

INTRODUCTION

A course on **Random Vibration and Fuzzy Logic in Earthquake Engineering** is planned to be conducted at IIT Madras during 25th – 29th December 2006 under the aegis of National Programme on Earthquake Engineering Education (NPEEE).

In the aftermath of the Bhuj earthquake in 2001, the NPEEE was initiated with the support of the Ministry of Human Resource Development (MHRD) to develop better teaching capability in the area of Earthquake Engineering. As a part of this strategy, several short term courses are planned to be conducted at all the resource institutions. Details of NPEEE may be found at <http://www.nicee.org/npeee>.

Engineers and scientists studying practical problems are faced with the task of developing designs under conditions of uncertainty. The uncertainty is a fact of life in Civil Engineering. The nature of uncertainty in a problem is a very important point that engineers should ponder prior to their selection of an appropriate method to express the uncertainty. Understanding the concepts of random vibration and fuzzy logic is essential for finding solutions to large or complex civil engineering structures. The course will attempt to introduce the fundamentals of probability and reliability, random processes, stochastic and fuzzy structural analysis in the context of earthquake engineering.

As a resource institute for the programme, the course will be conducted in the Department of Civil Engineering, IIT Madras, Chennai. The course ***RVFLEE 2006*** is specially developed for Teachers of Engineering Colleges who are involved or likely to be involved in teaching of the subject at the Undergraduate and Postgraduate levels. A test will be conducted at the end of the course to evaluate the value addition of the training.

OBJECTIVES

- To introduce issues which are essential for understanding of the concepts of random vibration and fuzzy analyses in earthquake engineering
- To illustrate the usage of these methodologies in seismic analysis of structures.

COURSE CONTENTS

1. Introduction to Applied Probability
2. Stochastic (Random) Processes
3. Random Processes in Time and Frequency Domains
4. Response of SDOF and MDOF Systems to Random Environments
5. Methods of Reliability Analysis
6. Introduction to Fuzzy Logic
7. Fuzzy Logic in Earthquake Engineering
8. Fuzzy Reliability Analysis
9. Seismic Reliability Analysis of Structures

REGISTRATION FORM (RVFLEE 2006)

1. Name:
2. Designation:
3. Mailing address:

Telephone:
Fax:
E-mail:
4. Educational qualifications:
5. Experience:
6. Motivation for attending the course and future plans
7. Name of the Sponsoring Organisation/College/University
8. Boarding and Lodging required: Y/N
9. Signature and date:

Note:

- In addition to this form, candidates should fill the NPEEE application form for teachers to participate in the training programme and get the recommendation of the Head of their Institution on the same.

MAIL TO

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Department of Civil Engineering
Indian Institute of Technology Madras
Chennai - 600 036**

RESOURCE FACULTY

The following faculty who have considerable expertise in the area of reliability analysis, fuzzy logic and simulation modelling will be involved in the theory and tutorial sessions.

Dr. G. R. Dodagoudar
Dr. B. Nageswara Rao
Prof. A. Meher Prasad
Prof. Devdas Menon
Prof. S. Narayanan

IMPORTANT DETAILS

- Only permanent full-time faculty of AICTE recognized engineering colleges are eligible to apply. **Only 30 seats are available.**
- Cancellation after registration is highly discouraged and application will be given low preference during selection for future courses.
- Candidates are eligible for III AC train fare from the nearest station on production of a copy of the ticket. Non-A/C double room accommodation will be provided on a shared basis during the course period.
- Last date for Registration **25th Nov. 2006.**

CORRESPONDENCE

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**National Programme on
Earthquake Engineering
Education (NPEEE)**

**Short Term Course on
Random Vibration and Fuzzy Logic
in Earthquake Engineering**

25th – 29th December 2006

Coordinators

**Dr G R Dodagoudar
Dr B Nageswara Rao**



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Indian Institute of Technology Madras
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