Projects Handbook

Professionalism and Project Modules

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Contents

Project - Professionalism and Project Module

Please note that this handbook ONLY covers the Project part of the module.

The project subject matter **must be related/appropriate** to the course being studied. The nature of the project will be **to address an academic issue** and **answer an academic question**. The project could be centred around: the development of a software or hardware solution, development or investigation of an algorithm, create a testable design for a complex system, etc.

All students must follow the development life-cycle, with the aim of **producing an artefact.** A typically artefact could be a software or hardware prototype or an algorithms developed to meet a specification, the artefact will be used to answer the academic question. Must provide a justification of tools and techniques used throughout the project.

In order to pass the Module a Student MUST meet the requirements of the BCS (The Chartered Institute of IT), see details below.
The project must:

be practical and problem solving in nature;
include an artefact;
include the development cycle, including testing;
justify development tools and techniques;
be related to your course of study;
no resit for BCS but is acceptable to pass the module.

Students will also be required to include **additional relevant supporting work** in order to demonstrate the quality/accuracy of the work produced, to validate/test what has been discovered and to demonstrate understanding.

All students will be allocated a **Supervisor** who will act as a mentor for the project. The supervisor will also be responsible for marking the project. Students must attend **regular** supervised project meeting.

All projects will be allocated a **Reader**. The role of the Reader is to offer additional support to the project as a whole and to also mark the final project submission.

All students are required to produce a **report** of the work carried out. The report is to act a**s a container** for all the work carried out on the project. The report must include: **a Literature review, details of the artefact produced, address the academic question, other relevant supporting work, conclusions and critical evaluation** of **all** work carried out, *further details can be found in*

the project lectures and in this handbook.

Project management skills must be demonstrated **throughout** the project. Students are expected to attend **all** supervised sessions with their supervisor. This will enable your supervisor to monitor progress on the project. A log book entry template is shown in **Appendix - Individual Project Log Book Entry Template**. You are also expected to produce a plan for your project in the form of a Gantt chart and show you progress on the project. Finally you should meet all milestones, as specified on Canvas.

Examples project types are given in Appendix

British Computer Society– Chartered Institute for IT Accreditation

The course (including the Professionalism and Projects module) is BCS accredited, this means that you can apply to join the BCS without having to pass the BCS entrance examinations - there is a fee involved. You must pass the projects module at the first attempt (no resit).

BCS accreditation is the recognition by the BCS professional body that a student graduated with a BCS accredited degree and has obtained all the necessary academic requirements for being entitled to register as Chartered or Incorporated Engineer (CEng/IEng) at the BCS professional institution. Students with BCS accredited degrees will not be required to undertake further academic examinations by the BCS institution when they apply to register as Chartered or Incorporated Engineer (CEng/IEng).

The BCS expects a substantial project to provide a major contribution to the computing-related practical abilities which the students should acquire. It is expected to be a problem-solving project, and it is desirable that it should meet a real need in an industrial or research context and have an identifiable client other than the student. This may be interpreted as some or all of the systems life cycle. In the project students are expected to apply the principles, skills and tools to which they have been introduced throughout the course.

In order to be eligible to apply form accreditation the project must be passed at the first attempt (no resit)

Copyright

It is acknowledged that the author of any project work shall own the copyright. However, by submitting such copyright work for assessment, the author grants to the University a perpetual royalty-free licence to do all or any of those things referred to in section 16(i) of the Copyright Designs and Patents Act 1988 (viz: to copy work; to issue copies to the public; to perform or show or play the work in public; to broadcast the work or to make an adaptation of the work).

Ethical Considerations

You should fill in the **Ethical Consideration** section of your **Project Registration** form.

In the first instance your project's ethical implications will be considered by the School of Maths and Computer Science ethics committee:

- If your project has no or limited ethical implications, no further action is required and you can proceed.
- If your project is flagged as having potential issues, you should:
    - Fill in the **Faculty Ethics Student Form** and submit via Canvas. This will be considered by the Faculty Ethics committee. You should provide plenty of information and evidence of good practice.
        - If your project is approved, no further action is required and you can proceed
        - If your project is rejected, then you should amend your proposal accordingly, with the help of your supervisor. You will have to resubmit for further consideration.

