Department of Computer Science and Engineering
Academic Year 2021 - 2022 (Even Semester)

Degree, Semester & Branch: VIII Semester B.E. CSE
Course Code & Title: GE8076 & Professional Ethics in Engineering
Name of the Faculty member (s): Dr.V.Anusuya, ASCP/CSE

Innovative Practice Description

- **Unit / Topic:** Unit I / Introduction to Yoga and Meditation for Professional excellence and Stress Management
- **Course Outcome:** CO1
- **Topic Learning Outcome:** TLO4
- **Activity Chosen:** Flipped Class Room
- **Justification:**

  In unit I, the students need to understand the importance of yoga such as Yama (Restraints, rules of social discipline) Niyama (Observances, rules of self discipline) , Asana (Body postures), Pranayama (Control of vital energy of body), Prtayahara (Control of senses), Dharana (Concentration), Dhyana (Meditation), Samadhi (Super-conscious stage). Also they need to understand the benefit of yoga in health. This activity helps the students to understand the **Astanga Yoga** and its benefits clearly.

- **Time Allotted for the Activity:** 25 Minutes

- **Details of the Implementation:**
  - Learning materials such as video and documents were sent to the student's mail and Canvas, one week before conducting this activity.
  - Instruct the students to watch the video individually at their home and take the notes according to their understanding level.
  - On the day of the activity, 5 teams were formed by their own interest.
  - Each student in a group discusses among the peer members based on their self-learning and write the points for Presentation within 10 minutes.
  - Once they prepared the content for presentation with their peer members, each group present the given topic for maximum of 5 minute. The implementation of flipped class room activity as shown in figure1 and figure2.

- **CO – PO / PSO mapping:**

CO	PO6	PO8	PO9	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	1	1	1	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	**PO6**	**PO8**	**PO9**	**PO12**	**PSO1**	**PSO2**	**PSO3**
	3	3	3	1	1	1	1
Justification for correlation	Needs to understand the moral values protect public and public interest at the local, regional and global level	The students can identify situations of unethical professional conduct and propose ethical alternatives	To perform any task as a professional or to extract it from sub-ordinates in future, they should know how to treat others in a team.	Moral values and ethics are applicable in every stages of personal and professional life..	As human values and ethics are required to be a better software developer.	As human values and ethics are required to be a better cloud developer	As human values and ethics are required to provide solution to real world problem

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

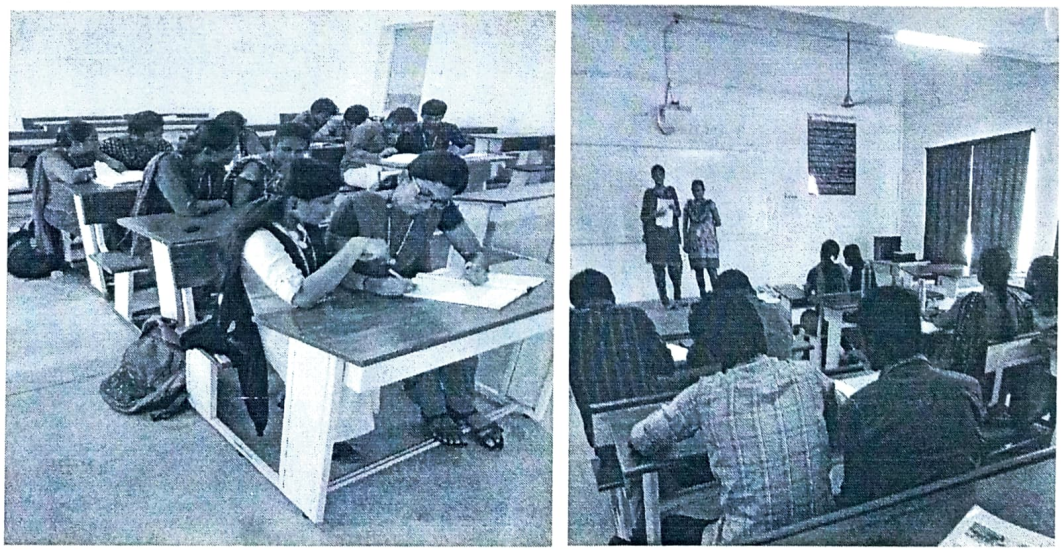


Figure 1: Flipped class Room Implementation

Figure 2: Flipped class Room Implementation

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    - All the students were actively participated and they understood the concepts correctly.
    - Students explored the knowledge of the various Astanga yoga.
    - It makes the students to gain well knowledge on different Asanas and its benefits.
  - ***Benefit of the practice:***
    - Students can able to write about the various yoga and its role in professional excellence and stress management questions in examination.
    - Students can able to identify the importance of yoga in real life.
    - This activity helps the students to know the importance of meditation in the current world.
  - ***Challenges faced in implementation:***
    - Some team members are hesitated and lack to share the concepts that they learnt and discussed.

References:

- https://www.nyu.edu/faculty/teaching-and-learning-resources/strategies-for-teaching-with-tech/flipped-classes/implementing-a-flipped-class.html
- https://www.ritrjpm.ac.in/images/computer-science/Flipped-Classroom-PJ-DAA.pdf

18/4/22

Signature of Faculty Member

Dr.V.Anusuya

6/4/2022

HOD

Dr.K.Vijayalakshmi

Department of Computer Science and Engineering
Academic Year 2021 - 2022 (Even Semester)

Degree, Semester & Branch: VIII Semester B.E. CSE
Course Code & Title: GE8076 & Professional Ethics in Engineering
Name of the Faculty member (s): Dr.V.Anusuya, ASCP/CSE

Innovative Practice Description

- **Unit / Topic: Unit 2 /** Uses of Ethical Theories- Relating professional and ordinary morality
- **Course Outcome:** The student will be able to Explain about engineering ethics.
- **Topic Learning Outcome:** TLO8.
- **Activity Chosen: Cross word Puzzle**
- **Justification:**
  - To identify the understanding level of a student in Uses of ethical theories topic, a game based activity was chosen to do the revision of topic instead of carrying out regular quiz tests.
- **Time Allotted for the Activity:** 20 Minutes
- **Details of the Implementation:**

Crossword puzzle, popular form of word puzzle. A crossword puzzle consists of a diagram, usually rectangular, divided into blank (white) and cancelled (black, shaded, or crosshatched) squares. This diagram is accompanied by two lists of numbered definitions or clues, one for the horizontal and the other for the vertical words, the numbers corresponding to identical numbers on the diagram. Into each of the blank squares of the diagram a certain letter of the alphabet is to be inserted, forming the words fitting the numbered definitions or clues. The words cross each other, or interlock, which gives the puzzle its name.

The activity was conducted in a classroom for duration of 20 minutes. The students were given with a crossword puzzle of 10 questions in a paper. They have to think and provide the answers in the given puzzle.

The students answered the questions as shown in figure 2, 3 and 4. Sample questions and answers were shown in figure 1. The answers for the wrong questions were discussed immediately to make them to know the answer of all the questions.

CO – PO / PSO mapping:

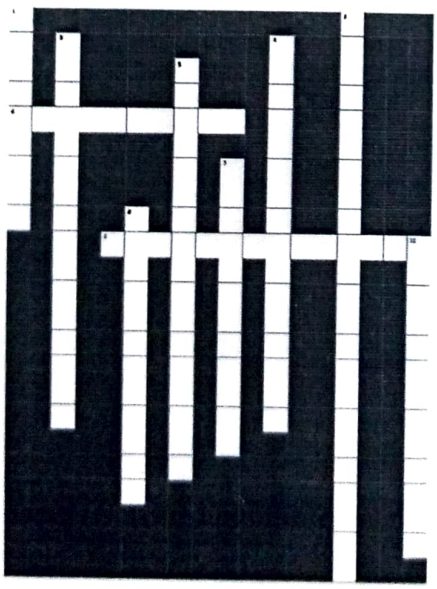
CO	PO6	PO8	PO9	PO12	PSO1	PSO2	PSO3
CO2	3	3	3	1	1	1	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO6	PO8	PO9	PO12	PSO1	PSO2	PSO3
	3	3	3	1	1	1	1
Justification for correlation	Needs to identify and categorize the professional roles required to protect public and public interest at the local, regional and global level	The students studying about theories of right action, they can identify situations of unethical professional conduct and propose ethical alternatives	By knowing the theories of right action, students can follow the ethics required for an individual and team work.	Knowledge about the theories of right action is required for continuous development of profession	As a better software developer should solve moral issues and moral dilemmas during software development they should know the ethical theories.	To apply the knowledge of IoT, Cloud computing and cybersecurity, they should know the Ethical Theories during development	To provide a solution to real world problem using Artificial Intelligence and big data they should learn Ethical theories.

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



ACROSS

6 Under ethical ___ objective moral principles can be rationally determined, while ethical under relativism morality is both context dependant and subjective.

9 A theory which states that an action is morally right if it promotes the greatest good for the greatest number

DOWN

1 ___ theory can be described as a code of conduct to which all rational beings should adhere

2 What term can be used to describe 'the hypothetical agreement between member of society and those who govern it which establishes the inter-relationships, rights and responsibilities on a fair basis'?

3 Utilitarianism is a ____ ethical theory focusing on outcomes and collective welfare

4 ____ assert that ethics are context and individual specific and as such have an internal guide to ethics.

5 Ethics of duty and Ethics of rights and justice are both examples of ___ based theories which are based on basic universal principles of right and wrong

7 ____ focus on an individual's character and are based on the notion that humans can learn virtuous traits to lead a good life

8 ____ is a principle based ethical theory attributed to Emmanuel Kant.

