



Dept. of Civil Engineering | CPD Courses

Geotechnical Engineering

Masters Modules 2019



UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

SPES BONA

Introduction



The Masters Programme

The Master's Programme with a specialisation in Geotechnical Engineering is intended to support high level training and enhance both the technical skills of recent graduates or experienced personnel who work in, or aspire to a career in civil engineering construction, consulting, environmental and related industries. The primary purpose of the programme is to provide advanced conceptual understanding, detailed factual geotechnical knowledge and specialist technical skills appropriate for postgraduates who wish to widen their professional scope and work towards a career in the field of geotechnical engineering. For further information about this master's programme please visit the website: <http://www.civil.uct.ac.za/msc-engineering-specialising-geotechnical-engineering>

Continuing Professional Development

Modules of this master's programme are offered to Continuing Professional Development delegates as 4 separate certificate courses from which a participant can obtain CPD credits. Two of the courses consist of 3 days of formal lectures at the University of Cape Town while two run for 4 days.

Who should attend?

The courses are best suited for Civil Engineers, Consultants, Architects, Engineering Geologists, Geotechnical Engineers and Geologists, Bridge Engineers, Landscape Architects, Contractors, Soil Scientists, Project managers, City and Public Works Officials, City Planners, and other design professionals who address construction related issues.

Format

Each module is structured in the following way:

3 or 4 days of intensive contact time at UCT, comprising formal lectures.

Laboratory and Field Techniques

CIV5110Z: 18 - 20 February 2019

This course aims to develop an advanced understanding of laboratory and field techniques. Topics include: Laboratory methods: role and scope of laboratory tests; fundamentals of stress-strain and strength measurements; stresses, pore pressures and strains; transducers and control systems; practical applications. The theoretical and practical aspects of in situ tests in geotechnical engineering. Tests discussed include: dynamic cone penetrometer standard penetration test, field vane, piezocone, dilatometer, pressuremeter etc. Geophysical methods are also included. Emphasis on use of in situ test results for determining engineering properties of soil for design. Field instrumentation; settlement gauges; extensometers; inclinometers; piezometers; geotechnical data correlation charts; measurements of in-situ stresses and permeability's; etc. are also covered.

 3 CPD points, ECSA Validation No: UCTGTEFLT19

Foundation Design

CIV5114Z: 25 - 27 February 2019

This course aims to furnish participants with the necessary knowledge and design skills required to ensure stability of both the ground, and any structure built in or on the ground. It will introduce participants to the application of theories of soil mechanics, applied mathematics and physics to provide solutions to the serviceability and ultimate limit states of geotechnical structures. Topics include: review of soil mechanics; working stress approach, limit state design; analysis and design of shallow and deep foundations; determination of settlement of structures; use of foundation design standards such as Eurocodes, SANS 10160; etc.

 3 CPD points, ECSA Validation No: UCTGTEFDN19

Advanced Soil Mechanics

CIV5114Z: 24 - 27 June 2019

The course covers the advanced concepts and theories in soil mechanics fundamental to geotechnical engineering such as; Shear Strength of Soils; Stress-Strain Behaviour; Drained and Undrained Shear Strength; Stress Paths; Critical State Soil Mechanics, Failure Criteria; Constitutive Models Soil Deformation Analysis; Stress Distribution in Soil; Settlement of Soil; Consolidation Theory.

 4 CPD points, ECSA Validation No: UCTGTEASM19

Soil Modelling and Numerical Methods

CIV5150Z: 30 September – 3 October 2019

Numerical analyses of geotechnical engineering problems are becoming more and more commonplace in industrial practice. Complex problems dealing with elasto-plastic behaviour of soil under drained and undrained conditions require numerical analysis for implementing proper design. It is necessary to identify the appropriate soil constitutive model and the model parameters that should be used for analysis of different field problems. At the same time, it is necessary to understand the fundamentals behind the appropriate use of these soil constitutive models in numerical schemes for solving different field problems. This course provides an introduction to the different soil constitutive models and their use in numerical analysis.

 4 CPD points, ECSA Validation No: UCTGTESMMN19

Overview

Programme	Geotechnical Engineering	
Modules and duration	Laboratory and Field Techniques: 18 – 20 Feb 2019 Foundation Design: 25 – 27 Feb 2019 Advanced Soil Mechanics: 24 – 27 Jun 2019 Soil Modelling and Numerical Methods: 30 Sep – Oct 2019	
Venue	Upper Campus, University of Cape Town	
CPD	CPD points and ECSA codes as indicated per module	
Participants	Civil Engineers, Consultants, Architects, Engineering Geologists, Geotechnical Engineers and Geologists, Bridge Engineers, Landscape Architects, Contractors, Soil Scientists, Project managers, City and Public Works Officials, City Planners	
Fees*	3-day courses: R9700	4-day courses: R11100

*The course fee includes course material.

Registration

Registration and Cancellation

- **You can register for these courses in one of the following ways:**
 1. [register online](#) or
 2. [download](#) the registration form and email it to ebe-cpd@uct.ac.za
- Registration covers attendance of all sessions of the course as well as course material.
- Registrations close one week before the start of the course. Confirmation of acceptance will be sent on receipt of a registration form.
- Cancellations must be received one week before the start of a course, or the full course fee will be charged.
- **For more information on application and registration procedures, please visit our website:** www.cpd.uct.ac.za/cpd/registration-policies

Certificates and CPD Points

A certificate of attendance will be awarded to CPD participants. Participants need to attend 80% of the lectures to qualify for an attendance certificate.

CPD participants can also request a formal university transcript, which will show this course as part of a Professional Development Career.

Please note: If you are interested in attending this course for credit purposes, you will need to register for the Masters or as an occasional student. For further information about the Masters Programme, please contact rowen.geswindt@uct.ac.za

If you attend the course as a CPD participant, credit cannot be claimed in retrospect.

Contact details

For more information or details on CPD courses, visit our website or contact us.

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