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Department of Electronics and Communication Engineering

Academic year : 2023-2024

Name of the Faculty : Ms.C.Mullaikodi

Course code & Title : EC3501/Wireless Communication

Degree & Semester : B.E ECE & V

Name of the topic : WIFI,GPRS

Innovative Method : Field Visit to K-Lite

Date : 11.09.2024

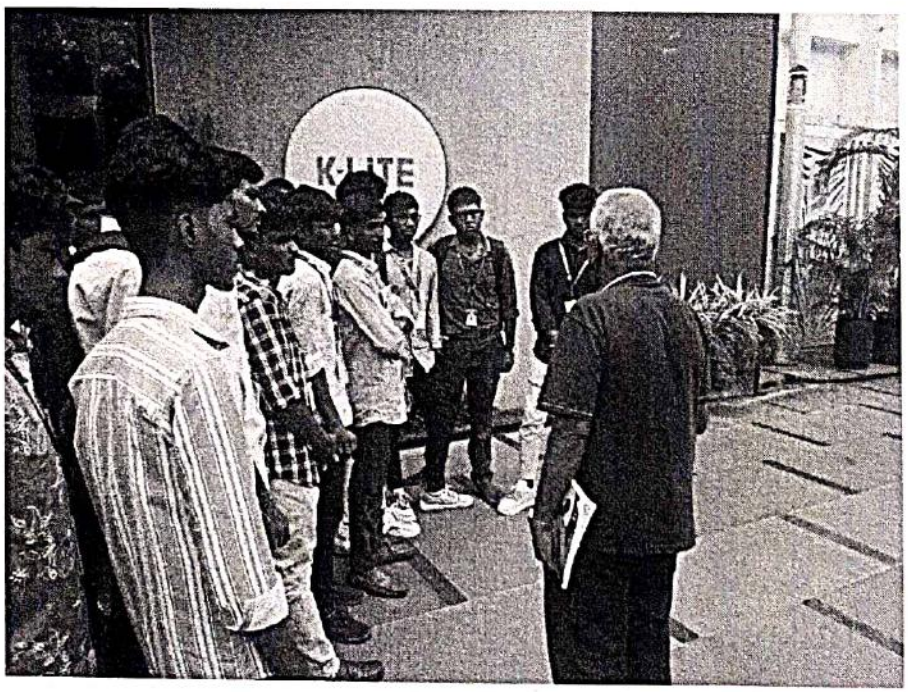

Fig. Field visit to K-Lite

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Field Visit Report: K-LITE Industries

Faculty: Ms. C. Mullaikodi

Course Code & Title: EC3501 - Wireless Communication

Degree & Semester: B.E ECE, V Semester

Topic: Wi-Fi and GPRS

Innovative Method: Field Visit to K-LITE Industries

1. Introduction

On 11.09.2024, the second-year B.E. Electronics and Communication Engineering students, under the guidance of Ms. C. Mullaikodi, visited K-LITE Industries in Chennai. The primary objective was to gain practical insights into the applications of wireless communication technologies, specifically Wi-Fi and GPRS, in industrial settings.

2. Company Overview

K-LITE Industries, established in 1977, is a renowned manufacturer specializing in indoor and outdoor LED luminaires, poles, and various lighting solutions. Their headquarters is located at D-10, 4th Street, Ambattur Industrial Estate, Chennai – 600058, Tamil Nadu, India.

3. Objectives of the Visit

- Understand the implementation of Wi-Fi and GPRS technologies in industrial applications.
- Observe real-world applications of wireless communication in manufacturing processes.
- Bridge the gap between theoretical knowledge and practical applications.

4. Activities During the Visit

Upon arrival, we were welcomed by the company's technical team, who provided an overview of K-LITE's product portfolio and their integration of wireless technologies. The session included:

- **Presentation:** An introduction to K-LITE's history, products, and market presence.
- **Technical Discussion:** Detailed insights into how Wi-Fi and GPRS are utilized in their lighting solutions for remote monitoring and control.
- **Factory Tour:** A guided tour of the manufacturing units, showcasing the production process and the role of wireless communication in quality control and automation.

