

Module Outline

Part 1- as validated

1. Title	Individual Engineering Project
2. Level	6
3. Credits	40
4. Indicative Student Study Hours	36 hours lectures 364 hours self-directed study
5. Core (must take and pass), Compulsory (must take) or Optional	Compulsory

5. Brief Description of Module (purpose, principal aims and objectives)

The aim of this module is to allow students to link academic study, advanced research methods, and practical problem solving in a professional or simulated manufacturing setting. This module acts as a rigorous honours level project for traditional BEng students. Students will undertake an independent and complex engineering project that is either linked to industry, focused on research, or based on a high level simulation. The module requires students to plan, carry out, and critically evaluate a major piece of technical work. While this module follows a traditional academic pathway, it maintains strict parity with the integrated apprenticeship route in terms of academic challenge and workload. This is achieved through a 9,000 word technical report and a 60 minute viva voce presentation. The module is designed to align with the UK Standard for Professional Engineering Competence (UK-SPEC) for those seeking Incorporated Engineer (IEng) status. It develops essential professional skills in project management, technical communication, and ethical decision making within an engineering context.

For the purposes of this module, an engineering project is defined as a substantial independent undertaking that addresses a "complex problem" (where multiple possible solutions exist). To ensure academic parity with industry standards, the student must complete a project based on one of the following areas:

- A specific problem or recurring issue related to a product, or a research and development project (for example, a continuous improvement project or product system update).
- A new project, such as the design or implementation of a product or technology.
- A feasibility study, such as investigating a new piece of equipment, material, or technology.

Within these areas, students are expected to either:

- Design and build a device, widget, or system to solve a complex problem by identifying and critically evaluating options and implementing an optimal solution.
- Investigate and devise refinements to an existing process or system by critically analysing its current features and devising evidence-based solutions to its shortcomings.

To ensure the project allows the student to meet the module learning outcomes to the highest available grade, the Module Leader must formally sign off the project title and scope at the proposal stage to confirm it is suitable and pitched appropriately for Level 6 study.

6. Learning Outcomes - On successful completion of this module a student will be able to:

<i>(Add more lines if required)</i>	
	Subject Specific Learning Outcomes
1.	Formulate a detailed research/project proposal, including well defined objectives, scope, methodology, and a realistic project plan for an engineering project.
2.	Conduct a comprehensive literature review, critically analysing existing research, methodologies, and technologies relevant to the engineering project.
3.	Execute the project plan by applying appropriate engineering principles, research methods, and analytical tools to investigate, design, or solve the identified engineering problem.
	Generic Learning Outcomes
4.	Critically evaluate the ethical, environmental, sustainability, and commercial implications of the chosen engineering project, and reflect on the project management processes, research methodologies, and personal problem-solving strategies applied.
5.	Present research findings effectively through an oral presentation and a written dissertation, demonstrating the ability to communicate complex technical concepts, methodologies, and conclusions to both technical and non-technical audiences.

7. Assessment						
Pass on aggregate or Pass all components <i>(Modules can only be pass all components if this is a PSRB requirement)</i>				Pass on aggregate		
Summary of Assessment Plan						
	Type	% Weighting	Anonymous Yes / No	Word Count/ Exam Length	Learning Outcomes Coverage	Comments
1.	Project Proposal	10%	No	1,500 words	LO 1, 4	Formative feedback provided to ensure project viability.
2.	Technical Project Report	70%	No	9,000 words (±10%)	LO1, LO2, LO3, LO5	The main dissertation reflecting the full project lifecycle.
3.	Viva Voce	20%	No	60 minutes	LO3, LO4, LO5	20 mins Presentation followed by 40 mins technical questioning.
Further Details of Assessment Proposals						
Give brief explanation of each assessment activity listed						

Project Proposal: A formative submission outlining the engineering challenge, project aims, and research methodology. This includes a project plan and risk assessment to ensure the project is viable and safe.

Technical Project Report: A comprehensive 9,000 word dissertation style technical report. This reflects the investigative process, application of technologies, sustainability and ethical reviews, and a critical evaluation of the project outcomes.

Live Assessment: A 60 minute presentation and viva voce conducted by an academic panel. This includes a 20 minute presentation by the student on their research findings, followed by 40 minutes of technical questioning to defend their methodology and conclusions.

8. Summary of Pre and / or Co Requisite Requirements

Not applicable. Standard course progression rules apply for Level 6 honours study.

9. For use on following programmes

BEng (Hons) Engineering