Important: If at any point in time your project is flagged as potentially having ethical issues, **you should still progress with the work** (proposal, research, artefact design etc.) Only the parts that **may** pose ethical risks (e.g. human testing) should be put on hold until your project has been fully approved.

Professionalism and Project Submissions and Assessments

Dates of submission are shown on the Canvas topic's homepage.

Important. In order to pass the module you must pass both Assessment 1 and Assessment 2.

Professionalism Assessment 1 (25%)

A SUMMATIVE assessment.
To be submitted via Canvas.
Details are provided in a separate document available on Canvas

Project - Project Registration Form
To be submitted via Canvas before the deadline, when a member of staff has agreed to be the supervisor of the project.
The module team reserves the right to change the allocated supervisor of a project.

or

Project Clearing Form
Only to be submitted if you have NOT been able to find a project and/or Supervisor by the deadline. DO NOT SUBMIT IF YOU HAVE ALREADY SUBMITTED A Project Registration Form.
The purpose is to capture project information (interests) to enable the module team to allocate a supervisor. It is important to submit this form on time.

Ethical Considerations Form (if applicable, see previous section)

To be discussed with your supervisor and submitted by the deadline to Canvas.

Milestone 1 - Project Proposal Report- PPR

Pass/Pass with minor mods/Fail
This will take the form of a project proposal report, to be submitted via Canvas. Students should not progress with their project until the proposal has been signed-off by the supervisor:

- "**Pass**": No further actions required. The student may proceed.
- "**Pass with minor mods**": student should make small amendments to their proposal before proceeding, as per feedback.
- "**Fail**": Student cannot proceed. Proposal needs major changes.

A BCS requirements check will be made to ensure that the project is likely to meet the requirements.

Milestone 2 – **Literature Review section**

A FORMATIVE assessment
An electronic copy must be submitted to Canvas.
Feedback will be provided.
This piece of work is not marked. However, missing this milestone will impact your Project Management grade.

Milestone 3 – **Artefact Design and Test Plan**

A FORMATIVE assessment
An electronic copy must be submitted to Canvas.
Feedback will be provided.
This piece of work is not marked. However, missing this milestone will impact your Project Management grade.

Milestone 4 – **Professionalism section of the report, early prototype.**

A FORMATIVE assessment
An electronic copy must be submitted to Canvas.
Feedback will be provided.
This piece of work is not marked. However, missing this milestone will impact your Project Management grade.

Milestone 5 – **Draft report, advanced version of artefact**

A FORMATIVE assessment
An electronic copy must be submitted to Canvas.
This will be a draft of the final report. **Feedback** will be provided on this report for students to use in producing the final report.
This piece of work is not marked. However, missing this milestone will impact your Project Management grade.

Milestone 6 – **Final report and final artefact - Project Assessment 2 (75%)**

A SUMMATIVE assessment
An electronic copy must be submitted to Canvas.

The detailed structure and contents will be individual to the project but must contain sections on Literature review, the design, development and testing of a suitable artefact, conclusions and critical evaluation. **A typical structure of a Final Report and writing style details is shown in the Appendix**. At all times be guided by your supervisor.

The average word count for the Final Report is expected to be approximately 10000 words, 8000 - 12000 words is acceptable. *If the*

word count is significantly different then you should discuss this with your supervisor.

The demonstration is a compulsory part of the project. You must arrange a demonstration of your artefact before leaving the University.

Marks will be provided on the final marking sheet together with the project report & management document.

Supervisors and Readers

The following is a set of guidelines outlining the duties of supervisors and readers.

Project

A member of staff will supervise a number of students. Supervision may be group or individually based.

It is **strongly recommended** that supervisors keep a record of students' attendance, progress and log books for each supervised session.

Format of the session

Supervised sessions may be **individual or group based**.

Typical contents of a session (suggested only):

Project progress discussion. Consider Gantt charts, problems and progress. Provide support and guidance to the student.
Check students' log book entries.

Requirements of supervisors

Supervisors will be available and meet with students for all supervision sessions. If unable to attend the meeting supervisors should contact the Reader in the first place.

Supervisors are required to act as a mentor to students. To offer support and advice and to guide the students through the project process.

Supervisors are required to monitor and record the progress of the student, check log book entries and notify the module leader of any significant problems/issues (i.e students not attending).

