

Who can apply ?

- Faculty from all disciplines of engineering and science
- Applied mathematicians
- Faculty of management studies
- Knowledge of basic engineering mathematics is essential

How to Apply ?

The interested candidates may send in their application on a plain paper with their Name, Designation, Address and a one-page letter of motivation for attending the course. The details may be sent as an email attachment to one of the course co-ordinator(s):

Ratna Kumar: ratna@iitm.ac.in

Sundararajan: snatarajan@iitm.ac.in.

Alternatively, the interested candidates may browse for the details of the course and use the online registration link available at the following website: https://home.iitm.ac.in/ratna/aicte_feed/



INFORMATION TO PARTICIPANTS

The course is meant for teaching faculty at AICTE sponsored/recognised engineering colleges. The participants are requested to send a letter of motivation clearly stating why they are interested in this course. The selection of the candidates is based on their letter of motivation and their current status in teaching career. Preference will be given to candidates who wish to pursue *doctoral* studies in the future. The course is completely sponsored by AICTE and hence participants need not pay any registration fees. All the selected candidates will be paid a return journey fare to IIT-Madras from their place of origin by III AC train. The participants will also be provided free boarding and lodging in the institute guesthouse on shared basis.

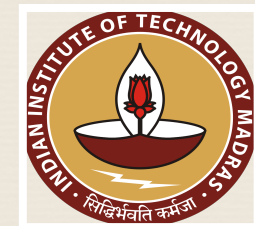
DEPARTMENT OF MECHANICAL ENGINEERING

Indian Institute of Technology-Madras
Chennai - 600036, Tamil Nadu, India.
<https://mech.iitm.ac.in>

FINITE ELEMENT METHOD FOR ENGINEERS FROM ALL DISCIPLINES

AICTE SPONSORED SHORT TERM COURSE

26-Mar-2018 to 01-Apr-2018



Course co-ordinators

Dr. Ratna Kumar Annabattula

Dr. Sundararajan Natarajan

Department of Mechanical Engineering

Indian Institute of Technology Madras

Chennai



FINITE ELEMENT METHOD FOR ENGINEERS FROM ALL DISCIPLINES

COURSE OUTLINE

- ❖ Introduction to the mathematical description of engineering problems
- ❖ Overview of numerical solutions to differential and algebraic equations
- ❖ Overview of the finite element method - Variational approach, Ritz technique, Galerkin method
- ❖ Approximation functions for one, two and three-dimensional elements
- ❖ Application of the FEM to various problems in Science and Engineering: financial modelling, analysing electrical circuits, vibrations and waves, structural analysis, fluid flow and heat transfer.
- ❖ Programming FEM in opensource Julia
- ❖ Development of user element subroutines to use within Abaqus.

COURSE OBJECTIVES

- ❖ To introduce the finite element method as a numerical tool to solve differential equations arising in various engineering disciplines
- ❖ Build confidence in participants through hands-on experience

COURSE SCHEDULE

Day	9:00 – 10:30	10:30 – 11:00	11:00 – 12:30	12:30 – 14:00	14:00 – 16:00
Monday	Lecture (RKA)	Tea	Lecture (RKA)	Lunch	Lab (RKA/TA)
Tuesday	Lecture (SN)		Lecture (SN)		Lab (SN/TA)
Wednesday	Lecture (SN)		Lecture (SN)		Lab (SN/TA)
Thursday	Lecture (SN)		Lecture (SN)		Lab (SN/TA)
Friday	Lecture (RKA)		Lecture (RKA)		Lab (RKA/TA)
Saturday	Lecture (RKA)		Lecture (RKA)		Valedictory

RKA: Dr. Ratna Kumar Annabattula

SN: Dr. Sundararajan Natarajan

TA: Teaching Assistant