

# GLOBAL INITIATIVE FOR ACADEMIC NETWORKS



National Coordinating Institute  
**INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR**

[www.gian.iitkgp.ac.in](http://www.gian.iitkgp.ac.in)

## GEOTECHNICAL SITE CHARACTERIZATION AND IN-SITU TESTING WITH EMPHASIS ON ASSESS- MENT OF LIQUEFACTION SUSCEPTIBILITY

### Overview

Site characterization and in-situ testing is almost invariably the first step in any construction project. In many such applications extraction of soil samples of acceptable quality becomes impossible or exorbitantly expensive calling for intrusive and non intrusive probing of the subsurface geology. Continual upgrading of knowledge and sharing of experience becomes vital for students, academics and practitioners involved in heavy civil and mining engineering projects to develop an understanding on recent developments in the field of instrumentation and to assimilate emerging knowledge on characterization of non text- book materials.

Availability of Dr John Hughes, an ex-adjunct professor at the University of British Columbia, who has been involved with a number of site characterization and in-situ testing projects across the world for since 1970s to share his experience in the development of instrumentation, insitu sting methods and project experience provides an enormous opportunity to those interested in geotechnical engineering in India. The proposed course will span over 24 hours of lessons covering basics on statically-triggered, earthquake-related and wave-induced liquefaction, state-of-the-art and emerging technologies on subsurface investigation and in-situ testing on assessment of liquefaction susceptibility and relevant unique experiences on site characterization and insitu testing. The course is planned and offered as per the norms set by IIT Kharagpur pertaining to the GIAN initiative.

This course is organized in two modules that should be taken together. The topics in the course will expose the participants to the use of state-of-the-art insitu testing instruments, data analyses and application of these tests in liquefaction susceptibility assessments. Highlight of the program will be hands on exposure to the piezocone device and data analysis and field demonstrations on the use of non intrusive methods for shear wave velocity profiling and use of the self boring pressure meter.

Course participants will learn these topics through lectures and hands-on demonstrations. Also case studies and assignments will be shared to stimulate research motivation of participants.

#### Modules

**A: Basic Concepts on earthquake induced and statically triggered liquefaction and uses of SPT, and SCPTu in assessing liquefaction susceptibility (June 14-18, 2016)**

**B: The pressure meter technology and its application in assessing liquefaction susceptibility (June 21-25, 2016)**

**Number of participants for the course will be limited to fifty.**

#### Who Should Attend

- You are a geotechnical engineer, a faculty member from an academic institution, a research scientist or a student of geotechnical engineering interested in site characterization and liquefaction assessment with advanced insitu testing procedures.
- You are interested in gaining a hand on introduction to insitu testing and data interpretation techniques on state-of-the-art tools being employed internationally for sub surface characterization of geomaterials

## Fees

The participation fees for taking the course is as follows:

<b>Participants from abroad :</b>	<b>\$ 500</b>
<b>Industry/ Research Organizations:</b>	<b>₹ 20000</b>
<b>Faculty members from an academic institution:</b>	<b>₹ 5000</b>
<b>Bonafide students of Academic Institutions:</b>	<b>₹ 1000 (to be refunded after completion of course)</b>

The above fee include all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, 24 hr free internet facility. The participants will be provided with accommodation on payment basis.

## The Faculty



**John Hughes**, President, Hughes In-situ Engineering, Inc., Vancouver, BC, Canada developed the modern electronic pressure meter during his doctoral work at Cambridge University in England. He has about 40 years' experience with insitu testing and characterization of non text book geomaterials not amenable to standard investigation strategies.



**Debasis Roy** is a Professor of Civil Engineering at IIT, Kharagpur. He has over ten years of experience as a professional engineer. His professional career and research pursuit remained focused on Geotechnical Earthquake Engineering, Ground Improvement, and Insitu testing of Geomaterials.

## Course Co-ordinator

### Prof. Debasis Roy

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## Registration Process

Registration for GIAN courses is not automatic because of the constraints on maximum number of participants allowed to register for a course. In order to register for one or multiple non-overlapping courses, you have to apply online using the following steps:

1. **Create login and password at [www.cep.iitkgp.ac.in/gian](http://www.cep.iitkgp.ac.in/gian)**
2. **Login and complete the registration form.**
3. **Select courses**
4. **Confirm your application and payment information.**
5. **Pay ₹ 500 (non-refundable) through online payment gateway.**

The course coordinators of the selected courses will go through your application and confirm your selection as a participant one month before the starting date of the courses. Once you are selected you will be informed and requested to pay the full fees through online payment gateway service.



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