If possible, supervisors are required to offer subject specific advice in the subject area of the project. Where this is not possible supervisors should direct students to other staff/resources for additional support.

Supervisors are required to mark and provide feedback on all submissions and assessments submitted by the student as guided by the module leader. All project final reports must be submitted to 'turnitin', the University preferred plagiarism detection system. If academic misconduct is suspected it is the responsibility of the supervisor to submit all necessary paper work to the school office and notify the module leader. A result of 0AM (Academic Misconduct - under investigation) should be submitted on the mark form as required. All results are to be uploaded to Canvas and only emailed to the module leader under exceptional circumstances.

Supervisors and readers are required to attend artefact demonstration (aka viva).

Unplanned supervisor absences will be covered as per the module absence cover process.

Requirements of readers

Readers are required to provide supervised sessions for the student in exceptional circumstances when the supervisor is not available.

Readers are required to attend the artefact demonstration, mark the final report and provide additional support for the project. The reader is required to enter all marks, feedback and associated documentation to Canvas, before the deadline for entering marks into registry systems.

Resit and Retake Requirements

All students will be provided with feedback on their Final Project Report and Project Management document submission. If you fail to obtain feedback please contact your supervisor as soon as possible.

Students who are awarded <40% for their final project submission will have additional feedback as to the specific areas of the project that failed to meet the minimum pass requirements for the project. Students with <40% will have the opportunity to do further work on their project and resubmit a revised version of their project (report/artefact) during the resit period. Students may also be requested by their supervisor to participate in an additional demonstration.

If a student is required to **retake** the project, they must complete the entire process again with a **new project** and must submit all assessments, including those that have previously been awarded passing mark.

Resit dates will be provided on the Canvas topic (if not available please contact the module leader)

Appendix - Project Example Types

The following examples of projects are intended to demonstrate a number of different types of acceptable projects.

Example1 – Software and/or Hardware Solution (Prototype)

A student will have an academic issue to investigate. Typical questions could include implementing a software and/or hardware solution to a problem, a comparison of software algorithms, a comparison of hardware designs, etc. It is anticipated that a detailed design and testing phase would be required for the software and/or hardware solution. The design phase would lead to an artefact in the form of a software and/or hardware prototype.

In order to demonstrate the quality and accuracy of the prototype, testing would be required.

Question: Is there a more effective approach to implementing a Web Based Auction site?

Aims and Objectives: *Project dependent*

Process: Using/justifying/demonstrating the development life cycle. Research auction sites, analysis/investigation of existing systems, determine software/user requirements, **design** solution(s) using the most appropriate tools and techniques, design testing methods, **implement** and testing the prototype.

Artefact: Prototype Web site - Design, implementation and testing.

Report: To contain details of the literature review/research. Include compare/contrast/evaluation of material found, otherwise it is simple a list of material found. Analysis and Specification, Artefact – Design, implementation and testing details. Answer to academic question from the research and results of the prototype. Also include: justification of approach adopted and value of the final design, Testing, Conclusions. Critical evaluation, etc. Project management details .

Example2– Design and Testing (Complex system)

**** Important - The system must be of suitable complexity ****

A student will have an academic issue to investigate. Typical questions could include finding the most suitable design for a software solution, a comparison of designs for a software solution. Requirements can be provided to the students, or determine through requirements gathering by the student. The student will select a suitable design method, design the solution to the problem, and undertake the testing of the design produced. **It is anticipated that the design would be of a significant complexity** to met the requirement of the BCS. The design and testing phase would produce an artefact possibly in the form of a design and testing document.

Question: What is the most effective design for a unified staff workshop marking system?

Aim and Objectives: Project dependent.

Process: Research University's information requirements, design methods, similar systems, select an appropriate design method for the project, build a suitable **design** for the problem (data manipulation and interfaces), provide suitable and relevant **testing** for the design.

Artefact: A design and testing document for the current and proposed design.

Report: Literature review/research (all Projects), The artefact - design and testing document. Answer to academic questions using the design and testing document. Justification of design and testing approaches used, etc. Critical evaluation (all projects). Project management details (all projects).

