



## Civil, Environmental and Geomatic Engineering

## Roads and Underground Infrastructure: Design, Construction and Maintenance (CEGE0030)

### Description

#### Brief Description:

This course provides an introduction to the application of soil mechanics to three main geotechnical areas of infrastructure construction: roads, deep excavations and tunnels. The course is designed to provide a practical approach to the design of these major infrastructure projects using design manuals, codes of practice, industrial expertise and research. The topics covered in this course are highway alignment, drainage, pavement design, deep excavations and cuttings, retaining wall design, tunnel lining design, excavation methodologies, settlement calculations, shafts, etc.

#### Aims and Learning outcomes

- Understand the importance of Ground Investigation;
- Knowledge and ability to analyse the different structures using state-of-the-art methods.
- Awareness of the implications of the design on Health & Safety during construction.
- Understanding the importance of the link between design and construction
- Appreciation of the different standards and codes of practice for the topics covered.
- Appreciation of the concept of whole life cycle of structures and the influence of the decisions made at the design stage on the future performance of the structure.
- Understanding and knowledge of the importance of monitoring systems during construction for verification and maintenance purposes.
- Appreciation and knowledge of the most common maintenance techniques for each structure and how this can be influenced at design stage.

#### Reading List

### Key information

<b>Year</b>	2019/20
<b>Credit value</b>	15 (150 study hours)
<b>Delivery</b>	PGT L7, Campus-based
<b>Reading List</b>	<a href="#">View on UCL website</a>
<b>Tutor</b>	<a href="#">Dr Pedro Ferreira</a>
<b>Term</b>	Term 2
<b>Timetable</b>	<a href="#">View on UCL website</a>

### Assessment



- Coursework: 28%
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- Coursework: 29%
- Written examination (departmentally managed): 5%
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### Find out more

For more information about the department, programmes, relevant open days and to browse other modules, visit [ucl.ac.uk](http://ucl.ac.uk)

- David Chapman, Nicole Metje, Alfred Stärk, Introduction to Tunnel Construction, Spon Press, 2010 (ISBN 978-0-415-46842-8)
- ICE Manual of Geotechnical Engineering - first edition, Thomas Telford (ISBN 978-0-7277-3652-9)



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