

# Six Weeks Online Summer Internship program

On

## Recent Trends of RF Technology

(Simulation and Fabrication)

June 21- July 30, 2021



### Organized By

Department of Electronics and Communication Engineering  
Sant Longowal Institute of Engineering & Technology  
(Deemed to be University Under MoE, Government of India )  
Longowal -148106, Dist. Sangrur (Punjab)

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### ABOUT THE INSTITUTE



Sant Longowal Institute of Engineering & Technology (SLIET), Deemed to be University, has been established and funded by MoE, Government of India in 1991, to provide technical education in emerging areas of Engineering and Technology. The institute caters to the technical manpower requirements at various levels by adopting a concept of a modular system in imparting professional education with an emphasis on practical training in the industry. The study programs include various courses at certificate, diploma, B.E. M.Tech. and Ph.D. levels in different branches of engineering and technology. The institute has a sprawling area of 451 acres of land. Surrounded by lush green land, the campus of the institute extends a beautiful and well-developed area with many topographically featured picturesque landscape.

### INSTITUTE VISION

SLIET shall strive to act as an international podium for the development and transfer of technical competence in academics through formal and non-formal education, entrepreneurship, and research to meet the changing need of society.

### INSTITUTE MISSION

- Non formal, flexible, modular, multipoint entry programmes in engineering and technology and in the areas like rural development, educational planning, information and management sciences.
- Education and training in modern technology areas.
- Promotion of self-development among the students.
- Extension services to industry working population, passed-out students, social organizations and institutions of research and higher learning.
- Close interface with the industry to conduct research on the basis of manpower requirements leading integrated educational planning curriculum development and instructional material preparation in technology and inter-disciplinary areas.

## DEPARTMENT OF ECE

The Department of Electronics and Communication Engineering aims to provide quality education to youngsters so that they can contribute to the development of the nation. Promoting Industry involvement in student projects, placement, joint R & D ventures, organizing collaborative programs with premier institutions are the prime objectives of the department. The department has experienced, dedicated, and highly qualified faculty in specialized areas with significant publications in reputed journals. The curriculum reflects dynamic changes relevant to today's marketplace and offers more opportunities for internships and training to the students. The courses being run by the department include:

- Integrated Certificate-Diploma Program DEC
- B.E. (Electronics & Communication Engg.)
- M.Tech. (Electronics & Communication Engg.)
- Ph.D. Programme

## ABOUT THE PROGRAM

The main aim of this program is to train the fresher B. Tech. (3<sup>rd</sup> and 4<sup>th</sup> year) M. Tech., researcher and faculty undergone for R&D and communication industry. RF Circuits 'designs are play the central role of most of the present research in communication industries and commercial activities in Electronics and communication Engineering. This training program focuses on specific RF circuit design using theoretical techniques as well Electromagnetic software tool.

## OBJECTIVES OF PROGRAM

The main objective of this training program are as follows: -

- To expose the participants to various modelling, simulation, and design techniques, applied to contemporary problems in the field of RF Technology
- To train the Engineering student (B.Tech. & M.Tech.), Researchers, and faculty members with latest software and hardware.
- To provide a forum to exchange and stimulate new ideas.

## RESOURCE PERSONS

Renowned experts and researchers from premier Institutions (IIT/NITs) and other organizations and industries will deliver expert lectures.

## TRAINING PROGRAM CONTENTS:

- Introduction to Antenna
- Introduction to RF Filters
- Basic of Transmission line
- Basic of microstrip line
- 5G/6G RF Technology
- Internet of Things (IOT)
- Substrate Integrated Waveguide Technology
- Theoretical Modeling of RF filters
- Implementation of RF filters/Antennas using Software
- MIMO Antennas
- Self-Multiplexing Antennas
- Terahertz Antenna and Filters
- RF Amplifiers
- RF Sensor
- Dielectric Resonator Antennas
- Computational modeling Techniques
- Biomedical Antenna Design
- Nanoscale Based Antenna Design Applications
- Python/JAVA/C++
- **Project:** Design and Implementation of RF Circuits for 5G and 6G Communication

## ELIGIBILITY

B.Tech. (Third and final year) students, M.Tech. Students, research scholars and faculty belonging to engineering & applied sciences disciplines from Colleges and Universities. The program is also useful to industrial practitioners working at an appropriate level.

## REGISTRATION

The registration will be done online using the link

<https://docs.google.com/forms/d/1uunbCLr5JnWGysAHVj7FQ9w-6aPtjm8TjH9RQ0IRvgU/edit>

No registration fees for participants from SLIET. Rs. 500/- for participants outside the SLIET. Bank details will be provided later.

## IMPORTANT DATES

- Last date for registration: June 20, 2021, Time: 5 PM
- Notification of selection: June 20, 2021, Time: 8 PM

## Participant can join in module-1/Module-2/Module-3/Any two module/ all the modules

### Module-1: Two weeks Online Summer Internship program

- Introduction to Antenna
- Python
- JAVA
- C++
- MATLAB
- Introduction to RF Filters
- Basic of Transmission line
- 5G/6G RF Technology
- Internet of Things (IOT)

### Module-2: Four weeks Online Summer Internship program

- Topic mentioned in module 1
- Basic of microstrip line
- Co-planar Waveguide
- Conventional Waveguide
- Substrate Integrated Waveguide Technology
- Metamaterial
- Theoretical Modeling of RF filters
- Implementation of RF filters/Antennas using Software
- MIMO Antennas
- Self-Multiplexing Antennas
- Terahertz Antenna and Filters
- RF Amplifiers
- **Project:** Design and Implementation of RF Circuits for Wireless Communication

### Module-3: Six weeks Online Summer Internship program

- C++
- JAVA
- Python
- MATLAB
- Introduction to Antenna
- Introduction to RF Filters
- Basic of Transmission line
- Basic of microstrip line
- 5G/6G RF Technology
- Internet of Things (IOT)
- Substrate Integrated Waveguide Technology
- Theoretical Modeling of RF filters
- Implementation of RF filters/Antennas using Software
- MIMO Antennas
- Self-Multiplexing Antennas
- Terahertz Antenna and Filters
- RF Amplifiers
- RF Sensor
- Dielectric Resonator Antennas
- Computational modeling Techniques
- Biomedical Antenna Design
- Nanoscale Based Antenna Design Applications
- **Project:** Design and Implementation of RF Circuits for 5G Communication