

Summary Information

Module Code	5406ELE
Formal Module Title	Professional Practice Integrative Project
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Martin Jones	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Obrad Dordevic	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	11
Practical	33

Module Offering(s)

Offering Code	Location	Start Month	Duration
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	To enable students to develop the skills required to practice as a professional engineer. This module provides a broad range of experiences with an emphasis upon the systematic thinking, planning and execution required of engineers in a modern professional environment. The students will be required to design build and test an electronic product to a given specification. The product will incorporate elements covered elsewhere on the course, including analogue electronics and a programmable device such as a microcontroller, a motor and sensors.
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Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Design, build and test an electronic product to a given specification.
MLO2	Demonstrate a commitment to conduct engineering activities in a professional manner.
MLO3	Research a topic, find relevant literature and produce a technical review.
MLO4	Research a topic and write a project proposal.
MLO5	Demonstrate an awareness of the importance of management in the context of engineering projects.

Module Content

Outline Syllabus
The list below provides an indicative list of topics which may be covered in this module: Experimental Practice• Complete a set of laboratory experiments• Observation, measurement and recording of experimental results• Data handling• Presenting and reporting of results Professional Development• Health & Safety • Ethics• Institutional Code of Conduct Research Methods• Research & Library Skills• Report Writing• Critical Thinking

Module Overview

Additional Information

The professional nature of this module requires a wide range of skills, knowledge and application. This is demonstrated through a Portfolio of evidence. General Notes UNESCO Sustainable Development Goals 1. Quality Education 2. Gender Equality 3. Decent Work and Economic Growth 4. Industry, Innovation and Infrastructure 5. Reduced Inequalities 6. Responsible Consumption and Production 7. Partnerships for the Goals UK SPEC AHEP 4CEng. M2 Formulate and analyse complex problems to reach substantiated conclusions. This will involve evaluating available data using first principles of mathematics, statistics, natural science and engineering principles, and using engineering judgment to work with information that may be uncertain or incomplete, discussing the limitations of the techniques employed. M3 Select and apply appropriate computational and analytical techniques to model complex problems, discussing the limitations of the techniques employed. M4 Select and critically evaluate technical literature and other sources of information to solve complex problems. M5 Design solutions for complex problems that evidence some originality and meet a combination of societal, user, business and customer needs as appropriate. This will involve consideration of applicable health and safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards. M6 Apply an integrated or systems approach to the solution of complex problems. M7 Evaluate the environmental and societal impact of solutions to complex problems (to include the entire lifecycle of a product or process) and minimise adverse impacts. M8 Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct. M9 Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity. M10 Adopt a holistic and proportionate approach to the mitigation of security risks. M11 Adopt an inclusive approach to engineering practice and recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion. M12 Use practical laboratory and workshop skills to investigate complex problems. M13 Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations. M15 Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights. M16 Function effectively as an individual, and as a member or leader of a team. Evaluate effectiveness of own and team performance. M17 Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used. M18 Plan and record self-learning and development as the foundation for lifelong learning/CPD. IEng. B1 Apply knowledge of mathematics, statistics, natural science and engineering principles to broadly-defined problems. Some of the knowledge will be informed by current developments in the subject of study. B2 Analyse broadly-defined problems reaching substantiated conclusions using first principles of mathematics, statistics, natural science and engineering principles. B3 Select and apply appropriate computational and analytical techniques to model broadly-defined problems, recognising the limitations of the techniques employed. B4 Select and evaluate technical literature and other sources of information to address broadly-defined problems. B5 Design solutions for broadly-defined problems that meet a combination of societal, user, business and customer needs as appropriate. This will involve consideration of applicable health and safety, diversity, inclusion, cultural, societal, environmental and commercial matters, codes of practice and industry standards. B6 Apply an integrated or systems approach to the solu

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Portfolio	Product development	100	0	MLO4, MLO1, MLO2, MLO3, MLO5