. It is important that these should be examples of good work. Showing examples of poor practice is usually an ineffective teaching method, and there is a danger that students will be harmed by treating examples of mediocre work as though they were examples of good work and following their example.

The Faculty of Technology at De Montfort University has an institutional procedure for selecting reports from good projects for distribution via the University’s document repository system, on an invitation-only basis. This requires the recommendation of the Supervisor and Second Marker, the approval of the MSc Project Module Coordinator, and the agreement of the Student.

Project reports selected for distribution internally may also be distributed externally using De Montfort University’s public document repository system, provided they pass a further institutional check that they meet appropriate standards of confidentiality and do not contain copyrighted material for which appropriate permissions have not been obtained. Students may, of course, approve their projects for internal distribution but not external distribution.

* 1. Original copies

You are very strongly advised to retain electronic copies of your work, and keep them safe. The Faculty of Technology treats hardcopy project reports as examination papers, and does not return them. It may also simply be impossible to find a project report a long time after it has been assessed, or it may be destroyed. Finding an electronic copy submitted to *Turnitin* might be possible, but would involve considerable effort.

1. Requirements of Masters Degrees

To avoid any possible ambiguity the following important extract is taken directly from the **Framework document for higher education qualifications in England, Wales and Northern Ireland**. (See the QAA’s Master’s Degree Characteristics description at <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/MastersDegreeCharacteristics.pdf>, accessed October 2013)

*Master's degrees are awarded to students who have demonstrated:*

* *a systematic understanding of knowledge, and a critical awareness of current*

*problems and/or new insights, much of which is at, or informed by, the forefront*

*of their academic discipline, field of study or area of professional practice*

* *a comprehensive understanding of techniques applicable to their own research or*

*advanced scholarship*

* *originality in the application of knowledge, together with a practical*

*understanding of how established techniques of research and enquiry are used to*

*create and interpret knowledge in the discipline*

* *conceptual understanding that enables the student:*
* *to evaluate critically current research and advanced scholarship in the discipline*
* *to evaluate methodologies and develop critiques of them and, where appropriate,*

*to propose new hypotheses.*

*Typically, holders of the qualification will be able to:*

* *deal with complex issues both systematically and creatively, make sound*

*judgements in the absence of complete data, and communicate their conclusions*

*clearly to specialist and non-specialist audiences*

* *demonstrate self-direction and originality in tackling and solving problems,*

*and act autonomously in planning and implementing tasks at a professional or*

*equivalent level*

* *continue to advance their knowledge and understanding, and to develop new*

*skills to a high level.*

*And holders will have:*

* *the qualities and transferable skills necessary for employment requiring:*
* *the exercise of initiative and personal responsibility*
* *decision-making in complex and unpredictable situations*
* *the independent learning ability required for continuing professional*

*development.*

1. BCS Requirements for projects

Quoted from Section 2.5 of the BCS document ‘*Guidelines on Course Accreditation: Information for universities and colleges*’ dated September 2010, updated for use from Autumn 2012.

**General project requirements**

An individual project is an expectation within undergraduate, integrated masters, and postgraduate masters programmes. Students must be provided with written guidance on all aspects of the project, including selection, conduct, supervision, milestones, format of the report and the criteria for assessment.

All projects should reflect the aims and learning outcomes which characterise the programme to which they contribute as set out in the programme specification.

**Project reports**

Projects must involve the production of a report which should include:

* elucidation of the problem and the objectives of the project
* an in-depth investigation of the context and literature, and where appropriate, other similar products (this section is likely to be emphasised less for an IEng project)
* where appropriate, a clear description of the stages of the life cycle undertaken
* where appropriate, a description of how verification and validation were applied at these stages
* where appropriate, a description of the use of tools to support the development process
* a critical appraisal of the project, indicating the rationale for any design/implementation decisions, lessons learnt during the course of the project, and evaluation (with hindsight) of the project outcome and the process of its production (including a review of the plan and any deviations from it)
* a description of any research hypothesis
* in the event that the individual work is part of a group enterprise, a clear indication of the part played by the author in achieving the goals of the project and its effectiveness
* references

**Undergraduate individual project requirements**

It is expected that within an undergraduate programme, students will undertake a major computing project, normally in their final year and normally as an individual activity, giving them the opportunity to demonstrate:

* their ability to apply practical and analytical skills present in the programme as a whole
* innovation and/or creativity
* synthesis of information, ideas and practices to provide a quality solution together with an evaluation of that solution
* that their project meets a real need in a wider context
* the ability to self-manage a significant piece of work
* critical self-evaluation of the process

In the event of this major activity being undertaken as part of a group enterprise, there is a requirement that the assessment is such that the individual contribution of each student is measured against all the above learning outcomes.

