

**Online**  
**Short-Term Course (e-STC)**  
**On**  
**CONDITION MONITORING OF**  
**MECHANICAL SYSTEMS**  
**(CMMS-2024)**  
**16<sup>th</sup> September –20<sup>th</sup> September 2024**  
**(Five Days)**



**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)**

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**Department of Mechanical Engineering**  
**National Institute of Technology Hamirpur**  
**Hamirpur-177005, Himachal Pradesh, India.**

**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 26<sup>th</sup> 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.

## Objective of e-STC

- ❖ To provide a comprehensive overview of fundamentals and concepts of continuously monitoring the health and performance of machinery to detect any changes or faults that could lead to downtime or failures.
- ❖ To explore the various vibration and noise-based condition monitoring techniques, fundamentals of lubrication and fault diagnosis and signal processing of Mechanical systems.
- ❖ To teach the participants to do software coding and computational modelling on vibration-based condition monitoring and performance evaluation of various tribological elements.
- ❖ To present real-world case studies and practical examples demonstrating successful implementation of condition monitoring in various sectors like automobile, coal mines, etc. Participants can acquire insights into challenges, solutions, and best practices from these cases.

## Resource Persons/Speakers

Faculties/Experts from IITs, NITs, Industries and other premier Institutions/Organizations will deliver the lectures.

## Topics to be Covered:

Fundamentals of condition monitoring of Mechanical Systems, Noise monitoring techniques, Fundamentals of Lubrication, Lubricant analysis with case studies, Condition monitoring of various machine elements, Architecture and Design of Critical Monitoring Systems: Hardware and Signal Processing, Fault diagnosis of Mechanical Systems, Vibration analysis using MATLAB etc.

## Certificate

e-Certificate will be issued to the participants, with at least 75% attendance and after successfully submitting the feedback form on completion of the online STC.

## Important Dates

Last Date of Registration	12 <sup>th</sup> September 2024
e-STC Duration	16 <sup>th</sup> -20 <sup>th</sup> September 2024

## About the e-STC

Effective condition monitoring helps in reducing unplanned downtime, optimizing maintenance schedules, extending equipment lifespan, and improving overall reliability and safety of mechanical systems. Condition monitoring techniques and technologies continue to evolve. This short-term course provides insights into the latest advancements, best practices, and emerging trends in the field, ensuring participants stay current and informed. This course not only bridges the gap between experts and new researchers but also offers an exceptional learning opportunity for participants. Attendees can grasp cutting-edge concepts, engage in discussions with industry leaders, and gain insights into practical applications through interactive sessions. Moreover, it serves as a platform for speakers to share their extensive knowledge and expertise among students and faculty members, encouraging a rich exchange of ideas and skills essential related to the course.



## Eligibility

This program is open to faculty members, scientists, research scholars, PG & UG Students and industrial Personnel.

**Registration Fee: Rs. 200 for each participant**

## 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/eofFs28EfuPvGT5k7>



## The SBI-I collect has following steps:

- 1) Visit SBI collect at <https://www.onlinesbi.sbi/sbicollect/icollecthome.htm>
- 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.

**Venue:** Through Google Meet. The link for the online course will be shared through email/ WhatsApp group later.