



Condition Assessment of Steel Structures

22 – 23 October 2018



Introduction



The structural infrastructure in industrial operations is exposed to excessive and even extreme loading conditions due to the nature and environment of these operations. The structures often support operational equipment and loads that are often dynamic in nature and could vary in magnitude and intensity depending on the operational conditions and requirements. As a result these structures experience high levels of deterioration and other effects which often lead to compromising their integrity, load bearing behaviour and structural efficiency.

Safe and reliable structures are a fundamental aspect of any operation and every structural failure has potential for injuries, fatalities and operational shut-downs, and the risk

of structural failures is closely associated with the condition of the structures.

This workshop will consider the structural material (which is mainly steel), will present a systematic method for regular condition assessment (inspections) on structures so as to determine the levels of structural deterioration at any given time in the life of the operation. The assessment considers the current condition of the structures with reference to their original condition, identify deterioration mechanisms, assess and rate the risk of failure and make appropriate recommendations and prioritise any such interventions. This ensures early identification of structural maintenance requirements, thereby facilitating preventive maintenance, to ensure safety and prevent asset value destruction.

Course Content

- Basics of structural steel
- Characteristics and properties
- Structural behaviour of steel
- Deterioration of steel
- Fire damage
- Dynamics/vibrations problems
- Fatigue
- Risks assessment and rating
- Condition assessment and monitoring
- Remedial action and repairs

Course Outcomes

At the end of this course the participants should be able to:

- Identify elements to inspect in steel structures.
- Identify and quantify structural defects in steel structures.
- Specify of remedial actions.

Course Presenters



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 is 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.. [View profile](#)



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 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 also developed solutions for remedial action as well as performing regular structural and civil engineering condition assessments. The main focus was in the 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 Lecturer at the University of Cape Town and the University of Johannesburg, teaching both under- and post-graduate civil/structural engineering courses. [View profile](#)

Course Overview

Name	Condition Assessment of Steel Structures	
Duration	22 – 23 October 2018, 2 days	
Venue	School of Rail, Esselen Park, Johannesburg	
CPD	2 CPD points, ECSA Validation No: UCTCASS18	
Participants	Suitable for engineers, technicians, students and academics involved in the design, construction and management of steel structures	
Fees	Standard delegate: R7300	Full-time student: R3650

Registration

Registration and Cancellation

- **You can register for this course 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 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:** www.cpd.uct.ac.za/cpd/applications

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.

Contact details

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

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