5. Key Observations

- **Wi-Fi Integration:** K-LITE employs Wi-Fi technology to enable smart lighting solutions, allowing users to control lighting systems remotely via mobile applications.
- **GPRS Utilization:** For outdoor lighting in remote areas, GPRS is used to monitor and manage lighting systems where Wi-Fi connectivity is limited.
- **Automation:** The integration of wireless communication has enhanced automation in their manufacturing processes, leading to increased efficiency and reduced manual intervention.

6. Learning Outcomes

The visit provided students with a comprehensive understanding of:

- The practical applications of Wi-Fi and GPRS in industrial products.
- The challenges and solutions in implementing wireless technologies in manufacturing.
- The importance of continuous innovation in engineering to meet market demands.

7. Conclusion

The field visit to K-LITE Industries was an enlightening experience, effectively bridging the gap between classroom learning and real-world applications. It highlighted the significance of wireless communication technologies in modern industrial practices and inspired students to explore innovative solutions in their future careers.

8. Acknowledgements

We extend our gratitude to the management and staff of K-LITE Industries for their hospitality and for providing valuable insights into their operations. Special thanks to Ms. C. Mullaikodi for organizing this informative visit.

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Department of Electronics and Communication Engineering

Academic year : 2023-2024

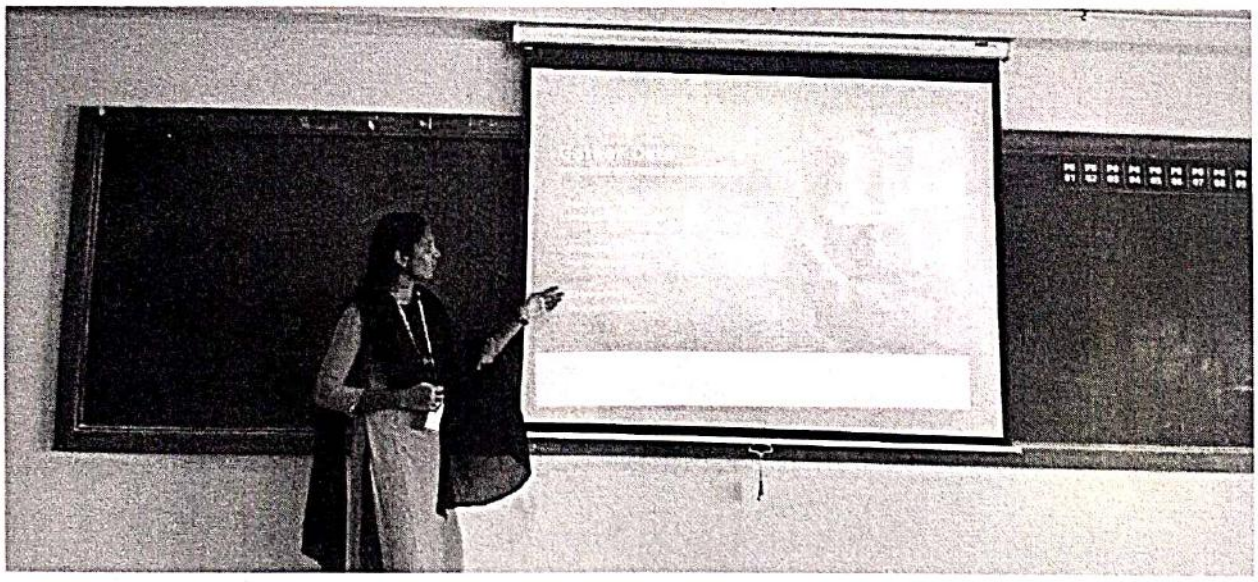
Name of the Faculty : Ms.P.B.Smitha

Course code & Title : CEC345/Optical Communication and Networks

Degree & Semester : B.E ECE & V

Name of the topic : Total internal reflection-Acceptance angle

Innovative Method : Seminar



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Report on Innovative Teaching Method

