Group Design Project

Module Information

2022.01, Approved

Summary Information

Module Code	7416ELE
Formal Module Title	Group Design Project
Owning School	Engineering
Career	Postgraduate Taught
Credits	30
Academic level	FHEQ Level 7
Grading Schema	50

Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Tutorial	44

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
SEP-CTY	CTY	September	44 Weeks

Aims and Outcomes

Aims	This module aims to build upon the Level 6 Electrical Engineering Design module, by providing an authentic design project in conjunction with an internal or external client group or company (typically a research group or local industry). It will require students to demonstrate substantial independent initiative, working with the client to develop and communicate a design specification and project plan. The participants will select appropriate engineering and design processes and techniques to solve the problem.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Work with a client to establish a set of requirements and specifications
MLO2	2	Actively manage the design process, while monitoring and reporting progress to a client
MLO3	3	Communicate design information and data effectively with a client
MLO4	4	Determine appropriate analytical approaches and apply them to the design of a solution which meets the client requirements
MLO5	5	Demonstrate professional interpersonal skills with both a client and a design team
MLO6	6	Identify relevant standards and apply them to the design process and validate designs to ensure compliance

Module Content

Outline Syllabus	Establishing project requirements in conjunction with an external or internal clientProject planning and control to ensure an efficient, timely and effective outcome which meets client expectationsDesign delivery and execution of a technical design project, according to a planPresentation of design solutions in a concise and professional way to an audience including the client, peers and academic staff
Module Overview	
Additional Information	General NotesThe project provides the opportunity to conduct a major learning activity on arelevant engineering or technical topic. The project requires the student group todemonstrate good project management, engineering skills application, criticalevaluation and presentational skills in a team working environment.UNESCO Sustainable Development GoalsQuality EducationGender EqualityIndustry, Innovation and InfrastructurePartnerships for the GoalsUK SPEC AHEP 4CEng. M1 Apply a comprehensive knowledge of mathematics, statistics, natural science and engineering principles to the solution of complex problems. Much of the knowledge will be at the forefront of the particular subject of study and informed by a critical awareness of new developments and the wider context of engineering.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 standardsM6 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.M13 Select and apply appropriate materials, equipment, engineering technologies and processes, recognising their limitations.M14 Discuss the role of quality management systems and continuous improvement in the context of complex problems.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.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	Design Proposal & Project Plan	20	0	MLO1
Reflection	Written & Oral Presentation	80	0	MLO2, MLO3, MLO4, MLO5, MLO6

Module Contacts