

Module Code	CMP 3410
MODULE TITLE	GROUP PROJECT
Schools involved in delivery	Computing and Engineering
Name of Course(s)	MEng Software Engineering
Module Leader	Dr Gary Allen
Location for delivery	Queensgate
Module Type	Core
Credit Rating	30 (M) Credits
Level	M
Learning Methods	Guided Tutorial: 24 hrs Self-directed study: 376 hrs
Pre-requisites	None
Recommended Prior Study	None
Co-requisites	None
Professional Body Requirements	Required for BCS Validation
Barred Combinations	None
Graded or Non Graded	Graded

Synopsis

In this module the learners are formed into groups of three to five developers and are allocated specific software development tasks, which culminate in the production of a piece of working software. Wherever possible these projects will be for 'real' clients, often the companies where the students worked on their industrial placements. A member of academic staff assumes an active role as project manager for each group, and provides tutorial support in the examination of the processes involved. In particular the tutor leads investigation of project management methods and techniques relevant to software development. The groups make use of modern software tools and environments in the conduct of their project.

The major aims of the module are:

1. To develop an understanding of team work within one of a number of team structures.
2. To illustrate the problems of cooperative software development and its management.
3. To introduce the practical use of large scale software development tools.

Outline Syllabus

An outline syllabus is not appropriate to a project module. Instead, examples of the types of projects that may be undertaken include:

- Development of compression software for network transmission of data.
- Pattern recognition software.
- Data conversion and manipulation software.
- Visualization software for complex real time data.
- Support software for complex business processes.

Within the context of the chosen project, the following topics and their application will be discussed:

- Project Management
- Ethics and Professionalism

- Psychology of Software Development
- Estimation and Costing
- Feasibility Analysis

Learning Outcomes

Knowledge and Understanding Outcomes

- 1.1 Critically assess the practical and organisational problems of team software development.
- 1.2 Understand the practical issues involved in one of a number of team structures (e.g. Chief Programmer Team).
- 1.3 Expound the ethical and legal implications of the work of software professionals.

Ability Outcomes

- 2.1 Evaluate, select, and adopt appropriate hardware and software platforms and large scale software development tools (e.g. Together Enterprise, NetBeans, J2EE, .Net, DBMS software, version control software, etc.) as appropriate to the particular project.
- 2.2 Analyse and critically evaluate the structure and behaviour of software teams.

Assessment Strategy

Formative assessment

Formative assessment will be provided by the academic staff at the weekly meetings with the project team. These meetings will include discussions of progress, problems faced, and contingency planning (where necessary).

Summative Assessment

Assessment tasks (including assessment weightings)

Each project team will prepare and deliver a project presentation at the end of the first term or start of the second. This presentation will not only describe the project and its progress but will include some analysis of project implementation and will be worth 10% of the marks for this module. A major purpose of this assessment is to form a check point to trap projects which are going astray.

At the end of term 2 the students will submit a package containing:

1. The working software
2. A complete documentation set
3. A set of individual reports on the project, each of which is evaluative and reflective in nature, describing the team and individuals conduct of the project and analysing their performance and use of facilities. This component will form a vehicle for analysis of the project and will concentrate on project management and professional issues.

Components 1 and 2 will be marked according to the School's standard guidelines for group work, which will supply an individual mark for each student. This will form 45% of the overall mark. Component 3 will be marked independently for each student and will contribute another 45% of the overall mark.

Assessment Criteria

The examiners will be expected to assess the work in terms of:

- completeness, correctness, and fitness for purpose of the software and accompanying documentation.

- the depth and critical insight shown in the individual reports.
- the overall professionalism shown by the team, and the efficacy of the approaches, team structures, hardware and software decisions taken by the members.

Learning Strategy

The learners will be formed into groups by the module leader and given a list of suitable projects to choose from (all of which will be adequately if not completely specified). Groups may choose their own projects, but must supply an adequate specification.

Each group will be allocated a member of staff as project manager who will guide them through the project suggesting or determining appropriate tools, design methods and team structures. The project manager will meet the team for one hour per week for management meetings. The project manager may also fulfil (or simulate) the role of interface with the customer.

The product will be developed as for a real client, and will have to demonstrate feasibility within a stated business context. The continued viability of the product will be monitored throughout the project.

Indicative Reading

Sommerville, I, Software Engineering (7th Edition), Addison Wesley 2004.

van Vliet, H, Software Engineering Principles and Practice (2nd edition), Wiley, 2000

British Computer Society - Code of conduct

In addition use will be made of whatever materials are appropriate to each project.