Final Project and Dissertation Guidelines
for
MSc in Data Science and Business Analytics

Version 1.0

Final Project and Dissertation
Guidelines for Students and Dissertation Advisors
for the MSc in Data Science and Business Analytics

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May 2024

Table of Content

1 Introduction: Project Module Aims

(Throughout the document the following acronyms hold:
DA – Dissertation Advisor: The instructor that acts as the advisor to the project
PM – Program Manager: The faculty member in charge of the Dissertation program
PD – M.Sc. Program Director
DS – Dissertation
HD – Head of Department
BE – Board of Examiners, the evaluation board composed by DA, PM, PD, and the second assigned assessor of the dissertation).

This module is the concluding project of the MSc program and is carried out towards the end of the program. The goal of the module is the conduct of work where students apply new knowledge gained from their program and work experience. The dissertation must present a piece of work that involves original thinking. The project should emphasise the student's ability to make use of the various doctrines and techniques acquired during the program, to investigate and critically evaluate alternative approaches, and to present the results in a professional manner.

The main aim of the final project and dissertation is for a student to develop and demonstrate autonomy in the management and development of realistic projects in the specific chosen specialization, which may have either a research or application orientation. Although new technical skills may be acquired, this is not the main aim of the project.

By the end of the project, a student should have demonstrated:

1. The ability to initiate, plan, manage, and deliver a complete project for a customer or research sponsor.
2. The ability to investigate and interpret information relevant to the problem.
3. Originality and independent thinking in the application of knowledge gained.
4. Critical judgment in the evaluation of both the student's own work and of alternatives.
5. The ability to present the results in an appropriate professional manner.

Project outputs include giving interim results describing important steps of the project and a final dissertation describing the project as a whole. It must be emphasized that the dissertation that follows is an integral part of the module and by no means should the writing of the dissertation be viewed as an afterthought of the project (such as the way documentation is handled by many programmers).

2 The Project Subject

The project subjects require that the activities should be intellectually demanding and involve the original application of knowledge gained in the specific program and the chosen specialization.

The dissertation subject should relate to the program and specific specialization.

The dissertation project can also relate to the student's work environment. For example, a project could entail an analytic examination of procedures, work patterns, usage of applications, and efficient methodologies in the office, culminating with a testable professional product or a strategic information system management plan for the implementation of these findings. Thus, the work should advance from mere planning and should be implemented, even if only as a feasibility study or a case study, to verify, test and collect evaluation comments from users regarding its effectiveness.

Another example is a project to implement (identify, define, analyse, code, test, and evaluate) a data system that is designed to solve specific trade, office, or community needs, where the system goes beyond the mere programming and testing of an application by providing novel solutions or a combination of several requirements.

Other projects may have a more general focus, such as an investigation and evaluation of methods to address a general problem, such as data security, finding information on the Internet, setting and controlling the human resource of an information technology office, investigating the market using operational research methodology, setting a marketing plan within the industry, etc.

In all cases, however, the work carried out should have the following key characteristics:

Originality in the application of knowledge, together with a practical application of the techniques of research and enquiry.
Generalization: even when the project has a very specific target, the student should address it in a way which will make the results potentially applicable in a broader context.
Critical evaluation: design decisions made by the student in the course of the project should be made in the context of a critical examination of alternatives, and the student should subject his/her results and conclusions to the same rigorous analysis.

It is not expected, of course, that the project will involve original research in the sense of making new scientific discoveries. It should, however, be original work in the sense that it applies current knowledge to find solutions to a real problem in the workplace or elsewhere. Thus, a display of scholarly achievement (in information technology or information management systems) must be present in the work.

This does not have to be a full-fledged research undertaking, yet it should add some seed of original thinking, innovative approach, or otherwise interesting or beneficial contribution to the field.

The project's final outcome takes the form of a written dissertation. A target size of 12000-15000 words is recommended (excluding listings of source code, if present, that should appear as an appendix), yet this can be slightly modified in appropriate cases with the approval of the *DA*.

Guides to choosing a project, identifying its requirements, and writing the proposal is to be found in the textbooks that are used in the Research Methodology Module component, which is the first stage of the project.

A project that is already either finished or close to being finished cannot serve as the dissertation project, as it must be a new piece of work building on what has been done in the program.

2.1 Project typologies

Students should evaluate their proposals by examining them according to the following criteria:

2.1.1 Applications

1. Most proposals are focused on a product as the outcome, rather than the scholarly aims of a dissertation. Sometimes there is a feeling that the project is a task the student wants/needs to perform for his company, but students should be aware that the demands of a dissertation are different. In fact, it could well be that if the student accomplishes everything which has been proposed, it will possibly be much more work than we require in the dissertation project, but would still not be satisfactory because many of the required learning outcomes of the module might be omitted.

2. Students need to be open to other possibilities for their dissertations. The exact form the site will take should not be decided upon until all the possibilities have been researched to determine what the best design and implementation strategy might be.

3. The project should demonstrate additional fields of Data Science such as a backend database system that would require software design as well as implementation and security considerations, and not just a basic database implementation with its GUI. As another example, if security is intended to be a part of the site, then it should, for example, focus strongly on several security and privacy issues: not just secure payments, but the development of a full security/privacy infrastructure that would allow individual customer details to be protected separately.

4. It is essential to understand that the goal of the project is not a web site, nor indeed any software deliverable, but a dissertation that demonstrates the student's ability to carry out an intellectually demanding program of work that requires research, planning, innovative thinking, and objective evaluation.

2.1.2 Survey of State-of-the-art

Proposals that are mainly critical literature surveys or the comparative analysis or abstraction and evaluation of systems, regulations or programs, will not be approved in most cases, even if this is accomplished in a scholarly fashion. The project research must include a comprehensive application of the gathered information, including testing and validation, user feedback, true life tests, analysis

of the results, and conclusions and recommendations. If a project side-tracks into an activity such as a literature survey, it will awarded a low grade, as this type of activity alone lacks many of the ingredients that are expected in an MSc dissertation. Such an undertaking is usually associated with only one of the components of the project and cannot stand on its own.

2.1.3 Software and Hardware Requirements

There are other DS project subjects that in most cases will not be approved. Unless it can be demonstrated that an exception should be granted and the work represents a substantial departure from the norm, this includes the following: installation of commercial software packages, even if complex (e.g. installation of a new database, OS platform migration, script coding, etc.); upgrading hardware components (e.g. a router, another computing platform, etc.); finding programming solutions or evaluating software packages (e.g. which spam system to install, which DB to adopt, etc.); recommendation of what should be installed in a specific installation that is already well documented and researched (e.g. implementing a distributed installation, general security recommendations). All of these are regarded as part of the regular day to day tasks of systems programming and do not constitute a scholarly undertaking suitable for a Master's degree.

2.1.4 Institutional Projects

Institutional and commercial projects (e.g. developing an information providing database, a web interface for laymen, etc.), cannot be approved as DS projects in most cases, as they most likely have not been conducted according to the DS guidelines. They will likely have been conducted according to the methodology of the company that manages them and thus will not comply with the academic requirements of the DS module. Furthermore, it would be extremely difficult to identify student's contribution to a large project.

In some instances, it might be possible to construct a suitable DS from an implementation project, but much care would need to be taken to identify a student's work and to ensure it has the proper academic content. If this is to be considered, it would be necessary to spell out in advance just what the student's role in the project would be; the work must be sufficiently and clearly separated from the rest of the team. It should be noted that an implementation project would require substantial work to ensure that DS criteria (research, literature survey, needing to draw general conclusions, etc.) are met and that the project is undertaken within a proper academic context.