Course: CEC345 – Optical Communication and Networks

Degree & Semester: B.E ECE & V

Faculty: Ms. P.B. Smitha

Topic: Total Internal Reflection and Acceptance Angle

Innovative Method: Seminar

Introduction

Understanding the principles of total internal reflection and acceptance angle is fundamental in the field of optical communications, as these concepts are pivotal in the design and functioning of optical fibers. To deepen students' comprehension and encourage active learning, a seminar-based approach was implemented as an innovative teaching method.

Objective

The primary objectives of utilizing the seminar method were to:

- Promote in-depth understanding of total internal reflection and acceptance angle through research and presentation.
- Enhance students' communication and presentation skills.
- Foster collaborative learning and critical thinking among students.

The seminar was conducted as follows:

Preparation:

- Students were divided into small groups and assigned specific subtopics related to total internal reflection and acceptance angle, such as:
  - Fundamental principles of total internal reflection.
  - Mathematical derivation of the critical angle.
  - Role of acceptance angle in optical fiber design.
  - Applications of these principles in modern optical communication systems.
- Each group conducted research using textbooks, scholarly articles, and reputable online resources to prepare their presentations.

Execution:

- Over a series of class sessions, each group delivered a 15-minute presentation on their assigned subtopic, utilizing visual aids such as slides and diagrams to enhance clarity.
- Presentations were followed by a Q&A session, encouraging audience engagement and discussion.

Outcome

The implementation of the seminar method yielded several positive outcomes:

- **Enhanced Understanding:** Students developed a deeper grasp of complex concepts through active research and peer-to-peer teaching.
- **Improved Communication Skills:** The process of preparing and delivering presentations bolstered students' ability to convey technical information effectively.
- **Increased Engagement:** The interactive nature of seminars fostered a collaborative learning environment, prompting students to engage critically with the material and with each other.

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Department of Electronics and Communication Engineering

Academic year : 2022-2023

Name of the Faculty : Ms.N.Malathy

Course code & Title : EC3353/Electronic Devices and Circuits

Degree & Semester : B.E ECE & III

Name of the topic : Zener Diode

Innovative Method : One Minute Speech

Signature of the Faculty Member

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Department of Electronics and Communication Engineering

