Registration info

Registration is obligatory in order to prepare material, receipts, certificates, lunch and refreshments

Registration fee: US$ 200 (no on-line registration, make check payable to "Princeton University" and simply bring it to the course), cash accepted

Registration includes: course notes, USB memory stick, receipt, certificate of attendance, lunch and refreshments

Preferred registration deadline: March 7, 2013

Registration form

Please fill the registration form and mail it or e-mail it to the contact address below

Short course on Structural Health Monitoring using Fiber Optic Sensors, Registration Form	
Name	
Affiliation	
Street	
City/State/ZIP	
Phone	
Fax	
e-mail	
Signature	

Contact address

Branko Glisic
Princeton University
E330 EQuad
Princeton NJ, 08544
Phone: 1-609-258-8278
Fax: 1-609-258-2760
e-mail: bglisic@princeton.edu
http:// www.princeton.edu/~bglisic/Short_Course.html

Venue and transportation

Attendees are responsible for their own transportation and accommodation

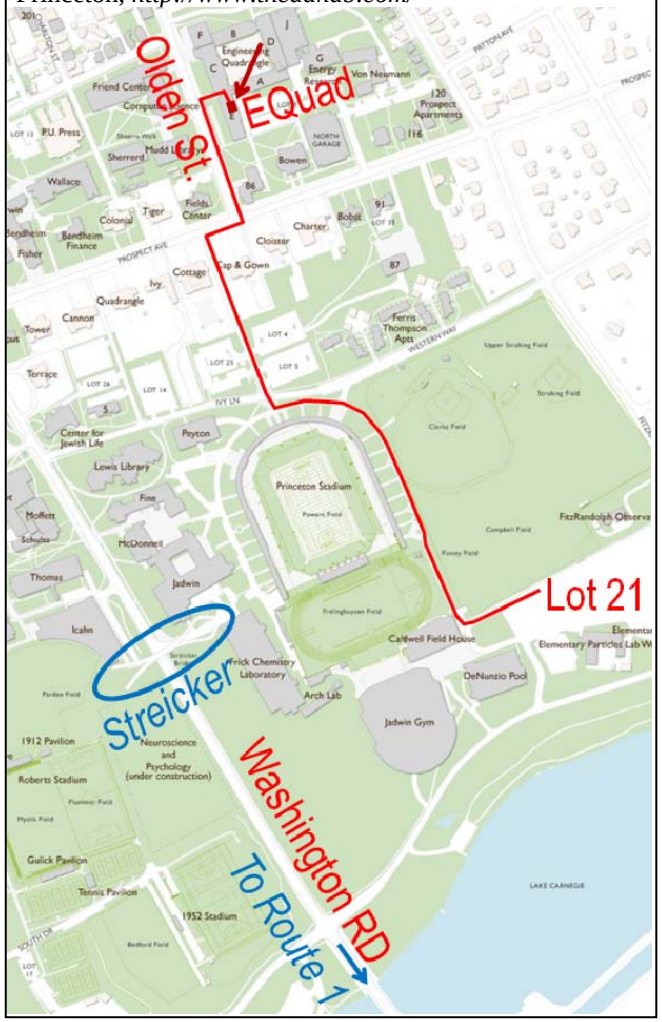
Venue: Princeton University, EQuad, Rooms E225 (lectures) and E219 (registration and breaks)

Driving directions: From Route One take Washington Road, then see map below

Parking: Parking Lot 21 + walk (see map below) or shuttle East Line towards Friend Center ***OR*** park-metered space in Olden Street, in front of EQuad (change needed)

Hotels: any hotel in Princeton area OR contact CEE Dpt. Manager Jennifer Poacelli at poacelli@princeton.edu

Cocktail: Cocktail will be held at Alchemist & Barrister, "Princeton's Premiere Pub", 28 Witherspoon Street, Princeton, *http://www.theaandb.com/*



SHM Lab at Princeton University

The Fourth Short course on Structural Health Monitoring using Fiber Optic Sensors

DRAFT

Princeton University,
Princeton, New Jersey

EQuad, Room E225 (E219)

