NALLA NARASIMHA REDDY

Education Society's Group of Institutions–Integrated Campus

(Approved by AICTE & PCI, New Delhi & Affiliated to JNTUH, Accredited by NAAC with A+ Grade)

Near Narapally, Chowdariguda (V), Korremula 'X' Road, Ghatkesar (M), Medchal-Malkajgiri (D), Hyderabad - 500088, Telangana.

(UGC AUTONOMOUS INSTITUTION)

School of Engineering

DEPARTMENT OF
ELECTRONICS AND COMMUNICATION ENGINEERING

A Report

One week SDP on

"Exploring Optimizable and Generative Communication Technologies"

from 10/06/2024 to 15/06/2024

The Research Group NICoN-Department of ECE successfully conducted a week workshop on "**Exploring Optimizable and Generative Communication Technologies**" for II B.Tech. students from 10th June 2024 to 15th June 2024. This workshop aims to provide insight into the importance of MATLAB Software and its related tools for student development in the fields of wireless communication, signal processing, antenna design, Simulink, image processing, and so on. The workshop comprises of theoretical lectures and demonstrations of the software and various toolboxes by department faculties.

The students got exposure to MATLAB coding, wireless communication, LIFI technology, Antenna design, Simulink usage for communication, and Image processing toolboxes. As an outcome of the workshop, the students can develop programming code, process of communication, antenna design, and simulation.

Totally 49 students participated in the workshop and it was organized in association with **the IETE Student Forum (ISF).**

Dr. S Rekha, Mr. Aravind, and **Mrs. ANURADHA** worked as Faculty Coordinators for this workshop.

NICoN Research group with Director, Dean, and HoD

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On 10th June 2024:

Day-1 INAUGURATION (9:45 am to 11 am):

The workshop was inaugurated by Director, Dean-School of Engineering, and ECE-Head at the ECE seminar hall from 9:45 am to 11 am.

Day-1 Forenoon (11:15 am to 12:50 pm) and Afternoon (1:30 pm to 4:00 pm):

The workshop started from forenoon session 2 in which **Dr. S Rekha** delivered the lecture on **"Realizing Antennas using MATLAB"** and related concepts. The afternoon session is followed by hands-on training using MATLAB.

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Dr. S. Rekha, Associate Professor as resource person delivered the concepts of
"Basics of Antenna"

Day 2 Forenoon and Afternoon Session:

In the morning session, **Mr. Prashanth Kulakarni** handled the theoretical session on **"Wireless sensor network technologies and their implementation in MATLAB"** followed by practical sessions in the afternoon.

Mr. Prashanth Kulkarni, Associate Professor of ECE, as a resource
person delivered the concept of wireless communication.

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Day-3 Forenoon and Afternoon Session:

In the morning session, resource person **Mr. A. Aravind** delivered a lecture on **"OTFS".** The afternoon session is followed by hands-on and project implementation.

Mr. A. Aravind, Assistant Professor of ECE delivered lecture on
OTFS

Day-4 Forenoon session 1:

In morning session, resource person **Mrs T Swetha** delivered lecture on **"Light Fidelity-LIFI Technology"**

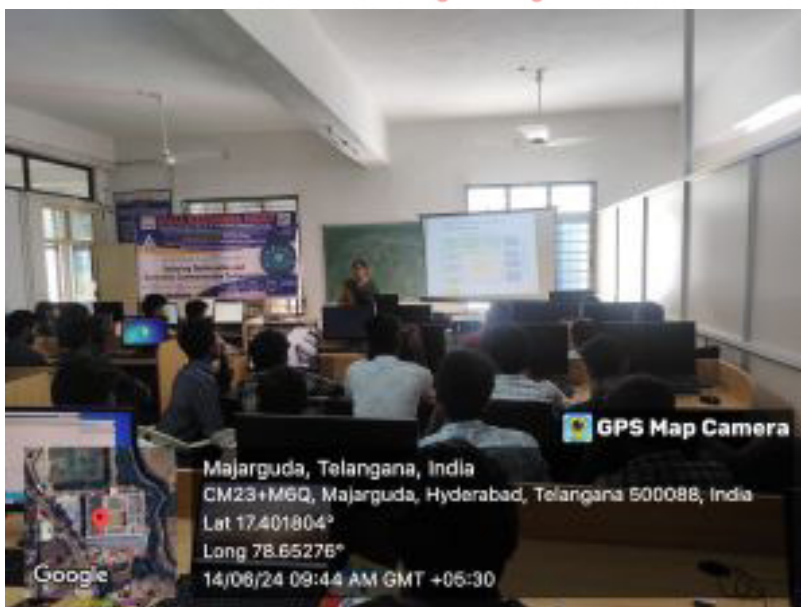Mrs. T Swetha, Assistant Professor of ECE, delivered the concept of "LIFI Technology"

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Day-4 Forenoon session 2:

Forenoon session 2 is handled by resource person **Mrs. K. Anuradha** on **"Introduction to Simulink – Design of Communication System".** In the afternoon session, implementation of coding and students project work is carried out.

Mrs. K. Anuradha, Assistant Professor of ECE, delivered basic concepts of SIMULINK in MATALB for Designing communication system

Day-5 Forenoon and Afternoon Session:

In the morning session, resource person Mrs. G. Soumya delivered a lecture on "**Visualizing Communication: Essential Digital Image Processing Fundamentals**" followed by hands-on training on Image processing tools in the afternoon session.

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Mrs. G. Soumya, Assistant Professor of ECE, delivered basic concepts of Image processing

Day-6 Forenoon session:

In the morning session, resource person **Mr. N. Raju** delivered a lecture on **"HFSS Introduction"** to the students followed by hands-on training in the afternoon session.

Mr K Raju, Assistant Professor of ECE, delivering lecture
on "HFSS Introduction"

Day-6 Afternoon session 2 (Valedictory):

The valedictory program is organized during the afternoon session. The program is felicitated by Dean and Hod-ECE.

![NNRG Logo] **NALLA NARASIMHA REDDY**
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Dean, School of Engineering - NNRG addressing the students and the faculties

The NICoN team was felicitated by the Dean, School of Engineering - NNRG

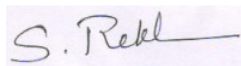**Student participants receiving merit certificates from HoD-ECE – A Glimpse**

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HoD-ECE addressing the gathering

Outcomes of the Workshop:

After the completion of workshop, the students are able to Code a program in the MATLAB, design in Simulink, compile, debug and visualize the output

1) Implement WSN in MATLAB
2) Design antenna and simulation using ANSYS HFSS tool
3) Implement Li-Fi coding
4) Implement Simulink for designing a communication system
5) Develop code for image processing applications.

Place: Hyderabad
Date: 15/06/2024

NICoN-SPoC

R & D Co-ordinator

HOD-ECE