



Malaviya Mission Teacher Training Programme (MMTTP)

Indian Institute of Technology Mandi
Kamand, Mandi, Himachal Pradesh

06 Days Short Term Course
on

Multiphysics Finite Element Method

(In-online Mode)

24th March – 29th March, 2026

About the Course:

The short-term course on “Multiphysics Finite Element Method (FEM)” is designed to provide faculty members with a comprehensive understanding of numerical modeling and simulation of engineering systems involving coupled physical phenomena. The course emphasizes the theoretical foundations as well as practical implementation of FEM for problems where multiple physics such as structural mechanics, heat transfer, fluid flow, electromagnetics, and their interactions play a critical role.

Participants will be introduced to the governing equations of different physical domains and the principles of their coupling within a unified finite element framework. The course covers one-dimensional and introductory multi-dimensional formulations to build strong conceptual clarity while keeping the mathematical complexity accessible. Special emphasis is placed on multiphysics problems such as thermo-structural interaction, fluid–structure interaction, thermo-fluid systems, and electromechanical (piezoelectric) coupling.

Through expert lectures and guided lab sessions, participants will gain experience in problem formulation, discretization, boundary condition implementation, solution strategies, and post-processing of results. Case studies drawn from real engineering applications will illustrate how Multiphysics FEM is used in the design and analysis of coupled system. By the end of the programme, participants will be able to model, analyze, and interpret multiphysics problems using finite element techniques and apply these skills in teaching, research, and engineering practice.

Participants Eligibility Criteria

Faculty members working in universities and colleges that are included under Section 2(f) of the UGC Act. The teachers of colleges that do not yet come within the purview of Section 2(f), but have been affiliated to a university for at least three years, will be permitted to participate in the courses. These conditions are applicable only for Residential Training Programmes/Courses.

Application/Registration Procedure

The participants should first register at <https://mmc.ugc.ac.in/> and create an account.

- After logging in as participant using User ID and Password, from the dashboard, click on “Apply for Guru Dakshta (FIP), Refresher Course and Short-Term Programme/Faculty Development Programme”, next start filling the application form.
- In the application form, select “Apply for” as “Short Term Programme (online)”, next give details of your earlier participation in FIP, next select “Programme Name & Centre Name” as “Indian Institute of Technology Mandi”, later fill in the remaining items and submit the application form.

Salient Features of the Course

- The course will be of one weeks’ duration, with a minimum of 6 days and 36 contact hours. The course will have 18 hours of lectures by resource persons and 18 hours of lab sessions.
- There will be MCQ based assessment examination conducted at the end of the course. This course will be considered for fulfilment of the requirements as laid down by UGC for Career Advance Scheme.
- Application / registration is free of cost.
- A Certificate will be issued to those who have attended all the sessions and have qualified the Assessment examination.

This course is beneficial for individuals looking to stay updated with current trends in research and improve their overall academic and professional output. After attending the course, the participants will independently and accurately be able to perform better research, writing and analysis.

| MMTTP Coordinator | Resource Person(s) |
|-------------------|--|
| Prof Atul Dhar | Prof Rajeev Kumar Prof Mohammed Talha |

| Important Dates | Contact |
|--|--|
| Application Deadline Date: 22 nd March 2026 | mmttp@iitmandi.ac.in |
| Programme Start Date: 24 th March 2026 End Date: 29 th March 2026 | |

Relevant Important Links:

- **Step-by-Step Process:**

https://docs.google.com/document/d/1zyGtudBOAj7MswcjSs7vmC_N-Vd3jI9W/edit?usp=sharing&ouid=112681287609063730528&rtpof=true&sd=true

- **User Participant Manual Link:**

<https://mmc.ugc.ac.in/S/MMTTP%20User%20Manual%20Participants.pdf>

- **MMTTP Website:** <https://mmc.ugc.ac.in/>