March 22, 2013, 10:30AM-6:00PM

A one-day course for civil engineers, researchers, practitioners, infrastructure managers and owners

About lecturer

Prof. Branko Glisic has been engaged in R&D of structural health monitoring (SHM) methods and fiber-optic sensors (FOS) since 1996. He was involved at different levels of responsibility in numerous SHM projects, EU and NSF funded projects, and internal R&D projects. Since February 2009, he has been an Assistant Professor with the Department of Civil and Environmental Engineering at Princeton University where he funded SHM lab. His expertise and current research interest include SHM methods and strategies, structural analysis, FOS and advanced sensory systems, and model-based and model-free data analysis.

About course

Structural health monitoring (SHM) is a process aimed at providing accurate and in-time information concerning structural health condition and performance. The information obtained from monitoring is generally used to increase the safety, plan and design maintenance activities, verify hypotheses, reduce uncertainty, and to widen the knowledge concerning the structure being monitored.

Recent developments in fiber optic sensing (FOS) technologies made possible global structural monitoring using long-gauge sensors and integrity monitoring using truly distributed sensors. These sensors combined in appropriate topologies and networks can provide for assessment of wide range of parameters relevant for structural behavior.

The aim of this course is to transfer the knowledge on SHM and FOS. Targeted groups are those who can take benefits from SHM: civil engineers, practitioners, consultants, contractors, infrastructure managers, and owners. Researchers and students are welcome too.

Covered topics include brief introduction to the SHM, overview of available FOS technologies, and SHM methods based on FOS technologies. The topics are illustrated through numerous examples taken from practice, and a site visit to Streicker Bridge is included.

Course schedule

Friday, March 22, 2013: Lectures and activities		
10:30-11:00 am	Welcome, registration, distribution of material, coffee, refreshments	30 m.
11:00-11:30	Introduction to Structural Health Monitoring • *Motivation, aims, benefits, SHM process*	30 min.
11:30-12:00	Financial Analysis of an Effective Bridge Monitoring Program • ***Guest lecturer expected from Roctest, Inc.***	30 min
12:00-12:40	Overview of Fiber Optic Sensing technologies • *Monitoring systems,* • *Discrete and distributed strain and temperature sensors* • *Accelerometers, tilt-meters, technical textiles*	40 min.
12:40-1:05	Monitoring projects – examples from practice • *New I35W Minneapolis Bridge, USA (courtesy of Roctest Inc.)* • *Halifax Metro Centre, Canada (courtesy of Roctest Inc.)*	25 min.
1:05-1:45	Box lunch	40 min.
1:45-2:25	Sensors types and interpretation of measurement • *Strain analysis; dependence of measurement on gauge-length of sensor*	40 min.
2:25-3:05	Sensor topologies and global structural monitoring • *Simple, parallel, crossed, and triangular topology* • *Integrity monitoring*	40 min.
3:05-3:45	Global structural monitoring – data analysis examples from practice • *High-rise buildings Punggol EC26 (courtesy of Roctest Inc.) and Pinnacle@Duxton (courtesy of HDB), Singapore* • *Semiconductor facility piles testing, Taiwan (courtesy of Roctest Inc.)* • *Streicker Bridge, Princeton, USA and NJ23/US202 overpass, Wayne, NJ, USA*	40 min.
3:45-4:00	Coffee break, refreshments	15 min.
4:00-5:00	**Visit to Streicker footbridge at Princeton campus (walking distance)**	**60 min.**
5:00-5:35	Integrity monitoring – examples from practice • *Concrete pipeline full scale testing, USA* • *Fatigue cracking monitoring of Gota Bridge, Sweden (courtesy of Roctest Inc.)* • *Streicker Bridge, Princeton, USA*	35 min.
5:35-5:55	Importance of data visualization • *SHM live (courtesy of Roctest Inc.)* • *The Learning Bridge project (Tacony-Palmyra Bridge, NJ)*	20 min.
5:55-6:00	Survey and closing remarks	5 min.
6:00-8:00	**Cocktail**	