

B.Sc. Professional Project (COM3001)
Module Handbook, 2011 - 2012

Department of Computing

29 September 2011

Document History		
Author	Date	Notes
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TMC Approved	27/09/11	Second Draft
S. Moschoyiannis	29/09/11	First Release

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Chapter 1

Introduction

This document is a point of reference for all details related to the Professional Project module for current Level 3 students.

It is designed to help you initially to choose a project. During the academic year, it also helps you keep track of deliverables; due dates and a complete description of each deliverable are provided. Finally, this document specifies how the project is assessed, including pointers to marking criteria, details on the examination, as well as the process for dealing with complaints.

1.1 What does a project involve?

A Professional (or Final Year) Project is a module that allows you to undertake a major piece of work that will involve developing and applying material encountered on the course under the guidance of a supervisor, who is normally a member of the teaching staff. The Project lasts for the whole academic year and involves practical work and writing a report on the work done. A major part of the assessment is based on the report and the work reported therein, while two presentations account for smaller parts.

This module is different from all other modules in that the content is determined to a large extent by you, the student. The Project gives you a lot of freedom in choosing what to study, but on the other hand it requires a lot more independent thought and organisational skills than the majority of modules. Therefore, the project should not be considered an easy option as most students find it more demanding than the usual lecture courses. However, it is also more rewarding and a well-executed project can give confidence and pride in the results. It is also something that can be used to demonstrate ability to potential employers.

1.2 Aim and Purpose of Project

The aim of the Project is to demonstrate that you are able to undertake and complete a substantial piece of work at a professional level. It is also intended as an opportunity to put into practice various concepts and techniques studied on a Computing degree programme. The project will help the student to acquire a deeper insight into certain aspects of computing, a particular application domain, or both.

If you are undertaking the Project in collaboration with an external organisation, then you may also wish to arrange for a co-supervisor from outside the University. All such arrangements

must be formally approved by the Director of Undergraduate Studies in the Department of Computing.

1.3 Scope and Content of Project

The Project may focus on any of the themes within the degree programme. The student is generally expected to create new software or to apply existing tools and techniques in order to solve a well-defined problem. In keeping with the overall purpose, it is desirable that the output from the project should be “real” in the sense that it meets a real need of some external organisation or class of end-users, or that it can be used to do a real job for someone other than the author. The development of a product for use by the student alone is not acceptable; nor is a project whose outcome embodies little or no individual contribution by the student (such as a literature survey or a descriptive evaluation of work that was carried out entirely by others).

It is essential that the Project be carried through to some appropriate conclusion, i.e. a clearly identifiable achievement, which can be shown to be of value to its potential “customers”. For a traditional software development project, this means that the whole of the initial life-cycle must be taken into consideration when establishing the project objectives and workplan:

- Analysis and specification.
- Design, implementation and testing.
- User validation and acceptance.

Your first concern must be to ensure that the project is feasible, so that its objectives can be achieved within a fixed timescale and that necessary resources are actually available. Thereafter, you should ensure that the work carried out at each successive stage has been completed to a suitable professional standard – that is, with due attention to both quality and fitness for purpose.

It should be emphasised that a Project is not expected to result in ‘new discoveries’ as would be the case for postgraduate degrees. However, you are expected to use originality in the compilation of your report, showing insight, technical creativity and imagination. The wholesale copying of material from books in undigested form is not appropriate.

1.4 Undertaking a Project

An introductory lecture is scheduled in Week 1 of Semester 1 to discuss with you some of the issues in planning and executing a project.

You should make regular appointments with your supervisor on a weekly or fortnightly basis and turn up to discuss the progress of your project. It is important to get started on your project early in the first semester and not to waste time, even though the deadline for the completed report seems a long way off. You will also have relatively little coursework from other modules at this stage, so more time is available for the Project.

The Christmas holidays can also be a good opportunity to do some concentrated work on your Project, but you will need to balance this with your revision for the Semester 1 exams which will be in January / February. You should not leave anything major to be done over the Easter break, since if you do run into problems at that time it may be difficult to contact

your supervisor and discuss it with them. Ideally, you should already be well into the details of writing your report before the Easter break.

The Professional Project is worth 45 credits - that is, the equivalent of three 15-credit final-year options. You are therefore expected to undertake approximately 450 hours study, including the preparation of the report. This translates to about 20 hours per week over a period of approximately 23 weeks which are available for your Project, once you have excluded the examination periods. The amount of time required should be taken seriously, and if you do not work hard enough in the first semester you can be sure to run into time pressures later.

