

## Module Information

2022.01, Approved

### Summary Information

Module Code	6503CVQR
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

### Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

### Partner Teaching Institution

Institution Name
Oryx Universal College WLL

### Learning Methods

Learning Method Type	Hours
Lecture	44
Tutorial	22
Workshop	5

### Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-PAR	PAR	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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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	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	2	Design advanced structural elements following safe, economical and sustainable design procedures and in accordance with the current codes of practice.
MLO3	3	Use a risk management process to identify, evaluate and mitigate risks (the effects of uncertainty) associated with a particular project or activity.
MLO4	4	Apply knowledge and understanding of risk issues to engineering design, and critically evaluate current practices of risk management.
MLO5	5	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)	Module Learning Outcome Mapping
Report	GROUP STRUCTURAL DESIGN & RISK	40	0	MLO1, MLO2, MLO3, MLO4, MLO5

Exam	Examination	60	2	MLO1, MLO2, MLO3, MLO4
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## Module Contacts

### Module Leader

Contact Name	Applies to all offerings	Offerings
Michaela Gkantou	Yes	N/A

### Partner Module Team

Contact Name	Applies to all offerings	Offerings
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