

Overview

Finite element modelling has broader and efficient applicability to investigate real-life engineering problems. It can analyse complicated geometry domains, various boundary conditions, non-linearity, and coupled physics phenomena common in scientific problems. Commercial software packages based on the finite element method are often used in industrial, research and academic institutions for the solution of engineering and scientific problems related to solid mechanics, fluid mechanics, heat transfer, electromagnetics and structural dynamics. The intelligent use of these software packages and correct interpretation of the output is often predicted on knowledge of the basic concept of the FEM. This three-week course has been designed to introduce finite element modelling technique, formulation background, and implementation issues in detail. The course will enhance the analysis skill and provides a greater understanding of the problems being solved. This course will be particularly beneficial for diploma engineers, engineering students, practicing engineers, researchers, faculty members and scientists working in various institutions. At the end of the course, participants may be able to identify, select and implement appropriate finite element models for specific conditions.

Eligibility

The course is open to motivated diploma engineers, engineering students, practicing/working engineers, PG and Ph.D. level students, teachers/faculty members of technical institutions who are having a strong willingness to get excellence in their scientific and engineering research pursuits. **Only 80 participations from Himachal Pradesh will be selected as per the scheme norms.**

How to Apply

The registration is open for only residents of Himachal Pradesh. Interested participants from can apply through Google form available at webpage:

<https://forms.gle/4G6umSwTb3bf3uR29>

Registration Deadline: 30th September 2022. Applications will be shortlisted based on academic and research credentials. The shortlisted candidates will be intimated through email.

No registration fee, free accommodation and fooding during the course in IIT Mandi campus.

Course Objectives

- To apply FEM for solving problems related to stress analysis, fluid flow, heat transfer, manufacturing, electromagnetic and vibrations; in the engineering domain of aerospace, civil structures, electronics circuits etc.
- To Implement FEM with computer programming. The course will have sufficient initial lectures on the programming syntax from the basic level, assuming the participants are not familiar with any programming language. The base code for FEM implementation will be shared for the understanding of computer implementation.
- The participants will be trained with latest FEM based software packages used in industries. Hands on practice sessions will be conducted using ANSYS, ABAQUS and DIGIMAT software package.
- To familiarize participants with advancement of FEM techniques (i.e. eXtended Finite Element Method, Mesh-free Methods etc.).

About IIT Mandi

Indian Institute of Technology Mandi or IIT Mandi is located at an average altitude of 3000 feet above sea level in the scenic forested Himalayan mountains along the banks of the river Uhl, a tributary of River Beas. IIT Mandi is an autonomous premier engineering and technology institute located in Kamand valley, Mandi, Himachal Pradesh. The institute was established in 2009 by the Ministry of Human Resource Development, Government of India. The focus of IIT Mandi is to spearhead cutting edge research and development of technologies needed by the world in the years to come. Research groups work together in creating and harnessing the newest technologies needed to serve the people of the region and the country, and to tackle problems of global importance.

Course Coordinators

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For any clarification, please contact:

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Event Webpage: https://research.iitmandi.ac.in/fem_hpknv/

