RAMCO INSTITUTE OF TECHNOLOGY
Department of Electronics and Communication Engineering
Academic Year: 2024 - 2025 (Odd Semester)

INNOVATIVE TEACHING METHOD

Degree, Semester & Branch : V Semester B.E. ECE B
Course Code & Title : EC3501 Wireless Communication
Name of the Faculty member: Mrs.R.Ramalakshmi

Innovative Teaching Method Execution
Unit I
Prioritizing Handoffs, Practical Handoff Considerations – Think Pair Share

Unit II
Fading Effects Due To Doppler Spread – Brain Storming


Innovative Teaching Method Execution
Unit III
Equalization, Diversity and Channel Coding- Introduction, Fundamentals of Equalization – Zero Minute Speech


Department of Electronics and Communication Engineering
Academic Year 2024 – 2025 (Odd Semester)

Degree, Semester & Branch: B.E., V & ECE B
Course Code & Title: EC3501 & Wireless Communication
Name of the Faculty member (s): Mrs.R.Ramalakshmi

Innovative Practice Description

- **Unit / Topic:** IV / Time Division Multiple Access (TDMA)
- **Course Outcome:** CO4: Students will be able to examine the performance of various multiple access schemes.
- **Topic Learning Outcome:** TLO4.1: Describe the concepts of TDMA.
- **Activity Chosen:** Flipped class room
- **Justification:** It allows students to learn in their own pace, it encourages students to actively engage with lecture material, it frees up actual class time for more effective, creative and active learning activities and students take control and responsibility for their learning.
- **Time Allotted for the Activity:** 40 minutes
- **Details of the Implementation:**
  Specific topic was given to the students learn on their own. Resources like reference book, videos were given to the students. Students are asked to prepare more in depth than before. Students are separate into groups where students are given a task to perform. Get the class back together to share the individual group's work with everyone.
- **CO – PO / PSO mapping:**

CO	PO1	PO2	PO3	PO5	PO9	PO10	PO12	PSO1	PSO3
CO3	3	2	2	3	2	2	2	2	2

- **PO / PSO mapped:**

Innovative practice	PO9	PSO1
	2	2
Justification for correlation	This activity helps the students to present results as an individual, with smooth integration of contributions from all individual efforts. The course outcome is correlated at level 2.	The concepts of TDMA techniques are used in wireless communication in order to mitigate the effects of interference and noise which occurs in communication system & also share the spectrum effectively and thus the course outcome is mapped at level 2.

- **Images / Screenshot of the practice:**

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    Self-learning and accountability of the students got improved. They learn how to communicate with team members and work together to achieve common goals.
  - ***Benefit of the practice:***
    Every student got equal opportunity to take part in this activity. The success of the activity was evaluated by asking the same question in Internal Assessment test II – Around 80% of students answered correct
  - ***Challenges faced in implementation:***
    The main challenge faced is that few students not exposed to flipped class room.

    Students struggle with self-discipline and may turn up to class without having absorbed the lesson. Few students hesitated to come forward and to interact. I have encouraged them to come forward and share their points

References:

- https://www.rcboe.org/cms/lib/GA01903614/Centricity/Domain/15451/Flip_your_Classroom.pdf
- Bergmann, J., & Sams, A. (2012). Flip your classroom: Reach every student in every class every day. Eugene, Or: International Society for Technology in Education.
- Center for Teaching Innovation at Cornell University. (2017). Flipping the classroom. Retrieved from https://www.cte.cornell.edu/teaching-ideas/designing-your-course/flipping-the-classroom.html.

Department of Electronics and Communication Engineering
Academic Year 2024 – 2025 (Odd Semester)

Degree, Semester & Branch: B.E., V & ECE B
Course Code & Title: EC3501 & Wireless Communication
Name of the Faculty member (s): Mrs.R.Ramalakshmi

Innovative Practice Description

- **Unit / Topic: Unit V /** Development of Wireless Networks- First Generation Wireless Networks, Second Generation Wireless Networks, Third Generation Wireless Networks
- **Course Outcome:** CO 5
- **Topic Learning Outcome:** TLO 5.2
- **Activity Chosen:** Reciprocal Peer Questioning
- **Justification:**

  The students will be able to understand the concepts of Development of Wireless Networks- First Generation Wireless Networks, Second Generation Wireless Networks, Third Generation Wireless Networks with the help of Reciprocal Peer Questioning activity. The students will be able to easily remember the concepts if questions are being asked to them.

- **Time Allotted for the Activity:** 10 minutes
- **Details of the Implementation:**

Reciprocal Peer Questioning is an activity in which students question each other about the content they are learning using higher-order, open-ended question stems. The questions are used to promote thinking and generate focused discussions in small groups.

The students were in the class room. First the students were taught with the concepts of Development of Wireless Networks. Then the students were allowed to discuss the topics among their friends. Then the students were encouraged to ask questions to eachother by which the concepts are learnt easily and more quickly.

- **CO – PO / PSO mapping:**

CO	PO1	PO2	PO3	PO9	PO10	PO12	PSO1	PSO3
CO5	3	3	3	2	2	2	2	2

- **PO / PSO mapped:**

Innovative practice	**PO9**	**PSO3**
	2	**2**
Justification for correlation	• Reciprocal Peer Questioning on development of wireless networks helps the students to think and analyze the concepts and able to answer. The course outcome is moderately correlated.	The knowledge of 1G,2G,3G networks is useful in designing Wireless Communication systems. Hence, the course outcome is mapped at level 2.

- **Images / Screenshot of the practice:**

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    The effectiveness of the activity was felt when the students were asked the questions on the topic, they were able to answer easily. They also understood the concepts more easily and able to remember while writing the test.

References:

Textbooks:

1) Andreas.F. Molisch, -Wireless Communications, John Wiley – India, 2006

2) 1. https://archive.nptel.ac.in/courses/117/102/117102062/ Wireless Communication, IIT Delhi, Dr.Ranjan Bose

3) 2. https://archive.nptel.ac.in/courses/108/106/106106167/ Introduction to Wireless and Cellular Communication, IIT Madras, Prof. David Koilpillai