It is a good idea to write up work that you do as you go along. Otherwise, when you get to the end of the project, you may have forgotten the details of some of your earlier work. It is also a useful way to organise the work that you have done and can show up gaps that need to be filled in before your move on.

1.5 Expectation Management

Departmental guidelines on what to expect from your supervisor are:

- You can expect a minimum of a 30-min meeting every two weeks with your supervisor.
- Meetings may be scheduled or unscheduled, depending on supervisor preference.
- You can expect supervisors to reply to emails within at most a week. If you do not receive a reply in this time-frame, please do send a gentle reminder.
- Whenever you feel the need for a supervision meeting, be clear and specific in your request (e.g. I would like to make an appointment for a 30-min meeting to discuss progress on my final year project, some time in the coming week; please let me know when is suitable.). Otherwise it is easy to get into situations where you think you have requested a meeting, but your supervisor thinks otherwise.
- Your supervisor does not need to be pro-active in requesting meetings with you. Rather, it is your responsibility to be pro-active in requesting supervision meetings.

Similar guidelines are in the staff handbook for the Professional Project, and have been disseminated to staff separately.

1.6 Intellectual Property

On admission, undergraduate students are bound by the University Code of Practice in relation to Patenting and Exploitation of Inventions (IP Code). The IP Code requires undergraduate students not to disclose or use without authorisation any confidential information to which they may have access. It also states that each undergraduate student may be required to assign to the University or its nominee any intellectual property rights (whether patentable or otherwise) that he/she is considered to have acquired whilst studying at the University of Surrey in return for a fair proportion of any net receipts in accordance with the terms of the IP Code. More information is available online at:

http://www.surrey.ac.uk/about/corporate/policies/intellectual_property_code_including_patents.htm

Any student concerned about intellectual property rights (IPR) issues should consult the Level 3 or Projects Coordinator. Similarly, the project supervisors will liaise with the Projects Coordinator as necessary in case of IPR issues arising.

1.7 Complaints and Queries

The principle described in Chapter 35 & Appendices B and C, of the Department of Computing Student Handbook 2011-12 applies to your final year project. The first step is to raise your query with the person that has the most knowledge of your progress in your final year project. In the case of the final year project, this will be your project supervisor.

If you consider it inappropriate to contact your project supervisor, or you have concerns about your supervision, then you can raise your concern with the appropriate Level Coordinator. In the case of the final year project, this will be the Level 3 Coordinator. If your project supervisor is also your Level Coordinator then you should contact the Undergraduate Director of Studies. If you still have concerns after exhausting the above avenues, and have allowed some time to pass in order to see whether your concerns are alleviated, then you can contact the Head of Department.

Chapter 2

Deadlines

2.1 Important Dates

For current Level 3 students, the important deadlines relevant to the Professional Project are as follows:

Tuesday 18 October 2011 16:00	Submit list of preferred project topics
Tuesday 25 October 2011 16:00	Project topic and supervisor confirmed
Mon 21 Nov - Fri 2 Dec 2011	Interim Discussion (Assessed)
Monday 19 March 2012 16:00	Draft Report Submission
Monday 7 May 2012 16:00	Final Report Submission (Assessed)
Mon 14 May - Fri 25 May 2012	Final Presentation - Viva (Assessed)

All written submissions should be handed in via the UG Office of FEPS. All electronic submissions are through ULearn. (Do not hand in reports via supervisors.) In general, feedback may be expected within three weeks of the relevant submission.

2.2 Units of Assessment

There are three separate Units of Assessment in the Professional Project: the Interim Discussion, the Final Report and the Final Presentation or Viva. These carry the following weightings towards your overall mark for the Professional Project.

Interim Discussion	10%
Final Report	70%
Final Presentation - Viva	20%

Please note that the List of preferred project topics and the Draft Report are also deliverables of the Professional Project, albeit not assessed.

2.3 What if I miss a deliverable deadline?

No marking penalty will apply to an assessed project deliverable submitted by a student within the limits of an agreed extension. If a student is not granted an extension, and hands

in an assessed project deliverable late, a marking penalty will be applied in accordance with the University late penalty scheme (see Chapter 16, Section 16.1, of the Department of Computing Student Handbook 2011-12). Extensions can only be granted following an application for Extenuating Circumstances, as explained in detail in Chapter 5, Section 16.4, Chapter 18 & Appendix D of the Department of Computing Student Handbook 2011-12. Vivas (both the Interim Discussion and the Final Presentation) are dealt with as exams; a no-show to a scheduled viva is a failure with a zero grade.

