

Summary Information

Module Code	6303CIV
Formal Module Title	Structural Design and Risk Management
Owning School	Civil Engineering and Built Environment
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Joseph Amoako-Attah	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Xinrui Wang	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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Teaching Responsibility

LJMU Schools involved in Delivery
Civil Engineering and Built Environment

Learning Methods

Learning Method Type	Hours
Lecture	44
Tutorial	22
Workshop	5

Module Offering(s)

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

Aims and Outcomes

Aims	Critically apply the structural design procedures for members made from a variety of materials based on their environmental conditions. Develop critical understanding of Risk Assessment and the associated Risk Management within a construction project environment. Students will develop and consolidate the structural application, design and detailing, evaluation and analysis introduced at Level 4 and 5 with more advanced application to, building elements/structures, using the current codes of practice.
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Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Critically analyse the design process and apply it to complex structural elements using a variety of building materials and under different environmental and loading conditions.
MLO2	Design advanced structural elements following safe, economical and sustainable design procedures and in accordance with the current codes of practice.
MLO3	Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.
MLO4	Apply knowledge and understanding of risk issues to engineering design, and critically evaluate current practices of risk management.
MLO5	Exercise initiative, personal responsibility and leadership skills as a member of a design team, and critically evaluate the success of team working.

Module Content

Outline Syllabus

Design of steel connections, slender column, flat slab, ribbed slab, prestressed concrete structures, Composite concrete-steel structures, Masonry and timber structures. The environmental impact of the structural design through its carbon assessment. Use of Structural Design software to carry out design. Health and safety management Programming, resource implications, time cost applications and project acceleration Financial risks. Risk management strategy: hazard and risk, definitions and interpretation, strategic risks, political and business implications of risks, understanding the management strategy;- Current practices of risk management: what it is; why it is used; how it is applied; when it should be undertaken; and who should be responsible for it, including the deployment of appropriate practices and procedures for the effective management of risk in construction- Risk perception and identification, risk analysis and assessment, qualitative assessment, quantitative assessment, risk response and mitigation, risk controls, monitoring and audit, risk outcomes.

Module Overview

Additional Information

This module is intended to extend, develop and consolidate the structural design introduced at Levels 4 and 5, with particular reference to the use of the current Codes of Practice and other Standards in practical and more advanced design levels using different loading and environmental conditions. Students will consider the risks associated with the design.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Report	Group Structural Design & Risk	40	0	MLO4, MLO1, MLO3, MLO5, MLO2
Centralised Exam	Examination	60	2	MLO4, MLO1, MLO3, MLO2