



Dept. of Civil Engineering | CPD Courses

Civil Infrastructure Management and Maintenance

Masters Modules 2024



Introduction



The Master's Programme:

Civil Infrastructure Management and Maintenance is designed to offer training in structural and materials engineering, underpinned by principles of infrastructure management. The broad areas of interest cover deterioration science, assessment technologies, and renewal engineering.

The key objectives of the programme are to develop a clear understanding of the following aspects: the concept of civil infrastructure management • practical application of infrastructure management principles in selected infrastructure systems • causes and implications of material and structural deterioration • infrastructure assessment technologies such as non-destructive testing • infrastructure maintenance and rehabilitation strategies • principles of life cycle

assessment as applied to various types of infrastructure • project management principles for infrastructure maintenance and renewal.

The programme is designed to attract students who are aiming to graduate with an MEng or MScEng degree. Both full-time students, aiming to complete all the requirements within one or two years, and part-time students can be accommodated.

Continuing Professional Development:

Modules of this Master's Programme are offered to Continuing Professional Development students as separate certificated courses from which a participant can obtain CPD points as these courses are registered with the Engineering Council of South Africa (ECSA). These CPD courses are attendance based, and a certificate of attendance is issued.

Who should attend?

The courses are best suited for Civil Engineers, Consultants, Architects, Structural Engineers, Contractors, Project managers, City and Public Works Officials, City Planners, students and other engineering professionals.

Format

Each module is structured in the following way: a week of intensive contact time at UCT, comprising formal lectures, class assignments and seminars/tutorials.

Please note: these courses are currently planned to be presented face-to-face over 5 days, but it may be necessary to change the format of a course to an online or hybrid format.

CPD Courses

Advanced Concrete Technology and Service Life Design

CIV5138Z: 6 – 10 May 2024

This advanced course aims to develop an understanding of advanced concrete technology, including sustainability aspects, modern cementitious binders, fresh and hardened concrete properties, deterioration mechanisms, durability of concrete structures, and service life design. Topics include: concrete mix design and quality control; load-dependent and load-independent deformations of concrete; special concretes; recycled aggregate concrete; circular economy in the concrete industry; concrete deterioration mechanisms; reinforcement corrosion; Alkali Silica Reaction (ASR); chemical attack; cracking of concrete structures; fire damage to structures; prevention of concrete deterioration through material selection, mix design and construction; service-life modelling laboratory-based and on-site evaluation techniques for quality control and conformity assessment.

The course is based on lectures and projects and may include case studies, laboratory sessions, and site visits.

5 CPD points, ECSA Validation No: UCTCIMMACT24

Advanced Infrastructure Management

CIV5067Z: 22 – 26 April 2024

The module exposes students to the concepts of municipal infrastructure management. These concepts include the context in which Infrastructure Management Planning is done, the process of Infrastructure Management Planning and the techniques required to prepare an Infrastructure Management Plan.

5 CPD points, ECSA Validation No: UCTCIMMAIM24

Strengthening and Retrofitting of Concrete Structures

CIV5140Z: 28 October – 1 November 2024

This course deals with the strengthening and retrofitting of concrete structures and covers the following topics: introduction to structural condition surveys and assessment of concrete structures; materials and strategies for structural strengthening; compatibility aspects; structural requirements and procedures for rehabilitation; practical and contractual aspects; strengthening systems; FRP design and application; strengthening for shear, bending and torsion; bonded steel plates; external prestressing systems; design procedures; analysis of strengthened concrete structures.

5 CPD points, ECSA Validation No: UCTCIMMSRCS24

Condition Assessment and Remedial Action on Steel Structures

CIV5141Z: 4 - 8 November 2024

The course aims to develop an understanding of durability aspects, service life design, condition assessment and non-destructive testing of steel structures. Topics include: basics of steel material science; material characteristics and properties; structural behaviour of steel; advantages of steel structures in industrial application; fire resistance of steel structures; deterioration of steel structures; fundamentals of steel corrosion; corrosion detection techniques; in-situ assessment of steel structures; protection of steel structures; coatings; cathodic protection; fatigue behaviour; strengthening and repair of steel structures.

5 CPD points, ECSA Validation No: UCTCIMMCASS24

Overview

Programme	Civil Infrastructure Management and Maintenance
Modules and duration	Advanced Concrete Technology and Service Life Design CIV5138Z: 6 – 10 May Advanced Infrastructure Management CIV5067Z: 8 – 12 July Strengthening and Retrofitting of Concrete Structures CIV5140Z: 28 Oct – 1 Nov Condition Assessment and Remedial Action on Steel Structures CIV5141Z: 4 – 8 Nov
Venue	New Engineering Building, Upper Campus, UCT.
CPD	CPD points and ECSA codes as indicated per module
Participants	The courses are best suited for Civil Engineers, Consultants, Architects, Structural Engineers, Contractors, Project managers, City and Public Works Officials, City Planners, students and other engineering professionals.
Fees	Standard fee: R16 500 UCT staff and students: R8 250

Registration

Registration and Cancellation

- [Register for this course](#)
- Registration covers attendance of all sessions of the course and 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

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 master's programme or as an occasional student. If you attend the course as a CPD participant, credit cannot be claimed in retrospect.

For further information on the master's programme please see the website: [Civil Infrastructure Management and Maintenance \(CIMM\) | University of Cape Town](#)

Contact details

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

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