**FYP Project Manual**

**2020-21**

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# 1. Introduction

The final year project allows each student to give expression to what they have learned and achieved in the other modules of the degree and in their life experience in general; it provides a capstone to the student's studies in the institute. The quality of a student's project work is often regarded by the community, and potential employers in particular, as being a key measure of the student's transferable innovative capabilities and ability to sustain a piece of work over a period of six months or more.

The project is divided into two modules, called Semester 1 and Semester 2 below, each of which is formally examined.

This manual has been produced to outline the procedures involved in running the final year project modules in the department to the end that a quality teaching and learning experience is maintained.

# 2. Organisation of the project modules

The project is organised across all six final year computing programmes in WIT, with a project coordinator overall, currently Lucy White (lbwhite@wit.ie).

The programmes are:

BSc (Hons) in Applied Computing  
BSc (Hons) in Computer Forensics and Security

BSc (Hons) in Creative Computing

BSc (Hons) in Entertainment Systems

BSc (Hons) in Information Technology Management

BSc (Hons) in Internet of Things  
BSc (Hons) in Software Systems Development

BSc (Hons) in Software Systems Practice

Each student is allocated a staff member to act as their project supervisor, and that staff member will meet the student for half an hour each week.

Further, each student is allocated a second reader who will assist the supervisor in key issues and will, with the supervisor, act as principal intern examiner of the project for semester 1.3. Indicative calendar for Semester 1 & Semester 2

## Semester 1 – Deliverables and Events

***Status Report***

Submission by Moodle not later than **11:55 pm, Tuesday, 12th January 2021** (This is an absolute deadline to give supervisors time to read the reports before the presentations.)

Online presentations will take place from **Monday 18th – Wednesday, 20th January 2021** inclusive.

***Presentations will be take place online via MS Teams. All students must be available on these dates to present their work.***

## Semester 2 - Deliverables and Events

***Abstract for Computing Projects Fair Brochure*** *(date to be decide)*

***Poster*** due, via Moodle, not later than **11.55 p.m. Friday 26th March 2021**

***Video (must include speech)*** *due*, via Moodle, not later than **11.55 p.m. Tuesday 13th April 2021** (Submit a link, only, to 3rd party hosting of your video, for example on YouTube.)

***Poster display*** – *(to be decided)*

***Final Report & Source Code (two Moodle submission boxes will be provided)*** due, via Moodle, not later than **11.55 p.m. Friday 28th April 2021** *(date to be confirmed)*

***Demonstrations***  **Tuesday** **4th, Wednesday 5th and Thursday 6th of May 2021** *(dates to be confirmed)*; further details about project panels and will be posted to Moodle closer to the time. Warning: If you don't submit video, report and source code by the due date, it may be assumed that you won't attend your demonstration either and so your demo slot may be re-used.

***Computing Projects Fair (attendance mandatory)* Monday 24th May*****2021*** *(date to be confirmed)*.

***Sun Life Awards*** *(date to be confirmed)*

***Repeat/Deferred Candidates***

The demonstrations for repeat/deferred candidates will take place on **2nd September 2021**. Any or all **project examiners** may be required on this day.

# 4. Weekly Meetings

You'll meet with your supervisor week by week, without fail, to discuss your project and ensure that it's going according to plan. You should document your meeting and highlight any actions from the meeting. Online tools such as Trello or GitHub are recommended throughout the duration of your FYP.

# 5. General characteristic of a development-type project report

*Title Page* Emphasis should be put on a well-chosen informative title for your project, and your name, student number and course. The words *final report* (semester 2) or *status report* (semester 1) should be in smaller letters. See section 8 below for more details.

*Brevity*  The document should be as short as possible; indeed a project report can NEVER be too short, if it contains succinctly all that's needed. It's always useful to work on your writing to reduce its amount since marks could be lost for needlessly long reports. Remember that the *final report* should be 8000 words or less and the *status report* should be 4000 words or less. Take careful note that a short report takes longer to write than a long one, because you have to keep whittling down what you say to capture everything worth saying in a smaller number of words.

For some projects 4000 words or 8000 words could conceivably be too many words, so these limits are simple maximums beyond which you must not go; they’re NOT targets to be aimed for.

However, the final report should be good enough that another developer should be able to continue your project!  It should have the usual contents page and page numbers are essential.  Page numbers are often overlooked by students in a hurry.

