

## ABOUT THE INSTITUTION

National Institute of Technology Hamirpur is one of the thirty-one NITs of the country, established in 1986 as Regional Engineering College, as a joint and cooperative enterprise of the Govt. of India and Govt. of Himachal Pradesh. On 26th June 2002, REC Hamirpur was awarded the status of Deemed University and upgraded to National Institute of Technology.

The goals of the institute as embodied in the logo are truly remarkable in their scope of vision. The Institute provides Undergraduate, Postgraduate and Doctorate Education in Engineering, Sciences & Humanities; fostering the spirit of National Integration among the students, a close interaction with industry and a strong emphasis on research, both basic and applied.

## ABOUT THE DEPARTMENT

The Department of Mechanical Engineering came into its existence right from the inception of the Regional Engineering College Hamirpur (now National Institute of Technology Hamirpur) in the year 1986 and served as catering department to other disciplines. The discipline of Mechanical Engineering started offering undergraduate programme leading to four year Bachelor of Technology (B.Tech) degree in Mechanical Engineering in the year 1994.

The Department of Mechanical Engineering has evolved into one of the finest in terms of teaching curriculum and methodology supported by a well-organized and adequately funded research program. The Department has a very well-established B. Tech. program complemented by M.Tech. and Ph.D. programs in Design, Thermal, and Manufacturing.

### Patron

Prof. H. M. Suryavanshi  
Director, National Institute of Technology  
Hamirpur

### Chairman

Dr. Prashant Kumar  
Head, Mechanical Engineering Department

### Convener

Dr. Mohit Pant

### Coordinator (s)

Dr. Anshul Sharma  
Dr. Niharika Gupta

### Treasurer

Dr. Mohit Pant

### Organizing Committee

All Faculties and Staff Members of  
Mechanical Engineering Department, NIT  
Hamirpur

### Contact Persons

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**Dr. Niharika Gupta**  
Assistant Professor  
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### Online

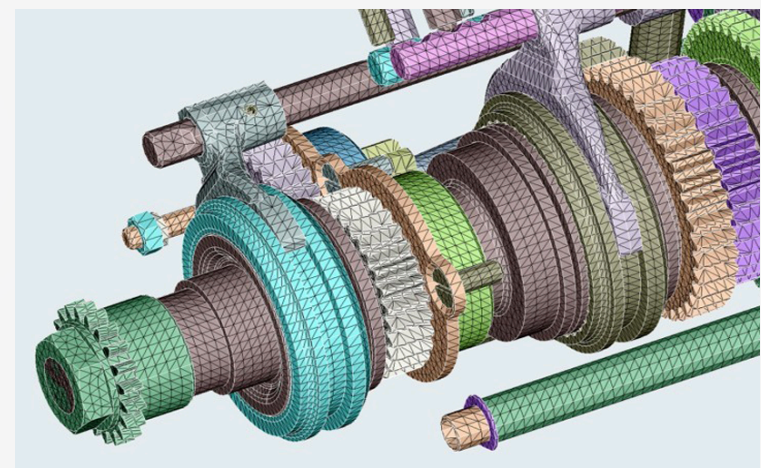
### Short-Term Course (e-STC)

on

# APPLIED FINITE ELEMENT ANALYSIS FOR STRUCTURAL AND BIOMEDICAL APPLICATIONS

(BioStruct-FEA 2025)

19th May – 23rd May 2025



Organized by

Department of Mechanical Engineering  
National Institute of Technology Hamirpur  
Hamirpur, Himachal Pradesh, India

Web: [www.nith.ac.in](http://www.nith.ac.in)

## OBJECTIVES

- ▶ To provide participants with a solid foundation in the theory and mathematical formulations of finite element analysis (FEA) for structural engineering problems.
- ▶ To introduce participants to efficient modeling and meshing techniques for structural components under static and dynamic loads.
- ▶ To provide an overview of the role of FEA in analyzing biomechanical systems, such as bone, tissue, and implants.
- ▶ To enable participants to create FEM algorithms, for simple one-dimensional problems, on MATLAB.
- ▶ To enable participants to analyze more complex problems (Structural, vibration analysis and Biomedical) using commercial FEM software ANSYS.
- ▶ Enhance the ability of participants to approach and solve engineering problems systematically using FEA.
- ▶ Equip participants with advanced simulation skills to contribute to academic or industrial research.

## TOPICS TO BE COVERED

- ★ Introduction to Finite Element Method and Basic Concepts
- ★ FEM Formulation for Structural Problems
- ★ FEM as a tool for Biomedical Applications
- ★ Introduction to ANSYS and COMSOL Environment and their Practical Implementation for Structural & Biomedical Applications
- ★ Introduction to MATLAB: Basics and Programming

## RESOURCE PERSONS/SPEAKERS



Prof. Sundararajan Natarajan  
Dept. of Mechanical Engineering  
IIT Madras



Prof. Naveen Kumar  
Dept. of Mechanical Engineering  
IIT Ropar



Dr. Himanshu Pathak  
School of Mechanical and  
Materials Engineering, IIT Mandi



Expert from ANSYS



Expert from COMSOL Multiphysics



Dr. Mohit pant  
Dept. of Mechanical Engineering  
NIT Hamirpur



Dr. Anshul Sharma  
Dept. of Mechanical Engineering  
NIT Hamirpur



Dr. Niharika Gupta  
Dept. of Mechanical Engineering  
NIT Hamirpur

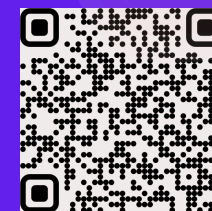
## REGISTRATION FEES

- Students (UG/PG/Ph.D.) : Rs. 200
- Faculties and Scientists: Rs. 500
- Industry Personnel: Rs. 700

## HOW TO APPLY

The interested participants must deposit the nonrefundable registration fee through SBI-I collect and filling the Google form as given below:

<https://forms.gle/qJGQcuBdHrjcfq2K7>



The SBI collect has following steps:

- 1) Visit SBI collect
- 2) Select State of Corporate/ Institution: Himachal Pradesh and Type of Corporate/Institution as Educational Institution and click Go.
- 3) Select Educational Institutions Name: NIT Hamirpur
- 4) Select Payment Category: WORKSHOP STC FDP CONFERENCE (Last option)
- 5) Fill up all the details.
  - a. Write TITLE of e-STC
  - b. Organizing Department
- 6) Address: Filling Postal code is must
- 7) Submit the form and generate the receipt.

Notes: The applications will be accepted on “**first come first serve**” basis.

The link for the online course will be shared through email/ WhatsApp group later.

## IMPORTANT DATES

Last Date of Registration : 15th May, 2025