

Summary Information

Module Code	6456ELE
Formal Module Title	Mechatronics Engineering Project
Owning School	Engineering
Career	Undergraduate
Credits	40
Academic level	FHEQ Level 6
Grading Schema	40

Module Contacts
Module Leader

Contact Name	Applies to all offerings	Offerings
Guangming Zhang	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
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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
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Seminar	4
Tutorial	22

Module Offering(s)

Offering Code	Location	Start Month	Duration
SEP-CTY	CTY	September	28 Weeks

Aims and Outcomes

Aims	The project aims to provide a supervised but student led learning activity in a relevant area of engineering or technology. It aims to develop the academic, technical and organisational skills required to undertake a substantial individual engineering project from specification to conclusion. The Project activity should reflect Mechatronic Systems development.
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Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Conceptualise and plan a supervised but self-led project
MLO2	Carry out a self-managed programme of work according to good project management practices
MLO3	Research and analyse the established body of knowledge relevant to the project
MLO4	Demonstrate deep technical understanding of their project
MLO5	Communicate technical information clearly and concisely in written and oral forms
MLO6	Critically evaluate all aspects of a project and formulate justified conclusions

Module Content

Outline Syllabus
Projects may involve experiment, analysis, design and/or computation and should allow a student to demonstrate achievement of the module learning outcomes.

Module Overview

Additional Information

UNESCO Sustainable Development Goals Quality Education Gender Equality Industry, Innovation and Infrastructure Partnerships for the Goals UK SPEC AHEP 4C Eng. 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. M15 Apply knowledge of engineering management principles, commercial context, project and change management, and relevant legal matters including intellectual property rights. M17 Communicate effectively on complex engineering matters with technical and non-technical audiences, evaluating the effectiveness of the methods used. 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 solution of broadly-defined problems. B8 Identify and analyse ethical concerns and make reasoned ethical choices informed by professional codes of conduct. B9 Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity. B10 Adopt a holistic and proportionate approach to the mitigation of security risks. B11 Recognise the responsibilities, benefits and importance of supporting equality, diversity and inclusion. B15 Apply knowledge of engineering management principles, commercial context, project management and relevant legal matters. B17 Communicate effectively with technical and non-technical audiences.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Report	Interim Report	20	0	MLO3, MLO2, MLO5, MLO1
Report	Final Report	50	0	MLO3, MLO4, MLO6, MLO2, MLO5
Presentation	Presentation, Viva and Poster	30	0	MLO4, MLO6, MLO5