2.1.5 Are Specifications and Design appropriate?

Several students have proposed an analysis of the limitations of an existing application or the working of a company. They proposed that a framework (or model) be developed to improve an application or procedure, basing their research on a review of the application, interviews of company personnel, and literature and product surveys. Such proposals were, in most cases, not approved, as a project cannot stop at this point. In suggesting a "working system", a crucial requirement is that some validation through a prototype, a feasibility test, or a case study will be done to demonstrate that the ideas as expressed in the Specification and the Design are indeed feasible, were tried, and are of value. The results of running the prototype, as well as feedback from its users should be

included in an "Analysis" chapter. This should be followed by a "Conclusions" chapter, and possibly an "Improvements" chapter, in order to verify the validity of the project.

A project that comprises essentially a literature survey, personnel interviews, and software evaluation that ends in a specification and a design without any evaluation is nothing more than wishful thinking, as who is to say what the real value of it is without a test? An abstract design which has not been verified could turn out to be worse than the system it has tried to improve upon. Thus, a full implementation of a complex untested and unverified proposal might find that the design is faulty and the system does not function as perceived, or that the suggested framework is wrong.

A project cannot end with an untested “framework”: it must implement and validate the proposed design even if it is only in the form of a prototype.

2.1.6 Test and Validation of the Approach

Several proposals rightly indicate that, in addition to the literature survey, specification, and design, prototypes need to be produced to demonstrate the feasibility of the solution. Such prototypes (or test cases) should be tested and conclusions drawn in order to substantiate the specifications, and to refute and amend them. The best way to conduct this validation is to have the tests conducted with "clients" and to record their reaction as to whether the "model" is appropriate, as otherwise it is all just a theory. The model/application should then be changed, based on these tests, or at least a chapter of "Conclusions and Improvements" should be added to the final dissertation.

In summary: “Every project that develops a design, a framework, or a procedure must implement it, test it, report the results and analyse them.”

2.2 What the Dissertation must include

A project will not be accepted as a satisfactory piece of work unless it includes:

- A clear description of the problem to be solved.
- A review of the state-of-the-art literature identifying different models and implementation strategies that can potentially be used.
- A critical evaluation of the possible alternatives.
- Design and justification of a proposed solution.
- Implementation of the proposed solution.
- The source code of a programming project, if the project involves the development of a system.
- Evaluation of the solution, at least as a prototype, a case study, or a controlled examination of the procedure. It should be conducted using test data, test cases, or a control run of the procedures, preferably by testers other than the student.
- Analysis and discussion of the outcome.
- Expansion of the conclusion to a general context

- A documented report along the lines of the template file.

The submitted proposal should indicate how each of these components will be produced.

2.3 Plagiarism and Copyrights

2.3.1 Citations and Plagiarism

Students are expected to use the Harvard system as promoted throughout the program.

The dissertation is to follow the same requirements for proper citation that were applicable in the other modules of the program. In fact, it is more crucial to use proper citation in the dissertation than in other prior modules.

Proper credit to other sources should already be present in the proposal, then continue through the specification and design stages. Proper citation must be an integral part of the final dissertation report. Failure to adhere to the citation rules, which are simple to follow, will most likely be considered as plagiarism.

Each of the two assessors of the dissertation is obliged to inform the academic department of any such suspicion. This might cause the project to be suspended; an explanation will be requested from the student, and this explanation, together with the other evidence taken from analysis of the dissertation, will be brought to the Board of Examiners when it considers the assessment of the dissertation. The Board has the power to decide what final result should be recorded, in the light of the evidence, and also to consider whether further action is necessary up to failing the dissertation.

Thus, great care should be exercised when posting the concluding report, as no additional submissions or corrections are allowed after the final draft is submitted. Missing citations and references will not be allowed to be added late to any document.

2.3.2 Copyright

Confidentiality: Students who need to keep their dissertation confidential should include the following sentence on the same page that they make their declaration about plagiarism:

“This dissertation contains material that is confidential and/or commercially sensitive. It is included here on the understanding that this will not be revealed to any person not involved in the assessment process.”

2.3.3 Publishing

All documents concerned with the progress of the dissertation during the dissertation process (proposals, monthly reports, specifications, and design) are internal documents submitted to the University for Assessment. They should thus be regarded as coursework assignments which belong to the UNYT rather than to the student. In particular, the dissertation is an internal document until after final assessment, at which point it becomes public. However, permission from the university is still required should you want to publish it or make other public use of it (contact your PM)**.**

3 Project Management

A key element of the dissertation is that it is a project conducted for a sponsor, who defines the principal goals of the project. The sponsor provides an additional level of confidence that the work is worthwhile. Sponsors may be external customers or the *DA* of the dissertation. The *DA* is a designated instructor who will oversee the project and will be responsible for advising the student on all aspects of the project. The *DA* will be the main point of contact for the student and sponsor.

The *DA*'s role is to ensure that the goals are consistent with the academic requirements of the MSc, and that the agreed program of work will satisfy the learning outcomes itemized in the first paragraph of this guide. For the purpose of the MSc, the *DA* rather than the sponsor will specify the outcomes that are required from the project.

The dissertation project will be carried out by a single student in most cases, but it is sometimes possible for two students to work together on a common project. In the latter case, it is essential that the contributions of the two students be clearly identified to enable them to be assessed separately. Each student will, of course, complete a separate dissertation.

4 Methodology (Steps, Schedule and Duration)

The overall duration of the module is **six** months from initiation to submission. The followings are steps and consideration towards submitting the final document:

1) Before starting the last module of the M.Sc. program, you are required to ask for the dissertation topic. You should contact the *PM*. in order for you to be assigned a *DA*. The request should consist in an abstract describing what you propose to do.

2) Once the request is received and approved, an email will be sent to you indicating, the appointed *DA*, and the dissertation folder. This is a formal notification that the timeline towards the **Dissertation Deadline has begun**, and that you should begin the development of a formal proposal.

3) All the correspondence between you and the *DA* should be conducted through email. The first step is to preserve any important prior messages (e.g. the approved proposal).

4) The Research Methodology module is the first stage that requires you to work through a number of assignments. Each assignment has the goal of developing an understanding of the criteria for a successful proposal and dissertation, as well as key skills in research.

5) Once the *DA* believes that the proposal has reached a stage that will gain academic approval, it is submitted to the *PD*. who will approve or reject the proposal. The final proposal must be submitted using the form found in 11.1 [b] in Appendix A.

6) Once the proposal has been approved, you should begin the development of your project. It should be noted that a fee will be imposed if you want to change your *DA* before the proposal has been approved, and another, higher fee will be charged if you decide to change your *DA* after the proposal has been approved. You will need to submit a request to the *PM* if you change *DA* at these stages. The *PM* will discuss this with your *DA* and the *PD* and a decision will be made whether you should be allowed to change.

7) The required dissertation stages should be executed in a sequential order, and all stages must be completed. Within the MSc Programs, "Project Specification", and "Project Design" components must be completed before the next step can be taken. This occurs prior to the submission of the "Final Document". These stages will form part of the project's grade.

8) From the start of project until the submission of the final copy of the dissertation, you must submit to the *DA* a monthly status detailing your progress.

The report should be submitted on the date specified by the Dissertation Advisor (DA). Keeping to deadlines and making regular progress reports are aspects of professionalism that are expected when completing the dissertation. Failure to submit at least 80% of the required Status Reports may result in a reduction of the final grade by up to 10 points (out of a hundred), as recommended by the DA and the Program Manager (PM).

