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INSTITUTE OF  
STRUCTURAL  
ENGINEERING



# Bridge Design

A practical seminar for structural engineers covering various aspects of bridge analysis and design

**1 CPD** **R3000**  
CREDITS EARLY BIRD

STIAS Library, Stellenbosch  
Monday 12 June 2017

Garden Court OR Tambo, JHB  
Wednesday 14 June 2017





## SEMINAR OBJECTIVE

The particular focus of the seminar is aimed at the bridge construction and design. The seminar should provide structural engineers with a basic understanding of different bridge components and structural elements with emphasis on design. Different construction techniques and methods are discussed along with detailed overview of associated statics calculations. A part of the seminar is devoted to integral bridges.

This seminar is dedicated to the bridge design in view of the:

- basic nomenclature and bridge classification
- basis of foundations
- the multitude of construction types and methods
- static behavior of bridges, emphasis on integral bridges

The seminar provides background information and **equips the designer with a better understanding, guidance and ability to make informed design assumptions and choices.**

## SEMINAR FOCAL POINTS

The focus is on:

- Bridge classification and nomenclature
- Foundations, piers and abutments
- Different bridge construction types
- Construction methods and statical behaviour of bridges
- Bridge loading and analysis
- Slab bridges and girder bridges: dimensions, cross section, reinforcement, prestressing, construction process
- Balanced cantilever and incremental launching
- Cable stayed and suspension bridges
- Integral and semi-integral bridges

# SEMINAR PROGRAM

TIME	TOPIC	SPEAKER
08:00 - 08:20	Registration & Refreshments	
08:20 - 08:30	Welcome & Introduction	Lukas Vrablik Roman Lenner
08:30 - 09:00	Bridges - basic information, nomenclature and structure types	Lukas Vrablik
09:00 - 10:00	Bridges - loading	Roman Lenner
10:00 - 10:30	<b>Coffee/Tea break</b>	
10:30 - 11:15	Foundations, piers, abutments, bearings, hinges, expansion joints, superstructure arrangement	Lukas Vrablik
11:15 - 12:00	Slab bridges - dimensions, cross section, reinforcement, prestressing, construction process	Lukas Vrablik
12:00 - 13:00	<b>Lunch</b>	
13:00 - 13:45	Girder bridges - dimensions, cross section, reinforcement, prestressing, construction process	Lukas Vrablik
13:45 - 14:30	Balanced cantilever construction process & Incremental launching	Lukas Vrablik
14:30 - 15:15	<b>Coffee/Tea break</b>	
15:15 - 15:45	Cable stayed and suspension bridges	Lukas Vrablik
15:45 - 17:15	Integral and semi-integral bridges	Roman Lenner
17:15 - 17:30	Closure   Discussion   Q&A	

# PRESENTERS



## 1. Prof Lukas Vrablik

An associated professor at the Czech Technical University in Prague - Faculty of Civil Engineering. His main research interests are related to staged construction, creep and shrinkage analysis as well as optimisation of prestressing systems in bridges.

Prof. Vrablik is additionally a technical director at a design company called Novak&Partner in Prague forming a part of the Valbek EU group. He is a highly skilled designer with over 12 years' experience in the construction industry specialising in the project management, civil engineering structures and bridge design. Responsible for design of excellent bridge structures with a span length of more than 200m.

Prof. Vrablik has an expert knowledge in bridge engineering, structural design of bridges, monitoring of existing bridges, assessment of existing bridges and is very experienced in the preparation of feasibility studies and preliminary designs of bridge projects. He also has lots of international exposure and experience in heading up multidisciplinary design teams and thus good knowledge also in other design fields which enables the management and coordination of multi-disciplinary projects.



## 2. Dr Roman Lenner

A senior lecturer at the University of Stellenbosch - Department of Civil Engineering. His main research interests include structural reliability, bridge loading, target reliability and assessment of existing structures.

Dr Lenner was employed in 2010-2014 as a scientific assistant while working towards his PhD qualification at the University of Armed Forces in Munich, Germany. During that period, he also was appointed as a consultant to BUNG AG in Munich. Main duties involved dynamic analysis of ship impact to a number of historic bridges and multiple tunnel design reviews.

His previous experience include large transportation projects in North America, where he mainly provided structural design services for bridges and other transportation related structures. He is a registered professional civil engineer in California.

Dr Lenner is partially involved in Valbek EU group which based out of Czech Republic and is providing structural design services mainly in the transport sector.

# CPD CREDITS

The seminar is accredited for 1 Continued Professional Development credit with the ECSA.



# REGISTRATION

To register, please provide your details on the registration template provided at

<http://shortcourses.sun.ac.za/courses/c-7/2017-4738.html>

**Please Note:** Our system will only generate an invoice for your records if you request an invoice before payment.



# PAYMENT



**Early Bird: R 3000.00** Payment must be received by 12 April 2017

**Normal Fee: R 3850.00** Payment must be received 10 working days prior to the course date

## PAYMENT INSTRUCTIONS:

On registering for a course you will receive an automated email featuring our bank details for payment. If you are paying your own registration and do not require an invoice, please use this method.

If however your company is making payment on your behalf and requires an official tax invoice, please contact [oliviavw@sun.ac.za](mailto:oliviavw@sun.ac.za) **before making payment**.

## PLEASE EMAIL PROOF OF PAYMENT TO:

**Ms. Olivia van Wyk**

Stellenbosch University, Department of Civil Engineering **Email:**  
[oliviavw@sun.ac.za](mailto:oliviavw@sun.ac.za)

**Enquiries:** 021 808 4070

Please indicate which course date or city you plan to attend

## WE LOOK FORWARD TO WELCOMING YOU AT THIS COURSE



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