**** Important - The system must be of suitable complexity ****

PROJECT MANAGEMENT LOG	
First Name:	**Surname:**
Student Number:	**Supervisor:**
Project Title:	**Month:**
What have you done since the last meeting	
What do you aim to complete before the next meeting	
Supervisor comments	

Appendix - Project Log Book Entry Template

Appendix – Project Registration Form

MCS COMMITTEE ON THE ETHICS OF RESEARCH

Registration of a Research Project

This form must be completed by the Researcher(s) and, in cases where the applicant is a student, the project Supervisor to determine if the project requires approval by the FSE Research Ethics Committee.

YOUR DETAILS	
First Name:	**Surname:**
Student Number:	**Supervisor:**
Course:	
Project Title:	
YOUR PROJECT	
State in no more than 100 words the problem(s) your project is aiming to address	
Will the information or artefact resulting from your project be available externally to the University?	**YES / NO** If yes, please complete an External Agreement Form
Will your project involve: **(a) Human participants** **(b) Data about humans** **(c) Sensitive information**	**YES / NO** If yes, please complete Page 2 of this form. Otherwise, please sign the top of Page 3, and if necessary pass it on to your supervisor.

Human participants	Yes	No
• If your proposal involves healthy adult participants, does the project have characteristics that may be detrimental to their physical or mental wellbeing?		
• Does the proposal involve vulnerable participants (for example, are they under 18 years of age, do they have a disability or are mentally unable to consent)?		
Privacy		
• Does the proposal involve processing of genetic information or personal data (e.g. health, sexual lifestyle, ethnicity, political opinion, religious or philosophical conviction)		
• Does the proposal involve tracking the location or observation of people without their knowledge?		
Research on Animals		
• Does the proposal involve research with animals?		
Research Involving Developing Countries		
• Is any of the research involving one of the Least Developed Countries?		
Dual Use		
• Does the research have direct military application?		
• Does the research have the potential for terrorist abuse?		

This form should be filled in and submitted to the corresponding assignment on Canvas by the student (in the case of student applicants).

Print this page and fill in with your supervisor (the student may also want a copy for themselves).

Project Title:

Student Name: _____ Student Number: _____

Supervisor Name: _____

☐ **We confirm that the information given in this form is true, complete and accurate.**

Student Signature: _____ Date: _____

Supervisor Signature: _____ Date: _____

Thank you for completing this form. The MCS Ethics Committee will process the information provided and inform you of their decision shortly.

FOR MCS ETHICS COMMITTEE USE ONLY

The MCS Ethics Committee:

□ approves this project. You may proceed with your project.

□ your project requires approval by the FSE Research Ethics Committee. Please complete the **MCS_REC_Application Form.**

Project Coordinator Signature (if applicable) _____ Date: _____

Appendix – Project Clearing Form (PCF).

Project Clearing Form

You will be allocated a supervisor to discuss a possible project by the project's module team.

Last Name: **First Name:**	
Student No:	
University Email Address	
Course Name or Award Title.(if unsure please look up on e-vision)	

Please complete EITHER section A or B

A. Complete the box below if you have a possible project in mind.

Add the project details below

Title: *Brief outline of the project:* *Artefact to be produced:*

B. Complete the box below if you do not have a specific project in mind

Add the project area of interest below

Eg. Networking, Games development, Software development, Hardware development, Web development.

C. Please add the name(s) of staff if you have spoken to about your project specified in A or B above.

Add staff name(s) below

Please submit this form to Canvas – Clearing form upload

Appendix – Project Proposal Report - Pass/Fail

Student:	***THIS FORM IS TO BE SUBMITTED VIA THE CANVAS TOPIC*** *Complete all sections of this form.* ***If you fail to pass this proposal you have the opportunity to submit again.*** ***If your feedback is delayed you should continue working on your project.***
Supervisor:	*Complete the marking/feedback sheet provided and upload the marking sheet to Canvas.*
Module Leader:	*Check results entered and feedback sheets.*

The word count should be approximately 2000-3000 words.

The project proposal report should be produced as a result of discussions with your supervisor. Please refer to the marking sheet provided as a guide to completing the report.

The report should be written in a professional style.

Important Notes:

Please refer to the marking sheet provide for additional information.

If you fail to pass this proposal you have the opportunity to submit again.
If your feedback is delayed you should continue working on your project.

