

Module specification

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Module code	ENG6AG
Module title	Project
Level	6
Credit value	40
Faculty	FAST
Module Leader	Andrew Sharp
HECoS Code	100184
Cost Code	GAME

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
BEng (Hons) Production Engineering	Core
BEng (Hons) Industrial Engineering Design (Mechanical)	Core
BEng (Hons) Industrial Engineering Design (Electrical & Electronic)	Core
BEng (Hons) Low Carbon Energy, Efficiency and Sustainability	Core

Pre-requisites

None

Breakdown of module hours

Learning and teaching hours	24 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	0 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	24 hrs
Placement / work based learning	0 hrs
Guided independent study	376 hrs
Module duration (total hours)	400 hrs

For office use only	
Initial approval date	11/09/2019
With effect from date	11/09/2019
Date and details of revision	30/01/20 admin update of derogation Approved on 21/09/20 for addition of BEng Low Carbon Energy, Efficiency and Sustainability Oct 21 minor modification to LO wording through the revalidation and template update
Version number	3

Module aims

To provide students with the opportunity to practice the task management and problem-solving activities of a professional engineer and to explore original ideas.

To exercise the student in applying and extending the methods, skills, information, knowledge and understanding obtained during the various parts of the programme to developing and evaluating an original design of an engineering product or system.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Integrate appropriate theoretical and practical methods including risk management to the critical analysis and evaluation of an engineering problems
2	Integrate research and project management methodologies and planning in investigating the subject matter relevant to the project.
3	Implement the appropriate stages of a project which may include: specification, task analysis, search of current information sources, consider options and plan and cost solutions, select and design a solution, construct/implement solution, test and evaluate the solution and present this information in an engineering report.
4	Communicate the results in the form of an oral presentation, with due consideration given to commercial implications.

Assessment

Indicative Assessment Tasks:

This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

For part time students on industrial programmes the project is expected to be a workplace problem, issues or specification.

The project has the value of 40 credits. And is assessed by means of a written dissertation and an oral presentation.

Presentation: A final formal presentation

Report: A final formal written report.

Marking will be carried out by the Personal Supervisor and by one other member of the programme team using blind double marking. Students will be co-ordinated by a co-ordinator assigned to be responsible for the module. The relevant co-ordinator will oversee the module and make appropriate arrangements for the stages of assessment. In general, the supervisor will be responsible for assessing the technical aspects of the project and the co-ordinator for ensuring consistency of standards. For the presentation, comments will be invited from guests and from other programme team staff. However, final responsibility for the awarding of the marks remains with the supervisor and second marker. Where a decision concerning grading cannot be reached, another member of the programme team will be called upon to provide a third opinion.

The components of assessment, together with criteria and weightings are shown below.

1. A written report presented according to guidelines issued.
2. A presentation: content, organisation, audio visual aids, delivery and question handling.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1,2,3	Written Assignment	80
2	4	Presentation	20

Derogations

A derogation from regulations has been approved for this module which means that whilst the pass mark is 40% overall, each element of assessment (where there is more than one assessment) requires a minimum mark of 30%.

Learning and Teaching Strategies

All the expected stages - contained in the assessment section - should be observed and assessed. A structured approach using stage, or part, development/testing/evaluation will be expected. The on-going records should be maintained by the student in the form of a log and the final product, together with a formal report, presented in an oral presentation at the end of the exercise.

A series of seminars and small-group tutorials will be conducted to develop research and methodology. The student is typically expected to see his/her personal supervisor regularly and by mutual agreement as required. During this time a log detailing the main points of discussion should be recorded so as to give a record of the meeting having taken place. This should be included in the logbook.

Supervision: There will be an overall co-ordinator to supervise the general conduct and consistency of standards. Each student must have a supervisor to provide technical guidance. There will also be a second marker who will be involved in the assessment process to ensure fairness of marking.

Initial Presentation: Students should be given the opportunity to give an initial presentation

6 weeks or so after the student begins the module (in the conventional academic year this would be before the Christmas break). This is formative and has been found to aid student focus and also to provide feedback to guide the progress of the project.

Interim Report: Supervisors may ask that an interim report to be returned by the student shortly after the initial presentation. (In the conventional academic year this would be just after the Christmas break). This report enables the student to formally document the project work undertaken so far and provide a progress report. The aims, deliverables, analysis of tasks and timeline for the work should be addressed. This is formative and has been found to aid student focus and also to provide feedback to guide the progress of the project.

Indicative Syllabus Outline

Research and Methodology: Purpose of research; research groups; specification - aims and objectives; literature searches (including Internet and other sources); IEEE referencing; experimental methods (data collection, data manipulation, analysis of data; evaluation of data and implications). Report - presentation of findings, definition of further work. Dissemination and sharing of information.

Typically the project can follow one of 2 routes – a project/applied study or a more extended piece of research but the stages of either are broadly the same.

Stages of the project:

1. Writing a proposal
2. Registering the project with a supervisor
2. Analyse the task to develop an appropriate engineering solution
3. Evaluate the technological options for solving the problem and select one solution on the basis of function and feasibility given the constraints of time and budget
4. Draw up a plan giving deadlines for key stages in the progress of the dissertation
5. Utilise appropriate information and knowledge from various sources; including technical, scientific and economic data
6. Design the solution including the selection of appropriate materials and components
7. Implement the solution, interacting with others as necessary
8. Test and evaluate the solution against the original specification and relating the final product to actual industrial applications and practice
9. Communicate the results in the form of a formal written report and an oral presentation

The student will carry out a research task or a design, development and evaluation exercise. The task area should be relevant to the rest of the course on an academic or an industrial basis. A list of preferred topics - contributing to existing work within the Faculty of Art, Science and Technology or to local industrial projects - should be offered. However, the final choice of a title will result from an agreement between the supervisor, acting in the role of and the student and it should be presented as a formal proposal. The project should only proceed on acceptance of the proposal.

For an industry-based project the industrial 'client' would be in addition to the personal supervisor.

EXAMPLES OF TOPICS

A list of possible topics will be presented to students. Wherever possible, they will either

be industry-based or based on real problems faced in engineering.

In order to comply with the requirements of the engineering professional bodies the EAB checklist should be completed to include details of where the EAB criteria has been met and this checklist should be submitted as an appendix at the back of the report.

Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads

Bary-Kahn, P. et al. (2010) *A Practical Guide to Technical Reports and Presentations for Scientists, Engineers, and Students*, Pearson Custom Publishing.

Other indicative reading

Neville, C. (2016) *The Complete Guide to Referencing and Avoiding Plagiarism*, 3rd Edn., Open University Press.

Key Website References:

IEEE Citation Reference:

<https://iee-dataport.org/sites/default/files/analysis/27/IEEE%20Citation%20Guidelines.pdf>

Guidelines for writing an undergraduate engineering project:

<http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=531013>

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Project guide document available on the VLE and additional sources as directed by the Project Supervisor.

Employability skills – the Glyndŵr Graduate

Each module and programme is designed to cover core Glyndŵr Graduate Attributes with the aim that each Graduate will leave Glyndŵr having achieved key employability skills as part of their study. The following attributes will be covered within this module either through the content or as part of the assessment. The programme is designed to cover all attributes and each module may cover different areas.

Core Attributes

Engaged

Ethical

Practical Skillsets

Organisation

Critical Thinking

Communication