



Dept. of Civil Engineering | CPD Course

Stability and Design of Steel Structures

Masters's Programme: Structural Engineering and Materials

Presented at UCT, 30 Oct – 3 Nov 2023



Introduction

The Master's Programme: The programme offers high level training in structural design, structural analysis and structural materials by providing sound theoretical background and encouraging critical and innovative thinking. Students benefit from expertise in concrete technology, concrete durability, structural performance and design, computational mechanics and finite element analysis. The programme is supported by excellent laboratory and computing facilities and draws from cutting edge research including the in-house developed structural analysis software SESKA.

All programmes can be completed in a minimum of two years full-time or may be taken over an extended period of a maximum of five years.

CPD Courses: Three of these master's modules are offered as individual short courses in 2023. Continuing Professional Development students may take each module as a separate certificate course. CPD students are required to attend the lectures but are not required to submit assignments or write the exam.

Who Should Attend?

Applicants may register for the individual master's level courses offered by the programme as Continuing Professional Development students. CPD participants are required to have a BSc (Eng) or BEng qualification in civil, mechanical, marine or aerospace engineering. The programme has been designed to be accessible to people in full-time employment as well as full-time students. CPD students will be awarded a Certificate of Attendance which will allow them to claim CPD points.

Format

Each course is presented face-to-face over 5 days, but this may be subject to change and the course may be presented online or a mixture of online and face-to-face. Details will be supplied closer to the time. Venue of lectures is the PG Seminar room in the New Engineering Building (NEB) at upper campus.

Stability and Design of Steel Structures

CIV5112Z: 30 October - 03 November 2023

The course aims to provide knowledge on stability theory and its application in the analysis and design of structural steel members, as well as the theory behind some of the design approaches used for steel structures. It also aims to present knowledge on some topics not typically covered in the undergraduate curriculum. Design of selected elements is carried out with appropriate examples presented. The course covers: Structural stability concepts, buckling instability of columns, beams and beam-columns, plate buckling, plate girders, design for torsion, design of crane supporting beams and design of connections. Other topics are fatigue and risk assessment of steel structures.

Overview

Name	Stability and Design of Steel Structures	
Dates	30 October – 3 November 2023	
Venue	PG Seminar Room. New Engineering Building (NEB), UCT upper campus	
Entrance requirements	BSc (Eng) or BEng qualification in civil, mechanical, marine or aerospace engineering	
CPD points	ECSA: 5 days, 5 CPD points, ECSA validation number: UCTSEMSDSS	
Fees	Standard delegate	R15 700
	UCT staff and students	R7 850
	Students from other tertiary institutes	R11 775

Course Presenters



Kenny Mudenda (PrEng) is a senior lecturer at the University of Cape Town with experience in civil and structural engineering projects as well as teaching at tertiary level. Kenny's work experience spans over four countries on the African continent (Zambia, South Africa, Sierra Leone and Mauritius) in both structural design and site work. This experience includes various infrastructure in the areas of materials handling structures, liquid retaining structures, several types of industrial, commercial and residential buildings, pedestrian bridges as well as municipal infrastructure.



Alvin Masarira (PrEng) is a Structural Engineering Consultant with Isithelo Technical Solutions (PTY) Ltd which provides expert services to the mining, manufacturing and other related industries. He is also proprietor of Structural SIMTech Consulting (PTY) Ltd. Prior to that he was a Senior Structural Engineer at Anglo American plc, providing civil/structural engineering support, conducting technical reviews on designs as well as structural failure investigations. He serves as a Visiting Lecturer at the University of Cape Town and the University of Johannesburg, teaching both under- and post-graduate civil/structural engineering courses.

Registration

Registration and Cancellation

- [Register for a 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: [Structural Engineering and Materials | University of Cape Town](#)

Contact details

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

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