# 6. Plagiarism

Plagiarism (a form of cheating or the semblance of cheating) is effectively a crime in an academic context. There is no institute of learning that tolerates it. To avoid any accusation of plagiarism, take note of the following:

Everything you write should be in your own words! When you're writing the text of your report, have nothing else in front of you except possibly for notes that you've made in preparation for the task.

Not only should all the words be your own, but diagrams should be your own too, unless credited to their owners.

Any lines or sections of source code that you didn't write from scratch must be clearly shown as such with the start and the finish of any such section clearly marked. Further if the code comes from a published work, reference must be explicitly made to that source, whether from a book, a journal, an academic report or thesis or from the Internet.

Even if failure to acknowledge someone else's work was a careless omission rather than a deliberate intention to cheat, a charge of plagiarism can still be successfully made against you; so be extremely careful! Whereas theft in criminal law is defined by the intention, not by the action alone, plagiarism in academic life is defined by the action alone.

# 7. The Essence of Project Reporting and of the Demonstration

Without a set of meaningful project reports and documented source code a project has neither academic nor commercial worth, since it resides only in the mind of the developer.  The system can neither be developed further nor maintained.  Thus, report writing is a serious integral part of the project.

The set of project reports should contain no irrelevant padding and should be no less and no more than is required to describe the project in words and diagrams.  As already mentioned, tutorials in standard technologies or methods have no place in a project report, and can at worst be plagiaristic.

In the last analysis, neither reports nor demonstrations are ends in themselves, but rather instruments of enquiry by which examiners discover what the student did in their project to the end that it is assessed.

## 7.1 Naming of documents

**The following explains the filenames that electronic copies of documents should have:**

<CCCCC>\_<99999999>\_Report1 Ssssss.Ffffff.<ext>

<CCCCC>\_<99999999>\_Presentation1.<ext>

where:

CCCCC is the course code e.g. KMULA, KENTS

99999999 is the student number

Ssssss.Ffffff represents Surname.Forename

ext is the extension of the file e.g. ppt, .avi, .doc etc

**Here' s an example:**

**KMULA\_20034287\_Video\_Brennan.Julie.mov**

## 7.2 The front page (semester 1 & 2 reports)

The following is a ***suggested*** style for the front cover of your documentation:

Academic Title of Project (16 point)

*Optional Commercial Title of project (12 point Italic)*

Generic project report title (12 point) – for example: Semester 2 Report

Developer's name (16 point)

Developer's student number (16 point)

Supervisor (16 point)

Programme followed (14 point)

**The following is an example:**

Networked Book Retrieval System

*find that book*

Semester 2 Report

Peter Grant

20066793

Supervisor: Aisling Barrett

BSc (Hons) in Software Systems Design

# 8. Semester 1 status report, indicative contents

**(4000 words maximum + diagrams)**

The report will usually be accompanied by a technological feasibility study in which you show that the various technologies to be used in your project, both hardware and software, work together.  The word *shows* in the last sentence is to be taken literally.  In other words, you should build a working technological prototype using the relevant software/hardware.

The test application that you build need not necessarily have any real functionality to it as long as it tests that the “building blocks” work together. The first report may be accompanied, not just with a technological prototype, but also with that technological prototype partially or completely fleshed out with code for the first iteration.  At all times you should be guided by the advice of your supervisor with whom you discuss your own project week by week.

It is often at the seams between technologies that things go awry.

*Example 1:* A developer may understand Java very well. They may understand SQL very well, but getting code in Java to talk with a given proprietary database management system is likely to be where the problems, if any, lie.

*Example 2:* A developer may intend to develop code for a mobile device using an emulator on a PC or laptop. They must ensure that they are capable of using their development system, and that it yields code that runs on their mobile device.

You may decide some weeks later to change their technologies, but you must ensure at this stage that you have a base to fall back on if your new ideas do not work out well.

If the project is being done in an iterative, incremental and evolutionary manner, this report *may* contain the first attempt at a plan for release of the project, in a number of iterations, each of which aims to be of production quality but which will be (a) re-factored and possibly (b) changed in functionality, too, to reflect a more mature idea of user requirements, just before the next iteration is started.

Whatever method you use, there should be clear evidence that you have started to deal with what are arguably the three main risk factors involved in a project

*Requirements risk* – One asks oneself “Am I starting to understand what the user (real or imaginary) really wants or would like from the system?”

*Skills risk* – One asks oneself "Am I building my skills in programming, or in other areas in order to be able to tackle the project?"

*Technological Risk* – That is largely covered in the technological prototype.