9) You should continue to work with the *DA* throughout the duration of the module. The target turnaround time for the *DA's* responses to questions posed by the student is within four days, and within ten days for drafts. Past experience has shown that work should proceed in well-planned steps and intermediate results should be shown to the *DA*.

10) Submission of an initial draft should be included in the planning of any dissertation. This will allow you to gain feedback on the completed paper before the deadline is due. Please allow at least one month for this phase, as it usually requires detailed feedback from the *DA* and then revision and re-submission by you.

11) Submission of the final dissertation document should be made on or before the dissertation deadline. You should be aware that failure to complete the dissertation in time will lead to a penalty for late submission.

12) The dissertation project for the MSc in Data Science and Business Analytics program carries 18 ECTS credits. Writing a dissertation is a creative process and does not progress along a straight path. You are expected to spend approximately 450 hours on your dissertation, considering that 1 ECTS credit corresponds to about 25 hours of work.

13) One of the most important requirements is that the project must be completed as scheduled. The deadline is **six months from the date of the approval,** as specified in the approval letter,

and you will be penalized for late submission. If you can't meet the requirement, including timely submission of the dissertation, at the first attempt, then the final highest grade that can be awarded is C, and it will be Fail if you are more than one month late.

Extensions will not normally be granted, except in clearly unexpected circumstances beyond student control, such as in cases of real personal/family/medical/work emergencies. The case for an extension will need to be made in writing with supporting documentation. Such requests should be sent to the *DA* who will approach the *PM* for approval.

14) Once submission has been made, you will receive an email confirming the receipt of your dissertation. This contains the final acceptance of your dissertation and marks the point at which communication between your *DA* and you should end so that the grading process can begin.

15) Grading will continue for several weeks once the dissertation is complete. However, final grades will not be released to you until the *Board of Examiners (BE)* has met and agreed on a final award. This could mean a wait of several weeks, depending upon the deadline and submission date of the dissertation. You will be contacted by your *PM* with official confirmation of the results once the *BE* has made its decision.

5 Timetable

5.1 First Stage

Stages are sequential and that you can't proceed to a new stage before completing and being graded on the previous stage

If **S** is the start date of the module (date of approval and notification), then the following events should be done during the following **weeks**. It should be noted that while the listed times serve only as approximations, following the timeline as recommended will ensure that the project will be finished within the allocated **six** months after the **S** date.

The ongoing work was described in the previous section. The aim of this section is to clarify the timelines involved.

Stage 1 (From **S -1** to **S**): starts with:
(2) Submitting the proposal for approval.

If the *DA* finds the proposal to be satisfactory, the *DA* will then submit it to the *PM* for approval.

It is possible this cycle will repeat, with the student submitting new versions until an acceptable proposal has been accepted.

It is expected that the proposal will be submitted within **four** weeks **(S+4)**.

The proposal can be submitted at any time during this period, and there is no need to wait until the Research Methodology Module is finished before submitting it. However, whether the proposal is

submitted at the end of Research Methodology Module or is submitted before the completion of Research Methodology Module, this component must be completed before the student is allowed to proceed to the next stage. Research Methodology Module is considered completed when all the interim and final grades of the Research Methodology Module have been finalized and added to the proposal submission.

If the Research Methodology Module component has not been finished by the proposal submission date, then a partial record of the interim grades must be included in the proposal.

Any requests for an extension of the proposal submission date must be substantiated with justified reasons and should be sent to the *DA* and the student's PM, who will approach the *PD* for approval.

5.2 The concluding stages

The exact timetable will be agreed upon between the student and the *DA* and reported in the Proposal. The times are given in <u>weeks</u>.

Stage 2. (From **S** to **S+3 (**or **S+6**)): If the proposal was approved during this period but the Research Methodology Module component has not yet been completed, the student will continue with it until completion and then move on to stage 3. If the proposal was not approved within the first **three** weeks, the student will continue working on it so that it will be completed within the **six**-week period.

Stage 2 is really a period in which the objectives of Stage 1 are completed. The Research Methodology module cannot be continued after the **6th** week. If not finished by **week 6** it will carry the grade of **Fail**, which might fail the whole project.

Stage 3. (From **S+6** to **S+10**): The **Project Specification** document will be sent to the Dissertation Advisor (DA) by email. The DA will respond within seven (7) days. You can only continue to Stage 4 after the assessment form reflecting a passing grade has been submitted to the folder. To avoid overlap, there will be a mandatory buffer period of one week after the DA's response before progressing to Stage 4, allowing for any necessary revisions.

Specification submissions will not be accepted after subsequent project components have been submitted, which might cause the entire project to fail.

Stage 4. (From **S+11** to **S+15**): **The Project Design** document is sent to the DA who will respond within seven (7) days. The student may progress to Stage 5 only after the assessment form has been submitted to the folder with a passable grade. To ensure clear separation of stages, there will be a mandatory buffer period of one week after the DA's response before progressing to Stage 5, allowing for any necessary revisions.

Design submissions will not be accepted after subsequent project components have been submitted, which might cause the entire project to fail.

Stage 5. (From **S+15** to **Final Submission Date** (**S+24)**): Work on the dissertation. In the case of software development, this stage is composed of sub-stages: Build, Test, Implement and Acceptance. The stage ends with the final submission of the Dissertation. The submitted report must be written according to the template file. A complete draft should be sent to the *DA* on **S+20** so that there will be ample time for corrections and revisions. The final submission will be evaluated by the *DA*, acting as the first assessor, and a second assigned assessor.

The student and *DA* should agree upon an appropriate due date for the next stage at each stage of the process, and this should be reported in the Status Report.

Students should be aware that the ability to keep to agreed deadlines will be a factor in the assessment of the project. Each stage of the project will be carried out in full consultation with the *DA*, who should be willing to discuss submitted section drafts before the final delivery date. Students should have their *DA* approve submitted sections before proceeding to the next section during the writing of the dissertation. Each stage should also meet the satisfaction of the advisor before the next stage is started.

It is extremely important that a last draft of the dissertation be submitted to the *DA* before the final dissertation submission. It should be noted, however, that as this is a student dissertation, it is expected that the student will demonstrate self-sufficiency. Most of the dissertation will be already known to the Dissertation Adviser as it was presented to him/her piece by piece along the way. Thus, the *DA* will normally comment in detail only on a **single** full last draft before the final submission of the dissertation.

6 The Dissertation package

The structure and usage of the DS package is a bit different from that of the regular modules.

The package consists in:

- *Read_me_checklist: a checklist of the latest versions of the package*
- *Dissertation Guidelines - the file that you are reading now*
- *Dissertation Template - the formatting template*
- *DAs and Subjects - a list of instructors and their topics of interest*
- *Proposed Research Projects – a list of research subjects that interest the instructors and are offered to the students*
- *MSc in CS Dissertation Titles – titles of approved MSc dissertations*
- *Student Honour Code – Acknowledging proper behaviour concerning plagiarism, collusion and work of academic value.*

7 The Relationship Advisor-Student

The working relationship between a dissertation student and his/her *DA* is an important one.

To ensure that it runs smoothly, the student will:

- Regularly enter the dissertation classroom and communicate regularly with the *DA.*
- Work to complete a proposal within the first four weeks of the specified timeline and a final dissertation by the specified deadline.
- Keep the *DA* informed of all matters relevant to progress, including planned absences.
- Submit regular monthly status through e-mail.
- Send sections of work for review by the *DA* during the dissertation period.
- Normally submit one full draft of the whole dissertation to the advisor. Feedback on multiple versions of the full document will usually not be given.
- Submit the completed dissertation to the classroom for grading after revising according to the advisor's comments on the full draft.
- Ensure that all communication takes place in the classroom.

