FACULTY OF
ENGINEERING &
THE BUILT ENVIRONMENT

CPD
CONTINUING PROFESSIONAL DEVELOPMENT

UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD
ENGINEERING & THE BUILT ENVIRONMENT

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Condition Assessment of Steel Structures

In person in Cape Town, 11 – 13 November 2025

UNIVERSITY OF CAPE TOWN
IYUNIVESITHI YASEKAPA • UNIVERSITEIT VAN KAAPSTAD

Introduction

Steel structures are often subjected to excessive and even extreme loading conditions owing to the nature and environment of these operations. As a result, these structures experience high levels of deterioration and other effects, often compromising their integrity, load-bearing behaviour, and structural efficiency.

Safe and reliable structures are fundamental to any operation, and every structural failure has the potential to cause injuries, fatalities, and operational shutdowns. The risk of structural failure is closely associated with the condition of the structure.

This course presents a systematic methodology for the regular condition assessment of steel structures to determine the levels of structural deterioration at any given time during the life of the structure. The assessment considers the current condition of a structure relative to its original condition, identifies deterioration mechanisms, assesses and rates the risk of failure, and makes appropriate recommendations and prioritises any interventions. This ensures the early identification of structural maintenance requirements, thereby facilitating preventive maintenance to ensure safety and prevent asset value destruction.

Course Content

1. Basics of structural steel
2. Characteristics and properties
3. Structural behaviour of steel
4. Deterioration of steel
5. Fire damage
6. Dynamics/vibrations problems
7. Fatigue
8. Risks assessment and rating
9. Condition assessment and monitoring
10. Remedial action and repairs

Course Objectives

The course aims to provide participants with the following:

- Practical procedures for inspecting steel structures
- Identification and assessment of structural defects
- Specification and supervision of remedial actions

Course Presenters

Dr 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 the 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 of designs, and conducting structural failure investigations. He also developed remedial solutions and conducted regular structural and civil engineering condition assessments. The main focus was on strategic condition management of civil/structural infrastructure, as well as the development of long-term solutions to increase infrastructure integrity, reliability, and durability, and to reduce the risk of failures and value destruction. He serves as a Visiting Professor at the University of Cape Town and the University of Johannesburg, teaching both under- and post-graduate civil/structural engineering courses.

Prof. Pilate Moyo (PrEng) is Professor of Structural Engineering and Director of the Concrete Materials and Structural Integrity Research Unit (CoMSIRU) in the Department of Civil Engineering at the University of Cape Town. His research and consultancy are on structural health monitoring, condition assessment, structural dynamics, vibration testing, and structural strengthening strategies for civil structures. His research is focused on developing structural assessment technologies integrating finite element modelling, full scale field testing, and advanced data analysis algorithms. He has published widely in these areas.

Course Overview

Name	Condition Assessment of Steel Structures	
Duration	11 – 13 November 2025	
Venue	Protea Hotel, Mowbray, Cape Town	
CPD	3 CPD points, ECSA Validation No: UCTCASS25	
Participants	Engineers and Technologists, Agency and Public Sector Asset Managers, Asset Maintenance Managers, Bridge and Infrastructure Inspection Consultants.	
Fees	Standard delegate: R12 800.00	Full-time student: R6 400.00

Registration

Registration and Cancellation

- Register online
- Registration covers attendance of all sessions of the workshop, teas and lunches, and a set of notes.
- 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.

Certificates and CPD Points

A digital certificate of attendance will be awarded to CPD participants. Participants need to attend 80% of the lectures to qualify for an attendance certificate. For further information on digital certificates please visit Digital Certificates at UCT

This course is registered with the Engineering Council of South Africa (ECSA) for the award of 3 CPD points. The ECSA course validation code is: UCTCASS25

Contact details

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

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