It is essential the report is done to a high standard and really does describe the project that you are undertaking. A project without a good report is a secret; it cannot be exploited commercially and it is of no academic interest either.

The report also serves a number of additional purposes:

1. It helps you and your supervisor review what you have completed in Semester 1.
2. It provides evidence of what you have achieved so that you can be examined.
3. It provides a plan which you then use to get started on Semester 2 work.

Although short, it is an important document. It must be page numbered, have chapters and titled paragraphs, and the structure of the document must be laid out in a contents page. Other people’s work alluded to must be referenced.

What it contains also depends on such factors as:

1. the method you are following
2. the programme you are on
3. the type of project you are doing

Its contents depend ultimately on what stage you have reached in following your chosen method. The stage you should have reached is “half way through” your project as defined by your chosen method.

To flesh this out: Suppose you are following an iterative method, where you release your project in production quality slices. If that is so, then at this stage you should have (a) got their functional prototype working and (b) have fleshed that out with one or two slices of functionality, defined in a set of use cases. Based on how long it took you to do that, you will now have a plan, to be implemented in semester 2, to make further production-quality increments to the project at the end of a series of more or less equal time intervals. You will know what you are capable of and what speed of development you can maintain.

Your report is likely to contain use cases, represented as numbered steps describing each scenario in the use case, a class diagram which shows the objects that are available to work together to provide what is required by the use cases, and interaction diagrams to show how the objects represented in the class diagram participate to provide the functionality required by each use case or even each scenario in a use case. So you will have one interaction diagram per use case, or, to avoid clutter, one interaction diagram for each scenario in each use case.

You will document all this in the report, so that you will be ready to go as soon you are back from taking a brief break at the end of the December.

If you are following a different method, then you will be guided by where that method indicates you should be at this stage.

The document should not be padded out with things that are of no real help to anyone, least of all you. In particular, it is entirely unnecessary, for the most part, to give exhaustive “tutorials” on topics such as project methods or technologies being used. The rightful place for this sort of thing is in textbooks, not your report. You should assume that their reader already knows that material. Indeed to include such material could lead to a charge of plagiarism.

This introduction is very general, and may be fleshed out with information that is related to your own programme. At all times, you should seek the advice and guidance of your supervisor as to what is appropriate to include.

## 8.1 Information on how the project is assessed in Semester 1 (indicative)

The following are the categories that semester 1 report is assessed against.

**Professional Conduct** 10% of the overall mark will be allocated by the supervisor under the heading “Professional Conduct”. This will reflect the level of engagement of the student with the project and the supervisor, and the responsiveness of the student to deadlines and feedback.

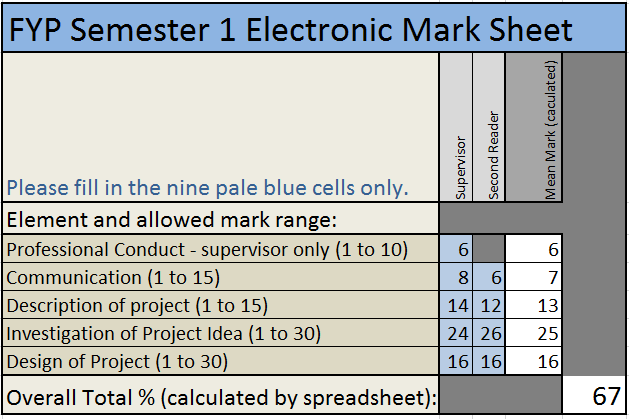
**Communication** 15% of the overall mark will be allocated by both examiners to the degree to which the student communicates the essence of the project by means of the report (words, diagrams and modelling diagrams) and the presentation.

***Description of Project 15%*** This represents the “What” of the project. The student should describe in a concise fashion what they are seeking to achieve in the project.

***Investigation of project idea 30%*** This represents the “Why” of the project. The student should describe the background to the project and any related resources that informs the project.

***Design of project 30%*** This represents the “How” of the project. The student should describe how they propose to develop the project, and what they've done so far. This may include methods or modelling approach used, and the results of these efforts expressed diagrammatically or textually.

**The following tableillustrates how a semester 1 percentage is derived. The example student in this case gets 67% overall.**



It would be wise for you to talk with your supervisor about the marking scheme and considering the nature of your particular project, you can determine what's best to put into your report, whether words or diagrams. Report on what you did do and what models and plans you did create. Naturally you don't attempt to report on what you've not yet done - in other words nothing false should appear in the report; honesty is crucial.