10 Post modern ethics locate morality beyond the sphere of rationality in an emotional ____ towards others.

Figure 1: Questions on storage classes

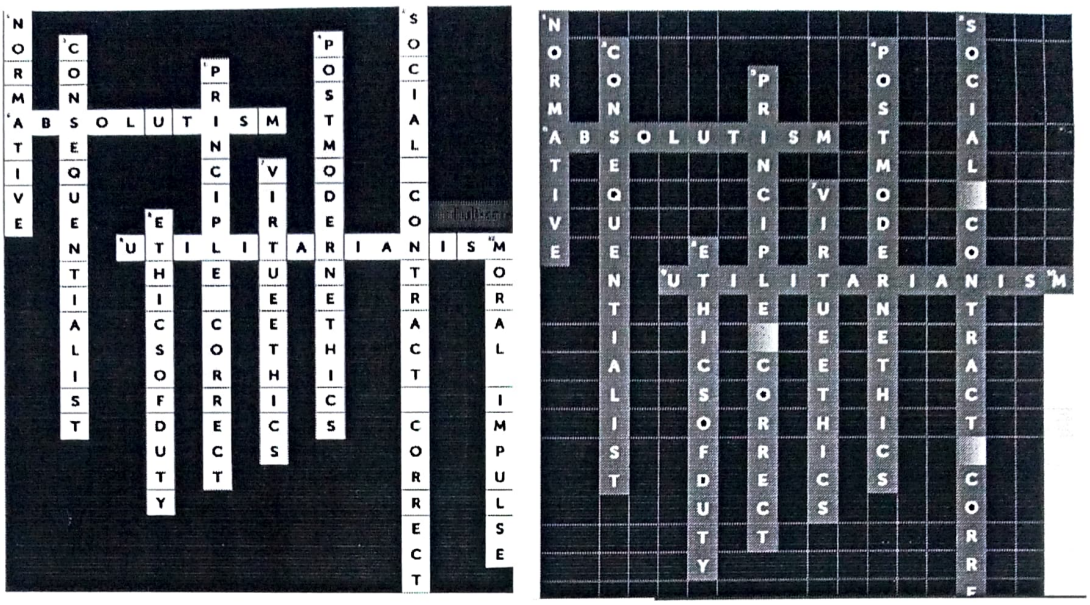


Figure 2. Sample Answers of students

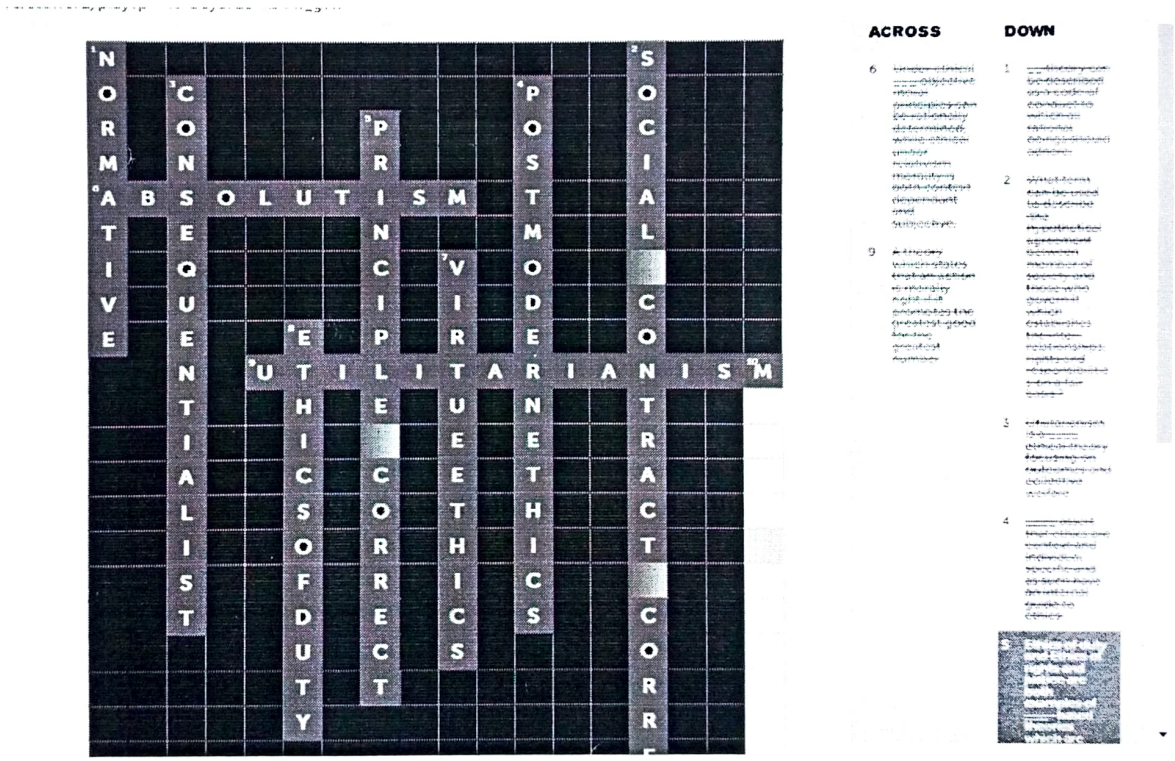


Figure 3. Sample Answers of students

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    All the students are actively participated and enjoyed. The students are understood well about the use of ethical theories concept and also how and where to use is also known well. They asked to conduct this type of activity in future.

- ***Benefit of the practice:*** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)
- From that we can find out that, most of the students had familiarity with the uses of Ethical Theories- Relating professional and ordinary morality

❖ ***Challenges faced in implementation:***
Some of the students couldn't able to recall the important terms and definitions while doing the activity.

References:

- https://www.ritrjpm.ac.in/images/computer-science/
- https://www.britannica.com/topic/crossword-puzzle

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Signature of Faculty Member
Dr.V.Anusuya

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Dr.K.Vijayalakshmi

Department of Computer Science and Engineering
Academic Year 2021 - 2022 (Even Semester)

Degree, Semester & Branch: VIII Semester B.E. CSE
Course Code & Title: GE8076 & Professional Ethics in Engineering
Name of the Faculty member (s): Dr.V.Anusuya, ASCP/CSE

Innovative Practice Description

- **Unit / Topic:** Unit 3 / A Balanced Outlook on Law
- **Course Outcome:** CO3
- **Topic Learning Outcome:** TLO11
- **Activity Chosen:** Think Pair Share
- **Justification:**
  - Think-pair-share is a cooperative learning technique.
  - The students should know the rules and regulations that control engineers, code of ethics, civil and criminal law, relationship between law and ethics.
  - This activity helps the students to understand the Law and Ethics and its benefits clearly.

- **Time Allotted for the Activity:** 20 Minutes

- **Details of the Implementation:**
  - T : (Think) Teachers begin by asking a specific question about the text. Students "think" about what they know or have learned about the topic.
  - P : (Pair) Each student should be paired with another student or a small group.
  - S : (Share) Students share their thinking with their partner. Teachers expand the "share" into a whole-class discussion.
  - Step 1 (THINK) – in this step, students were asked to define a concept or term in the topic Balanced outlook on law. Then, they were asked to think about its meaning and write down its use in the society in a paper.
  - In Step 2 (PAIR) – students were asked to discuss with the individual sitting next to him or her about the terms and concepts identified in step1. The rationale in step 2 is to not only understand the concepts from each student's point of view but also learn from each other.
  - Step 3 (SHARE) involved sharing of the experience of learning the concept with the rest of the class. The rationale in step 3 is to understand the term or concept from a variety of perspectives.

- The students pairs are Kavimalar and Samyukthavikashini,Mohan kumar and Abishek,Gnamoorthy vidhya and Nivethitha,Vijayalakshmi and Karthiga,Kannan and Mohamed Shein. They presented the topic Code of ethics, Balanced outlook on law, law and ethics as shown in figure1 and figure2.

- **CO – PO / PSO mapping:**

CO	PO1	PO2	PO6	PO8	PO9	PO12	PSO1	PSO2	PSO3
CO1	1	1	3	3	3	1	1	1	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO1	PO2	PO6	PO8	PO9	PO12	PSO1	PSO2	PSO3
	1	1	3	3	3	1	1	1	1
Justification for correlation	Needs to understand the role of engineers as experimenters, fundamental Engineering knowledge is essential	The students will study about engineering experiments, they could gain problem analysis skills	The students can identify the role of engineers and code of ethics required to protect public and public interest at the local, regional and global level.	The students can identify situations of unethical professional conduct and propose ethical alternatives as they know roles of engineers and code of ethics one has to follow.	As students are learning roles of engineers as managers, experimenters they can handle a team and team members	Consciousness about the role of engineers as managers, witness and advisors for continuous development of profession should follow the code of ethics.	As knowledge about the code of ethics are required to be a better software developer.	To apply the knowledge of IoT, Cloud computing and cybersecurity, they should know the code of ethics during development	To provide a solution to real world problem using Artificial Intelligenc and bigdat they shoul learn code of ethics.

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

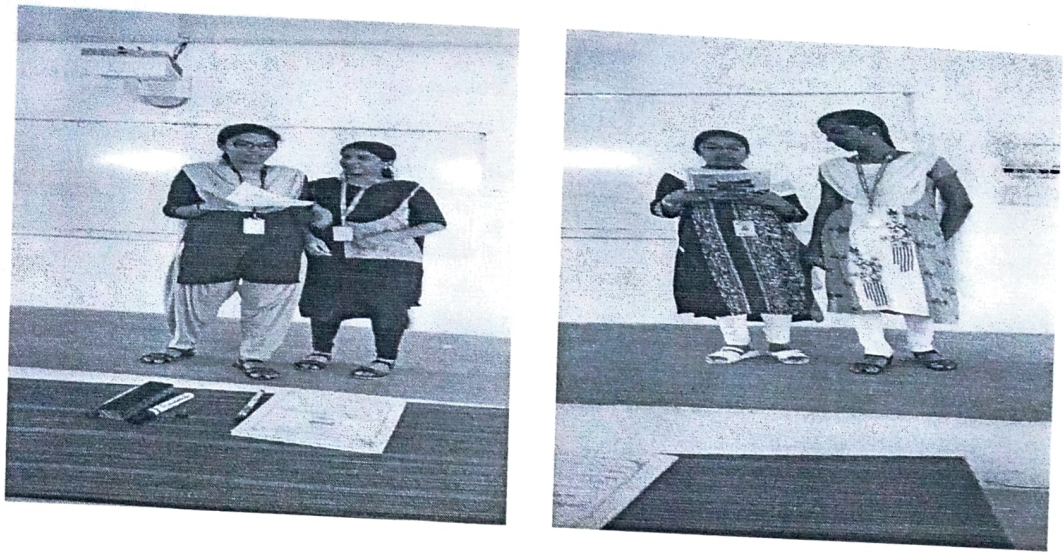

Figure 1: Think Pair Share Implementation

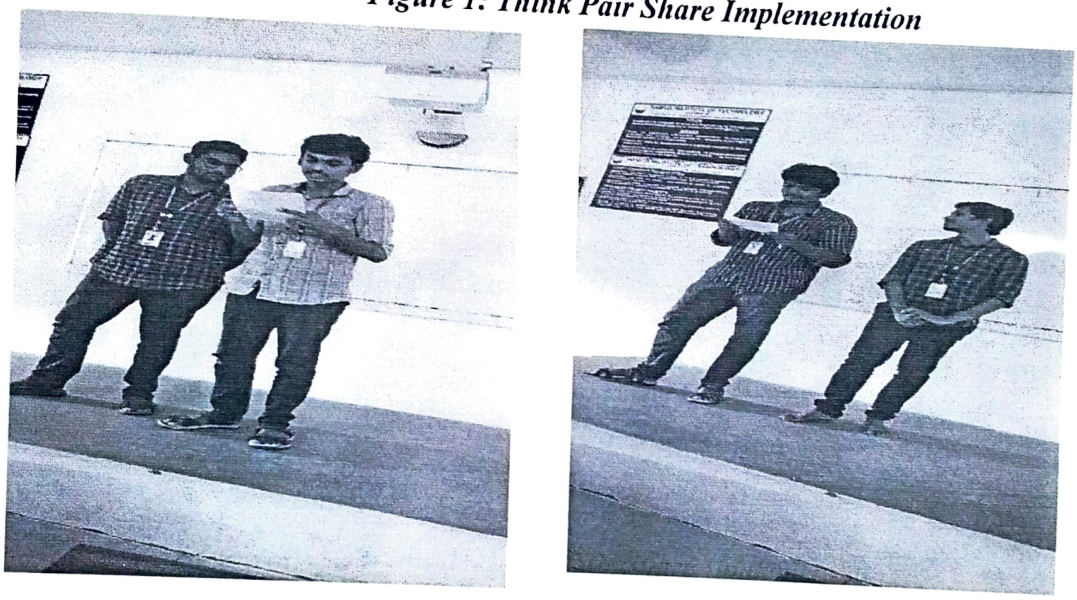

Figure 2: Think Pair Share Implementation

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    - All the students were actively participated and they understood the concepts correctly.
    - Students explored the knowledge of the rules and regulations that control engineers, code of ethics.
    - It makes the students to understand the civil and criminal law, relationship between law and ethics.
  - ***Benefit of the practice:***
    - Students can able to understand the details about balanced outlook on law

- Students can able to gain knowledge about the code of ethics are required to be a better software developer This activity helps the students to know the importance of ethics during software development.

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

- Two team members Mohankumar and Kannan presented the same topic. The Samyuktha vikashini and Vijayalakshmi teams are presented code of ethics in traffic signal and software industry case study.