Academic year : 2022-2023

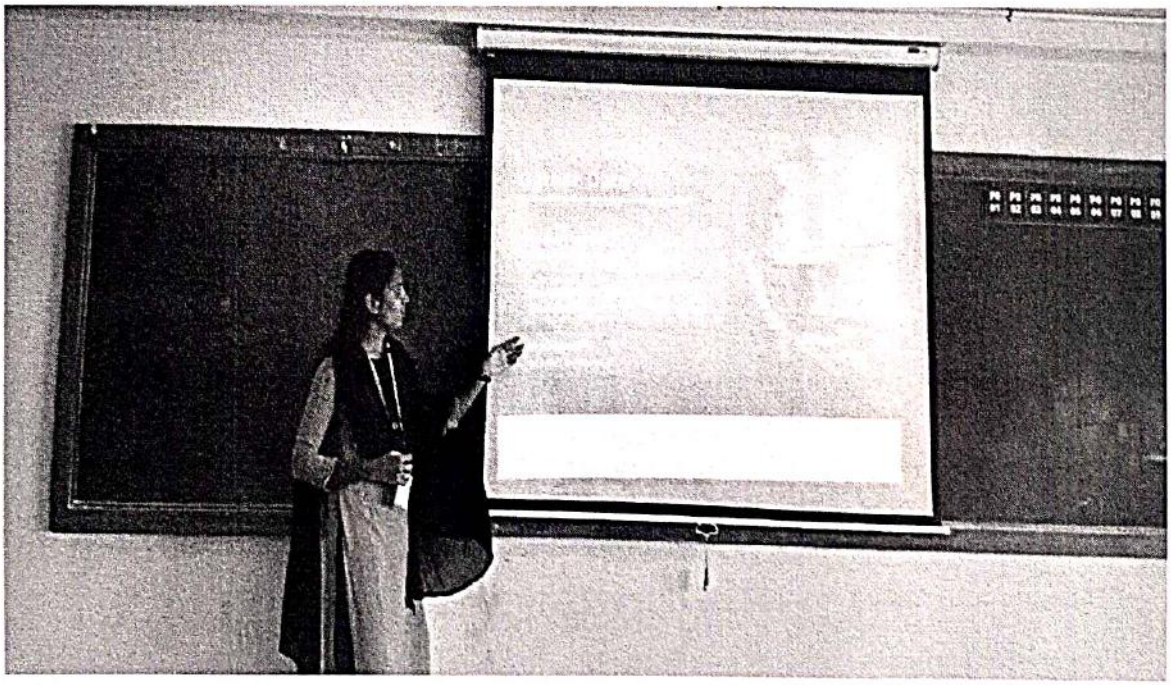
Name of the Faculty : Ms.N.Malathy

Course code & Title : EC3353/Electronic Devices and Circuits

Degree & Semester : B.E ECE & III

Name of the topic : Zener Diode

Innovative Method : One Minute Speech



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Report on Innovative Teaching Method

Course: EC3353/Electronic Devices and Circuits

Degree & Semester: B.E ECE – III Semester

Faculty: Ms.N.Malathy

Topic: Microwave Frequency Bands

Innovative Method: Zero Minute Speech

Objective

The objective of this session was to improve students' understanding of microwave frequency bands while developing their quick-thinking and communication skills through the innovative **Zero Minute Speech** method.

Methodology

In the Zero Minute Speech activity, students were randomly selected and given a specific microwave frequency band to speak about immediately without prior preparation. They were encouraged to cover key points such as the frequency range, applications, and real-world examples of that band. Each speech lasted for 1–2 minutes, focusing on spontaneity and accuracy.

Outcome

- Enhanced students' ability to think and articulate ideas on the spot.
- Increased familiarity with microwave frequency bands and their applications.
- Boosted confidence in public speaking and technical communication.

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Department of Electronics and Communication Engineering