The supervisor and second reader, assigned to you, will jointly examine the project at the end of semester 1. Each will attend your presentation in early January, and they'll each read your status report.

Note that the two deliverables, i.e. the report and the presentation are regarded as a bundle that are marked according to the marking scheme.

# 9. FYP assessment Semester 2 (indicative)

## 9.1 General grading criteria

The following table shows generalised criteria for grading projects that has been in use for some years.

Core Criteria

* light-weight, relevant modelling, generally in accordance with a recognised process and mostly expressed in UML.
* project-related communication including, but not limited to: keeping appropriate logs, writing well-constructed formal reports, maintaining sketches of ideas in diagrammatic/written form in UML or otherwise.
* implementation based on the modelling and the content of the reports.
* appropriate mix of (a) originality, (b) innovation and (c) complexity

Critical Self-review

* what student learned
* what student achieved, and in what direction the project might be taken if more time was available
* how problems were addressed and solved

## 9.2 information on how the project is assessed in Semester 2 (indicative)

The project will be assessed by the supervisor and three other examiners according to the following attributes.

* Complexity/Innovation
* Completeness
* Communication
* Usability
* Functionality

The supervisor will award 10% for Student Conduct with the remaining 15% based on the above list. Each of the other examiners will award 25% based on their evaluation of all of the deliverables according to the above list.

The four examiners fill out one copy of the marking spreadsheet per student. Each has a separate section to fill in. This process will result in a mark (out of 100) for the student.

The criteria for this mark out of 100 are:

report, demonstration, video and poster etc, based on the agreed criteria (*functionality*, *complexity*, etc)

The examiners put marks in the grade-bands for each of the criteria in a copy of the template.

The spreadsheet will then calculate a mark, for each panellist based on marks entered. These marks are then processed further to get a total mark.

The project supervisor marks according to the same criteria as the other three examiners and in addition marks for *professional conduct.* The other examiners do not give a mark for *project professional conduct*.

Penalties can be recorded on the summary sheets (e.g. -6 for late deliverables)

There is a *notes* section on the each student's spreadsheet to record any particular things the supervisor/other examiners wish to record.

At the end of the demonstration days, the panels will have one spreadsheet for each student. These spreadsheets can then be filed by course and stored electronically.

**The following table illustration how a semester 2 percentage is derived.**

***A picture containing table

Description automatically generated***

## 9.3 semester 2 deliverables

**The Report**

One soft copy in pdf form for semester 2 reports (Moodle submission box for this)

**The Source Code**

Soft copy of self-documented/documented, well-formatted source code. (moodle submission box for this)

Each report must be paginated, and have a contents page, numbered chapters and subsection numbers using decimal notation e.g. 2.3, meaning third sub-section of chapter 2. Not counting the title page, contents page, etc, reports should not normally be longer than stipulated (8000 words + diagrams for semester 2; 4000 words + diagrams for semester 1).

**The Poster**

Each student is required to create an A1-sized poster describing their project, so that, in a conference situation, say, a reader of the poster can understand what you’re project is about: what technologies it uses and what purpose it serves. You assume that your reader is a computer professional. More information and sample posters will be provided nearer the time.

**The Video**

The video is a non-professional 5 to 10 minutes mobile phone recording, prepared by the student, in which the main elements of the student's project are shown, via a narrated video (i.e. includes both vision and sound; a video with vision only is NOT an acceptable submission). This will serve as an essential adjunct to the final report. It should NOT include a lengthy spoken presentation since any information conveyed by such can be incorporated, if necessary, in some form or other, in the final report. In other words it is just whatever the final report cannot easily convey that should be in the video. The candidate may wish to refer to a point or two in the video in their final report, if they think it would be helpful.

The candidate may, if they wish, exclude any appearance of themselves in the video so that they are represented as a voice only and all the mobile phone camera work is on the screen alone or on items of hardware relevant to their project. If they do appear visually in the video, it should only be briefly when they are explaining something that does not have accompanying screenshots, or shots of hardware.

The candidate will NOT be examined on how 'polished' the video is. From that point of view it can be quite rough and ready, but the information conveyed should be as clear as possible, and thus needs careful preparation in regard to content.

The candidate is certainly not being examined on how capable the mobile phone at their disposal is at making videos and nobody will be penalised for using older technology. All that the candidate has to be concerned about it getting ideas across, particularly those that cannot easily be explained in the text of their report.

The video should be as short as possible, and no longer than ten minutes. The video is compulsory because it is a tool whereby the panel examiners become familiar with the project in advance of the demonstration.