



Bridge and Tunnel Management

Johannesburg, 18 – 22 February 2019



Introduction



Bridges and tunnels 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 and tunnel asset management practices are required to obtain the best value from limited resources. The course will provide participants meaningfully guidance to quantify their bridge & tunnel infrastructure deficit and prioritize bridge & tunnel investment. The course will give a broad overview of bridge & tunnel 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 Overview

Name	Bridge and Tunnel Management	
Duration	18 – 22 February 2019, 5 days	
Venue	Transnet School of Rail, Esselen Park, Johannesburg	
CPD	5 CPD points, ECSA Validation No: UCTBTM19	
Participants	Suitable for engineers, students and academics	
Fees	Standard delegate: R12528.00	Full-time student: R6264.00

Course Content

- Background: bridge failures
- Overview of Structures Management Systems
- Bridge asset management
- Visual assessment of structures
- Overview of typical defects on structures
- The DER Rating System
- BMS implementation in SA: Case Studies
- Implementing a BMS
- Applying bridge asset management
- Preventative maintenance of structures
- Asset valuation: replacement and current asset value
- Site visit to two concrete bridges (within 100 km from course venue).

Course Outcomes

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

- Select relevant bridge and tunnel management systems for their environment
- Create bridge and tunnel inventories
- Prioritise maintenance programs based on management systems
- Conduct bridge and tunnel inspection

Course Presenters



Prof. Pilate Moyo performs research and lectures in the fields of structural engineering and structural condition assessment 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 in bridge design are bridge loading and design of footbridges for vibration serviceability. [View profile](#)



Dr Paul Nordengen is a Principal Researcher at the Council for Scientific and Industrial Research in South Africa. He obtained an MSc in structural engineering from Wits University in Johannesburg in 1988 and his PhD in the area of performance-based standards for heavy vehicles in 2013. He has been involved in the development of bridge, overload control and abnormal load management systems in various countries in Africa.

He is Chairman of the South African national Smart Truck (PBS) committee for heavy vehicles in South Africa and 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" He was also a member of the OECD-ITF Working Group on Heavy Vehicles: regulatory, operational and productivity improvements and coordinated input from South Africa for various chapters of the OECD publication "Moving Freight with Better Trucks" (2011), which includes safety, performance/productivity, environmental impact and regulation benchmarking surveys on heavy vehicles. He is a Past-President of the SA Road Federation and served as President of the International Forum for Road Transport Technology (IFRTT) from 2010 to 2014; he now holds the position of Vice President: 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.



Mr. Nkululeko Mbedle (PrEng) is Senior Engineer, Bridges and Structures at Transnet Freight Rail. His responsibilities include the configuration of railway culverts, the inspection of bridges and tunnels, and the technical audit of Infrastructure Depots with regards to the maintenance of railway related civil engineering structures.

Nkululeko graduated with a BSc. in Civil Engineering from the University of Cape Town in 2002. He has worked as an Assistant Engineer for the Department of Water Affairs and Forestry; Assistant Resident Engineer for SNA Civil and Structural Engineers; and Senior Manager: Infrastructure Development Unit for Lukhanji Local Municipality.



Stephen Humphries (PrEng) is a director and head of the structural division of Nyeleti Consulting (Pty) Ltd. He specialises in bridge engineering and has completed various bridge engineering projects successfully. He is co-author of "Standard specifications for the rehabilitation of concrete bridges" (CSRA Series 10000) renamed later to COLTO: Series 12000. He was a bridge expert panel member of the COTO committee responsible to compile the draft TMH 19: Manual for the visual assessment of road structures. He is certified by SANRAL as a senior bridge inspector. He presented several BMS workshops and training sessions in South Africa, Namibia, Swaziland and Botswana.

Registration

Registration and Cancellation

- [Register for this course](#)
- 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.

Web: <http://www.cpd.uct.ac.za>

E-mail: ebe-cpd@uct.ac.za

Physical address

CPD Programme
Room 6.10, 6th Floor
New Engineering Building
Upper Campus
University of Cape Town
South Africa

Postal address

CPD Programme
EBE Faculty
University of Cape Town
Private Bag X3
Rondebosch 7701
South Africa

Programme administrators

Sandra Jemaar: +27 (0)21 650 5793

Heidi Tait: +27 (0)21 650 4922