The *DA* will:

- Also ensure that all communication takes place regularly.
- Work with the student to ensure that the proposal and final dissertation are completed on time.
- Respond to the student's requests within **five** days for ordinary communications, and **ten** days for reading and responding to drafts.
- Inform the student promptly if, for any reason, these response times will not be met on certain occasions.
- Inform the *PM*. as soon as the student has submitted the final dissertation.

8 Learning Outcomes of the MSc Program

The expected learning outcomes of the programs are repeated in this section. While they may not all be present in this module, they still reflect the overall objectives of the program. The *DS* project should demonstrate competency in a number of the outcomes, showing that a student has the following:

1. An understanding of the fundamental terminology, paradigms, and current state of knowledge of the subject of Data Science and Business Analytics.

2. The ability to evaluate current knowledge critically and to apply it effectively as a Data Science and Business Analytics professional.

3. A critical awareness of a wide spectrum of current IT issues and methodologies that allows participation in the design, programming, and implementation of IT systems and in the management of development teams and other professionals in the IT industry, and in the general management of IT oriented departments and organizations.

4. In-depth understanding of the practical and technical issues involved in the design, implementation and management of data systems.

5. An understanding of, and practical experience in, the effective transformation of operational systems needs and requirements into a work process.

6. The ability to implement programs in at least one modern programming language.

7. The ability to plan and carry out a major project, requiring original thought and substantial aspects of research, creative design, and realization, presenting the outcome in a detailed report.

8. An understanding of the importance of teamwork and cooperation in today's IT industry, and the essential practical and personal skills required to share knowledge and participate in teams

9. The ability to present and communicate professional concepts to colleagues and clients.

9 Detailed Requirements for the Project

9.1 The Final Project's Proposal

To be done in Stage 1

Approval of the proposal and any necessary completion of the Research Methodology Module are done in Step 2.

The proposal is to be submitted with the form found in Appendix 11.1 [b]. This should not exceed five printed pages of A4/Letter stationery.

This must be agreed to with the *DA*. The proposal is a management document and not a technical document. The same form is used for the Initial Proposal and for the Final Proposal. The proposal acts as a "contract" between the student and the *DA*, detailing exactly what should be accomplished and according to what timetable. It will be used during the assessments to determine if the student has indeed accomplished all that was suggested and agreed upon.

Project proposals will have the following structure (and **all fields are a must!)**

Student Name and **Student Number:**

Dissertation Title

Name of the Requested (or already assigned) *DA*

Name of the Program Manager

The program and specialization of the student

The Date of Submission: *If submitting another version of the proposal, please specify the data of the new version.*

The Version Number of the Proposal

Status of the Research Methodology Module:

Project Aims and Objectives: *What the project aims to achieve, what its objectives are, and an explanation of why the requirements cannot be met by using an existing solution, if any is found.*

Project Outline: *Of what will the project consis*t of?

Literature Survey: *At least a preliminary literature survey should be included in order to verify that some research and reading on the subject was done before the proposal was written.*

Scholarly Contributions of the Project: *Specify what you consider to be the original aspects of your project in relation to scholarly contributions in Information Technology.*

Description of the Deliverables: *What will the content of the project be? What will be the content delivered upon completion and in what form?*

Evaluation Criteria: *Key features and characteristics of the solution, which aspects are essential to the success of the project, and how you will assess the extent to which they have been achieved.*

Resource Plan: *The equipment, software, and other materials necessary to complete the project, how they are to be provided, and what the financial costs will be, such as travel.*

Project Plan and Timing: *Anticipated milestones and interim deliverables. A detailed timetable (schedule) of the stages, including the estimated finishing date, is a must. Stages will be reviewed with the sponsor and DA.*

Risk Assessment: *A description of what obstacles may arise and contingency plans to meet them.*

Quality Assurance: *How progress on your project will be monitored and how success at each stage will be assessed.*

9.2 Project Specification

To be done in Stage 3:

This stage ensures that there is a clear idea of **what** the project comprises, and that there is a well-defined plan showing how the project will progress.

The Specification should be posted as a report in the project folder.
This should not exceed five printed pages of A4/Letter stationery. The report may also be presented in the form of around 15 Power Point slides.

The *DA* will assess the project specification and return a grade, together with comments and suggestions, within **four** days of the submission. This grade will count for **10%** of the final grade.

The report should be structured as follows:

Student Name and **Student Number:**

Dissertation Title

Module name

Project Aims and Description*: A statement of what the project is about. This should include:*

Who the project is being done for;

What the problems and needs of the sponsor are;

What are the project's aims?

What is the proposed solution?

What will be produced in the project?

Any major modifications to the original proposal

Literature Survey: *This may expand upon what was presented in the proposal and should discuss existing knowledge in the field and the prior knowledge upon which the project is based. It does not have to be as detailed as the literature survey in the final dissertation report, yet it should prove that some research has been done and that reading was done on the subject.*

Conduct of the Project*: Proposes how the project will be carried out and should include, where appropriate:*

Background research: what information will be used to understand the problem and its solution?

Data required: what data will be needed for the project and from where it will be obtained;

Any new skills that will be required and how these will be acquired;

The design methods to be used;

The software to be used

Statement of Deliverables: *This states what will be produced by the project. In some cases it may be useful to identify some deliverables as essential and others as desirable. As appropriate, this will include:*

A description of anticipated documentation content;

A description of anticipated software;

A description of anticipated experiments;

A description of methods for evaluation of the work

Plan*: A timetable of project activities and outputs. This should include internal milestones as well as external assessments and reviews. The plan should state both the progress achieved up to the date the plan is written as well as future activities.*

9.3 Project Design

To be done in Stage 4:

Students should have completed the preliminary research and analysis by this stage of the project and thus have a clear idea of **how** they will achieve their project goals. Typically this understanding will be recorded in a design using some standard methodology. The purpose of this submission is to present this design.

The project design should be posted as a report in the project folder.
This should not exceed five printed pages of A4/Letter stationery. The report may also be presented in the form of around 15 Power Point slides.

The *DA* will give a grade for the design. This will be made available within **five** (4) days of the posting. This grade will count for **10%** of the final grade. The report should be structured as follows:

Student Name and **Student Number:**

Dissertation Title

Summary of Proposal: *A brief statement of what the project is about, including any necessary changes to the original proposal or Specification, based on new information or understanding. A summary of the research and analysis carried out thus far should also be included.*

Design: *Outline of the project design, according to method chosen in the Specification. Although designs will vary according to the needs of particular projects, a typical design of a software implementation will comprise:*

A description of the anticipated components of the system and how they are to be organized;

A description of Data structures to be used by the system;

Algorithms to manipulate these Data structures; and

A design of the intended interface

For example, if following an object-oriented design method, one might include: case diagrams; an interaction chart; the objects to be used in the system; attributes and methods of objects; pseudo-code for the key methods; an interface design.

In this section one might include: Data flow diagrams; entity relationship diagrams; entity life histories; pseudo code for the key processes; interface design.

For a project involving the empirical investigation of some hypothesis one would normally expect to see things such as: a statement of the hypotheses to be tested; a description of the test Data to be used; an experiment design, the experiments to be performed; any controls to be used; a description of how the results will be analysed, including any statistical techniques that will be used; anticipated conclusions; program designs for any software that needs to be developed to generate the test Data or conduct the experiments.
The important thing is that the report clearly shows that a design method has been followed, and that the design has been carried out with sufficient attention to detail as to inspire confidence that it can be realized, tested, and evaluated in the time remaining for the project.

