Railway Engineering Courses presented by The Chair in Railway Engineering in the Department of Civil Engineering at the University of Pretoria

Transnet is currently investing more than R300 billion in infrastructure development to rejuvenate the economy, create jobs and address poverty and inequalities. Of this amount, R201 billion has been assigned to Transnet Freight Rail to expand its rail infrastructure to create capacity and increase cargo volumes. Over the next three years Government will be spending approximately R22.9 billion to upgrade commuter rail services according to the 2014 Budget Speech. This means that focus will be placed on rail services, making this the ideal time to upgrade your railway engineering knowledge and skills.

Utilising world class experts we offer a wide variety of high quality short courses that will benefit railway engineering practitioners. For more information about the various courses please see below.

UPCOMING 2015 COURSES
Wheel Rail Interaction
Railway Infrastructure Maintenance Management
Locomotive Systems, Performance and Maintenance

RAILWAY ENGINEERING 2016
Introduction to Multi-Disciplinary Concepts in Railway Engineering
Introduction to Railway Projects and Processes
Introduction to Multi-Disciplinary Concepts in Railway Engineering
Management of Continuously Welded Rails
Introduction to Railway Projects and Processes
Track Geotechnology
Locomotive Systems, Performance and Maintenance
Railway Asset Management
Railway Safety Investigation
Introduction to Multi-Disciplinary Concepts in Railway Engineering
Wheel Rail Interaction
Railway Infrastructure Maintenance Management
Locomotive Systems, Performance and Maintenance

VENUE: DATES:
Innovation Hub SRC Hall UP
13 - 16 October 02 - 06 November
SRC Hall UP 23 - 27 November

Enquiries and registration:
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For customised courses: E-mail quote@ce.up.ac.za for quotations on in-house training.
Chair in Railway Engineering in the Department of Civil Engineering at the University of Pretoria

The Chair in Railway Engineering in the Department of Civil Engineering at the University of Pretoria was established in 1996 when Spoornet (now Transnet freight rail) initiated a partnership between industry and the University. This partnership revolves around three major aspects: graduate training, continuing education courses for industry and railway research.

On graduate level, students in Civil Engineering are taught the basics of Railway Engineering as part of their transportation studies. The Chair currently has on offer 9 different short courses that are presented by local and international experts in a wide range of railway engineering fields. All courses are registered with ECSA for Continued Professional Development (CPD) credits and some are also credit bearing with respect to the taught Honours post-graduate course in Transportation Engineering.

Research is annually undertaken by final year Civil Engineering students and Master’s students. The Chair focuses strongly on track infrastructure research and is active in the following fields:

- Conventional ballasted and non-conventional track structure performance
- Numerical modeling of track structures and vehicle/track interaction
- Formation failure, repair and investigation
- Standard laboratory testing of rails, fasteners, sleepers and ballast
- Development of track deflection measurement systems
- Development of non-destructive track condition monitoring technologies (e.g. Ground Penetrating Radar)
- Stress and strain measurement systems
- Measurement of Stress Free Temperature in continuously welded rails (CWR)
- Track maintenance models
- Maintenance limits and condition monitoring
- Asset management and maintenance management strategies and philosophies

The Chair in Railway Engineering at the University of Pretoria is kindly sponsored by Transnet Freight Rail, the largest division of Transnet Limited.

Prof Hannes Gräbe

The chair holder is Prof Hannes Gräbe, a civil engineer with 20 years’ experience in track technology, track geotechnology, advanced laboratory testing, field investigations, maintenance models and numerical analysis of track structures. After completing his undergraduate studies at the University of Pretoria in 1994, Prof Gräbe joined Transnet Freight Rail’s Track Technology Centre, Johannesburg. He studied abroad from 1999 to 2002 and obtained a PhD in Geotechnical Engineering from the University of Southampton (UK). This research was focused on the design life prediction of railway foundations under heavy axle loading.

Prof Gräbe is a registered professional engineer and Fellow of the South African Institution of Civil Engineering (SAICE). He is currently an associate professor in the department of Civil Engineering at the University of Pretoria responsible for undergraduate and post-graduate training, track research and rail short courses for industry.