For accreditation for CITP, CEng or CSci, the individual project should be worth at least 30 credit points at level 6 or above. The project must be passed without compensation.

For accreditation for IEng the individual project should be worth at least 20 credit points at level 5 or above. The project must be passed without compensation.

**Postgraduate project requirements**

Projects at postgraduate level may be similar in scope to undergraduate projects but should reflect the ethos of advanced study and scholarship appropriate to a masters degree (whether generalist or specialist).

Postgraduate projects must give students the opportunity to demonstrate:

* a systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of the specialist academic discipline
* a comprehensive understanding of techniques applicable to their own research or advanced scholarship
* originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline
* deal with complex issues both systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences
* demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level
* critical self-evaluation of the process

Generalist masters programme projects should be worth at least 30 credit points and be at least at undergraduate honours level. It is recognised that in practice a project on a masters programme is usually worth at least 60 credits at Level 7. The project must be passed without compensation.

1. BCS Code Of Conduct

**Rules of Professional Conduct**

As an aid to understanding, these rules have been grouped into the principal duties which all members should endeavour to discharge in pursuing their professional lives.

The Public Interest

You shall:

have due regard for public health, privacy, security and wellbeing of others and the environment.

have due regard for the legitimate rights of Third Parties\*.

conduct your professional activities without discrimination on the grounds of sex, sexual orientation, marital status, nationality, colour, race, ethnic origin, religion, age or disability, or of any other condition or requirement

promote equal access to the benefits of IT and seek to promote the inclusion of all sectors in society wherever opportunities arise.

**Professional Competence and Integrity**

You shall:

only undertake to do work or provide a service that is within your professional competence.

**NOT** claim any level of competence that you do not possess.

develop your professional knowledge, skills and competence on a continuing basis, maintaining awareness of technological developments, procedures, and standards that are relevant to your field.

ensure that you have the knowledge and understanding of Legislation\* and that you comply with such Legislation, in carrying out your professional responsibilities.

respect and value alternative viewpoints and, seek, accept and offer honest criticisms of work.

avoid injuring others, their property, reputation, or employment by false or malicious or negligent action or inaction.

reject and will not make any offer of bribery or unethical inducement.

**Duty to Relevant Authority**

You shall:

carry out your professional responsibilities with due care and diligence in accordance with the Relevant Authority’s requirements whilst exercising your professional judgement at all times.

seek to avoid any situation that may give rise to a conflict of interest between you and your Relevant Authority.

accept professional responsibility for your work and for the work of colleagues who are defined in a given context as working under your supervision.

**NOT** disclose or authorise to be disclosed, or use for personal gain or to benefit a third party, confidential information except with the permission of your Relevant Authority, or as required by Legislation.

**NOT** misrepresent or withhold information on the performance of products, systems or services (unless lawfully bound by a duty of confidentiality not to disclose such information), or take advantage of the lack of relevant knowledge or inexperience of others.

**Duty to the Profession**

You shall:

accept your personal duty to uphold the reputation of the profession and not take any action which could bring the profession into disrepute.

seek to improve professional standards through participation in their development, use and enforcement.

uphold the reputation and good standing of BCS, the Chartered Institute for IT.

act with integrity and respect in your professional relationships with all members of BCS and with members of other professions with whom you work in a professional capacity.

notify BCS if convicted of a criminal offence or upon becoming bankrupt or disqualified as a Company Director and in each case give details of the relevant jurisdiction.

encourage and support fellow members in their professional development.

