Applied Geotechnics and Design

Module Information

2022.02, Approved

Summary Information

Module Code	6302CIV
Formal Module Title	Applied 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
Civil Engineering and Built Environment

Learning Methods

Learning Method Type	Hours
Lecture	44
Tutorial	22

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	To gain an advanced level of design skills for complex geotechnical applications.

After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Evaluate the design of geotechnical structures to current codes under advanced conditions.
MLO2	2	Evaluate the design of geotechnical structures based on geomodels.
MLO3	3	Critically evaluate tunnelling techniques/design in different soil and rock conditions.
MLO4	4	Develop a comprehensive knowledge and create optimised sustainable designs for shallow and deep foundations for structures.

Module Content

Outline Syllabus	Design of geotechnical structures, including reinforced soils, retaining walls, deep, shallow and composite foundations to current standards under different rock, soil and water conditions. Geomodels in engineering geology, how different engineering geological conditions can influence the strength of the rock mass in different ways and orientations. Tunnelling methods in different soil conditions, NATM and TBM along with a range of world wide case studies.Design, analysis of shallow, deep and composite foundations.The design process covering methods to deal with uncertainty, design and load combinations, assumptions, the design procedure and decision criteria. Assess the sustainability of foundation alternatives at the planning and design stages of a project.
Module Overview	
Additional Information	This module develops the students' understanding of geotechnics and foundation design, and integrates this knowledge in order that students can successfully produce designs including both superstructure and substructure.

Assessments

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

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