If a student does not submit a list of preferred project topics, they they will be allocated a project topic and will have to proceed with this topic for the duration of the Professional Project.

If a student does not submit a Draft Report deliverable, their supervisor will not see the report before it is actually submitted as the Final Report and hence the student will miss the chance to receive comments and feedback on their work before it is submitted as the Final Report deliverable.

2.4 Extensions

Extensions for projects will only be given when Extenuating Circumstances apply (e.g., emergency medical needs). Please refer to Chapter 5, Section 16.4, Chapter 18 & Appendix D in the Department of Computing Student Handbook 2011-12, which prescribes the University's approach to Extenuating Circumstances. An extension can only be given by the Level Coordinator, with the agreement of the project supervisor. This will be recorded and normally communicated to you by email.

Chapter 3

Project selection / allocation

There are three ways to get a project topic to work on for your Professional Project. Project selection / allocation takes place in the first couple weeks of the autumn semester.

- Propose your own project topic - this might be in an area that draws from your placement year or an idea of your own that you think is worth pursuing further.
- Select project topics from the List of Proposed Project Topics - this list is collated from the academic members of staff who supervise Professional Projects, and you are allocated one of these projects (the selection / allocation procedure is described in Section 3.2 below).
- Work on Collaborative Project - these are project topics that are proposed by an industrial partner.

The procedure for each is described in more detail in the following sections.

3.1 Proposing your own project

Students can propose their own topic. This typically happens when you have an idea of your own that you would like to pursue further and believe is appropriate for a Professional Project (see Chapter 1, and in particular Sections 1.1-1.4). Proposing your own topic involves the following steps:

1. Write a brief description of the project you are proposing and an outline of the work that you wish to undertake.
2. Indicate a suitable academic member of staff that you think is suitable to supervise you on this project topic. In order to find an academic with a background in your chosen topic area, please read about the general interests of the academics who will be supervising projects this year - this information is included in the List of Proposed Topics (see Section 3.2).
3. Email your proposed project topic to the Project Coordinator.

The Projects Coordinator will then assess whether the proposed topic is of the appropriate nature for a Professional Project (recall Sections 1.1-1.4). If it is, then the Projects Coordinator

confirms with the supervisor indicated by the student or assists the student in finding a suitable supervisor from the academic members of staff.

Following this, the student's name will appear on the list of (student, project topic, supervisor) triples which is posted up on the ULearn website for COM3001 by the Projects Coordinator. This is done by the date announced for the 'Project topic and supervisor confirmed' deadline (see Chapter 2, Section 2.1 Important Dates).

Please note that until your name appears on the list, you are not guaranteed to be working on a specific project topic or to be associated with a particular supervisor. Once your name is on the list, your project topic allocation is confirmed and you can make a start on the project.

Also note that there is a quota on the number of students each academic will supervise every year. Otherwise, there could be an imbalance in the number of students being supervised by individual academics and this will not allow some supervisors enough time to supervise their project students adequately.

3.2 Selecting a project from the list

Students are also asked to look at the list of project topics proposed by academics. Each academic member of staff that supervises final year projects proposes a list of project topics that typically draw from the area of research interests and expertise of the corresponding academic. These projects are of an appropriate level for a Final Year Project. In some cases it is possible for more than one student to do the same project - this applies when the projects can be tailored to be different even though they start out with the same title, and this is indicated by the corresponding academic. If you want to do one of the projects that have been proposed by academics, the following steps apply:

1. Identify at least 6 project topics you would like to do, and list them in order of preference.
2. Submit your list of preferred project topics to the Project Coordinator by the deadline announced (see Chapter 2, Section 2.1 Important Dates).
3. Given the preferred list of topics from all students, and the number of students each academic can supervise, we will allocate you a project topic. In doing so, we will attempt the best match between students and preferred topics, but there is no guarantee that you will get one of your first choices. (For example, if 10 students choose topic A as their first preference we will only be able to satisfy one student.)

Once these three steps have been completed, the list of (student, project topic, supervisor) triples is posted up on the ULearn website for COM3001 by the Projects Coordinator. This is done by the date announced for the 'Project topic and supervisor confirmed' deadline (see Chapter 2, Section 2.1 Important Dates).

Please note that until your name appears on the list, you are not guaranteed to be working on a specific project topic or to be associated with a particular supervisor. Once your name is on the list, your project topic allocation is confirmed and you can make a start on the project.

Also note that there is a quota on the number of students each academic will supervise every year. Otherwise, there could be an imbalance in the number of students being supervised by individual academics and this will not allow some supervisors enough time to supervise their project students adequately.