References:

❖ https://www.ritrjpm.ac.in/images/computer-science/

❖ https://www.readingrockets.org/sites/default/files/Think-Pair-Share-template.pdf

❖ https://www.readingrockets.org/strategies/think-pair-share

29/4/22

Signature of Faculty Member

Dr.V.Anusuya

29/4/22

HOD

Dr.K.Vijayalakshmi

Department of Computer Science and Engineering
Academic Year 2021 - 2022 (Even Semester)

Degree, Semester & Branch: VIII Semester B.E. CSE
Course Code & Title: GE8076 & Professional Ethics in Engineering
Name of the Faculty member (s): Dr.V.Anusuya, ASCP/CSE

Innovative Practice Description

- **Unit / Topic:** Unit 4 / Conflict of Interest, Occupational Crime
- **Course Outcome:** CO4
- **Topic Learning Outcome:** TLO13
- **Activity Chosen:** One Minute paper
- **Justification:**
  - The one-minute paper is a formative tool that can improve both teaching and learning by monitoring student comprehension, giving you a glimpse into the strengths and weaknesses of your own teaching methods, and aid you in modifying your classroom's learning experience.
  - Giving students the ability to provide input into the teaching/learning process can promote healthy collaboration and a sense of meaning to a student's learning experience.
  - This activity helps the students to understand the conflict of interest and occupational crime and its limitations clearly.

- **Time Allotted for the Activity:** 10 Minutes

- **Details of the Implementation:**
  - The students are given 60 seconds at the end of a lecture period to jot down on paper some anonymous responses to an aspect of that day's class session.
  - Minute papers are an effective way of involving all students in class simultaneously. It ensures equal participation of each and every class member, including anyone who may be too shy or fearful to participate orally. It sends a message of high expectations—namely, each and every student is expected to participate and has something important to contribute—no matter what their cultural background or prior level of academic preparedness.
  - The students Anugragha ,Kavimalar and Gnamoorthy vidhya,Samyukthavikashini, Sowmya, Nivethitha,Vijayalakshmi Karthiga, wrote about conflict of interest. Mohan kumar and Abishek, and and Arunkumar, Kannan and Mohamed Yaseen, Ranjith kumar, Ram Babu wrote about Occupational crime as shown in figure1 and figure2.

- **CO – PO / PSO mapping:**

CO	PO1	PO2	PO3	PO6	PO7	PO8	PO9	PO12	PSO1	PSO2	PSO3
CO1	2	2	1	3	3	3	3	3	1	1	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO1	PO2	PO3	PO6	PO7	PO8	PO9	PO12	PSO1	PSO2	PSO3
	1	1	1	3	3	3	3	1	1	1	1
Justification for correlation	Needs to learn about the conflict of interest in safety and risk factors associated with a project, fundamental Engineering knowledge is essential	The students will study safety and risk factors, they could gain problem analysis skills.	Design a solution to resolve the conflict of interest ethically	The students can identify conflict of interest and occupational crime at the local, regional and global level.	As students will study about safety and risk factors involving in a project, they can understand the impact of engineering solutions on environment and society	The students can identify situations of unethical occupational crime and propose ethical alternatives as they know the rules	While assessing the safety and risk parameters of any project which involves team work, ethical principles has to be followed	Assessment of safety and risk factors and update is required throughout the professional life	As knowledge about the conflict of interest and occupational crime are required to be a better software developer.	To apply the knowledge of IoT, Cloud computing and cybersecurity, they should know the conflict of interest during development	To provide solution to real world problem usi Artificial Intelligence and bigdata they should learn code o ethics.

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

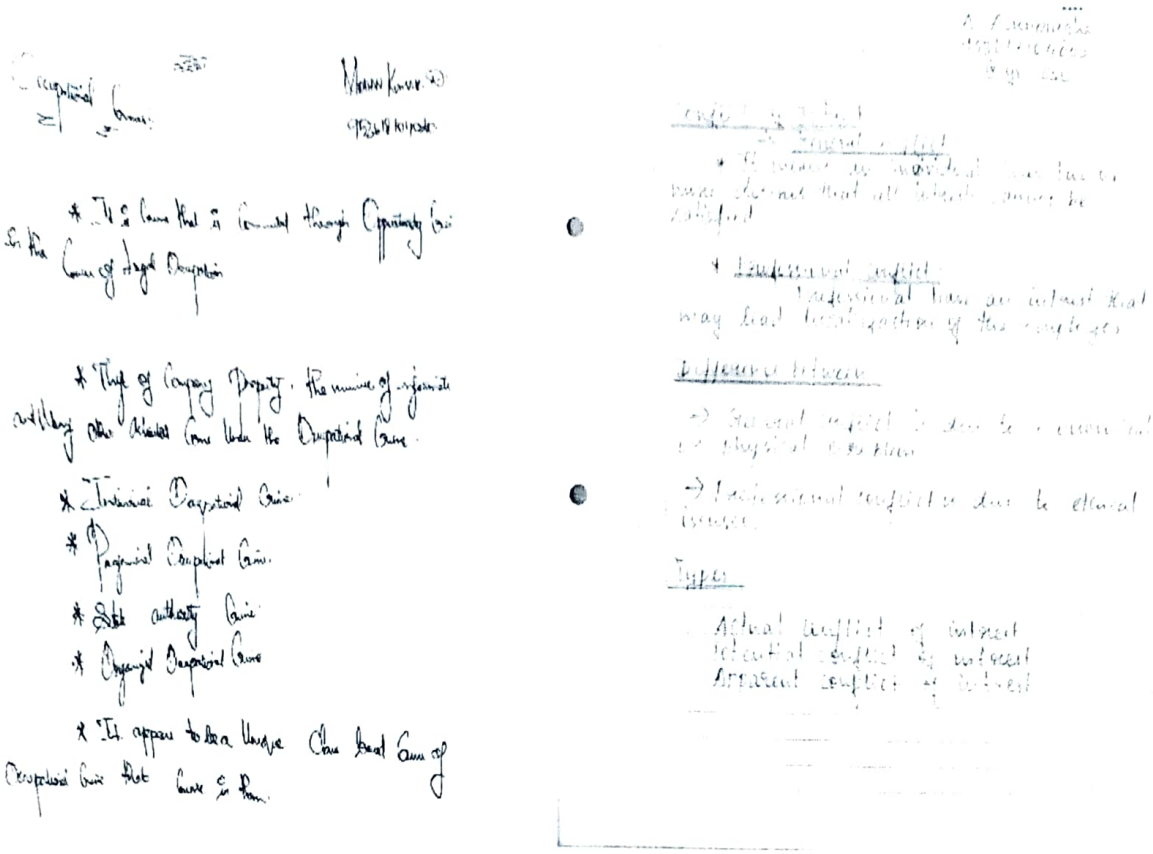

Figure 1: One Minute Paper Implementation

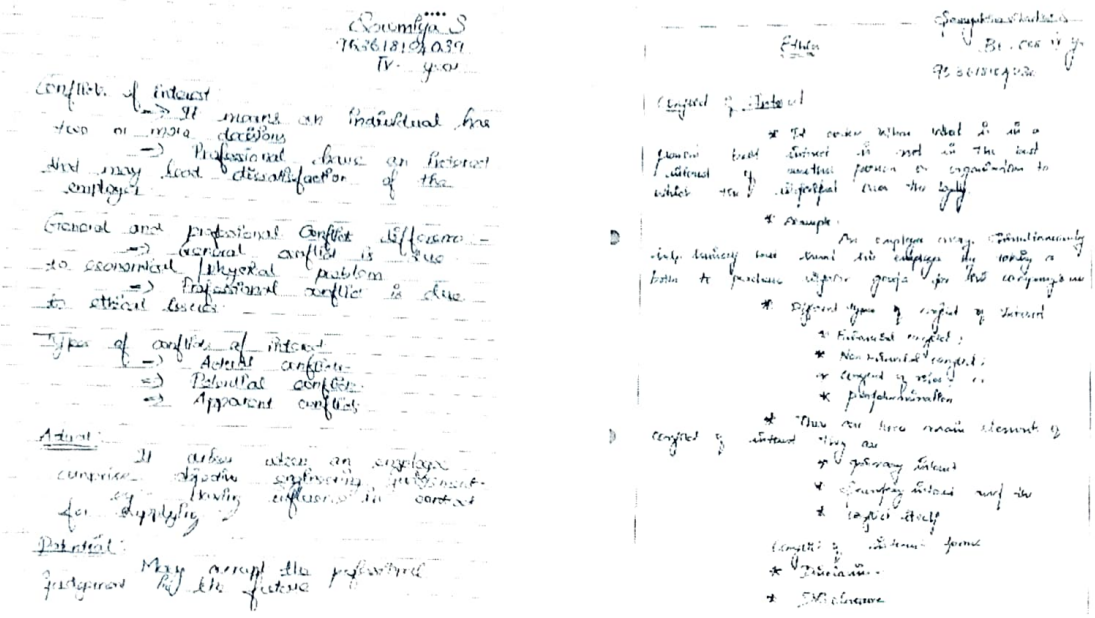

Figure 2: One Minute Paper Implementation

- **Reflective Critique:**
  - ❖ ***Feedback of practice from students and other stakeholders:***
    - Students said that they were able to recollect and remember the concepts of Conflict of Interest, Occupational Crime.
    - So Students understand conflict of interest and crimes in a profession.
    - Students felt they were able to identify the difference between bribe and gift.
    - It makes the students to understand the different types of conflict of interest.
  - ❖ ***Benefit of the practice:***
    - Students can able to understand the different types of occupational crime
    - Students can able to gain knowledge about the conflict of interest and how to resolve and how it is required for a software developer.
    - This activity helps the students to know the importance of conflict of interest and occupational crime in software development.
  - ❖ ***Challenges faced in implementation:***
    - The time allotted is 10 minutes, but they took 15 minutes to complete this task.

References:

- ❖ https://www.ritrjpm.ac.in/images/computer-science/
- ❖ https://www.rochester.edu/college/cetl/faculty/one-minute-paper.html

12/5/22

Signature of Faculty Member

Dr.V.Anusuya

12/5/2022

HOD

Dr.K.Vijayalakshmi

Department of Computer Science and Engineering
Academic Year 2021 - 2022 (Even Semester)

Degree, Semester & Branch: VIII Semester B.E. CSE
Course Code & Title: GE8076 & Professional Ethics in Engineering
Name of the Faculty member (s): Dr.V.Anusuya, ASCP/CSE

Innovative Practice Description

- **Unit / Topic:** Unit V / Moral Leadership
- **Course Outcome:** CO5
- **Topic Learning Outcome:** TLO19
- **Activity Chosen:** Learning by Teaching
- **Justification:**

  In unit V, the students need to understand the Moral Leader and their responsibility. This activity helps the students to understand the voluntarism and leadership.

- **Time Allotted for the Activity:** 25 Minutes

- **Details of the Implementation:**
  - A topic Moral leadership was given to Ms. Sowmya one week before the presentation.
  - She prepared the presentation and taken the class on 31.05.2022
  - The topic was delivered around 20 minutes.
  - The students discussed example moral leaders such as Mahatma Gandhi,Annai Therasa, Fredrick Taylor etc.,
  - The implementation of flipped class room activity as shown in figure1 and figure2.