(The following link gives further details of the BCS Code of Conduct approved June 2011

http://www.bcs.org/upload/pdf/conduct.pdf)

1. Useful References

There are several books that discuss English writing style in general, as well as a few specifically on technical writing, and also development or research projects. The following is a short list of books available from the library, though maybe not in the latest editions.

**Mounsey, C.** (2002). *Essays and Dissertations*. Oxford, UK: Oxford University Press.

**Weyers, J.D.B. & McMillan, K.** (2011). *How to Write Dissertations & Project reports*, 2nd ed. Harlow, UK: Pearson Prentice Hall.

**Weyers, J.D.B. & McMillan, K.** (2011). *How to write Essays & Assignments*. Harlow, UK: Pearson Prentice Hall.

**Hughes, R. & Cotterell, M.** (2009). *Software Project Management*. London: McGraw-Hill.

**Rudestam, K.E. & Newton, R.R.** (2014). *Surviving Your Dissertation: A Comprehensive Guide to Content and Process*, 4th ed. Los Angeles: Sage.

**Creme, P. & Lea M.R.** (2008). *Writing at University: a guide for students*, 3rd ed. Milton Keynes, UK: Open University Press.

**Palmer, R.** (2002). *Write in Style: A Guide to Good English*, 2nd ed. London: Routledge.

**Walliman, N.S.R.** (2013). *Your Undergraduate Dissertation: The Essential Guide for Success*, 2nd ed. London: Sage.

**Weaver, P.** (2004). *Success in Your Project*. Harlow, UK: Pearson Education.

**Dawson, C.W.** (2009). *Projects in Computing and Information Systems: a Student’s Guide*. Harlow, UK: Pearson Education.

**Ricketts, I. W.** (1998). *Managing your Software Project*. London: Springer.

**Oates, B.J.** (2006). *Researching Information Systems and Computing*. London: Sage.

**O’Leary, Z.** (2009). *The Essential Guide to Doing Your Research Project*, 2nd ed. London: Sage.

**Cornford, T. & Smithson, S.** (2006). *Project Research in Information Systems*, 2nd ed. Basingstoke, UK: Palgrave MacMillan.

1. Indicative Project Timetable - Full-Time

#### Semester 2

* The MSc Project Module Coordinator will meet with students for preliminary overview. Project Skills sessions will be held during this semester.
* Project details issued to students towards the end of the teaching period.
* The Programme Leader or MSc Project Module Coordinator allocates Students to Supervisors. The Student and Supervisor agree on a project to do. Students begin preparatory work on project.
* Students submit draft Terms of Reference and Project Plan to Supervisor.

**Project Period (14 Weeks to submission)**

Early June Full-time work on project commences

(Monday 8 June 2015 latest)

Late June First PMP/Project Progress Assessment

Late July Second PMP/Project Progress Assessment

Late August Third Project Progress Assessment

Friday 4 September 2015 Project Submission

Mid - Late September Presentations/Demonstrations

This allows 13 weeks full-time work on carrying out the project and writing the report.

For students seconded away from the University this assessment may, at the discretion of the PMP, be by written report only.

Full-time students are required to complete their project within the 12-month period of full-time attendance. The Supervisor and Programme Leader may exceptionally agree an alternative submission date.

1. Indicative Project Timetable - Part-Time

The assumption is that students will complete the project over 11 months from official start date to submission deadline but may choose to complete in a shorter time.

**1. PRIOR TO PROJECT YEAR**

 Identification of suitable project

 Project proposal submitted

 Project agreed

Draft Terms of Reference and timing plans submitted to Supervisor.

**2. PROJECT YEAR**

**Week Number:**

Week 1 Project work commences

 Week 8 1st PMP/Project Progress Assessment

Weeks 9-15 Project work proceeds

Weeks 16-30 Project work continues

 Meetings with Project Supervisor

 2nd PMP/Project Progress Assessment

Weeks 30 – 48 Project work continues

 Meetings with Project Supervisor

 3rd PMP/Project Progress Assessment

Schedule of report dates/PMP meetings and target submission date must be agreed with Project Co-ordinator and Supervisor. Students who fail to submit reports on schedule may be assessed as unsatisfactory. At least 2 formal progress assessments must involve attendance at PMP meeting.

