Advanced Geotechnics and Design

Module Information

2022.01, Approved

Summary Information

Module Code	6502CIVSL
Formal Module Title	Advanced Geotechnics and Design
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
International College of Business and Technology

Learning Methods

Learning Method Type	Hours
Lecture	33
Tutorial	16

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
APR-PAR	PAR	April	12 Weeks
JAN-PAR	PAR	January	12 Weeks

SEP_NS-PAR	PAR	September (Non-standard start date)	12 Weeks

Aims and Outcomes

Aims	To gain an advanced level of design skill in complex geotechnical applications.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Design geotechnical structures to current codes under advanced conditions.
MLO2	2	Apply knowledge of advanced geomodels to design.
MLO3	3	Apply knowledge of tunnelling in different soil and rock conditions
MLO4	4	Apply the design process to complex structural elements using steel and masonry under a variety of environmental and loading conditions.
MLO5	5	Demonstrate understanding of the interaction between superstructure and piling

Module Content

Outline Syllabus	Geomodels in engineering geology, how different geological conditions can influence the strength of the rock mass in different ways and orientations. Full design to current codes including EC7 under advanced conditions including temporary work, rock structure design, retaining wall design, pile design and foundation design under different rock, water and soil conditions. Tunnelling methods in different soil conditions, NATM, current techniques in Alpine environments along with a range of world wide case studies. Comparison of EC7 techniques with other global standards. Steelwork design to current codes including EC 3: laterally unrestrained beams, plate girders, composite columnsLoad bearing masonry design to current codes including EC 6: Solid and cavity walls, design principles and practical examples.
Module Overview	
Additional Information	This module develops the students' understanding of geotechnics and structural design, and integrates this knowledge in order that students can successfully produce designs including both superstructure and piling.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Report	DESIGN REPORT	30	0	MLO1, MLO5
Exam	Examination	70	2	MLO1, MLO2, MLO3, MLO4, MLO5

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Tina Marolt Cebasek	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings