RAMCO INSTITUTE OF TECHNOLOGY

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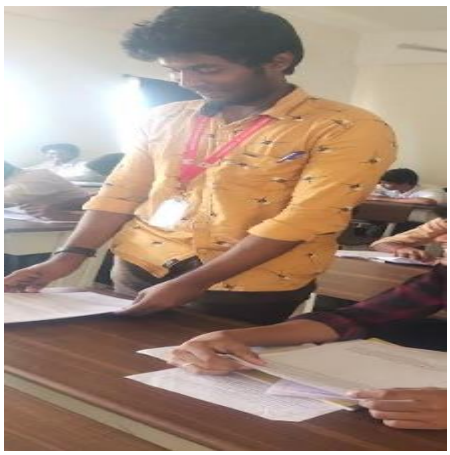
NBA Accredited UG Programs: CSE, EEE, ECE and MECH

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

Innovative Practices Description for Unit-II

Degree, Semester& Branch: III Semester B.E. ECE B
Course Code & Title: EC3353 & Electronic Devices and Circuits
Name of the Faculty member: Mrs.V.Krishna Meera
Date: 21.08.2024

UNIT II AMPLIFIERS	
Name of the Topic	**Name of the Innovative Practice**
Biasing methods for MOSFET	Brain storming
	

Signature of Faculty Member **HOD**

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

Innovative Practices Description for Unit-I

Degree, Semester& Branch: III Semester B.E. ECE B
Course Code & Title: EC3353 & Electronic Devices and Circuits
Name of the Faculty member: Mrs.V.Krishna Meera
Date: 12.08.2024

UNIT I SEMICONDUCTOR DEVICES	
Name of the Topic	**Name of the Innovative Practice**
MOSFET, UJT –structure, operation and V-I characteristics	One Minute Speech

Signature of Faculty Member **HOD**

Department of Electrical Electronics Engineering
Academic Year 2023 – 2024(ODD Semester)

Degree, Semester & Branch: B.E/III/ECE B
Course Code & Title: EC3353 & Electronic Devices and Circuits
Name of the Faculty member (s): Mrs.V.Krishna Meera

Innovative Practice Description

Unit / Topic: Unit I / Rectifiers – Full Wave Rectifiers

- **Course Outcome:** CO 1
- **Topic Learning Outcome:** TLO16.
- **Activity Chosen:** One Minute Paper
- **Date :14.08.24**
- **Justification:**
  The structure, operation and full wave rectifier. After teaching this topic ,I thought of this activity for making to have clarity about the operation of the rectifier and its characteristics. I can judge the understanding level of the students .
- **Time Allotted for the Activity:** 5 Minutes
- **Details of the Implementation:**
  - After teaching the concept, I gave students one or two minutes to think about the topic without writing anything.
  - Total Strength :44
  - Reporter: Myself
  - At the end of the Class (Last 5 minutes)
  - I asked the students to think about the diode operation and its applications concept for 3 minutes.
  - Then I told them to write as much as they can within a short period of time (1 minute)
  - Finally, I collected the papers from each column.
- **CO – PO / PSO mapping:**

CO	PO1	PO2	PO3	PO4	PO10	PO12
C204.1	2	1	1	1	2	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	**PO1**	**PO2**	**PO3**	**PO4**	**PO10**	**PO12**
	2	1	1	1	2	1
Justification for correlation	Students will be applying fundamental engineering concepts on rectifier Hence the course outcome is mapped with level 2.	The course outcome is mapped at level 1, since appropriate technical and mathematical knowledge to solve the problems are used .	Determine the specifications for the electronic devices. So the level of mapping is 1..	Students will define the scope and importance of various electronic devices. Hence it is mapped at level 1..	: A group assignment / presentation will be assigned to the students. They will make a report about it. Hence Course outcome is mapped at the level 2.	While designing amplifiers for specific applications, students will describe the simplest and changes in trends. Hence, it is linked to the level 1..

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

- **Reflective Critique:**
  - ❖ ***Feedback of practice from students and other stakeholders:***
  - The assessment of effectiveness of the activity was felt when told most of the points.
  - While conducting the activity, I understood that the students will be able to explain the applications of Rectifiers
  - The success of the activity was evaluated by asking the same question in Internal

Assessment test I – Around 90% of students answered.

Benefit of the practice:

- Students were able to attend the question even in the questions are in indirect form.
- Students were able to explain the concepts in examination without any confusion.

❖ ***Challenges faced in implementation:***

- In the class mostly girls hesitate to answer the questions.
- Time utilization for conducting activity.

References:

1. David A. Bell, "Electronic Devices and Circuits", Oxford Higher Education press, 5 th Edition, 2010.
2. Robert L. Boylestad and Louis Nasheresky, “Electronic Devices and Circuit Theory”, 10th Edition, Pearson Education / PHI, 2008.
3. Adel .S. Sedra, Kenneth C. Smith, "Micro Electronic Circuits", Oxford University Press, 7 th Edition, 2014

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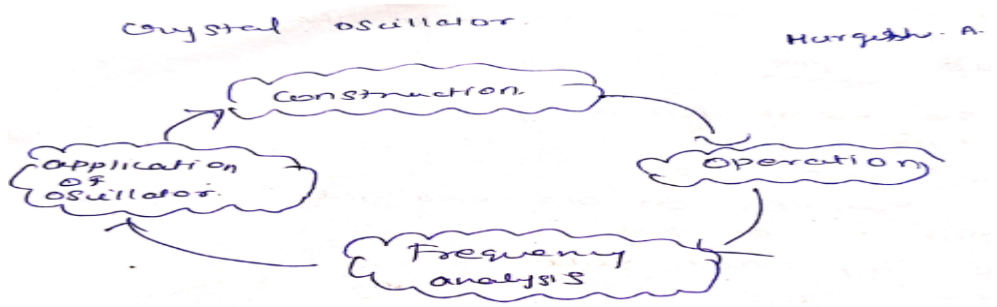
Department of Electronics and Communication Engineering
Academic Year: 2024-2025(Odd Semester)

Innovative Practices Description for Unit-IV

Degree, Semester& Branch: III Semester B.E. ECE B
Course Code & Title: EC3353 & Electronic Devices and Circuits
Name of the Faculty member: Mrs.V.Krishna Meera
Date: 9.10.2024

UNIT IV FEEDBACK AMPLIFIERS AND OSCILLATORS	
Name of the Topic	**Name of the Innovative Practice**
Colpitts oscillator	Mind Map



Signature of Faculty Member **HOD**

Department of Electronics and Communication Engineering

Academic Year 2024 – 2025 (ODD Semester)

Degree, Semester& Branch: III Semester B.E. ECE B

Course Code & Title: EC3353 & Electronic Devices and Circuits

Name of the Faculty member: Mrs.V.Krishna Meera

Date: 11.11.2024

Innovative Practice Description

Unit / Topic: V / DC/DC convertors –Buck-Boost analysis and design

- **Course Outcome:** Students able to apply the concepts of DC/DC convertors –Buck-Boost analysis and design for real time
- **Topic Learning Outcome:** Elaborate the various types of DC/DC converters
- **Activity Chosen:** Flipped Class Room
- **Justification:** Using this method, students learn at their own pace, engage actively with lecture material, free up class time for more effective, creative, and active activities, and take control and responsibility over their own learning.
- **Time Allotted for the Activity:** 40 minutes
- **Details of the Implementation:**

Students were given a specific topic to learn on their own. The reference book, PPT, and videos were already posted on Canvas. This flipped class is used for the topic, and in addition to the learning materials provided by the faculty, students have the opportunity to browse and locate more knowledge about the energy meter and its operation.

All students understand how energy meter is working and gained knowledge about how power consumption measured. As a result, this topic has been chosen for a flipped classroom activity. Students are divided into groups and assigned task to complete. Bring the class back together to share the work of the separate groups with everyone.

CO – PO / PSO mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO3
C204.5	2	1	2	1	-	-	-	-	-	2	-	1	2

- **PO / PSO mapped:**

Innovative practice	**PO1**	**PO2**	**PO3**	**PO4**	**PO10**	**PO12**	**PSO3**
	2	1	2	1	2	1	2
Justification for correlation	Applying fundamental Engineering Concepts and students will be able to solve basic problems on power amplifiers. Hence the course outcome is mapped with level 2.	Students will identify existing processes/solution approaches for tackling power amplifier challenges, including justifying approximations and assumptions. As a result, it is mapped at the first level. Hence the course outcome is mapped with level 1.	It is mapped to level 2 because since the students will determine design objectives, functional requirements and arrive at specifications of the power amplifiers and DC Converters.	The outcome is mapped to level 1 because problems, use and importance of power amplifiers is defined for analysis purpose.	A group assignment / presentation will be given to the students for the topic of power amplifiers. Course outcome is mapped at the level 2, since the students communication level will assessed.	Students will describe the simplest and changes in trends during design of power amplifiers for specific application. Hence, the level is linked to the level 1.	In the field of communication systems, students will design, analyze, and build amplifiers. Hence it is mapped at level 2.

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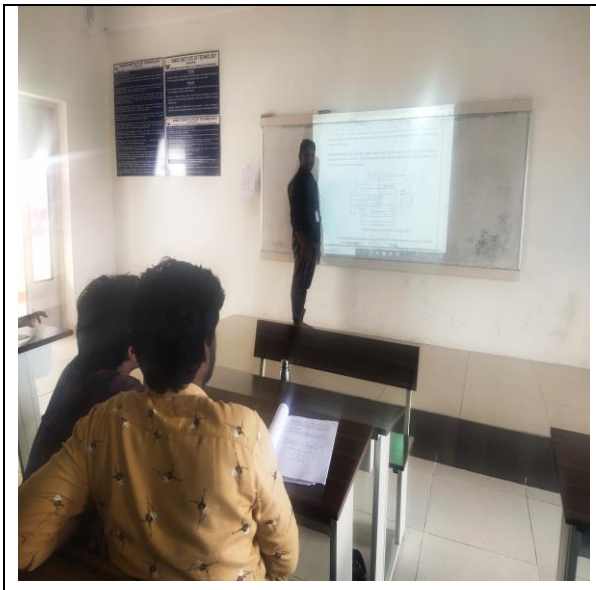

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***

    Students feel that they have improved self-learning. They learn how to communicate with team members and work together.
  - ***Benefit of the practice:***

    Every students got equal opportunity to come forward to take part in this activity. Through this activity Students learned the topic well.

  - ***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. To make all students to participate I started to praise others, taking turns for equal participation, and shared decision making.

References:

- 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.

Signature of the Faculty member **HOD**