Any changes to submission dates, or non-standard submission dates, require the approval of the Supervisor and Programme Leader. Students may submit and be assessed ahead of their deadline if they wish.

Submission date will be one of

Friday 9 January 2015

Friday 8 May 2015

Friday 4 September 2015

1. Dissertation Page Layout

 Boundaries of an A4 page

(Ref. The Self-study Pack: *Dissertation Preparation & Presentation*)

 15 mm

 40 mm

 15 mm

SPACE FOR TEXT AND ILLUSTRATIONS

 40 mm

1. IMAT 5314 Official Forms
* MSc Project Marking forms
* MSc Project Criterion reference grid
* MSc Project Progress Assessment – Student’s Report
* MSc Project Progress Assessment – Supervisor’s Report
* Ethical Review Form

MSc Project Final Assessment Summary

Student's Name:

Programme Title:

Project Title:

Name of 1st Marker (Supervisor):

 2nd Marker:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1st Marker | 2nd Marker | Agreed | Moderated | External |
| Project Mark |  |  |  |  |  |
| Pass |  |  |  |  |  |
| Internal Publication |  |  |  |  |  |
| External Publication |  |  |  |  |  |

Summary Comments

Name of Moderator:

Moderator Comments

Signature (Project Coordinator):

 MSc Project Final Assessment – Resit Specification

Student's Name:

Programme Title:

Project Title:

First Marker (supervisor):

**Note to student: this sheet specifies the work you need to do to resit your project. If you do not take advantage of this opportunity, resit is by undertaking a new project during the following academic year.**

**As your supervisor’s availability may be limited over the summer period, you should complete the work specified below without further supervision meetings.**

**You must include this sheet with the re-submitted project.**

Work to be undertaken:

*Note to supervisors: for projects with a mark below 50%: if it is possible for the student to rework by early September to achieve 50%, please specify here exactly what work is required, leave one copy with the mark sheet and a second on front desk of moderation room.*

 MSc Project Final Assessment Form

Student's Name: Programme Title:

Project Title:

Name of Marker: (1st Reader)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**PLEASE PROVIDE COMMENTS UNDER THE FOLLOWING HEADINGS**

Understanding of Problem & Requirements

Quality of research fact-finding and analysis

Project Development

Critical evaluation of project deliverables and project process

Report

Documentation

Oral Presentation/Demonstration & Viva

Project management

General Comments

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Mark % \_\_\_\_\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 MSc Project Final Assessment Form

Student's Name: Programme Title:

Project Title:

Name of Marker: (2nd Reader)