Review against Plan: *progress to date and any necessary changes to plan.*

9.4 Dissertation

To be done in Stage 5.

A dissertation document must be submitted in this stage. This should be a full, scholarly, and critical exposition of your project, presented in a conventional academic format, as a series of chapters.

The final submission of the dissertation for evaluation can be submitted as a Microsoft WORD, postscript, or PDF document. The preferred format for the submission is .DOC, using the WORD text editor. The pages' dimensions should conform to the A4/Letter format. A template is provided for the proper formatting of the dissertation. However, the dissertation will finally be produced in hard-copy form as a public document lodged at the University, so it is important that it be laid out with this in mind.

Upon acceptance of the final version of the dissertation the *DA*, acting as the first assessor, will check it, using the **Turnitin program** in order to verify its authenticity before informing its availability in the student's folder.

This will count for 70% of the final grade, and will be marked by **two** staff members from the Department of Information and Intelligent Systems Department, one being the *DA* (now acting as the first assessor) and the second being another staff member who will usually not have been involved with the project.

The dissertation must be self-contained and contain a complete record of the work carried out. Material included in the specification and design presentations can be repeated here. A target size of **12000-15000** words is recommended, but this can be slightly modified in appropriate cases with the agreement of the *DA*. Appendices, if justified, will not be included in the maximum, but examiners will not normally be expected to read appendices in detail. The word count will also be checked by the first assessor. The dissertation content is at the discretion of the student, and will depend on the nature of the project, but for a typical project, the following elements of the dissertation are expected.

(Structure and formatting guidelines are elaborated in the **template.dot** file)

Cover Page: *a one-page cover which contains the title of the dissertation and your name.*

Abstract: *a one-page summary of the project as a whole. This must be included for all projects.*

Certificate Statement*: certifies that the dissertation consists of your own product.*

Acknowledgements: *There are two parts to the acknowledgments. The first one, which must be included, should cite the person or the organization that supplied the information that was used for the dissertation. You should specify the domain of the project, the context in which it was performed, the environment where it was conducted, and any help that you received. The second optional part might include any further acknowledgments that you want to make.*

Table of Contents, List of Tables, and **List of Figures**

Next comes the "body" of the dissertation, which ***must*** *be written in past tense, third person singular style and include:*

Introduction: *this will give a brief overview of the project, why it was done, what problem it addressed, and the approach taken.*

Background and Review of Literature*: an analysis of the literature that deals with the subject of the project. It should include both the theory (academic) and, if relevant, the implementation (industry). This is a collection of the sources that supported and led the projects. The comparative analysis and the synthesis of the literature to a coherent exposition are of paramount importance.*

Theory: *a description of the assumptions and theories employed to acquire the necessary information and skills to carry out the project. It is essential that you demonstrate that your work has been based on a full and up-to-date understanding of relevant knowledge, properly cited in the recognized academic manner.*

Analysis and Design: *documentation of the analysis and design; while the organization should be similar to the design presentation, full detail of the design is required. All design documentation should be supplied (possibly as an appendix).*

Methods and Realization: *how the design was implemented. Changes made to the design in the course of implementation. How was the Data collected? How was the implementation tested? Typically code listings, screen shots, and test runs will appear as appendices.*

Results and Evaluation: *description and evaluation of the results. These may include, where appropriate, feedback from test groups, users and the project sponsor.*

Conclusions: *a summary of the project as a whole, examining the outcome in relation to the aims identified in the introduction. A critical review of the strengths and weaknesses of the project as carried out. A discussion of possible applications and extensions of the work should conclude this chapter.*

References Cited: *a properly cited list of books, articles, and other materials consulted during the project and/or referred to in the dissertation. You* ***must*** *use the Harvard method of citation.*

A dissertation using a different citation format will not be accepted and will be returned to the author to be corrected.

It should be noted that although the Internet can provide valuable information, the student must understand the difference between a credible source that might exist on the net and a non-credible source. Many research papers are freely available on the Web. A useful guide to the quality of the material found on the Internet is that it usually has a citation (e.g. an electronic or print journal) apart from just the Web address.

Sometimes it is difficult to separate the trusted references from the large volume of low level material found on the Internet. Because of this, it is highly recommended that more reliable resources be used, such as electronic libraries.

A list of references that quotes only Web sites implies that no serious effort was done to search for other worthwhile resources and most probably will lower the final grade.

Appendices: *appendices are meant to contain detailed material required for completeness, but which are too detailed to include in the main body of the text. They might typically contain a full code listing, details of test data, screen shots of sample runs, a user guide, and full design diagrams or similar material, but they should not be used as a way to just increase the number of pages in the body of the dissertation itself.*

The *DA* reviews the dissertation manuscript whenever the student or *DA* deems such review to be proper. One purpose of these reviews is to help the student improve the standard of presentation. Candidates are advised to take the utmost care at this final stage of their work. The standard of presentation is one of the criteria by which the dissertation is judged, and unsatisfactory presentation may in itself be grounds for awarding a lower grade or referring the dissertation for re-submission.

10 Assessment

All the components of the project (the specification, design, and dissertation) will be assessed in terms of their having met:

- The proposal, which should be considered as the "contract" between the student and the *DA* detailing exactly what should be accomplished and according to what timetable.
- The learning outcomes for the project, identified in the introduction of this document.
- The specific planned project outcomes and evaluation criteria, identified in the project proposal.

The Specification stage and the Design stage each contribute 15% towards the final grade.

Failure to submit at least **80%** of the required Status Reports may result in a reduction of the final

grade of up to ten points, as recommended by the *DA* and the Program Manager.

The assessments will be done using standard proformas (see 11.3 Appendix C – Proformas for Assessment of the Project Stages) (Seymour, 2005) (Lavitts, 2005) Students should study it to understand the criteria used in the evaluation of the dissertation. The first two proformas (specification and design) are used to provide feedback to the student, while the last one (dissertation) is not disclosed.

The *DA* will immediately send to the student the specification and the design proformas.

Once the student has submitted the final draft to the *DA* and the *DA* is satisfied with the final draft (after verifying the word count and checking the document using the **Turnitin** application) a message will be send to the Head of the Department informing him about the existence of the draft in the subfolder.

A second assessor will be assigned to evaluate the draft. The student will be informed who the second assessor is. At this point the relations between the *DA* and the student are void, as the *DA* becomes the first assessor. At this point, no further communication can exist between the student and *DA* about the dissertation, but only as the Dissertation Advisor's new role of the first assessor.

As part of this process, the second assessor, and sometimes the *DA* (acting as the first assessor) as well, might ask the student to answer a few questions, the aim of which is to clarify the work presented and to assess the student's depth of understanding of it. This dialogue should not normally take more than one week at the most. The student will be told by the *DA* to expect this. A date when the questions will be posted should be coordinated with the student and the responses should be given within **one** week.

In cases where the project produced a feasibility study or a prototype, the software should be available if required, either as a package to be shipped upon the request of the assessors, be demonstrated through a remote execution on the student's machine or, if these options are not possible (due to special resource requirements), as a detailed and convincing part of the report. Thus when software outputs are a significant part of the work, the assessors will really need to see them demonstrated in some form. The source code of a programming project should be included by the student. If not included, it might be specifically requested by the *DA* and/or the assessor. In these cases it must be uploaded to the folder as a separate shipment or as an appendix to the dissertation

The assessors will attempt to return all final assessments within **ten** days.