- **CO – PO / PSO mapping:**

CO	PO1	PO2	PO3	PO6	PO7	PO8	PO9	PO12	PSO1	PSO2	PSO3
CO1	2	2	1	3	3	3	3	3	1	1	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO1	PO2	PO3	PO6	PO7	PO8	PO9	PO12	PSO1	PSO2	PSO3
	2	2	1	3	3	3	3	3	1	1	1
Justification for correlation	Needs to learn about the ethical principal for a moral leadership, fundamental Engineering knowledge is essential	The students will study factors leads to environmental disasters, they could gain problem analysis skills while taking leadership.	Design a solution to resolve the problem ethically	The students can identify moral leaders at the local, regional and global level.	students can design and develop a solution by considering safety of environment and society	The students can identify situations of unethical behavior of moral leader and propose ethical alternatives as they know the rules	To perform any task as a moral leader or to extract it from sub-ordinates in future, they should know how to treat others in a team	For a moral leader ethics is required throughout the professional life	As knowledge about the Voluntarism and participation is required to be a better leader.	The knowledge of IoT, Cloud computing and cybersecurity is required for a moral leader	To provide a solution to real world problem the knowledge of Artificial Intelligence and bigdata is required for a moral leader

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

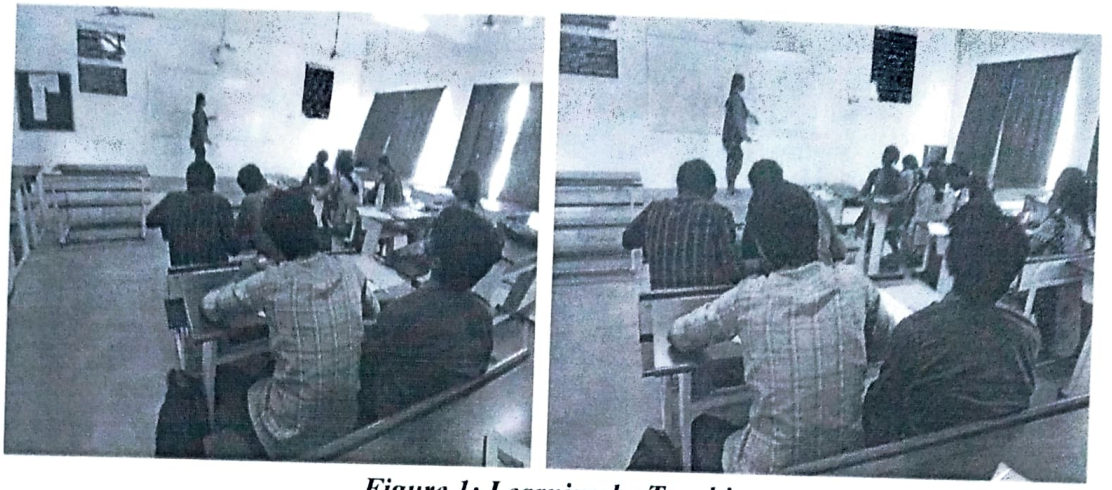

Figure 1: Learning by Teaching

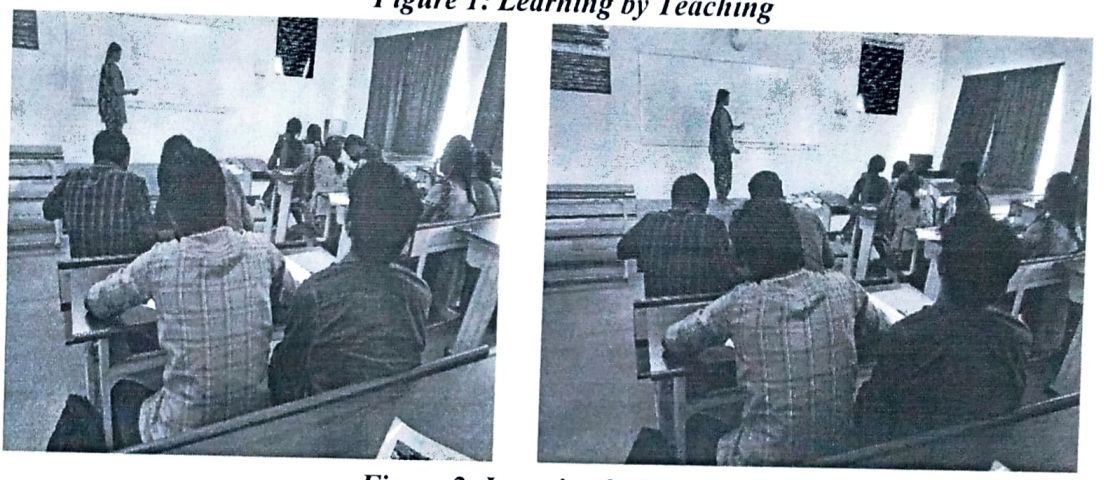

Figure 2: Learning by Teaching

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    - All the students were eagerly listened the class. They know the importance of participation in professional societies.
    - Students explored the responsibilities of a moral leader.
    - It makes the students to gain knowledge on volunteerism and its benefits.
  - ***Benefit of the practice:***
    - Students can able to know the role of a leader and their importance.
    - Students can able to identify the responsibilities of a leadership in communities.
    - This activity helps the students to know importance of professional societies.
  - ***Challenges faced in implementation:***
    - First Sowmya feel stressed then she managed the topic with real world example.
    - The topic was planned for 30 minutes,but she finishes within 20 minutes.

References:

- https://ohioline.osu.edu/
- https://www.ritrjpm.ac.in/images/computer-science/

8/6/22

Signature of Faculty Member

Dr.V.Anusuya

8/6/2022

HOD

Dr.K.Vijayalakshmi

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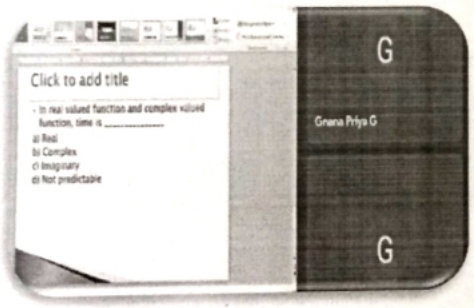
NBA Accredited UG Programs: CSE, EEE, ECE and MECH

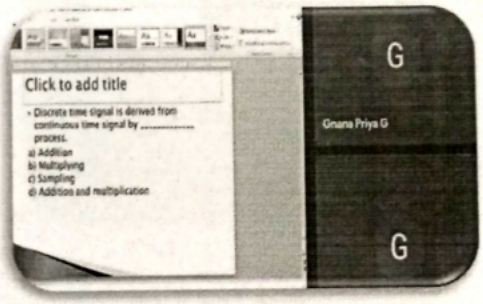
Department of Electronics and Communication Engineering
Academic Year: 2021- 2022 (Odd Semester)

INNOVATIVE TEACHING METHOD

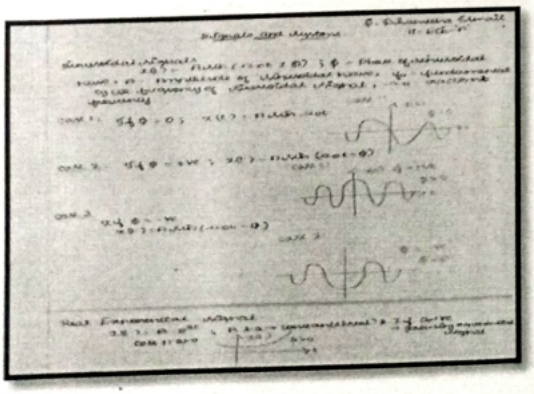
Degree, Semester& Branch: III Semester B.E. ECE A
Course Code & Title: EC8352 Signals and Systems
Name of the Faculty member: Mrs.G.Gnana Priya

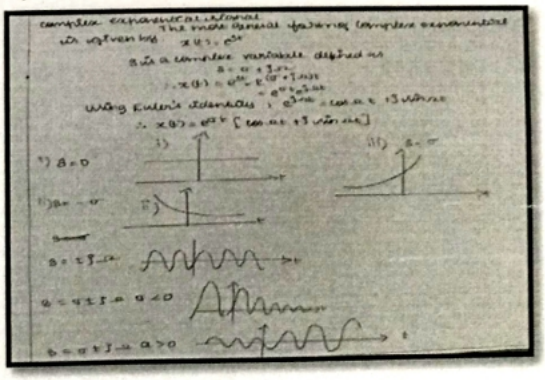
Sl.No.	Topic(s)	Activity	Reference(s)
UNIT I - CLASSIFICATION OF SIGNALS AND SYSTEMS			
1.	Introduction- Standard signals- Step, Ramp, Pulse	Quescussion	AllanV.Oppenheim,S.Wilsky and S.H.Nawab,"Signals and Systems", Pearson Education, 2007.





2.	Standard signals-Real and complex exponentials and Sinusoids	Minute Paper	AllanV.Oppenheim,S.Wilsky and S.H.Nawab,"Signals and Systems", Pearson Education, 2007.





3.	Classification of systems- Stable & Unstable, Revision	Crowd Sourcing	https://nptel.ac.in/courses/108/104/108104100/

14/9/2021

Signature of the Faculty member

14/9/21

HOD

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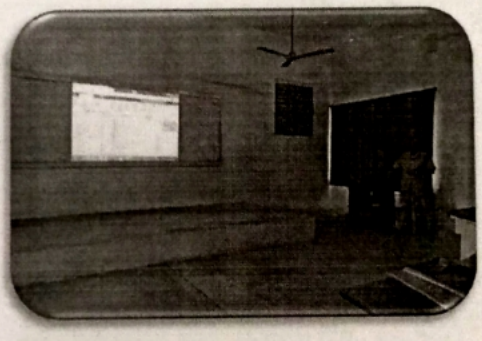
Department of Electronics and Communication Engineering
Academic Year: 2021- 2022 (Odd Semester)

INNOVATIVE TEACHING METHOD

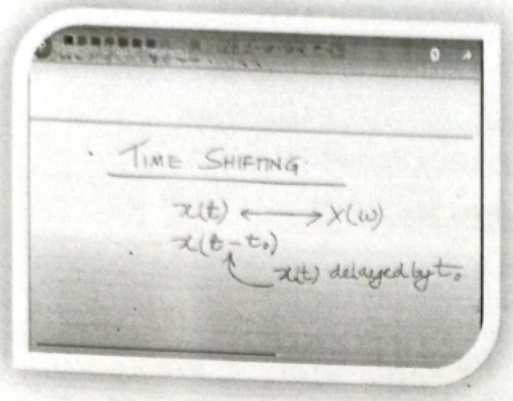
Degree, Semester& Branch: III Semester B.E. ECE A
Course Code & Title: EC8352 Signals and Systems
Name of the Faculty member: Mrs.G.Gnana Priya

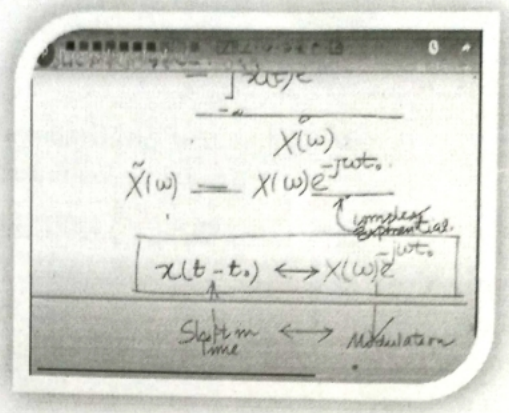
Sl.No.	Topic(s)	Activity	Reference(s)
	UNIT II - ANALYSIS OF CONTINUOUS TIME SIGNALS		
1.	Fourier series for periodic signals – Exponential Fourier series	Clickers	AllanV.Oppenheim,S.Wilsky and S.H.Nawab,"Signals and Systems", Pearson Education, 2007.



2.	Fourier series for periodic signals – Properties of Fourier Series -Linearity, Time shifting, Frequency Shift, Time scaling, Time Differentiation, Convolution, Multiplication, Parsevals theorem	Open book test (library)	AllanV.Oppenheim,S.Wilsky and S.H.Nawab,"Signals and Systems", Pearson Education, 2007.