3.3 Undertaking a Collaborative Project

A Collaborative Project is a Professional Project which includes collaboration with an industrial partner, the so-called 'collaborating organisation'.

Typically the collaborating organisation will have already identified the final year student for the project it proposes, and will have liaised with the Projects Coordinator in accordance with the Department of Computing's 'Collaborative Final Year Projects' guidelines. This document is available on the module website on ULearn.

If a student has not been identified, the proposed collaborative project will be advertised to the final year students alongside the other projects being proposed that year. Students will be allowed to indicate a preference for these projects and the Projects Coordinator will allocate a student to work on the project within the timescales announced for the Professional Project (see Chapter 2, Section 2.1 Important Dates).

The Department is keen to promote and support professional projects which include collaboration with industrial partners. However, it is important to ensure that all those involved have a clear understanding of the constraints and limitations which apply to student projects, in order to avoid subsequent misunderstandings or unreasonable expectations. If a student chooses an industrial project then the separate document on 'Collaborative Final Year Projects' guidelines must be read.

3.4 What happens if I can't make up my mind?

If you haven't submitted a list of preferred project topics by Tuesday 18 October 2011 16:00, then we will allocate you to a supervisor. The project that you will undertake will be chosen in discussion with the allocated supervisor. Failure to take responsibility for choosing your project is not a good start to the largest part of assessed work in your final year, and we encourage you to actively engage in the selection / allocation process of your final year project.

Chapter 4

Project Deliverables

Please submit all deliverables of your Professional Project to the Undergraduate Office and/or via ULearn as specified below. Do not hand in deliverables to your supervisor, do not email deliverables to the Projects Coordinator; for example, the Draft Report and Final Report need to be recorded centrally. At the beginning of the semester you will be allocated a Project Reference Number which you should include on the cover page of all your deliverables.

4.1 List of preferred project topics

Due: Tuesday 18 October 2011 16:00

You need to identify a list of at least six (6) project topics and sort them in order of preference. This list should include any type of project topic - your own proposed topics and/or a selection from the academics' list of Proposed Project Topics, and/or collaborative project topics (if any). Your list of preferred project topics must be submitted to the Projects Coordinator in time, otherwise you will have to be allocated a project topic.

4.2 Interim Discussion

Scheduled: Mon 21 Nov - Fri 2 Dec 2011

The interim discussion is a 15-20 minute discussion with you, your supervisor and another academic member of staff to discuss your project and progress to date. In brief, the discussion focuses on the project objectives, the outcomes, and your plan of action in order to achieve the objectives in the duration of the project. The specific date will be announced by the Project Coordinator after liaising with your supervisor. Refer to the relevant assessment form for details of the marking scheme.

4.3 Draft Report

Due: Monday 19 March 2012 16:00

You should submit a copy of the current state of your written report and a copy of your planned table of contents, by no later than the prescribed deadline. This is a minimum requirement; your supervisor may agree to review your draft report earlier.

It does *not* have to be printed or professionally bound and will not form part of the formal assessment of the module. There is an expectation that you submit a draft report because

it is important for you to receive feedback on your written report at this stage - remember the Final Report (see next section) weighs 70% towards your overall mark for your final year project. You should submit the report electronically via ULearn. You can expect to receive feedback from your supervisor within three weeks.

4.4 Final Report

Due: Monday 7 May 2012 16:00

The report should be submitted to the undergraduate office; this should include two professionally bound copies of the report and two CD-ROMs containing an electronic version of the report and any software developed as part of the project. An electronic copy of the report should also be submitted via ULearn. Refer to the relevant assessment form for details of the marking scheme.

The University print shop provides an appropriate copying service using a 'soft bound, fast track' (glue binding method) but expect a 24 hour service-time. There will be lots of students trying to print during submission week.

Each CD-ROM should include:

- Source files for programs developed,
- Any Makefiles,
- Instructions for building any programs from the included source code or executable files. If your program was not built on the departmental computer system then you must say how it was built on whatever system you used. If you have used your own computer, for example a PC, then you must say how to install the files needed to run your project.
- Results files,
- A machine readable version of your final report,
- Other files specific to your project.

You must make sure that the CD-ROM contains enough information so that your examiners have the information needed to run any programs which you have produced as part of your project. Please label your CD-ROM with your name, URN and Project Reference Number.

