Malaviya Mission Teacher Training Programme (MMTTP)

Indian Institute of Technology Mandi
Kamand, Mandi, Himachal Pradesh

06 Days INTERDISCIPLINARY STC

on

COMPUTATIONAL FLUID DYNAMICS AND HIGH-PERFORMANCE COMPUTING

(Online)

February 23 – 28, 2026

About the Course:

The main aim of this short-term course is to facilitate Faculty members from different regions of the country to gain knowledge from Experts to equip participants with advanced knowledge and skills in Computational Fluid Dynamics and High-Performance Computing to enhance their research capabilities. The development of modern computational fluid dynamics (CFD) began with the advent of the digital computer in the early 1950s. Since then, it has been used by researchers, industry personals to solve the problems of fundamental interest and industrial relevance in the broad domain of fluid flow and heat transfer. This course will provide an introduction to the theoretical fundamentals as well as to the use of commercial and opensource CFD codes to analyze flow and heat transfer in problems of practical engineering interest. Participants will be trained to preprocess raw geometric data, mesh it and then develop a CFD model. In this process, participants will understand the process of developing a geometrical model of the flow, applying appropriate boundary conditions, specifying solution parameters, and visualizing and analyzing the results.

The course will also introduce high-performance scientific computing (HPSC) to the participants which will be useful for starting their research in numerical sciences (e.g. computational mechanics, molecular dynamics, etc.). This course will cover efficient programming techniques (including Python and shell scripting), version control, parallel programming using OpenMP and MPI, graphics and visualisation, and cloud computing. These techniques will help the participants carry out their numerical research more effectively. Fortran/C will be used as the base programming language for

implementing OpenMP and MPI directives. Each course lecture will be supplement by problem solving sessions helping reinforce the concepts.

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 apply only to 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 "STP/FDP", 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 short-term course will be of 06 days duration, with a minimum of 36 contact hours (six hours a day, six days a week). The course will have 24 hours of lectures by resource persons and 12 hours of hands-on sessions, project works and other activities.
- There will be MCQ based assessment examination conducted at the end of the program. This program 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 STP, the participants will independently and accurately be able to perform better research, writing and analysis.

Program Director	Course Coordinator(s)
Prof. Atul Dhar	Prof. Atul Dhar,, School of Mechanical and Materials Engineering, IIT Mandi

Important Dates	Contact
Application Deadline Date: 18th February 2026	mmttp@iitmandi.ac.in
Programme Start Date: 23rd February 2026 End Date: 28th February 2026	

Relevant Important Links:

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

  https://docs.google.com/document/d/1WbBBISSfFeJtNqkAkRP-t6dSU6rFAdmH/edit?usp=sharing&ouid=107195621035338052957&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/