3.	Fourier Transform - Properties	NPTEL video	https://nptel.ac.in/courses/108/104/108104100/





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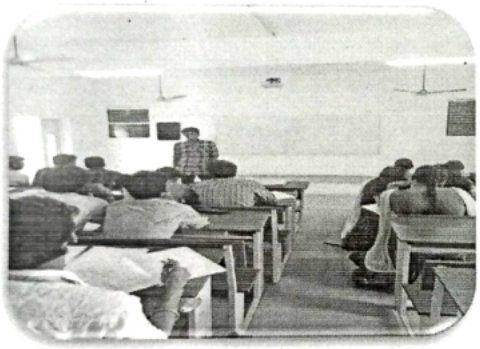
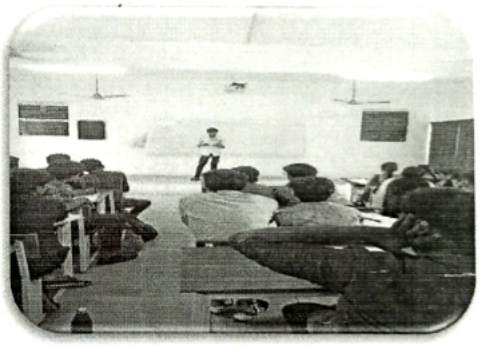
Department of Electronics and Communication Engineering
Academic Year: 2021- 2022 (Odd Semester)

INNOVATIVE TEACHING METHOD

Degree, Semester& Branch: III Semester B.E. ECE A
Course Code & Title: EC8352 Signals and Systems
Name of the Faculty member: Mrs.G.Gnana Priya

Sl.No.	Topic(s)	Activity	Reference(s)
UNIT III - LINEAR TIME INVARIANT –CONTINUOUS TIME SYSTEMS			
1.	Convolution integrals - Properties	Head and Talk	AllanV.Oppenheim,S.Wilsky and S.H.Nawab,"Signals and Systems", Pearson Education, 2007.
	 		
2.	Systems connected in series / parallel, Revision	Memory Matrix	AllanV.Oppenheim,S.Wilsky and S.H.Nawab,"Signals and Systems", Pearson Education, 2007.
	 		

3.	Convolution integrals	Online Simulation	https://www.youtube.com/watch?v=LZ0qjZezGkQ

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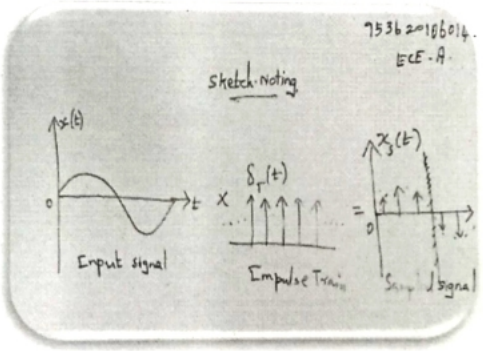
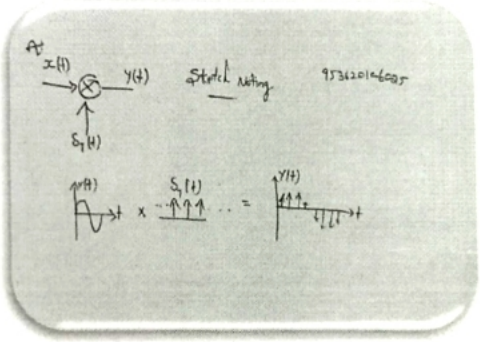
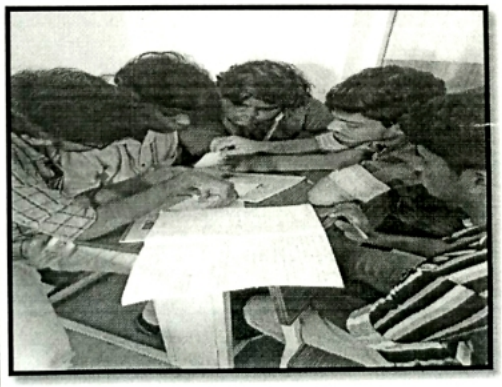
Department of Electronics and Communication Engineering
Academic Year: 2021- 2022 (Odd Semester)

INNOVATIVE TEACHING METHOD

Degree, Semester& Branch: III Semester B.E. ECE A
Course Code & Title: EC8352 Signals and Systems
Name of the Faculty member: Mrs.G.Gnana Priya

Sl.No.	Topic(s)	Activity	Reference(s)
	UNIT IV - ANALYSIS OF DISCRETE TIME SIGNALS		
1.	Baseband signal Sampling	Sketch Noting	AllanV.Oppenheim,S.Wilsky and S.H.Nawab,"Signals and Systems", Pearson Education, 2007.
	 		
2.	Properties of Z-transform	Index Card Match	AllanV.Oppenheim,S.Wilsky and S.H.Nawab,"Signals and Systems", Pearson Education, 2007.
	 		

3.	Methods of Inverse Z Transform	Mind Map	https://www.youtube.com/watch?v=LZ0qjZezGkQ

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Department of Electronics and Communication Engineering
Academic Year: 2021- 2022 (Odd Semester)

INNOVATIVE TEACHING METHOD

Degree, Semester& Branch: III Semester B.E. ECE A
Course Code & Title: EC8352 Signals and Systems
Name of the Faculty member: Mrs.G.Gnana Priya

Sl.No.	Topic(s)	Activity	Reference(s)
UNIT V - LINEAR TIME INVARIANT - DISCRETE TIME SYSTEMS			
1.	Convolution sum	Sorting strips	AllanV.Oppenheim,S.Wilsky and S.H.Nawab,"Signals and Systems", Pearson Education, 2007.
 			
2.	Z Transform in analysis of Recursive & Non-Recursive systems	Finger Signal	AllanV.Oppenheim,S.Wilsky and S.H.Nawab,"Signals and Systems", Pearson Education, 2007.
 			

3.	DT systems connected in series and parallel	Zero Minute Speech	https://www.youtube.com/watch?v=MVygBzbbUDc

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Department of Electronics and Communication Engineering
Academic Year 2021- 2022 (Odd Semester)

Degree, Semester & Branch: III Semester B.E. ECE-A
Course Code & Title: EC8352 Signals and Systems
Name of the Faculty member: Mrs.G.Gnana Priya

Innovative Practice Description

- **Unit / Topic:** Unit II / Laplace Transform – Properties
- **Course Outcome:** CO 2
- **Topic Learning Outcome:** TLO 7
- **Activity Chosen:** Flipped Classroom
- **Justification:**

The Unit II consists of Fourier transform and Laplace transform. The relation between Fourier transform and Laplace transform is very important. So I taught the properties of the Fourier transform in the class and then planned to conduct the properties of Laplace transform as a Flipped Classroom activity to make the students understand the two concepts clearly which enhances their learning level. From their presentation I can observe the understanding level of the students.

- **Time Allotted for the Activity:** 50 minutes
- **Details of the Implementation:**

. The materials related to the activity were posted earlier in canvas for learning by the students. The activity was implemented by forming teams.

No. of teams: 10

No. of properties: 10

The team forming choice was given to the students with the condition that a team should consist of mixer of advanced learners, average learners and slow learners. In such a way the class strength was divided into 10 teams. Each team prepared and presented one property of Laplace transform.

CO – PO / PSO mapping:

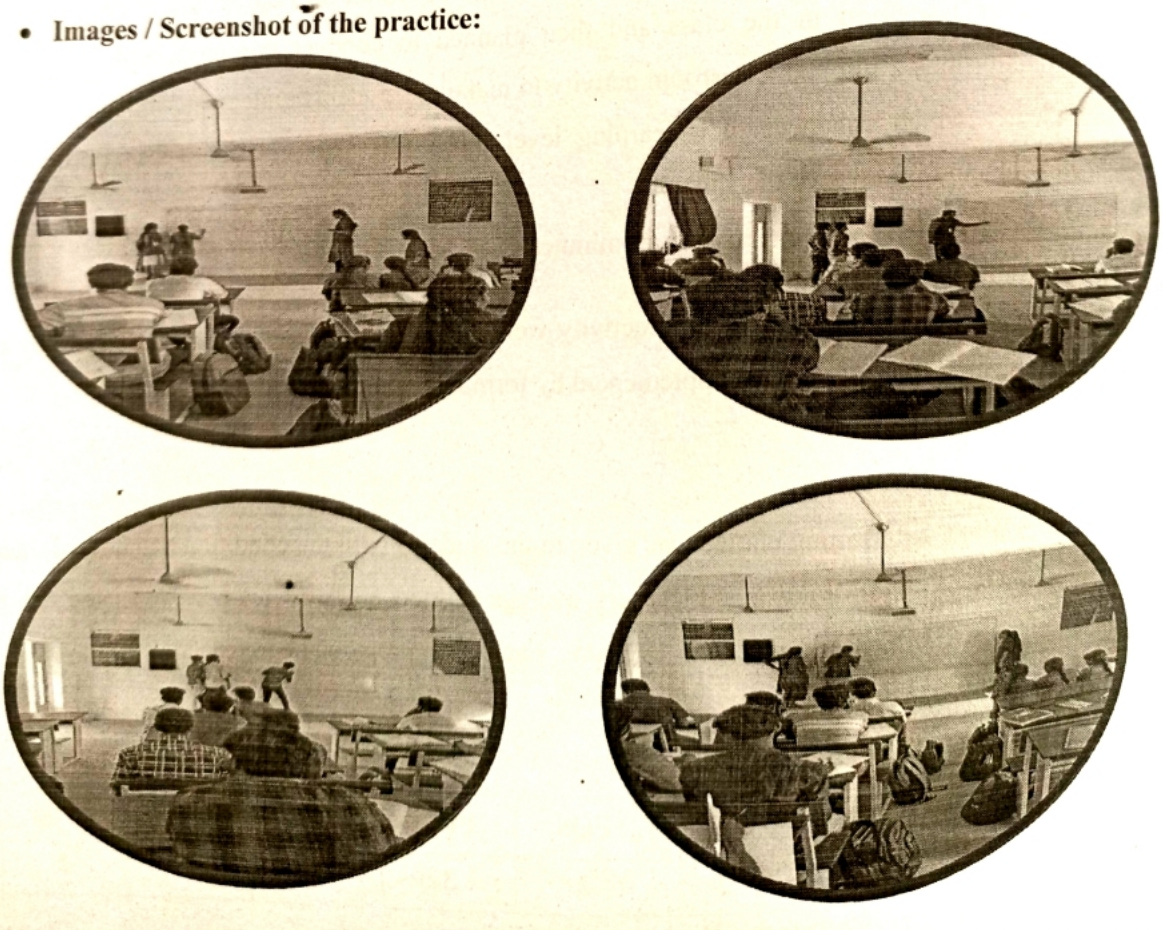
CO	PO1	PO2	PO8	PO9	PO10	PSO1	PSO3
CO2	2	2	2	3	3	2	2

(1 – Low 2 – Moderate 3 – High)

- PO / PSO mapped:

Innovative practice	PO1	PO8	PO9	PO10	PSO1
	3	2	3	2	3
Justification for correlation	Analysis of CT signals requires the knowledge of mathematical and engineering fundamentals such as integration, differentiation, and transforms. So, the PO1 is highly correlated.	The PO8 is moderately correlated, since the Flipped Classroom activity involves presentation which applies moral & ethical principles while collecting the materials related to the topic..	Through this flipped classroom activity, the students work as a member of a team to achieve the goal. So, the PO9 is highly correlated.	Through flipped classroom activity the students' listen to, comprehend information, instructions and viewpoints of others. So, the PO10 is mapped at level 2.	The students be able innovate ne ideas to sol existing/novel problems in t analysis of C signals. So, th PSO1 is mapped at level 3.

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



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

    The following points were observed based on the feedback got from the students.
    - ✓ The students felt that the self-learning capability improved because of this activity.
    - ✓ The presentation skills also increased while learning the concept by themselves and explaining to the class.
    - ✓ The communication skills of the students improved while discussing with their team members and then presenting to the class.

  - ***Benefit of the practice:***
    - ✓ The main benefit of the flipped class activity is each group will learn one property and the presentation helps the other members also to know about all the properties.
    - ✓ The students effectively involved in the activity by discussing with their team members.
    - ✓ The understanding level and learning level of the students also increased.
    - ✓ As the team forming choice was given to the students they actively participated.

  - ***Challenges faced in implementation:***
    - The biggest challenge was to making the students to learn the materials. Each student has to read the material posted in the canvas and then they have to prepare.
    - Very few students were not actively participated in the activity. Making all the students to participate was also challenging.
    - The activity was planned for one hour but it took two hours to complete as few teams took extra time than the allotted time to complete the activity.

References:

- Allan V.Oppenheim, S.Wilsky and S.H.Nawab, "Signals and Systems", Pearson, 2015.
- https://nptel.ac.in/courses/108/104/108104100/

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Department of Electronics and Communication Engineering
Academic Year 2021- 2022 (Odd Semester)

Degree, Semester & Branch: III Semester B.E. ECE-A
Course Code & Title: EC8352 Signals and Systems
Name of the Faculty member: Mrs.G.Gnana Priya

Innovative Practice Description

- **Unit / Topic:** Unit III / Differential Equation- Laplace transforms in Analysis of CT Systems - Total Response
- **Course Outcome:** CO 3
- **Topic Learning Outcome:** TLO 11
- **Activity Chosen:** Round Table
- **Justification:**

  Round Table activity is a method of round table discussion for solving problems which is used to engage students in ways that helps them integrate new and interesting content knowledge with prior knowledge through a structured round table format. I have chosen this topic Differential Equation- Laplace transforms in Analysis of CT Systems - Total Response for conducting this activity because the natural response and forced response were already taught to the students. So while finding the total response by round table discussion it enables them to solve the problems easily and effectively.

- **Time Allotted for the Activity:** 50 minutes

- **Details of the Implementation:**
  - The students were asked to turn from their position of seating in such a way that they have to sit in groups (round table).
  - Then each group was assigned a problem to solve
  - The students referred the solved problems of natural response and forced response to find the total response
  - They discussed with their group members to solve the problem
  - The doubts were also clarified during the activity

CO – PO / PSO mapping:

CO	PO1	PO2	PO5	PO8	PO9	PO10	PSO1	PSO3
CO3	3	2	2	2	3	2	3	2

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO1	PO2	PO8	PO9	PO10	PSO1
	3	2	2	3	2	3
Justification for correlation	The students apply the knowledge of mathematics such as differential equation, Integration to solve problems in Linear Time Invariant Continuous Time Systems. So, the outcome is highly correlated.	The students analyze complex engineering problems in LTI CT systems and they will be able to find the response using mathematical principles. So, the outcome is mapped at level 2.	The PO8 is mapped at level 2 since the Collaborative learning round table activity is planned here so the students must follow basic ethical practice among themselves and within groups.	The PO9 outcome is highly correlated since the students work well as individuals and as a team while doing the round table activity.	The students' listen to, comprehend information, instructions and viewpoints of others through round table (collaborative) activity. As a result, the PO10 is mapped to level 2.	The students come up with new ways to solve existing/new problems while determining the response to an LTI C system. As a result, the PSO1 is mapped at level 3.

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

Reflective Critique:

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

  The following points were observed based on the feedback got from the students.

  - ✓ The slow learners felt this activity very useful for solving problems by discussing with their friends who know the concept very clearly.
  - ✓ By sharing the steps involved in solving the problem with their group members it enhances their communication skills.

- ***Benefit of the practice:***

  - ✓ The main benefit of this collaborative activity is to make the slow learners to complete the task with the support of their group members.
  - ✓ The members of the team verified the answers of each step before executing the next step, which helped them to avoid mistakes.
  - ✓ They also discussed effectively within the team.
  - ✓ This type of team formation helped the slow learners to solve the problem in time.

❖ *Challenges faced in implementation:*

- In few groups the interest in doing collaborative learning was missing.

References:

❖ Allan V.Oppenheim, S.Wilsky and S.H.Nawab, "Signals and Systems", Pearson, 2015.

❖ https://nptel.ac.in/courses/108/104/108104100/

02/11/2021

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2/11/21

HOD

Department of Computer Science and Engineering
Academic Year 2021 – 2022(Odd / Even Semester)

Degree, Semester & Branch: B.E, VII & CSE
Course Code & Title: CS8791 & Cloud Computing
Name of the Faculty member (s): Dr.M.Gomathy Nayagam

Innovative Practice Description

- **Unit / Topic: Unit V /Map Reduce**
- **Course Outcome:** CO 5
- **Topic Learning Outcome:** TLO13
- **Activity Chosen: Flipped Class**
- **Justification:**
  Apcache Hadoop is one of the big data analytics tools which will be used by the most of the industry. It is highly reliable, scalable, distributed processing tool for big data. HDFS is one of component in Apache hadoop. The primary objective of the flipped class is to allow the students for self-paced learning, dive deeper into the concept, enhance the communiqué skill, inventiveness and analytic skill. Hence this activity will help the students to explore knowledge in Mapreduce concepts well and good.
- **Time Allotted for the Activity:** 40 Minutes
- **Details of the Implementation:**
  - Video lecture corresponding to the particular topic was hosted in online one week before.
  - Students were instructed to watch the video and took the notes according to their understanding level in their home and come with preparation for discussion on one particular day in the class room.
  - The students were segmented as a group in the class during the day of discussion.
  - Course Instructor gave 10 minutes for discussion among the group member regarding the video lecture they watched earlier.
  - Each group collected all the important points related to the topic from those group members and to be allotted 15 minutes time for on board presentation and discussion about the topic in front of the whole class with their corresponding group members. The fig 1a-d. shows the presentation of members from each teams.
  - Corresponding subject faculty monitored each group's presentation.
  - Course Instructor selected one among the student in the class and asked the particular student to summarize all groups' presentation for next 5 minutes

- **CO – PO / PSO mapping:**

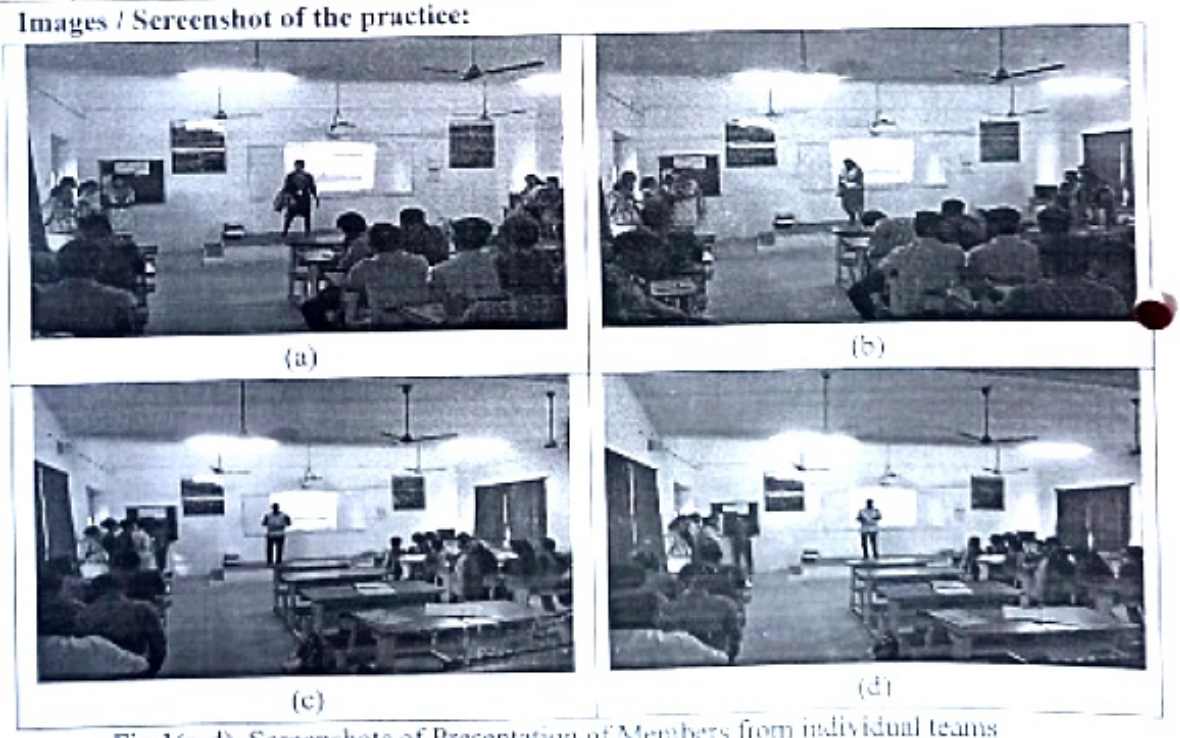
CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 3	3	2	2	2	2	-	-	1	1	2	-	1	2	3	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO 1	PO 8	PO 9	PO 10	PSO2
	3	1	2	1	3
Justification for correlation	Students could be able to apply basic theory and principles of Map reduce programming model in Hadoop	Based on the theoretical knowledge gathered, group of students prepared their own points without copying other groups points.	Students could be able to recollect the various map reduce programming model thorough their group	Students could able to get the knowledge clearly about the map reduce	Students could be able to write simple word count problem using map reduce programming model in hadoop.

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



(a) (b) (c) (d)

Fig 1(a-d). Screenshots of Presentation of Members from individual teams

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    Students are enjoyed to prepare the concept through self-learning. They felt that this activity is very helpful to them for improving their self-learning ability
  - ***Benefit of the practice:*** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)
    - The students can able to explore the knowledge in map reduce programming model concepts by improving their self-paced learning and get more key points from their peer groups when they are doing collaborative discussion among them.
  - ***Challenges faced in implementation:***
    - Difficult to make the individual to watch the video which is already hosted in canvas.
    - Difficult to Select the video for the activity and create the group which contains heterogeneous students.
    - Space for conducting this activity inside the class room is not so good.

References:

- https://www.ritrjpm.ac.in/images/computer-science/CS8603-flippedClassroom.pdf
- https://www.ritrjpm.ac.in/images/computer-cience/32_CS6703_Flippedclassroom.pdf
- Flipped Learning Network (FLN). (2014) The Four Pillars of F-L-I-P™
- Stephanie butler velegol, sarah e. Zappe, emily mahoney, The Evolution of a Flipped Classroom: Evidence-Based Recommendations, winter 2015, pp.1-37
- Dian Mita Nurhayati and Hartono, Implementation of Cooperative Learning Model Type with RME Approach to Understanding of Mathematical Concept Student State Junior High School in Pekanbaru, AIP Conference Proceedings 1848, 040002, 2017, https://doi.org/10.1063/1.4983940
- Micheal M van Wyk, The Effects of the Cooperative Learning Method on Student Achievement, Attitude and Motivation in Economics Education, Journal of Social Science pp. 261-270, 2017, https://doi.org/10.1080/09718923.2012.11893104

Signature of Faculty Member

HOD

Department of Computer Science and Engineering
Academic Year 2021 – 2022(Odd / Even Semester)

Degree, Semester & Branch: B.E, VII & CSE
Course Code & Title: CS8791 & Cloud Computing
Name of the Faculty member (s): Dr.M.Gomathy Nayagam

Innovative Practice Description

- **Unit / Topic: Unit 1 /Underlying Principles of Parallel and Distributed Computing**
- **Course Outcome:** CO 1
- **Topic Learning Outcome:** TLO2
- **Activity Chosen: Online Interactive Class Polling using Slido**
- **Justification:**
  Students were already studied the concept of "Parallel and Distributed Computing This topic was chosen in order to recollect the concepts of underpinning principles of Parallel and Distributed Computing. Since these principles are mandatory to understand the evaluation of Cloud computing, students can easily learn about these principles though this activity.
- **Time Allotted for the Activity:** 20 Seconds
- **Details of the Implementation:**
  Course Instructor created the online class polling using Slido.com on the previous day of the class. Al he shared the link of the class polling through. The fig1 shows the sample environment of the slido. After the students competed the each questions in the quiz, it will shows the statistics of percentage of students attended correct answers as shown in fig2. Once the students completed all the questions in the quiz, slido environment will show the leaderboard. The fig. 3 shows the sample leaderboard of the current quiz.