The dissertation will thus be assessed independently by the two assessors, who will each provide a grade for the dissertation. Each assessor's grade will have equal weight in forming the final grade. If the two assessors present a widely different assessment of the project (if the grades differ by two or more grades), then two separate grades may be posted, with an explanation of what the point of disagreement is. They will be invited to discuss their assessments and attempt to come to an agreed outcome. If the disagreement can't be resolved between the two assessors, the Director of M.Sc. will nominate a third assessor. The third assessor will then complete a separate analysis, and the three reports will be presented to the *Board of Examiners (BE)*, which will arrive at the final decision.

The full process will be monitored by the university academic personnel to resolve differences when necessary, and to guarantee that the dissertation is written in an acceptable level of English according to the requirements of the university. University rules do not allow the use of (human) editors to correct the English of a dissertation.

An important component of the grade is a timely completion of the project within the agreed upon duration.

The dissertation proforma used by the assessors is included in Appendix C. Dissertation grades will **not** be returned to the student at this stage, but, together with the grades for the specification and design, will be used to produce a preliminary overall grade for the dissertation. All the components of this grade, and the reports of the assessors, will be made available to the *BE,* which will agree the final grade. The Board has the power to give greater weighting to one or other after reviewing all the evidence, especially in cases where the two assessors disagree.

The Program Manager will release the final overall grade to the student only after the meeting of the Board of Examiners.

The *PM* will send the student a message with the UNYT graduation contact details, confirmation of the dissertation grade, and an explanation of UNYT involvement in the graduation and associated processes. Additionally, the student will be advised as to the permission to publish the dissertation online.

If the Board decides upon a failing grade, the student will be informed by the Program Manager, along with the reasons why a fail grade was given and a list of instructions of how to proceed from this point. The student has the option of repeating the dissertation once. This will be considered to be a "second sitting" of the module.

The BoE meets **four** times a year, and it takes time to assess the dissertation and prepare the results for the Board. Thus if you will submit your final dissertation even a few days after the assessors have wrapped up the modules for the Board, you will need to wait until the next graduation ceremony, which could be as long as **six** months, to have your degree! As the submission deadlines approach to be done in time for these two meetings, you will most likely be approached by your DA and PM, who will urge you to submit your final dissertation file in time.

A passing grade is required for the degree of MSc to be awarded. However, a student who fails to obtain a passing grade will be given one opportunity to rewrite and resubmit a dissertation for re-examination.

For a Checklist of Dissertation evaluation criteria, please see Appendix D and the evaluation Proformas in Appendix C.

The module uses a scale of six grades to assess components of work:

A*, A: Distinction grades (truly exceptional work).
B, C: Pass grades.
D: Compensable Fail.
F: Fail

Each of the components of assessment will be graded using the standard MSc grade descriptors, i.e., assessors should attempt to assign grades, which most closely correspond to the description in the following table.

Grade	Description	Key features
Excellent (A)	**Excellent work.** Logical; enlightening; originality of thought or approach; good coverage of topic; clear, in-depth understanding of material; good evidence of outside reading/research; very well written and directed.	**Distinction:** **Originality. Well-directed independent thought. Truly exceptional.**
Very Good (B)	**Very Good work.** Logical; thorough; factually sound (no serious errors); good understanding of material; evidence of outside reading/research; exercise of critical judgment; some originality of thought or approach; well written and directed.	**Pass:** **Essentially correct and complete. Competence; Critical judgment.**
Good (C)	**Good work**. Worthy effort, but undistinguished outcome. Essentially correct, but possibly missing important points. Largely derived from material delivered in the program, but with some evidence of outside reading/research; some evidence of critical judgment. Some weaknesses in expression/ presentation.	
Marginal Fail (D)	**Inadequate work**. Incomplete coverage of topic; evidence of poor understanding of material; Poor presentation; lack of coherent argument.	**Compensable Fail. Significant weaknesses, but serious effort.**
Fail (F)	**Unsatisfactory work.** Serious omissions; significant errors/ misconceptions; poorly directed at targets; evidence of inadequate effort.	**Fail. Little or no achievement of learning outcomes**

11 Appendices

11.1 Appendix A – Guidelines for Dissertation Management

11.1 [a] The initial application

‘My Dissertation’

Guidelines for Using Dissertation Management

Application Form –When students are ready to begin, they must complete the dissertation Application Form. This form has sections on project aims and the project outline which must be filled out, ensuring that students enter the dissertation process with a clear idea of what they are going to do.

The application requires the following fields to be completed:

1) ***Proposed Dissertation Title*** – A brief working title.
2) ***Module Area*** – A minimum of two modules with content that is represented within the context of the proposed dissertation.
3) ***Requested DA*** – A minimum of two and a maximum of three instructors that the student would like to support him/her through the dissertation.
4) ***Project Aims*** – A brief summary of the dissertation aims and objectives.
5) ***Project Outline*** – Maximum 200 words detailing how the dissertation aims will be achieved.

The student has to send the application to the Program Manager who will then approve or reject the application based on whether it provides the information necessary for potential advisors to decide if they will choose to accept the student.

Once the application is approved, the “Requested Dissertation Advisors” will be contacted by email to enquire if they wish to accept the topic. Both the student and the advisor will be notified by email and advised of the next steps to be taken.

Monthly Report – The Monthly Report is used for a student to give feedback on the dissertation progress. This can be used to confirm that everything is progressing as planned, or to highlight issues and challenges that have disrupted the dissertation progress. The Monthly Report should be sent to both the *DA* and the *PM*, ensuring that both academic and administrative support is available when required.

Monthly Reports are required on the 27th of each month.

Students will be asked to report on the following aspects of their dissertation:

1) Is the deadline still a realistic target?
2) Has regular contact been maintained with the Advisor?
3) Has all correspondence taken place within the class?
4) What has been achieved in the last month?
5) Are there any complications?
6) Is the plan staying the same?
7) On what date are we to expect the next submission?

In addition to these questions, students are able to raise any other issues that they wish to bring to the attention of their *DA* or *PM*. It should be noted that whilst this reporting function is outside of the class, all other communications should take place or be documented thoroughly within the classroom.

Upon submission of the student's Monthly Report, the *DA* is required to read through the report and then confirm they agree with or 'deny' the content. At this point the advisor will email the student directly with feedback. The advisor will also have to confirm the student's "phase" in the dissertation process. This will be used to help monitor the student's progress more thoroughly.

The Program Manager will be alerted to reports expressing issues/problems at various stages throughout the Monthly Report process. Again, this is done with the intention of gaining a greater understanding of a student's progress to help maximize the desired outcome (successful completion).

Dissertation Submission – This forms the final declaration from the student that they have submitted a version of the dissertation that they wish to be graded. Sending the declaration also provides an official date of submission, which can be verified against the official deadline set at the beginning of the dissertation process. Once this declaration has been submitted, the student should end communication with the *DA* unless told otherwise.

Administration staff will confirm the presence of a gradable dissertation within the class. Confirmation of receipt of the dissertation will be emailed to the student at this point. This receipt email forms the final end point of the dissertation process from the student's perspective.

Grading of the dissertation by the advisor will proceed, and a second assessor will also be assigned to grade the student's submission. Once assigned, the second assessor will have access to the student's progress card and classroom, and will proceed to grade in the usual manner.

Guidelines & Sample Materials – In addition to the reporting tools described above, the Dissertation Package includes:

1) ***Guidelines*** – These are documents that are designed to give the student a basic understanding of the dissertation requirements.
2) ***DAs*** – A full list of all available *DA* and their backgrounds and areas of interest.
3) ***Sample Materials*** – Includes a number of templates and various lists of previously approved project titles. These materials are to be used to help develop a student's

understanding of the dissertation requirements within the application, development, and submission phases.