Academic year : 2023-2024

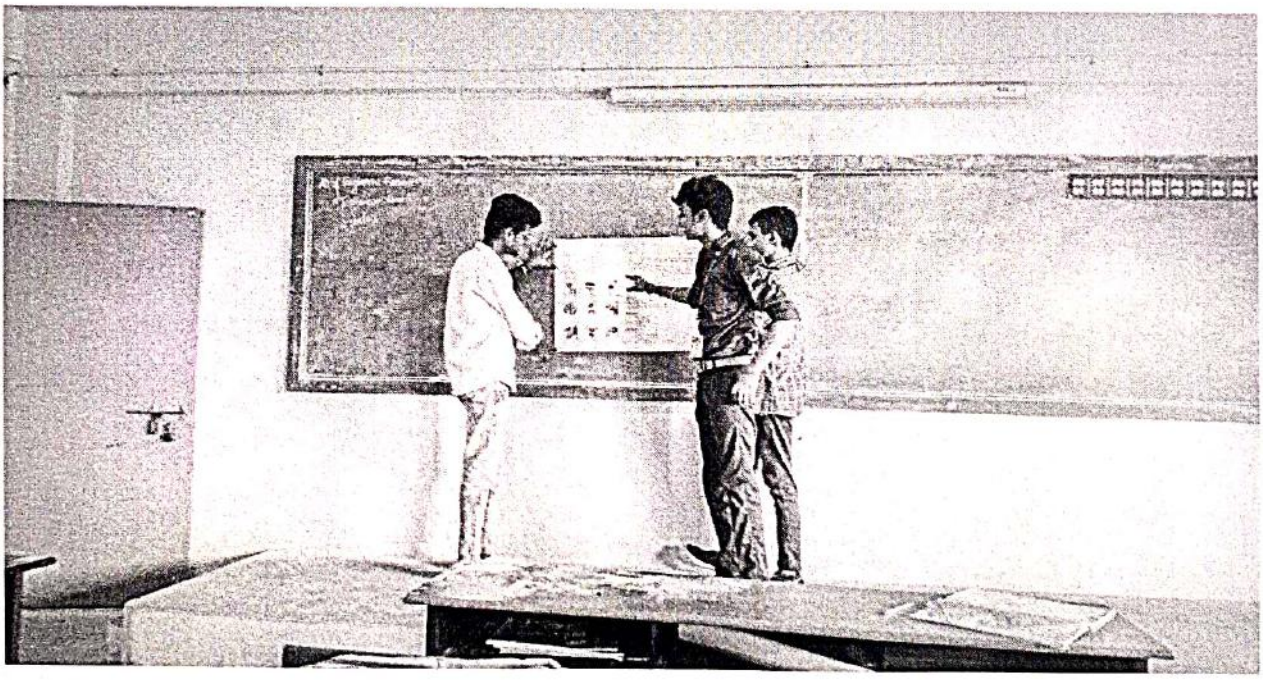
Name of the Faculty : Mr.M.Mari Selvam

Course code & Title : 22ECT303/Digital Electronics

Degree & Semester : B.E ECE & III

Name of the topic : Number Systems

Innovative Method : Mind Map



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Tiruvallur Dist, Tamilnadu - 601 102.

Report on Innovative Teaching Method

Faculty: Mr. M. Mari Selvam

Course Code & Title: 22ECT303 – Digital Electronics

Degree & Semester: B.E ECE & III

Topic: Number Systems

Innovative Method: Mind Map

Introduction

Number systems are fundamental to digital electronics, forming the basis for computing and logic circuits. The topic covers various numbering systems such as binary, octal, decimal, and hexadecimal, along with their conversions. To enhance conceptual understanding, the **Mind Map** technique was used as an innovative teaching method.

Objective

The primary goals of using Mind Mapping in this session were:

- To visually represent the different number systems and their relationships.
- To enable students to easily understand and recall conversions between number systems.
- To promote active learning and improve problem-solving skills.

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Introduction to Mind Mapping:

- The faculty introduced students to the concept of **Mind Maps**, explaining how they help in organizing and recalling information effectively.

Mind Map Creation:

- The central node of the mind map was **Number Systems**.
- Branches were created for **Binary, Decimal, Octal, and Hexadecimal** systems.
- Further sub-branches included **Base Values, Conversion Methods, Applications, and Examples**.

Student Participation:

- Students were asked to create their own **Mind Maps** based on the topic.
- They were encouraged to use colors, symbols, and connections to enhance understanding.

Presentation & Discussion:

- Students presented their Mind Maps to the class, explaining the relationships between number systems.
- A discussion followed where common misconceptions and doubts were addressed.

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Outcome

- **Enhanced Understanding:** Students gained a **clearer** and **more structured** understanding of number systems and their conversions.
- **Improved Retention:** The **visual representation** helped students remember key concepts easily.
- **Active Engagement:** Students actively participated in discussions and problem-solving exercises.

