

Summary Information

Module Code	6302DCIV
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

Module Contacts

Module Leader

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

Module Team Member

Contact Name	Applies to all offerings	Offerings
Zelong Yu	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	33
Online	11
Tutorial	11

Module Offering(s)

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

Aims and Outcomes

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

After completing the module the student should be able to:

Code	Description
MLO1	Evaluate the design of geotechnical structures to current codes under advanced conditions.
MLO2	Evaluate the design of geotechnical structures based on geomodels.
MLO3	Critically evaluate tunnelling techniques/design in different soil and rock conditions.
MLO4	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)	Learning Outcome Mapping
Report	Design Report	30	0	MLO1, MLO4
Centralised Exam	Examination	70	2	MLO2, MLO1, MLO4, MLO3