Students should refer back to these pages rather than storing them locally to ensure that they have the latest information.

11.1 [b] The submitted proposal

Submitted Project's Proposal
(Version 1.0)

The application must be submitted using the following form and should not exceed four to five pages in length! The file format to be used for submission is Microsoft WORD. Please do not submit a PDF file as it does not lend itself to easy insertions of comment, if needed.

All fields are a must!

For further details, please see the Detailed Requirements for the Project section.

Name of Student and [*and* **Student Number]:**

Project Title:

Submission Date:

Version Number of the Proposal:

Requested or Assigned Dissertation Advisor:

The program and specialization (a must) **of the student:**

Module Folder Number (A full and accurate number is a must!)**:**

Sponsor's Details:

Sponsor's Background:

Sponsor's Agreement:
(Has the person you have requested agreed to sponsor the project? Please note that quoting the agreement will suffice at this stage. When the proposal is approved and there is an external sponsor, a document signed by the sponsor agreeing to the project must be sent to the PM prior to the start of the project – see Appendix B – Sponsor Agreement.)

The Project Aims and Objectives:

Project Outline (*Please describe briefly in about 200 words***):**

Literature Survey / Resources' List: *(A preliminary survey and/or initial resource list*)**:**

Scholarly Contributions of the Project *(Please specify the aspects of what you consider to be the original scholarly contributions of your project.)***:**

Description of the Deliverables:

Evaluation Criteria:

Resource Plan:

Project Plan and Timing (*Detailed timetable of the stages, including the Research Methodology Module element, and estimate finishing date.*)**:**

Risk Assessment:

Quality Assurance:

11.2 Appendix C - Proformas for assessment of the project stages

There are **five** deliverables and **four** interim grade assessments for the project, which are combined for the final grade.

[a] The Final Proposal, which does not carry any grade.

[b] The Research Methodology Module, graded by the assigned instructor, with the grade being emailed to student.

[c] The Specification, graded by the *DA*, with the grade being disclosed to the student by being recorded on the assessment form, which is emailed to him.

[d] The Design, graded by the *DA*, with the grade being disclosed to the student by being recorded on the assessment form, which is emailed to him.

[e] The Dissertation, which will be graded separately by the *DA* and the second assessor. The combined grade is **not** disclosed to the student. This form will be posted to the Correspondence folder only after the two assessors have reviewed this part of the work.

The last form ([e]) should be also sent to the *PD*.

The suggested format for the submission of the Proposal, the Specification, the Design and the drafts of the Dissertation is MS WORD. The final submission - for the purpose of evaluation - of the Dissertation could be submitted as a MS WORD, postscript or PDF document. However, the dissertation will finally be produced in hard-copy form as a public document lodged at the University, so it is important that it be laid out with this in mind.

[a] Project Proposal

There is no assessment involved in the Proposal. Its acceptance is the indication that the student can proceed to the next stage.

[b] Research Methodology Module: Assessment Form

(Version 1.0)

This form, including the grade, is subject to the Assessment Forms as described in the M.Sc. program specification. Please refer to the section that treats the Research Methodology Module.

[c] Project Specifications: Assessment Form

(Version 1.0)

Student name:

Dissertation title:

Module (folder) number:

***DA* name:**

Date of submission:

Grade awarded (A*-F):

If a grade of A or A* is granted: What are the exceptional features of the work that lead to this recommendation?

If a grade of D or F is granted: The unsatisfactory features must be identified.

Specific Assessment Features: The *DA* should use the categories below to form a grade profile of the Specifications. The overall grade awarded will be a judgment made by the Dissertation Advisor, guided by this profile and not being a weighted or averaged grade.

#	**Category**	**A***	**A**	**B**	**C**	**D**	**F**
1	Correctly formatted and of reasonable length						
2	Logically developed and well written						
3	Topics covered in depth						
4	Clear understanding of what the project involved						
5	Thought has been given to design/analysis methods to be used						
6	All aspects of the project are addressed						
7	There is a project plan with appropriate milestones						
8	Project appears feasible in time available						
9	Project has enough content and originality for an MSc						

Additional Comments:

[d] Project Design: Assessment Form

(Version 1.0)

Student name:

Dissertation title:

Module (folder) number:

***DA* name:**

Date of submission:

Grade awarded (A*-F):

If a grade of A or A* is granted: What are the exceptional features of the work that led to this recommendation?
If a grade of D or F is granted, the unsatisfactory features must be identified.

Specific Assessment Features: The *DA* should use the categories below to form a grade profile of the Design. The overall grade awarded will be a judgment made by the dissertation Advisor, guided by this profile and not being a weighted or averaged grade.

#	**Category**	**A**	**B**	**C**	**D**	**F**
1	Correctly formatted and of reasonable length					
2	Logically developed and well written					
3	Topics covered in depth					
4	Clear understanding of what the project involves					
5	Appropriate design methods have been used					
6	Design presented for all relevant aspect of the project					
7	Implementation of design appears feasible in time available					
8	Progress against Plan					
9	Project has enough content and originality for an MSc					

Additional Comments:

[e] Project Dissertation: Assessment Form

(Version 1.0)

Assessment of Postgraduate Project with a Product	
Student:	**Banner ID:**
Supervisor/Second Marker:	

The project should demonstrate the following qualities which are expected of a Master's level project. Much of your study at this level is at, or informed by, the forefront of your academic discipline. Your project should reflect this and show originality in the application of knowledge, and your understanding of how the boundaries of knowledge are advanced through research. The project will demonstrate your ability to deal with complex issues both systematically and creatively, and your originality in tackling and solving problems that arise. It will also reflect the qualities needed for employment in circumstances requiring sound judgement, personal responsibility and initiative, in complex and unpredictable professional environments.
Adapted from the National Qualifications Framework

Broadly the final project should exhibit the following characteristics for the final grade. Both the report and the presentation form a holistic project view and contribute to the criteria stated in the Assessment Sheets

Marks	Grade	
≥ 90%	**Excellent**	**Meets all criteria. Shows a significant amount of critical analysis and exhibits an excellent understanding of the relevant issues. Product meets requirements.**
≥ 80%	**Very Good**	**Meets almost all of the criteria. Demonstrates clear awareness and exposition of the relevant issues with a high standard of critical analysis. Product meets requirements.**
70–79%	**Good**	**Meets most of the criteria. The analysis and design uses the appropriate frameworks but may include some minor errors. Product meets most of the requirements.**
60-69%	**Fair**	**The essential criteria present but is mainly factual and descriptive. The analysis and design uses the appropriate frameworks but may have several errors. Product meets most of the requirements.**
50-59%	**Pass**	**Some of the criteria present. It establishes a few relevant points but is superficial and there is a confused exposition of issues. The analysis and design uses the appropriate frameworks but may have several errors. Product meets the essential functional requirements.**
≤ 49	**Fail**	**Little or no evidence of given criteria and no grasp of analysis. Does not demonstrate self-direction or originality in problem solving or a critical self-evaluation of the project process. Product meets very few of the product requirements.**

Overall assessment of the project report and demonstration:

Final Mark (%)

Have you held a demonstration for this project? Yes/No

Does this project meet requirements for BCS? **Yes/No**
Does the report meet presentation criteria? **Yes/No** Word length 10,000-15,000. Structure of report appropriate. Harvard Referencing used. Proper use of spelling, punctuation, grammar, syntax. Figures and diagrams properly labelled and referenced. If no, then this should be reflected in the final feedback and should be a contributory factor in your project assessment
Each of the following four sections nominally carries equal weight and the list of things to consider under each heading is indicative. These may vary depending upon the project's aims and objectives..