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Department of Electronics and Communication Engineering

Academic year : 2022-2023

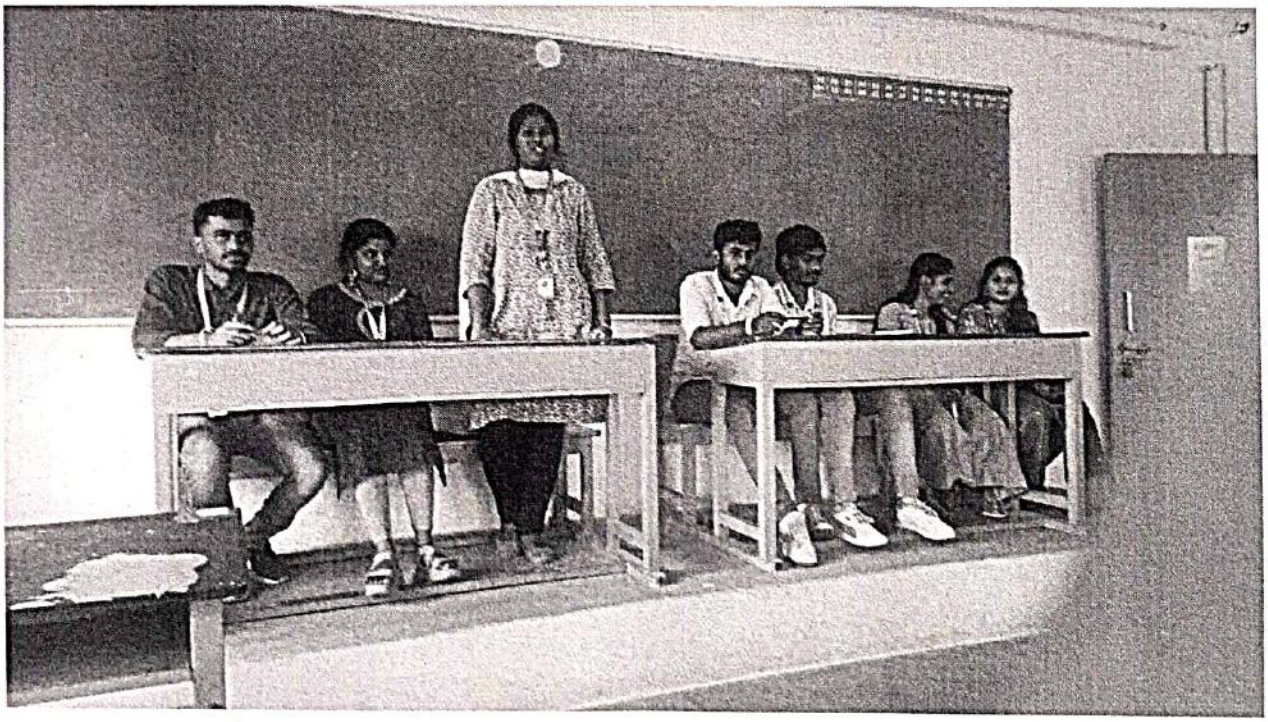
Name of the Faculty : Dr.J.Vijay Anand

Course code & Title : EC3451/ Linear Integrated Circuits

Degree & Semester : B.E ECE & IV

Name of the topic : JFET operational amplifiers

Innovative Method : Class Poll



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Report on Innovative Teaching Method

Course: EC3451 – Linear Integrated Circuits

Degree & Semester: B.E ECE & IV

Faculty: Dr.J.Vijay Anand

Topic: JFET Operational Amplifiers

Innovative Method: Class Poll

Introduction

Junction Field Effect Transistor (JFET) operational amplifiers are integral components in analog circuit design, known for their high input impedance and low noise characteristics. To enhance student engagement and assess understanding of this topic, a class poll was utilized as an innovative teaching method.

Objective

The class poll aimed to:

- Gauge students' prior knowledge and misconceptions about JFET operational amplifiers.
- Encourage active participation and peer learning.
- Identify areas requiring further clarification.

The implementation of the class poll involved the following steps:

Preparation:

- Developed a series of multiple-choice questions focusing on key aspects of JFET operational amplifiers, including their characteristics, configurations, and applications.