Please be aware of the Supervisor's check list to cover the British Computer Society (BCS) accreditation requirements, this can be found on the Supervisor's marking sheet, (in the Appendix)

The project proposal report should be arranged under the following sections:

SECTION 1: STUDENT DETAILS

Provide a front sheet to the proposal to include the following:

Full Name (Surname, Forename(s))

Student Number

Award/Course

Your University email address

Full name of your Supervisor and Reader (if known)

Date of submission

Contents Page

SECTION 2: STATEMENT OF PROJECT DETAILS

Provide a statement of the project details only.

Project Title

Academic Question

Aims *(provide a list)*
Objectives *(provide a list)*
Artefact (proposed) to be developed *(in brief)*

SECTION 3: PROJECT PROPOSAL (Main Section of the Report)

Introduction

Background to the project including why you have chosen the project. Explain in detail what you intend to do.
Provide further details of the academic question.

Initial Research into sources of information

Please note that the Initial Research into sources of information is ***not a full Literature Review,*** *(A full Literature Review will be required for the final project report).*

The Initial Research into sources of information is used to obtain a better/clearer understanding of the project at a very early stage, it can be used to refocus/redirect or define the project at an early stage, where as the literature Review is a review of all the relevant material to show that a project is founded upon an academic basis and can be used to help solve/execute the actual project.
The Initial Research into sources of information can in part be similar to an Annotated Bibliography. It is a brief account of the material discovered, on a given topic, at an early stage of a project. You are not expected to have fully read all the material discovered but to have an overview of the contents of the material. It should enable you to judge the relevance and value of the material discovered to your project. The Initial Research into sources should be as broad as possible covering a range of different sources. The initial research may consist of a sample of the material discovered so far, you are not expected to have discovered all sources at this stage.
It can be presented as a list of research sources discovered, including a concise descriptions and evaluations of each source explaining what it contains and how it may be used in the project.

You should provide sufficient detail to show that you understand the contents of the sources discovered. The sources should be fully referenced as per the University guidelines.

Artefact (proposed)

It is very important that you provide a clear vision of your final artefact (may change though out the development of the project
Justification of the artefact (how does it relate to the academic question), consideration of other artefacts.
Full details of the artefact to be developed including how you intend to develop the artefact (the use of the development cycle, tools and techniques planned to be used).
Justification of the Methodology you plan to use.
Provide details of all planned testing.

Plan/Schedule

Provide a detailed provisional plan/schedule identifying major milestones and interim

deliverables, in the form of a Gantt chart. Provide a description of the tasks of the Gantt chart.

References and Bibliography

All cited articles should be listed alphabetically in Harvard Style

SECTION 4: ADDITIONAL INFORMATION:

Resources:

Identify any 'special' hardware or software requirements of the dissertation. Identify any other resources required to complete the dissertation

Client:

If your supervisor is to act as the client then state the name of your supervisor. If your client is an 'external' person or body you will need to complete an external agreement form. You will still require a supervisor from the University.

Appendix - SUPERVISORS' Project Proposal Report Marking/Feedback Sheet (0%).

Professionalism and Project (40 Credit) Marking and Feedback Sheet - PASS/FAIL

	Supervisor: *Upload the Marking/Fee*
Student No:	**Student Name:**
Supervisor:	**Date:**

Assessment Criteria		
BCS Check	The project must be **practical and problem solving in nature**. Typical Artefacts: Software/hardware/system(s) development to produce a fully working or prototype based system OR The implementation of a suitable algorithm OR The development of a testable design of suitable complexity?	
	Is the project related to the course of study? Includes design, development and testing?	
The Report	**Introduction:** **Background to the project, what you intend to do.** *Consider: Details/clear/level of understanding/etc*	
	Initial research into sources of information: Consider: Range and quality: *Up to date, papers, articles, web, etc.*	
	Report *Consider: Structure, Spellings/grammar.* *References.*	
	Project Plan *Consider: Level of detail, Planning.* *Milestones and interim deliverables*	
The Artefact (Proposed)	**Artefact:** *Consider: Meets BCS accreditation, Level of detail provided, appropriate to the project, justification of the artefact.* *Planned Development - analysis, design, testing*	.