1. Understanding of Problem Domain

This section is about assessing the student's ability to identify and investigate a suitable problem, and follow an appropriate project methodology to solve the problem.

- Identified an area to research or investigate and a problem to be solved
- Demonstrated understanding of the problem domain
- Shown how project objectives were formed and project planning took place
- Discussed the research or investigation within the context of the project
- Critical evaluation (of the appropriateness) of the current thinking on the research area
- Compared similar products and systems
- Selected suitable criteria for development of product and ideas
- Chosen appropriate tools for modelling and development
- Production of requirements specification/client brief of suitable complexity
- Identified any legal, social, ethical and professional issues that are relevant to the project

Excel-lent	Very Good	Good	Fair	Pass	Fail
Report					
Demonstration					

2. Development of product and ideas

This section is about assessing the level of the development and the student's competency within the context of the chosen topic area.

- Demonstrated complexity in the design and implementation of the product
- Discussed the development process
- Shown that a number of alternative approaches have been considered
- Explained the reasons for selecting a particular solution
- Demonstrated changes in the project plan
- Resolution of relevant legal, social, ethical or professional issues

Excel-lent	Very Good	Good	Fair	Pass	Fail
Report					
Demonstration					

3. Product build and evaluation

This section is about assessing the student's ability to present their completed work and discuss issues of quality, usability, etc.

- Demonstrated technical ability in building the product
- Demonstrated the full scope of product developed
- Shown that the product has been tested and evaluated appropriately
- Discussed the quality of the product in relation to original objectives and criteria

Excel-lent	Very Good	Good	Fair	Pass	Fail
Report					
Demonstration					

• Demonstrated the usability and appropriateness of the product for the problem domain • Identified where and how improvement can be made						

4. Conclusions and critical review

This section is about assessing the student's ability to be critical of their own work and show reflective thinking.

	Excel -lent	Very Good	Good	Fair	Pass	Fail
• Demonstrated critical thinking in writing up the project • Discussed lessons learnt whilst completing the project • Identified any problems encountered and discussed how they were tackled • Identified mistakes made and lessons learnt • Reflected on how the project plan changed during the development • Made suggestions as to how the work can be improved • Identified how the project might be taken further or expanded	**Report**					
	Demonstration					

11.3 Appendix D - Checklist of Dissertation Evaluation Criteria

Introduction

Your dissertation will be assessed using the general grading descriptors, applied to the general learning outcomes of the dissertation and the specific goals of your project. To help you know whether your dissertation will meet the requirements for the MSc, the following checklist of assessment criteria may be helpful.

What follows is for general guidance only.

Criterion One: Construction of a principled basis for enquiry.

a) **What** is the purpose of the dissertation? For example, to explore an hypothesis, to review, etc.
b) **How** have you approached the dissertation? For example, have you worked using one or a combination of methods and sources including a literature search, survey/questionnaire, interviews, historical background, analysis, review, assessment, or evaluation?
c) **Why** is/are the method(s) you have chosen the best for your purpose?

Criterion Two: Construction of an appropriate literature base.

a) **What** is the relevant literature for this dissertation? This might include academic writings, official governmental documentation, work-based and personal professional material.
b) **Why** do you believe the sources used are relevant and appropriate?
c) **How** do you intend to use the literature? For example, to clarify the theory, to reflect critically upon theory in a specific professional context, to show gaps, deficiencies, or inconsistencies in the literature, etc.

NOTE:

1. **Remember** the advice given to you about citation and bibliography.
2. **Plagiarism** means a **fail**, so acknowledge your sources.
3. Always make clear the **status** of any opinion or fact you introduce. For example, are you quoting somebody who has carried out empirical research, or somebody who was merely expressing an opinion?

Criterion Three: Identification and use of key concepts and general principles

a) Have you **signalled** to the reader what these are and where they come from? (e.g. academic writings, governmental publications, action research.)
b) Have you **used** them to construct an argument? (e.g., by analysing a survey or piece of writing to show what concepts emerge from it and what they mean.)

Criterion Four: How key concepts and general principles relate to evidence.

a) Have you **connected** ideas and evidence? (Either evidence from your reading or empirical evidence which you have collected.)

b) Can you **justify** the conclusions you have drawn?
c) Can you **explain** why and where evidence does or does not support your conclusions?
d) Have you made any **claims** which cannot be justified?

Criterion Five: Ability to relate specific learning to global, where appropriate.

a) Is your work **coherent**? For example, have you drawn together different pieces of evidence or different arguments and shown how they do or do not relate to one another?
b) Have you made clear the wider **context** in which your dissertation belongs? For example, the socio-political context/the relationship between one professional role and another/the relationship between one theory and others.
c) Can you **apply** the conclusions drawn from the study of a particular case to the wider context?

Criterion Six: Development of a clear and coherent style, including the use of argument and use of pertinent examples.

a) Is your **meaning** clear?
b) Can others follow the **structure** of the dissertation?
c) Are your **arguments** supported?

Criterion Seven: Independent enquiry and thought.

Do you provide evidence of your own thinking in your writing? For example, do you:

a) **Explain** why you believe the title to be important or significant?
b) Clearly **acknowledge** your own ideas, questions, data collection, conclusions?
c) **Indicate** the ways in which your own approaches and thinking differ from or are similar to those of other authors?

Criterion Eight: Critical analysis and synthesis.

a) **Having** applied the methods you chose to use (criterion one), have you analysed the information which has emerged?
b) **Does** your analysis provide comparative analysis between, for example, the past and present, theory and practice, or the nature or strength of the evidence?
c) **Can** you point to any crucial factors? For example, such as in determining socio-educational outcomes?
d) **Have** you shown how different theories or ideas may or may not be combined to form a coherent view or body of opinion?

Criterion Nine: Ability to put forward conclusions and recommendation for policy and/or practice.

a) **Does** your dissertation arrive at supported conclusions which relate to your agreed area of professional study?

b) **Do** you make recommendations for policy or practice which are securely grounded in the study you have undertaken?

11.4 Appendix E – Formatting of the Dissertation final draft

The dissertation must be formatted according to the supplied MS WORD (DS Template.dot) or Latex template which is an integral part of the Dissertation Package.

Apart from being a template the document includes instructions on how to write the dissertation. Please study it at an early stage.

The final document may be submitted as a Microsoft's WORD, Tex. postscript or PDF document. The preferred format for the submission is .DOC or .TEX. Page size should conform to the A4/Letter format. More instructions are found in the DS template.

The dissertation will finally be produced in hard-copy form as a public document to be kept at the UNYT, so it is important that it be laid out with this in mind.

References

Brooks, Frederick P., Jr. (1995). The Mythical Man-Month: Essays on Software Engineering (Anniversary Edition with Four New Chapters). Addison-Wesley, Reading, Massachusetts.

Seymour, Diane (1995). Learning Outcomes and Assessment: Developing Assessment Criteria for Masters-Level Dissertations. Retrieved from http://www.brookes.ac.uk/publications/bejlt/volume1issue2/academic/seymour.html.

Lovitts, Barbara E. (2005). How to Grade a Dissertation. Retrieved from http://www.aaup.org/publications/Academe/2005/05nd/05ndlovi.htm.

Note. Our Dissertations' assessment proforma are based on the works of Dianae Seymour and Barbara Lovitts. The assessment criteria have been properly tailored to meet the needs of the Albanian context.

{End of the DS Guidelines document}