Execution:

- Administered the poll during the lecture using an interactive platform, allowing students to respond in real-time via their devices.

Analysis:

- Displayed the aggregated responses to the class, facilitating a discussion on each question.
- Addressed incorrect answers by revisiting relevant concepts and providing additional explanations.

Outcome

The class poll method yielded several positive outcomes:

- **Enhanced Engagement:** The interactive nature of the poll increased student involvement and attentiveness during the lecture.
- **Immediate Feedback:** Real-time results allowed for quick identification of misconceptions and knowledge gaps.

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Department of Electronics and Communication Engineering

Academic year : 2023-2024

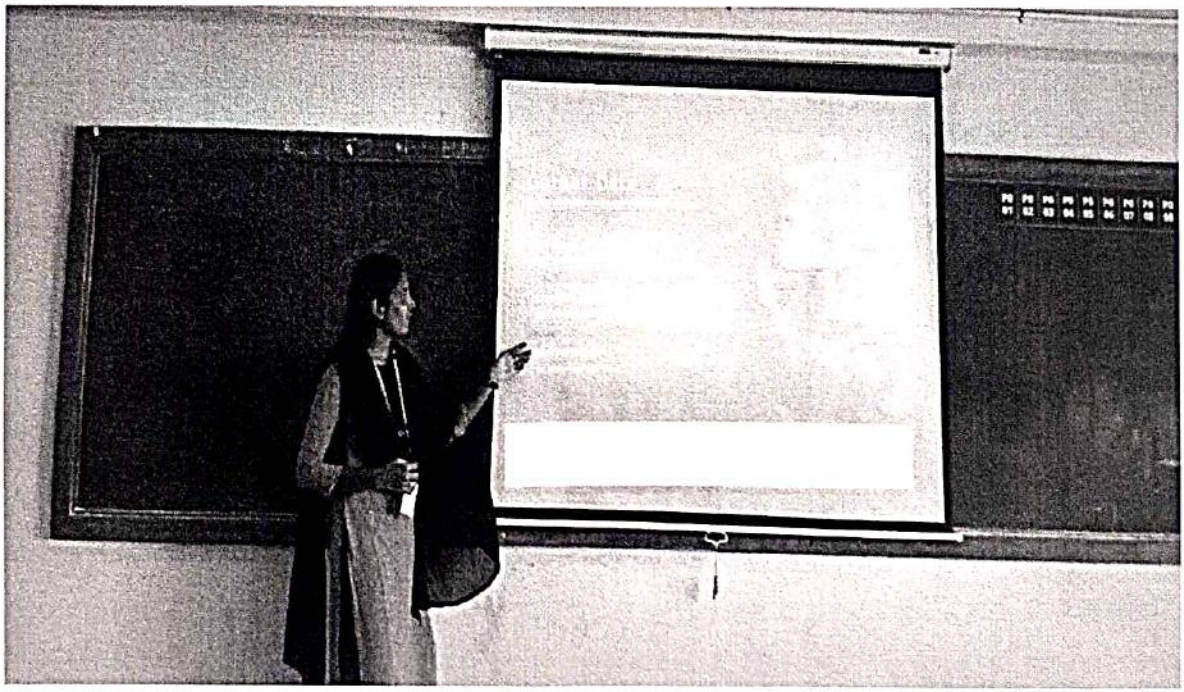
Name of the Faculty : Ms.P.B.Smitha

Course code & Title : EC8701/Antennas and Microwave Engineering

Degree & Semester : B.E ECE & VII

Name of the topic : Microwave frequency bands

Innovative Method : Zero Minute Speech



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Report on Innovative Teaching Method

Course: EC8701 – Antennas and Microwave Engineering

Degree & Semester: B.E ECE – VII Semester

Faculty: Ms.P.B.Smitha

Topic: Microwave Frequency Bands

Innovative Method: Zero Minute Speech

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