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**PLEASE PROVIDE COMMENTS UNDER THE FOLLOWING HEADINGS**

Understanding of Problem & Requirements

Quality of research fact-finding and analysis

Project Development

Critical evaluation of project deliverables and project process

Report

Documentation

Oral Presentation/Demonstration & Viva

Project management

General Comments

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Mark % \_\_\_\_\_\_\_\_\_\_\_\_\_ Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**IMAT 5314 MSc Project/Dissertation Assessment Marking Grid**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **<45%** **(Fail)** | **45-49%****(Marginal Fail)**  | **50-59%** **(Pass)** | **60-69%** **(Merit)** | **>=70% (Distinction)** |
| **Understanding of Problem & Requirements** | Little understanding of the problem domain, resulting in a substandard product in most respects. | Some understanding of the problem domain has been demonstrated, gained through limited research, analysis and design, but insufficient to achieve a pass as indicated by a less than satisfactory terms of reference, dissertation and demonstration / presentation and viva. | An acceptable understanding of the problem domain, gained through research, analysis and design but lacking insight or flair and discrimination. Evidenced in an acceptable dissertation and terms of reference and supported by the demonstration / presentation and viva. | A good understanding of the problem domain, gained through well referenced and evaluated research of current literature, sound analysis and design reflected in the dissertation in general and via the terms of reference and confirmed in the demonstration / presentation and viva. | An excellent understanding of the problem domain, gained through comprehensive, fully referenced and evaluated research of current literature, thorough analysis and design reflected throughout the dissertation but particularly in the terms of reference and fully confirmed in the demonstration / presentation and viva. |
| **Research fact-finding and analysis** | Little effort to investigate topics beyond the curriculum; or some investigation that is inadequately referenced. | Some investigation of topics beyond the curriculum, but poorly understood and described, and not used to support development or research, or with sloppy referencing. | Limited investigation of topics beyond the curriculum, adequately understood and explained, with adequate referencing making consistent use of a standard reference format, possibly with some gaps or misunderstandings. Limited use to support development or research. | Good systematic investigation of selected topics beyond the curriculum, with good survey of appropriate sources, clearly understood and well described, and with good referencing making consistent use of a standard reference format. Good application to support development or research. | Very good systematic investigation of selected topics beyond the curriculum, with thorough survey of appropriate sources, fully understood and well described, with immaculate referencing. Insightful application to support development or research. |
| **Project Development** | Very little or no evidence of critical analysis or systems design skills resulting in a sub-standard report or product. | Poor critical analysis and/or little evidence of planning or sensible system design resulting in a substandard report or product. | Work shows some evidence of critical analysis and evaluation and/or a reasonable attempt at system design resulting in a product/report meeting some of the requirements in the terms of reference.  | Very good work which demonstrates the student’s ability to synthesise material and construct responses, and which reveals good critical analysis and evaluation and/or a good system design using appropriate methodologies. The student took ownership of the project producing a product/report matching the terms of reference and meeting the requirements.  | Excellent work which demonstrates the student’s insight and in depth critical analysis and/or a highly effective thorough systems design skills employing all appropriate methodologies. The student took full ownership of a challenging project producing a product/report matching the terms of reference and fully meeting or exceeding the requirements.  |
| **Critical review** | Very little or no attempt to assess either the project as a whole or what the student has found or produced. | Some attempt to evaluate the strengths and weaknesses of the project and what it has produced, but inadequate or with some foolish views. | Solid but limited attempt to evaluate the deliverables and the project as a whole. Some major gaps or insufficiently critical views. | Good attempt to evaluate the project and the deliverables produced, but with some gaps or rather superficial in places. | Insightful analysis of the strengths, weaknesses and failings of both the project as a whole and the deliverables produced. |
| **Report** | Very poor or seriously incomplete report | Report covers most required information but is poorly written, has major omissions, or is seriously unsatisfactory in some ways. | Adequate report covering all essential topics and presenting most of the required information in line with guidelines; reasonably readable and with a sensible structure. | Good report covering all essential topics, with no major omissions, and with clear explanations of most of the information required. Readable, well structured, and well presented. | Very good concise, focused report, with clear and thorough explanations of all the required information. Well written with no major deficiencies of English, and well presented. |
| **Documentation** | None of the required documentation, or the documentation is seriously incomplete, or poor quality or incorrect. | Documentation supplied but has major omissions or contains errors or major deficiencies, or is very poorly presented. | Adequate documentation, but with some omissions or significant limitations, reasonably clearly presented. | Good, reasonably complete documentation, clearly presented. | All the required documentation, clearly and effectively presented; possibly also (useful and informative) information beyond what we expect. |
| Demonstration / viva | Very poor demonstration demonstrating little or no functionality, and unable to provide any defence of approach taken | Content just acceptable, but poorly planned demonstration. Able, with prompting, to answer some of the questions posed. | Demonstration shows some insight into the students work OR shows limited functionality of the system. Reasonably well planned. Able to answer majority of questions posed. | Competent performance with an acceptable guide. Demonstrated sound knowledge of the majority of the material relevant to the project. Satisfactory responses to majority of questions in the viva. | Highly professional demonstration, with well-planned guide providing an excellent view of the projects functionality and technical aspects. Logically presented with a thorough grasp of the relevant material. Excellent defence of the project in the viva. |
| **Presentation / viva** | Very poor presentation demonstrating little or no knowledge of material relevant to the project and unable to provide any defence of approach taken. | Content just acceptable but poor presentation skills OR Satisfactory presentation skills but knowledge of relevant material very patchy. | Presentation provided some insight into the student's work but performance at the oral rather pedestrian. Able, with prompting, to answer some of the questions posed. | Competent presentation using acceptable visual aids. Demonstrated sound knowledge of majority of material relevant to the project. Satisfactory responses to majority of questions in the viva. | Highly professional presentation with clear informative visual aids providing an excellent overview of the project. Clearly spoken with a thorough grasp of relevant material. Excellent defence of the project in the viva. |
| **Project Management** | Poor project management:Inadequate time management, little or no contact with supervisor, late or missing documents. | Inadequate project management. Serious deficiencies in time management, maintaining contact with supervisor, or getting documents produced. | Adequate project management, but with some problems with time management, proactively recognising and carrying out activities, maintaining contact with supervisor, or producing documents on time. | Compentent project management, Well organized and proactive with largely successful time management, sought contact with supervisor, produced required documents on time. | Exemplary project management: Good time management; development well-organized, proactive and self-directed, while actively seeking and acting on advice from the supervisor. Timely production of required documents. |

