

Site characterization, in-situ and laboratory testing of geologic materials, intrusive and non-intrusive geophysical methods of subsurface investigations, estimation of potential for liquefaction and landslides

Characterization of earthquakes, plate tectonics, faulting, Magnitude, Intensity, ground motion attenuation, near source effects, probabilistic and deterministic seismic hazard assessment

Site response analysis, equivalent-linear models, non-linear models, effective-stress and total-stress analyses, numerical assessment of generation and dissipation of pore water pressure (pseudo-coupled and fully-coupled approaches), available software packages

Earthquake loading, seismic zoning of India, design of shallow and deep foundations, slopes and retaining structures for earthquake loads, recommendations of the Indian Standard codes, soil-structure interaction under earthquake loading

#### APPLICATION FORMS

Application form for teachers of colleges and polytechnic institutes are as attached.

#### IMPORTANT DATES

Application deadline : May 21, 2004  
Intimation of acceptance : May 28, 2004  
to applicants  
Registration : July 6, 2004  
Short-term Course : July 6 to July 11, 2004

## NATIONAL PROGRAM ON EARTHQUAKE ENGINEERING EDUCATION (NPEEE) A MINISTRY OF HUMAN RESOURCE DEVELOPMENT INITIATIVE

A SHORT-TERM COURSE ON  
SOIL DYNAMICS AND  
EARTHQUAKE ENGINEERING

July 6 – 11, 2004



DEPARTMENT OF CIVIL ENGINEERING  
INDIAN INSTITUTE OF TECHNOLOGY  
KHARAGPUR 721302, WB



## OBJECTIVE

The objective of the short-term course on Soil Dynamics and Earthquake Engineering at IIT-Kharagpur is to introduce design of foundations elements, earth retaining structures and slopes for earthquakes and earthquake-related soil structure interaction.

## TARGET PARTICIPANTS

The short-term course is primarily designed for the teachers of engineering colleges and polytechnics and practicing engineers, architects and geoscientists interested in the areas of Geotechnical Engineering, Structural Engineering and Engineering Geology.

## REGISTRATION FEE

Participating faculty members from AICTE approved engineering colleges and appropriately accredited polytechnic institutes are eligible to attend this course free of cost. They are also eligible for full travel support and accommodation at one of the Guest Houses of IIT-Kharagpur. Faculty and staff from other educational or research institutions and practicing engineers and scientists interested in Soil Dynamics and Earthquake Engineering can attend the course for a registration fee of Rs. 7,000 per participant to cover for the costs of course material and accommodation at IIT-Kharagpur Guest House.

## COURSE MATERIALS

Course notes will be provided to the participants at no additional cost.

## FURTHER INFORMATION AND CONTACT

For further information of the activities of the NPEEE please visit <http://www.nicee.org/npeee/index.html>.

## COURSE COORDINATORS

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## FACULTY

Dr. Debasis Roy is active in the field of Geotechnical Earthquake Engineering over the last ten years. Before joining the IIT in 2002, he worked as a consulting engineer in India and Canada specializing in earthquake engineering, foundation engineering and seismic risk.

Dr. Nirjhar Dhang is an expert in structural earthquake engineering, soil structure interaction and numerical modeling.

Dr. Sriman K. Bhattacharya is an expert in structural engineering, dynamic fluid-structure interaction, platform modeling and design. His research interest also includes soil-structure interaction and numerical modeling.

Dr. W.K. Mohanty is actively involved in teaching and research in engineering geology, seismic hazard and risk assessment and seismotectonics.

Dr. Sankar K. Nath has been active in teaching and research in seismic tomography, weak and strong motion seismology, geophysical exploration, and earthquake hazard and risk assessment. He is the recipient of the 2002 S.S. Bhatnagar Prize in Earth, Atmosphere, Ocean and Planetary Sciences and the 1999 Mineral Award in Geophysics. Dr. Nath is the institute coordinator for NPEEE activities at IIT-Kharagpur.

Other faculty members from Structural and Geotechnical Engineering groups of Civil Engineering will also participate in teaching.

## COURSE CONTENTS

Earthquake response of soils and foundations, site effects, site amplification, response of one and multi degree of freedom systems, material non-linearity, ductility and response spectra