Appendix - Typical Structure of the Final Project Report

The structure and contents of the Final Report may/will vary due to the nature of your project - see your supervisor.
Word Count - 10 000 words average, 8000 - 1200 acceptable.

Title and Declaration sheets (2) – available in appendix
Abstract
Contents page including List of Diagrams/Tables/Figures
Introduction including the academic question, aims and objectives, brief details of the artefact produced and background to the project. Research methods used, scope and limitations of the project. Introduce the structure of the report.
Literature Review

Research/investigation from which the remainder of the report is based upon. Include all key literature you have found. You are not trying to answer the academic question in this section. It is the basis to answering the academic question. Compare, contrast and evaluate what is found - show understanding. Create a discussion where possible.

Main body of the report in sections
To include :

Full details of the Artefact

Development of the artefact, use of the development cycle, justification of tools and techniques, testing at all stages.

Supporting information *(if required)*
Answering the academic question.

Should not be a simple statement but a section(s) where all issues from the research, results from the artefact are considered.

Justification of your answer using your research, artefact and supporting information.

Conclusions including reference to the initial aims of the project and academic question. What has been discovered, what conclusions can be drawn from your report.a
Critical evaluation of the *product* - final report, software, findings, etc and *process* - planning, management, quality of sources found, etc. You should also include a section on *Self-reflection*.
Evidence of Project Management – logbooks, Gantt charts, milestones met.
References and Bibliography
Appendices to the Final Report

Appendix - Component 2: Project (including Artefact) and Project Management Marking and Feedback Sheet. (Weight: 75%)

Note. Marks are a matter of academic judgement based on the **University Performance Descriptors**.

Student No:	Student Name:	Supervisor:	
Date:	Project Title:	Reader:	

Sections	Marks	Criteria	
TurnITIN Score	*N/A*	*Add comments if >20%*	
Project Management *(Mark out of 100%. Weight: 20%)*	__%	*Consider: Has a **Gantt chart** or similar been produced?* *Have all **milestones** been met?* *Have regular **meetings** with supervisor taken place?*	
Dissertation and artefact *(Mark out of 100%. Weight: 80%)*	__%	**Literature Search and Review** *Consider: Range, quality and relevance of research.* *Comparison, evaluation, synthesis of information, discussion based, etc.* *Shown understanding of literature produced* *References and Bibliography*	
		Report Presentation *Consider: Thoughts & ideas clearly expressed.* *Grammar & spelling accurate. Fluent writing style.* *Good structure, as per project handbook.*	
		Artefact: **Analysis** *Requirement elicitation, relevance to aims and objectives*	
		Artefact: **Design** *e.g. Diagrams, UML, ERD*	
		Artefact: **Implementation** *Complete and relevant. Quality and challenge of Artefact.* *Demonstration/viva – MUST PASS*	
		Artefact: **Testing** *Suitable testing **methodology** used. Suitable **tools** used* *A good **analysis** of the results, linking back to research and project aims*	
		Conclusions and Critical Evaluation. *Consider: To answer the **academic question** based on research and testing of the artefact. To include addressing **Aim** and **objectives** of the project.* ***Evaluation** of Artefact and process. Strengths and weaknesses. Balanced argument.*	
Overall mark:	0%	***Calculated weighted average** of the 2 marks above. Detail of calculation:* *Project Management mark * 0.2 + Dissertation and Artefact mark * 0.8* *Important: right click + "update field" to update mark (or press F9 key)*	

Resit Details (Required in all cases for a failed project). Please include specific details for the student to address for the resit	

Component 1: Professionalism Section Marking and Feedback Sheet (Weight: 25%)

Note. Marks are not mechanically calculated but are a matter of academic judgement based on the University Performance Descriptors.

Student No:	Student Name:	Supervisor:	Pro
Date:	Project Title:	Reader:	

Assessment Criteria	Feedback
Social Aspects *covered are relevant to the project* *References correct*	
Ethical Aspects *covered are relevant to the project, (regardless of ethics form)* *References correct*	
Legal Aspects *covered are relevant to the project, (regardless of ethics form)* *References correct*	
Security Aspects *covered are relevant to the project* *References correct*	

Resit Details (Required in all cases for a failed). Please include specific details for the student to address for the resit	*Add here....*