

11. Conferences attended in the past five years

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
*(use separate sheets, if necessary)*

12. Earthquake engineering related activities pursued by the applicant in past 5 years: (it may be attached as a separate enclosure):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
*(use separate sheets, if necessary)*

13. Other activities that show interest in Earthquake Engineering

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
*(use separate sheets if necessary)*

Signature:

Name:

Recommendation of the Head of the Institution

Signature:

Name:

Date:

Designation:

(With Seal)

### Other Participants

Industries and Government departments desirous of utilizing this opportunity may depute participants at their own expenses. A course fee of Rs. 10,000 (Rupees ten thousand only) in the form of crossed DD payable to "Registrar, Indian Institute of Science Bangalore 560012" should be paid by such participants. Only five participants on a first come first served basis will be selected under this category.

#### For further details please contact

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Indian Institute of Science,  
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Phone: 080-2933121(Office) 080-23517961 (home)  
For more general information about NPEEE,  
please see website: <http://www.nicee.org/npeee> or  
Email: [npeee@iitk.ac.in](mailto:npeee@iitk.ac.in)

#### Please send your applications to:

Assistant Registrar,  
Centre for Continuing Education  
Indian Institute of Science, Bangalore-560012  
Tel: 080-2360 0911, 2293 2491  
Fax: 080-23600911  
Email: [office@cce.iisc.ernet.in](mailto:office@cce.iisc.ernet.in)

#### Important Dates:

Last date for receiving applications: 15-Dec-2005  
Date for Intimation of Selections: 23-Dec-2005

## SHORT TERM COURSE ON Earthquake Engineering Education Through Laboratory Experiments

16-21 January 2006

Coordinators  
Professor C S Manohar  
Mr S Venkatesha  
Dept. of Civil Engineering

**Sponsored by**  
Ministry of Human Resource  
Development, Govt. of India  
National Programme on Earthquake  
Engineering Education



Centre for Continuing Education  
INDIAN INSTITUTE OF SCIENCE  
BANGALORE - 560012  
INDIA

## Prelude

The study of structural dynamics and earthquake engineering in civil engineering curriculum is commonly perceived to be a difficult exercise due to the mathematical nature of the subject. This difficulty is felt even by the teachers, who may not have formal training in these subjects. Thus, there exists a need to employ suitable teaching and learning aids to augment classroom teaching in this area. One of the effective ways to achieve this would be to use simple experimental set-ups, which would enable the study of basic issues related to the vibration behavior. The Coordinators of this course have recently developed a set of experimental set-ups for this purpose at the Structural Dynamics Laboratory, Department of Civil Engineering, IISc, with funding from the NPEEE. The set-ups have been developed at a cost of about Rs. 4.5 lakhs. The present course aims to introduce these setups to teachers of engineering colleges. The course covers issues related to demonstration of various vibration phenomena and their mathematical modeling. It is expected that college teachers interested in developing such a facility in their respective institutions would be greatly benefited from attending this course.

## Participants

Teachers of recognized engineering colleges are eligible to apply for the course. There is no fee for the course. Selected participants will be given all course materials and will be provided with free lodging in the Hoysala Guest House of IISc. They will have access to the Structural Engineering laboratory of the Dept. of Civil Engineering. The number of participants is limited to 25-30. Working lunch and coffee/tea will be served during the course.

## Objectives

- To provide a brief overview of experimental methods in structural dynamics.
- To introduce to college teachers a suite of experimental set-ups developed at IISc for earthquake engineering education.

## Course Contents

Review of structural dynamics: impulse response and complex frequency response. Resonance. Normal modes. Damping. Introduction to system identification. Review of transducers and exciters. Earthquake simulators. Experimental setups for earthquake engineering education. Setups for demonstration of the following aspects: Dynamical behavior of building frame models: normal modes, damping and resonance; frames with irregularity in plan and/or elevation; soft and/or weak floors; frames under periodic (but nonharmonic) base motions. Vibration isolation and absorption. Dynamics of free standing rigid objects. Water tanks under dynamic base motion. Vibration of one span and two span beams. Seismic wave amplification, soil structure interaction and soil liquefaction.

### Course material

Manuals and experimental setups developed by the course coordinators with support from the NPEEE.

### Resource Faculty

Prof C S Manohar and Mr S Venkatesha

### Travel and Stay

Return train fare by 3-tier AC and free stay on the campus of IISc will be provided for the selected out station (non-local) participants. In addition a per diem of Rs. 150 will be provided for seven days to cover food and other expenses.

### Venue and Time

Lectures for the short-term course will be held in the central lecture hall complex, Center for Continuing Education, Indian Institute of Science, Bangalore and Laboratory Demonstrations will be held in the Structural Dynamics Laboratory, Department of Civil Engineering. The timings of the various lectures will be announced later and will be included in the registration material. The short-term course will be inaugurated at 9.30 AM on 16<sup>th</sup> January 2006. The course will end with a written test and feed-back session on 21<sup>st</sup> January 2006.

### Official Language

The official language of the short-term course will be English

*Short-term course on Earthquake Engineering Education Through Laboratory Experiments, Jan 16-21, 2006.*

### Application Form

Application form for teachers to participate in training programme

1. Name:
2. Designation:
3. Name of College/Institution:
4. Address:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

5. Phone (Office): \_\_\_\_\_  
Phone (Home): \_\_\_\_\_
6. Email: \_\_\_\_\_
7. Qualifications:

Year	Degree	Specialization	University

8. Thesis titles (if applicable)  
M.E./ MTech:

Ph.D:

9. Courses taught in the past five years:

\_\_\_\_\_

\_\_\_\_\_

10. Short courses attended in the past five years:

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\_\_\_\_\_

*(use separate sheets, if necessary)*