- **CO – PO / PSO mapping:**

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	3	2	2	1	1	-	-	1	-	1	-	1	-	3	-

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO 1	PO 10	PO 12	PO 2	PSO2
	3	1	1	3	3
Justification for	Students could be	Students could be able to	Students could be able	Students could able to get the knowledge	Students could be able to identify the

correlation	able to apply basic theory and principles of Distributed and Parallel Computing	attend the class polling/ answer the quiz questions with the help of gathered knowledge in the topic	to recollect the basic principles of distributed and parallel computing	and differentiate the concepts clearly between Distributed, Parallel, Grid and Cloud Computing.	difference between Distributed, Parallel and Cloud Computing

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

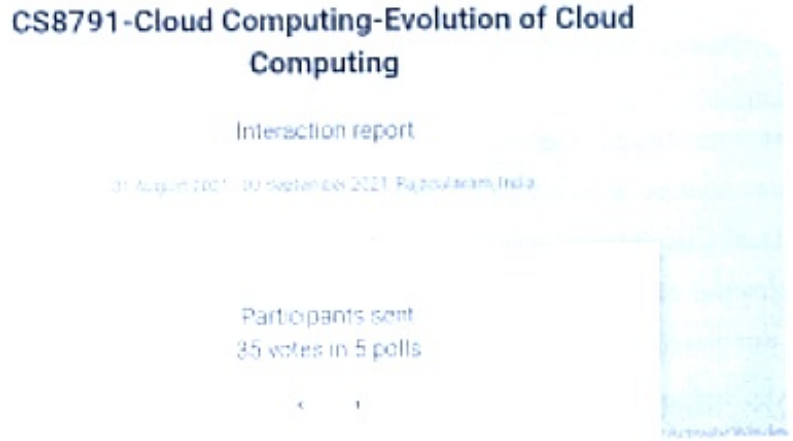


Fig 1. Sample Screen of Quiz

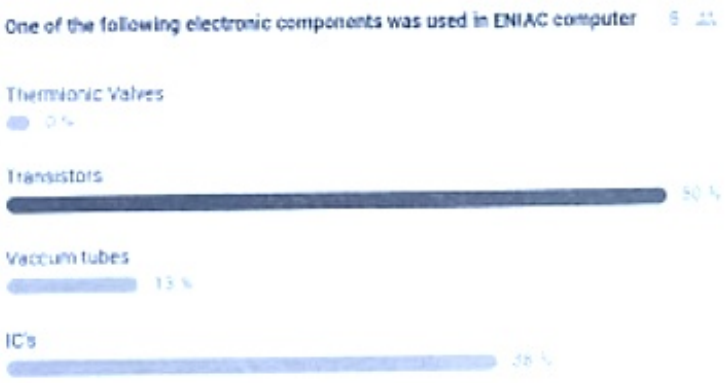


Fig 2. Sample statistics of Correct answer chosen by the students

Fig.3. Leaderboard of the participants

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    Feedback is attached here.
  - ***Benefit of the practice:*** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)
    - Students had understood the concepts of distributed and parallel computing.
    - More than 80% of students were attended the key elements of parallel computing question asked in IAT I and scored 70% of marks in the particular question.
  - ***Challenges faced in implementation:***
    - Making Every Students to answer the Questions in an online interactive class polling using Slido

References:

- . https://www.teacherspayteachers.com/Product/World-History-2-Daily-Warm-UpActivities-352341
- https://www.teachingideas.co.uk/subjects/warm-up-ideas
- https://www.ritrjpm.ac.in/images/computer-science/CS8491_ClassPoll.pdf
- https://www.ritrjpm.ac.in/images/computer-science/2_CS6703_ClassPoll.pdf
- https://www.ritrjpm.ac.in/images/computer-science/12_CS8392_Classpoll.pdf
- https://www.ritrjpm.ac.in/images/computer-science/27_CS8392_Classpoll.pdf

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Department of Computer Science and Engineering
Academic Year 2021 – 2022(Odd / Even Semester)

Degree, Semester & Branch: B.E, VII & CSE
Course Code & Title: CS8791 & Cloud Computing
Name of the Faculty member (s): Dr.M.Gomathy Nayagam

Innovative Practice Description

- **Unit / Topic: Unit II /Basics of Virtualization and Types of Virtualization**
- **Course Outcome:** CO 2
- **Topic Learning Outcome:** TLO6
- **Activity Chosen: Online Handson using ICTAcademy VLAB**
- **Justification:**
  Since the principles of Virtualization technique is mandatory for the Cloud computing, hands on demonstration is given to the students thorugh ICTAcademy Vlab by using the following link **https://portal.netdevgroup.com/learn/cloud-virt-concepts/enroll**
- **Time Allotted for the Activity:** 50 Minutes
- **Details of the Implementation:**
  Course instructor instructed the students to register in aforementioned link with their college mail id. Also he prepared video material for creating VM in ICTAcademy Vlab, hosted the video material in you tube and shared the youtube link to the students one day before the class. The fig.1 shows the screenshots of video material shared to the students. On the day of VLAB class, course instructor demonstrated step by step to create the Virtual machine using VMWare workstation through the ICTAcademy The youtube links are:
  https://www.youtube.com/watch?v=IijoMubAjP8
  https://www.youtube.com/watch?v=oRh_ogDB1xQ
- **CO – PO / PSO mapping:**

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	3	2	1	1	1	-	-	-	-	2	-	1	1	3	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO 1	PO 10	PO 12	PO 2	PSO2
	3	2	1	2	1
Justification for correlation	Students could be able to apply basic	Students could be able to have the	Students could be able to recollect	Students could able to get the knowledge and differentiate the	Students could be able to identify the difference between

	theory and principles of Basic Types of Virtualization, Virtualization Techniques	hands-on with Virtual machine creation on Vlab	the basic principles of Virtualization	concepts clearly between Virtualization type	Virtualization types

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

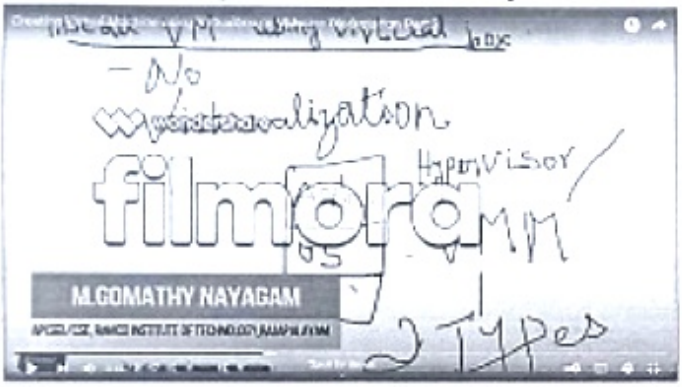


Fig1. Screenshots of Video shared to the students for VM creation

- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    Students felt that they understand the concepts of Virtualization, types and creation of Virtual Machine thorough the hands on using VLAB.
  - ***Benefit of the practice:*** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)
    - Students had understood the concepts of basics of virtualization, its types and VM creation.
    - All the students completed the creation of virtual machine in VMware work station virtually.
  - ***Challenges faced in implementation:***
    - Solving the issues during the creation of VM through online.

References:

- . https://www.ritrjpm.ac.in/images/computer-science/CS6801-MCAP-MGM.pdf
- https://www.ritrjpm.ac.in/images/computer-science/TPS_Demo_SM.pdf
- https://www.netdevgroup.com/online/content/vmita/ictacademy.html?utm_source=VMware&utm_campaign=ict#learn

19/21.

Signature of Faculty Member **HOD**

Department of Civil Engineering

Academic Year 2021– 2022 (Odd Semester)

Degree, Semester & Branch: V semester B.E Civil Engineering

Course Code & Title: CE8502 & Structural Analysis I

Name of the Faculty member (s): Dr.M. Indhumathi

Innovative Practice Description

- **Unit / Topic: Unit I to V / Analysis of Structure using STAAD pro**
- **Course Outcome:** CO1 to CO6
- **Topic Learning Outcome:** TLO1 to TLO20
- **Activity Chosen: Simulation Tool**
- **Justification:**
  Structural Analysis subject is mainly involves the process of analysis of structures in a various methods manually.Whether the results may justified using any softwares.Here STADD pro is used to analyse the structural elements and further the results are compared with manual calculation.
- **Time Allotted for the Activity:** 50 minutes
- **Details of the Implementation:**
  1. After Completing all the units theoretically, individual elements are analyzed in a structure step by step then the whole structure has been analysed (Upto two-story framed structures)
  2. I asked all students to take any residential plan and practice with STAAD pro to analyze the structure completely.
- **CO – PO / PSO mapping:**

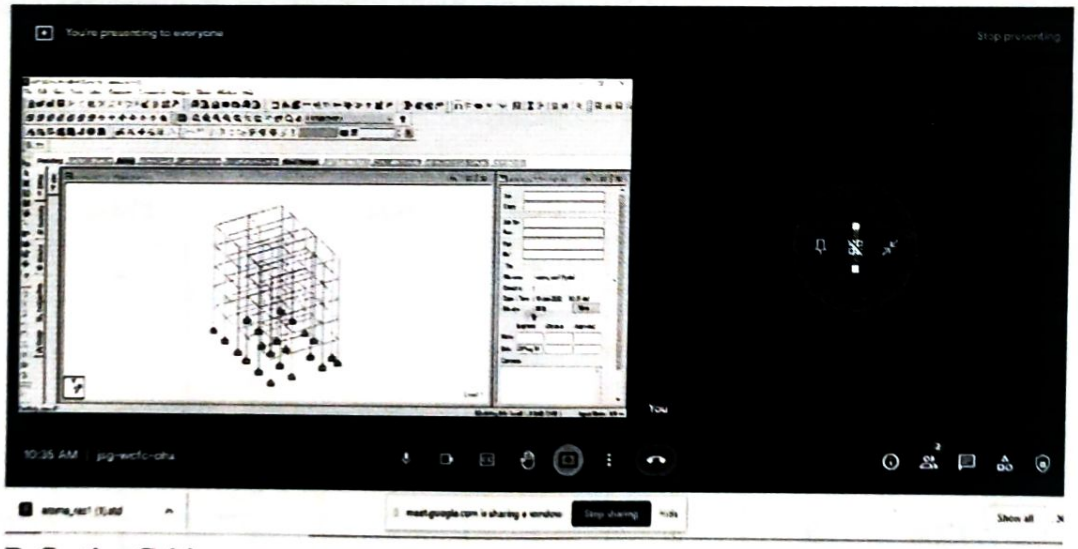
CO	PO1	PO2	PO3	PO4	PO5	PSO2	PSO4
CO1	3	3	2	1	3	2	3
CO2	3	3	2	1	3	2	3
CO3	3	3	2	1	3	2	3
CO4	3	3	2	1	3	2	3
CO5	3	3	2	1	3	2	3
CO6	3	3	2	1	3	2	3

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO1	PO2	PO3	PO4	PO5	PSO2	PSO4
Justification for correlation	Helps to applying the knowledge of mathematics, engineering fundamentals and an engineering specialization to the solution of complex engineering problems	Used to Identify, formulate, and analyze complex engineering problems	Giving design solutions for complex engineering problems and also it meets the public safety	Used to provide valid conclusions,utilising the design of experiments and analysis	Utilising the modern tool like STADD pro,Ansys etc..	Utilizing the modern tool for civil engineering practice	Enhancing the skill to act as design consultant in construction industry

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



- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    The students felt very easy to analyse the structure using STAAD pro tool than manually.they said ot is very useful tool to become a structural Engineer
  - ***Benefit of the practice:*** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)
    i. Simulation tool is an effective way of involving all students in class simultaneously.
    ii. It prompts students to reflect on the day's lesson and provides the instructor with useful feedback.

