INTRODUCTION
The basics of the Finite Element Method (FEM) will be discussed at length in this introductory course. Applicability of the method and different types of formulation procedures will be explained. Complete step-by-step details will be presented for typical one, two and three-dimensional analyses. Moreover, FEM formulations will be elaborated for various fields of Civil Engineering such as structural, hydraulics, geotechnical, environmental engineering etc. Computer implementation of the methods and use of various packages will be introduced. Course notes, source code, analysis software and the accompanying manuals will enable the participants to perform routine analyses.

BROAD OBJECTIVES
• To introduce the FEM to the participants.
• To apply the FEM to solve problems in different engineering disciplines viz. stress analysis, hydraulics, environmental and geotechnical engineering applications to familiarize the participants to programming techniques utilized in implementing the FEM.

COURSE CONTENTS
The short-term course aims to include following themes with particular emphasis to Civil Engineering:
• Introduction to FEM
• Advantages and disadvantages of FEM
• Variational and weighted residual formulations
• Formulation of 1-D and 2-D elements, as well as plate and shell elements with sample applications
• Programming techniques utilized in implementing FEM
• Introduction to Boundary Element Method (BEM)
• Demonstration of packages

WHO MAY BENEFIT
Officers, Engineers and Scientists working in structural/ water/ environmental/ geotechnical Engineering areas, Research Organizations, Govt. Engineering Departments, Consulting companies, and self-employed practitioners engaged in the analysis, design, planning, construction, operation, maintenance and management would benefit from the proposed program. As participants are expected from all over India, this course would provide an excellent opportunity for the participants to interact with one another and discuss problems and solutions of mutual interest. At the end of the workshop the participants may be in a position to identify and select appropriate FEM methodologies for their specific conditions.

Boarding & Lodging
Accommodation is available in the Institute Guest house for a limited number of participants on payment as per actual and with advance request.

Faculty
The teaching faculty constitutes experts from various engineering disciplines of IIT Bombay. The core faculty include Prof. Y.M. Desai, Prof. Tarun Kant, Prof. Eldho T.I., etc.

Venue for Classes
Classes will be held in Seminar Hall of Department of Civil Engineering, Guest House, IIT Bombay.

Lecture Notes
To fully realize the objectives of the course, the lecture notes will be made available at the time of registration at IIT Bombay.

Date & Time of Registration:
Online Last Registration Date:
Course date: 20-24 May 2019

20 May 2019, 9.00 AM at Civil Department, IIT Bombay.

Note:
• Incomplete online application forms will not be entertained.

Coordinator Contacts
Phone: (022) – 25767339 / 25767333
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               desai@civil.iitb.ac.in
CEP SHORT TERM COURSE

on

FINITE ELEMENT METHOD & APPLICATIONS IN CIVIL ENGINEERING

20 – 24 May 2019

Coordinators

Prof. T.I. Eldho
Prof. Y.M. Desai
Department of Civil Engineering,

Office of
Continuing Education & Quality Improvement Programs

Indian Institute of Technology Bombay, Powai, Mumbai 400 076, INDIA

COURSE FEE

The fee for the five-day course is Rs. 20000/- + 18% service Tax. Total Rs. 23,600/- per participant. The course fee includes course material, working lunch and coffee/tea. The demand draft may be drawn in favour of “The Registrar, IIT Bombay - CEP Account”. Please note that no income tax is to be deducted at source from the course fee, as IIT Bombay is exempt from the same.

Students and Faculty with valid identity proof and authorization letter from Head of the Institute may be given concession in the fees.

The participants should register for the course and pay the respective course fees online at the following URL on

https://portal.iitb.ac.in/ceqipapp/

Only online registration is accepted for this course

A Certificate of Participation will be awarded to all the participants of the course.

Deadline for submitting application: 1 May 2019
Notification of acceptance: 10 May 2019