4.5 Final Presentation - Viva

Scheduled: Mon 14 May - Fri 25 May 2012

This will be a meeting with you, your supervisor and another academic member of staff to discuss the results of your project. The viva will normally involve a 15-20 minute presentation of the software that you have created or your research findings, explaining what you have achieved and what you have learnt from the experience. A demonstration of your software should also be given where appropriate. A significant part of the viva involves answering questions about your work. This will give you the opportunity to show your technical competence – an essential aspect of the assessment criteria. The specific date will be announced by the Project Coordinator after liaising with your supervisor. Refer to the relevant assessment form for details of the marking scheme.

Chapter 5

Project Assessment

The assessment criteria for the individual deliverables will be available on ULearn. They will be discussed in greater detail in the corresponding sessions with the Final Year Projects Coordinator, which will take place before each major deliverable. General factors contributing to the overall assessment are:

- Intellectual Content – difficulty of material, relation to taught material, analytical skills
- Approach – method, originality, judgement
- Preparation – thoroughness, selection of material, design
- Implementation – quality of engineered product, accuracy
- Testing – own aims (verification), customer requirements (validation)
- Personal Qualities – productivity, motivation, supervision requirements
- Documentation – adequacy, structure, clarity, style
- Presentation – preparation, relation to report, suitability for audience

Chapter 6

Exceptional Cases

6.1 Resitting a project

If you have failed your final year project in the previous academic year or have withdrawn from the project, and no Extenuating Circumstances have been agreed, please refer to Chapter 14 in the Department of Computing Student Handbook 2011-12.

6.2 Continuing Students

Students who have been granted extensions due to special circumstances and are continuing their projects from last year can continue with their chosen project or choose a new project topic subject to the arrangements that have been agreed with the Projects Coordinator (Level 3 Coordinator), your supervisor and the Director of Undergraduate Studies. The deadlines for your project will be set on an individual basis.

Chapter 7

Recommended Format For Report

7.1 What should the report contain?

It should cover the objectives, methods and achievements of the project. It should conclude with a critical appraisal of your own work, and reflections of what you have learned in the process. See the Marking Criteria for details of the assessment criteria for the report. In summary, marks will be awarded to reflect the technical presentation of your work, including English structure, grammar, layout and so on, as well as achievements and argumentation presented in the report.

You should include code in your report in order to add clarity to the discussion in the text, or you need to show how different versions were produced. It will be different for everyone. For example, it would be sensible to show how a difficult algorithm was coded up but maybe not all the GUI code needs to go in it. You are *not* required to print out your code and include it all in an appendix. You *must*, however, include all your code on the CD-ROM.

You do *not* need to include a copy of your memorandum of agreement as an appendix. You do need to discuss in the report how you met your objectives and critically evaluate your achievements with respect to the aims noted in the memorandum.

7.2 What is an appropriate format for the report?

The report - excluding the annex should normally be between 12,000 and 25,000 words, or 50-80 pages of A4. There is no strict rule, it all depends on the type of project. The report can be single or double sided.

Prepare the text of the report with a word processor, using a font size and line spacing which will make it easily readable. For example, 11pt and single spacing is fine, also 11pt and 1.5 spacing is acceptable. Nowadays with word processors there is little need to make the text size 12pt - this is a bit big.

You need to leave a margin of at least 2cm on the left hand edge of the paper, to allow for binding. There is no restriction on the software you use to produce your reports and presentations, e.g. whether you should use LaTeX or Word or OpenOffice. You are encouraged to use a word processing software package that makes the report look professionally prepared. The same applies to your presentation slides.

7.3 Using mathematical word processing software

There is a lot of software currently available that supports your project write up. You may find it helpful to save each chapter as a separate file, as files can become unmanageably large.

Make sure you learn how to cross-reference material as well as use Greek symbols, subscripts and equations. You should look up the document on 'Guidance on Citations and Referencing' for information on how to reference material used in the Project.

7.4 Report Checklist

You need to attend to the details in the report.

1. Make sure you have broken the material down into chapters, sections.
2. Make sure you have a caption below each diagram, graph or figure and table to say what they are.
3. Number sections, figures, tables and important equations so that you can cross-reference them.
4. Make sure that the material in each section fits together coherently and that the section titles etc are an accurate description of the content.
5. Make sure the spelling is correct.
6. Make sure that you proof read the report.
7. Make sure references are accurate, dates are correct, and so on.
8. Give your report to friends and colleagues for comment and constructive criticism.

7.5 Report Examples

A selection of past Professional Project reports is available on ULearn. These can be used to judge the normal length and standard of reports.

7.6 Plagiarism

The University takes plagiarism very seriously. Further details, including University policy on dealing with cases of alleged plagiarism, can be found in Section 16.5, Chapter 34 & Appendix E of the Department of Computing Student Handbook 2011-12.