

Online Short-Term Course (e-STC)

On

Microwave Antennas, Filters, and Circuits: Fundamentals to Advanced

1st - 5th December 2025

An Initiative of
National Institute of Technology Hamirpur

(An Institute of national Importance)

Hamirpur – 177005, Himachal Pradesh, India



Organized by

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**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. 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

Established in the year 1988, the Electronics & Communication Engineering (E&CE) Department NIT Hamirpur, HP, has built an International reputation for excellence in teaching, research and service. Electronics engineers are changing the world to a comfortable global home. The information and technology revolution has been built on the advances of Electronics. The E&CE Department takes pride in its high National rankings and the International recognition its faculty has received from their peers.

Department of ECE is making exhilarating progress in areas ranging from microelectronics, signal processing, machine learning, mobile communications to VLSI Design Automation. In labs and classrooms, students draw on the expertise and knowledge of our able faculty, integrating practical, hands-on research experience with challenging and interesting coursework. The department runs M.Tech. in VLSI Design Automation & Techniques (VDAT) since 2006, M.Tech in Communication Systems and Networks and Also has over 30 PhD Scholars involved in various research in the department.

Objective of e-STC

The objective of this online short-term course is to provide participants with a comprehensive understanding of the fundamentals and advanced concepts of microwave antennas, filters, and circuits. The course aims to enhance knowledge of theoretical principles, design methodologies, and practical applications, enabling participants to develop skills for research, innovation, and problem-solving in modern RF and microwave engineering.

Resource Persons/Speakers

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

Number of Participants

Number of participants is limited for this e-STC. Application will be accepted **on first-cum-first serve basis**.

Targeted Participants

Faculty members from educational institutes, research scholars, UG/PG/PhD students, and employees from the industries.

Topics to be Covered

Fundamentals: Basics of Electromagnetic Waves and Transmission Lines, Microwave Network Parameters, Power Flow, Impedance Matching; Microwave Circuit: Passive Microwave Components, Microwave Resonators and Oscillators; Microwave Filters: Fundamentals of Filter Theory: Low-pass, High-pass, Band-pass, and Band-stop, Filter Design Techniques: Lumped, Distributed, and Planar, Advanced Filters: Dual-band, Multiband, and Reconfigurable Filters, Emerging Trends: Substrate Integrated Waveguide (SIW) and MEMS-based Filters; Antennas: Antenna Fundamentals: Radiation Mechanisms, Parameters, and Patterns, Microwave Antennas: Horn, Slot, Microstrip Patch, and Dielectric Resonator Antennas, Antenna Arrays: Theory, and Beamforming, Advanced Antenna Technologies: MIMO, Reconfigurable, and Metamaterial Antennas, etc. Advanced Topics & Applications: Metamaterials and Metasurfaces, Absorbers and EMI/EMC Considerations, Applications in Wireless Communications, Radar, Satellite, and 5G/6G and beyond.

Registration Fee Details

Participants	Amount(in Rs.)
Faculty members or Participants from Academia/R&D Labs	500/-
Students (UG, PG, PhD)	200/-
Participants from Industries	1000/-

Participants should have minimum 80% attendance.

Certificate

e-Certificate will be issued to the participants after successful submitting the feedback form on completion of the online workshop.

How to Apply

The interested participants should register by paying the registration fee at **SBI-I collect** and filling the Google form through the below link:

<https://forms.gle/yECvuyPQSuXzQxb78>

The SBI-I collect has following steps:

- Visit SBI collect at <https://www.onlinesbi.com/sbicollect/icollecthome.htm>
- Click on Proceed after accepting terms and conditions.
- Select State of Corporate/ Institution: Himachal Pradesh and Type of Corporate/Institution as Educational Institution and click Go.
- Select Educational Institutions Name: NIT Hamirpur
- Select Payment Category: WORKSHOP STC FDP CONFERENCE (Last option)
- Fill up all the details.
 - Write TITLE of e-Workshop
 - Organizing Department
- Address: Filling Postal code is must
- Submit the form and generate the receipt.

Last Date of Registration: 30th Nov. 2025