Criteria for distinction level overall:

**>= 70% (“Distinction level”)**

Excellent work which demonstrates that the candidate:

* possesses an authoritative grasp of the conceptual context within which the work was undertaken.
* is able to display originality, insight and powers of in-depth critical analysis in the solution offered and/or is able to sustain an argument displaying originality, insight into current debates and conceptual position, in-depth critical analysis, and is capable of expressing this argument clearly, concisely and accurately.
* possesses a high degree of relevant technical competence.

**MSc PROJECT PROGRESS ASSESSMENT - STUDENT'S REPORT**

Programme Title:

Name:

Project Title:

Assessment Period: Report Number:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Objectives for Period (refer to previous report):

Summary of Progress for Period (identify evidence of progress):

Problem Areas and Suggested Solutions:

Date of Next Review:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Supervisor’s Signature: Date:

**MSc PROJECT PROGRESS ASSESSMENT - SUPERVISOR'S REPORT**

Programme Title:

Name:

Project Title:

Assessment Period: Report Number:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Supervisor’s Comments on Progress for Period:

Supervisor’s Comments on Objectives, Deliverables and Plan for Next Period:

Overall Assessment: Unsatisfactory/Borderline/Satisfactory:

Date of Next Review:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Supervisor’s Signature: Date:

**MSc PROJECT - ETHICAL REVIEW FORM**

The University requires all postgraduate projects to undergo an ethical review and, where human research ethical issues are identified, to ensure that these issues are addressed.

For the majority of projects, the outcome will be either ‘No ethical issues’ or ‘Minor/Major ethical issues which have been addressed’; in these cases approval can be given by the Supervisor. In the unlikely event that the outcome is ‘Ethical issues that have not been addressed’, the completed form will need to be forwarded to the Faculty Research Ethics Committee.

**Student Name** **Programme**

**Project Title**

**Brief description of proposed research activity and its objectives:**

*for example: research survey, or user testing survey, or requirements gathering interview, or other activities involving interaction with humans*

**Ethical Issues Identified: How these will be addressed:**

**(see overleaf)**

**Checklist**

Has the project proposal identified any of the following research procedures?

1. Gathering information about human beings through: Interviewing, Surveying,

Questionnaires, Observation of human behaviour Yes / No

2. Using archived data in which individuals are identifiable Yes / No

3. Researching into illegal activities, activities at the margins of the law or

activities that have a risk of personal injury Yes / No

4. Supporting innovation that might impact on human behaviour

e.g. Behavioural Studies Yes / No

**If ‘Yes’ to any of 1-4 above: have you considered the following?**

🞏 Providing participants with full details of the objectives of the research

🞏 Providing information appropriate for those whose first language is not English

🞏 Voluntary participation with informed consent

🞏 Written description of involvement

🞏 Freedom to withdraw

🞏 Keeping appropriate records

🞏 Signed acknowledgement and understanding by participants

🞏 Consideration of relevant codes of conduct/guidelines

**Ethical Review Outcome**

 🞏 1. No ethical issues

 🞏 2. Minor ethical issues which have been addressed and concerns resolved

 🞏 3. Major ethical issues which have been addressed and concerns resolved

 🞏 4. Ethical issues that have not been resolved/addressed

**Authorisation**

*If the outcome is no. 3 or 4 above, this form should be forwarded to the Faculty Research Ethics Committee.*

Signature of student \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of Supervisor \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Signature of 2nd Supervisor \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_