



Dept. of Civil Engineering | Master's Module | CPD course

Bridge Management and Maintenance

Presented at UCT, 11 – 15 September 2023



Introduction



Bridges constitute significant and critical discrete components of a transportation system and they are among the most expensive investment asset of any country's civil infrastructure. They also have a long service life compared with most commercial products and are rarely replaceable once they are erected. Therefore, effective bridge asset management practices are required to obtain the best value from limited resources. This course is part of the suite of courses offered in the postgraduate program in Civil Infrastructure Management and Maintenance in the Department of Civil Engineering at the University of Cape Town. The course will provide participants meaningful guidance to quantify their bridge infrastructure deficit and prioritize bridge investment. The course will give a broad

overview of bridge management systems and maintenance strategies. Attention will be paid to the DER method of bridge inspection. This approach is used by a number of national, provincial and municipal authorities in South Africa.

Course Content

- Background: bridge failures
- Overview of Structures Management Systems
- Bridge asset management from a client perspective
- Structure definitions
- Basic information requirements
- Visual assessment of structures
- Overview of typical defects on structures
- The DER Rating System – TMH 19
- Visual Inspection guide
- Inspection procedure and quality assurance
- Inventory and inspection photos
- Visual assessment forms
- BMS implementation in SA: Case Studies
- Implementing a BMS
- Best Management Practices for existing structures
- Applying bridge asset management
- Preventative maintenance of structures
- Asset valuation: replacement and current asset value

Course Presenters



Prof. Pilate Moyo (PrEng) performs research and lectures in the field of structural engineering at the University of Cape Town. He is a member of the Concrete Materials & Structural Integrity Research Unit ([CoMSIRU](#)) at UCT, which focuses on infrastructure performance and renewal research. Prof Moyo's specific interests are in bridge design, bridge management, tunnel management, structural health monitoring, and vibration serviceability. [View profile](#).



Dr Paul Nordengen (PrEng) is the Founder and Director at Heavy Vehicle Transport Technology Africa. Prior to his current position, Paul was a Principal Researcher at the Council for Scientific and Industrial Research in South Africa. He has been involved in the development of bridge management systems in South Africa for national, provincial and local road authorities as well as a number of other countries including Taiwan, United Arab Emirates, Namibia, Botswana and Zambia.

Paul Chairs the South African National Smart Truck (PBS) committee for heavy vehicles in South Africa and is a member of the Road Transport Management System (RTMS) national steering committee, a self-regulation accreditation scheme for heavy vehicles. He serves on ISO PC241, the committee responsible for the development of ISO 39001, Road Traffic Safety Management Systems, published in 2012. He is currently a member of the OECD-ITF Working Groups on "High Capacity Transport" and "Policies to extend the life of road assets".



Hennie Niehaus (PrEng) is a Technical Director and head of Zutari's bridge engineering group in their Cape Town office. He specialises in bridge engineering and has been responsible for various award-winning bridge engineering projects. He is a COTO certified senior bridge inspector and has performed bridge inspections throughout South Africa, as well as Namibia, Lesotho, Dubai and Abu Dhabi. He has presented various BMS training sessions in South Africa and Lesotho.

Course Outcomes

Engineers who attended the workshop should be able to:

- Perform a conceptual design for various bridge types.
- Select appropriate load-bearing and support systems.
- Calculate bridge loading based on relevant load models and national Codes.
- Perform a preliminary structural analysis of concrete bridges.
- Understand issues relating to the construction of concrete bridges and how these affect the design process.

Course Overview

Name	Bridge Management and Maintenance	
Duration	11 – 15 September 2023, 5 days	
Venue	Post-Graduate Seminar Room, level 3, New Engineering Building, Upper Campus, UCT	
CPD	5 CPD points, ECSA Validation No: UCTCIMMBMM23	
Participants	Suitable for engineers, students and academics	
Fees	Standard delegate: R15 700.00	Full-time student: R7850

Registration

Registration and Cancellation

- [Register online](#)
- 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/cpd/applications

Certificates and CPD Points

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

According to guidelines set out by the Engineering Council of South Africa, attendance of this course will earn participants 5 points towards Category 1 (Developmental Activities).

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.

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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Course presenter

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