❖ ***Challenges faced in implementation:***
Initially, I have planned the activity for 50 minutes but students have taken more than 50 minutes to understand well.

References:

1. https://www.youtube.com/watch?v=3XxHHzIGC_M

Signature of Faculty Member **HOD**

Department of Electrical and Electronics Engineering
Academic Year 2021 – 2022 (Odd Semester)

Degree, Semester & Branch: III Semester B.E. EEE
Course Code & Title: EE8301 Electrical Machines - I
Name of the Faculty member (s): Mr. D. Karthik Prabhu

Innovative Practice Description

- **Unit / Topic:** Unit I / Hysteresis and Eddy Current losses
- **Course Outcome:** CO 1
- **Topic Learning Outcome:** TLO - 2
- **Activity Chosen:** Demonstration
- **Justification:**

The Hysteresis and Eddy Current losses depend on the types of cores. Since each type has its own property. After teaching the concept, I thought of conducting this activity for making the students to give the difference between the solid and laminated cores which enhance the learning level and as a teacher I can judge the understanding level of the students.

- **Time Allotted for the Activity:** 15 minutes
- **Details of the Implementation:**

After teaching the concept, give students one or two minutes to think about the topic without writing anything.

Total Strength is 29,

Photographer: one student - Mr. Nikil Dev (interested in photography)

Reporter: Myself

At the end the Class (Last 15 minutes)

- ✓ I asked the students to think about various types of cores in electrical machines for 2 minutes.
- ✓ Then I told them to Pair with their neighbours and discuss about the construction of cores for another 1 minute.
- ✓ Finally, I shown the stampings and laminated core for each student and explained.

- **CO – PO / PSO mapping:**

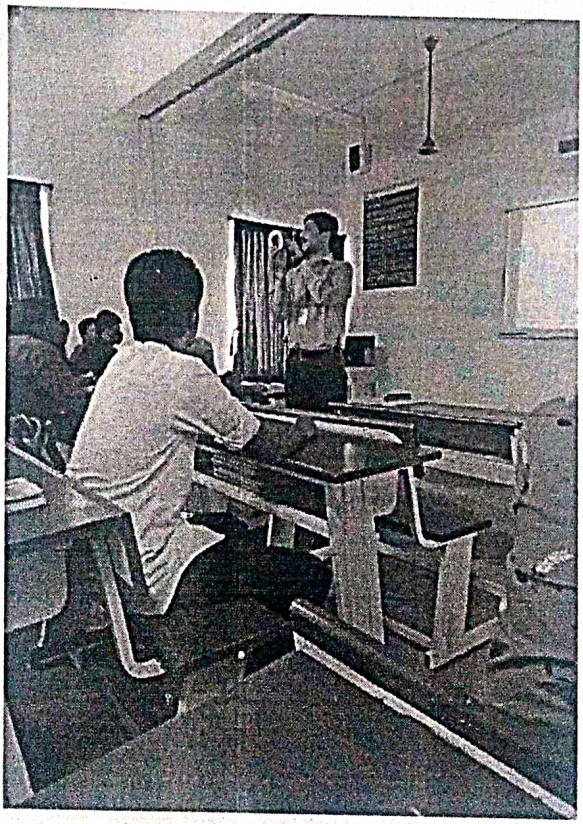
CO	PO 1	PO 2	PO 5	PO 10	PO12	PSO 1
CO1	3	2	1	2	2	2

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	**PO 7**
	1
Justification for correlation	Due to demonstration practice students understood about the core used in the electrical machines and the impact on electrical equipments performance and society. So it is correlated slightly.

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



Reflective Critique:

- ***Feedback of practice from students and other stakeholders:***
  Students told that it is good see all the parts of the machines individually and demonstration helps the students to understand the concepts easily.

- ***Benefit of the practice:***

1. Students can able to understand the impact of engineering solution on society
2. Most of the students attended the question asked Internal Assessment Test – I retest.
3. The success of the activity was evaluated by asking the same question during transformer core construction (Unit – II) – **Around 80% of students answered.**
4. Students can able to explain the concepts in examination without any confusion.

- ***Challenges faced in implementation:***

1. Time utilization for conducting activity.

References:

- https://omerad.msu.edu/teaching/teaching-strategies/active-learning-strategies/27-teaching/172-demonstrations
- Nagrath, I.J. and Kothari.D.P., Electric Machines', McGraw-Hill Education, 2004

7/1/2022
Signature of Faculty Member

S. K 07/01/2022
HOD

Department of Electrical and Electronics Engineering
Academic Year 2021 – 2022 (Odd Semester)

Degree, Semester & Branch: III Semester B.E. EEE
Course Code & Title: EE8301 Electrical Machines - I
Name of the Faculty member (s): Mr. D. Karthik Prabhu

Innovative Practice Description

- **Unit / Topic: Unit II / Constructional Features of Transformer**
- **Course Outcome:** CO 2
- **Topic Learning Outcome:** TLO - 4
- **Activity Chosen:** Field Visit
- **Justification:**

The topic construction of transformer has different parts, since each part has used for separate purposes. So, I thought of conducting this field visit for making the students to give the constructional features of transformers which enhance the learning level and as a teacher I can judge the understanding level of the students.

- **Time Allotted for the Activity:** 45 minutes
- **Details of the Implementation:**

After teaching the concept, students were took to the RIT – Power House Transformer yard and ask them to think about the constructional features of transformers.

Total Strength is 31,

Photographer: one student - Mr. Nikil Dev (interested in photography)

Reporter: Myself

At the end of the visit (Last 5 minutes)

- ✓ I asked the students to think about various parts of transformers for 2 minutes.
- ✓ Then I told them to Pair with their neighbors and discuss about the construction of transformer for another 1 minute.
- ✓ Finally, I randomly asked students about the construction parts of transformers. (2 minutes)

- **CO – PO / PSO mapping:**

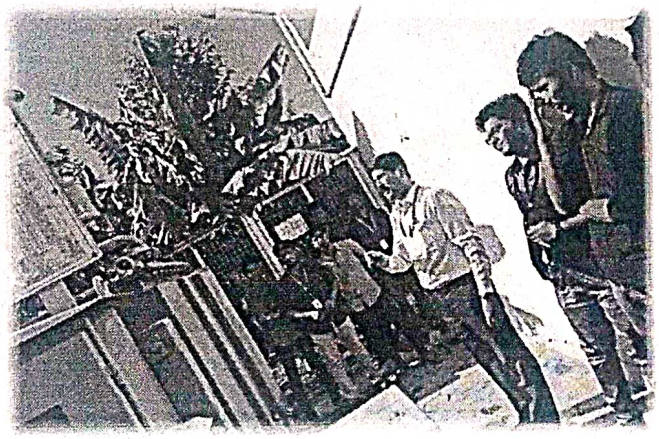
CO	PO 1	PO 2	PO 3	PO 5	PO 7	PO 8	PO 10	PO12	PSO 1	PSO 3
CO2	2	1	1	2	1	1	2	2	2	1

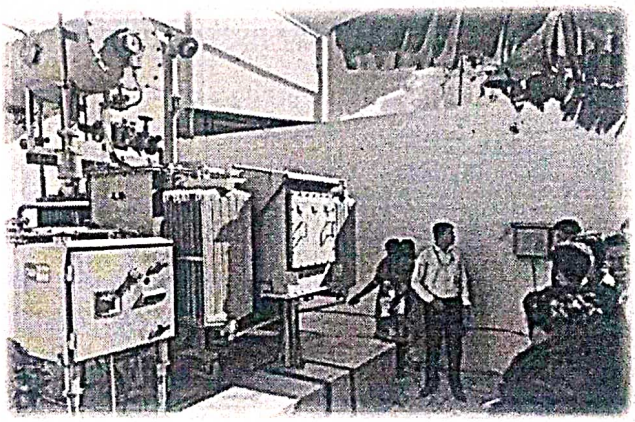
(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	**PO 7**
	1
Justification for correlation	Due to field visit students can able to understand the impact of engineering solution on society (i.e.) transformer operation and failure impact on society. So it is correlated slightly.

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





Reflective Critique:

❖ ***Feedback of practice from students and other stakeholders:***

Students enjoyed the field trip and especially boys asked more questions and clarified their doubts. Students asked, similar trips can be arranged in future for every unit of syllabus.

❖ ***Benefit of the practice:***

1. Students can able to understand the impact of engineering solution on society
2. Students can able to attend the question even in the questions are in indirect form.
3. Students can able to explain the concepts in examination without any confusion.

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

1. In the visit mostly girls hesitate to asking the questions.
2. Time utilization for conducting activity.

References:

- Nagrath, I.J. and Kothari.D.P., Electric Machines', McGraw-Hill Education, 2004
- Daniel PAEZ and Luis Alberto RUBIO, Colombia, "The Use of Field Trips in the Context of Engineering Collaborative Teaching: Experiences of Hands-On Geomatics Activities in Colombia", Peer reviewed paper, 2015.

7/01/2022

Signature of Faculty Member

07/01/2022

HOD

Department of Electrical and Electronics Engineering
Academic Year 2021 – 2022 (Odd Semester)

Degree, Semester & Branch: III Semester B.E. EEE
Course Code & Title: EE8301 Electrical Machines - I
Name of the Faculty member (s): Mr. D. Karthik Prabhu

Innovative Practice Description

- **Unit / Topic:** Unit III / Concepts in Rotating Machine
- **Course Outcome:** CO 3
- **Topic Learning Outcome:** TLO - 9
- **Activity Chosen:** Demonstration
- **Justification:**

The topic basic parts in electrical machines will vary machine to machine. Since each machine (A.C. and D.C.) has different parts. After teaching the concept, I thought of conducting this activity for making the students to give the knowledge about the different parts of different machines which enhance the learning level and as a teacher I can judge the understanding level of the students.

- **Time Allotted for the Activity:** 15 minutes
- **Details of the Implementation:**

After teaching the various parts of A.C. and D.C. machines, I explained the various parts of A.C. and D.C. machine using stampings.

Total Strength is 31,

Photographer: one student - Mr. Nikil Dev (interested in photography)

Reporter: Myself

At the end the Class (Last 15 minutes)

- ✓ I explained the various parts of A.C. and D.C. machine using stampings for 5 minutes.
- ✓ Then I told them to Pair with their neighbours and discuss about the various parts of electrical machines for another 3 minute.
- ✓ Finally, I asked the students to summarize each parts of the different machines. (2 minutes)

- **CO – PO / PSO mapping:**

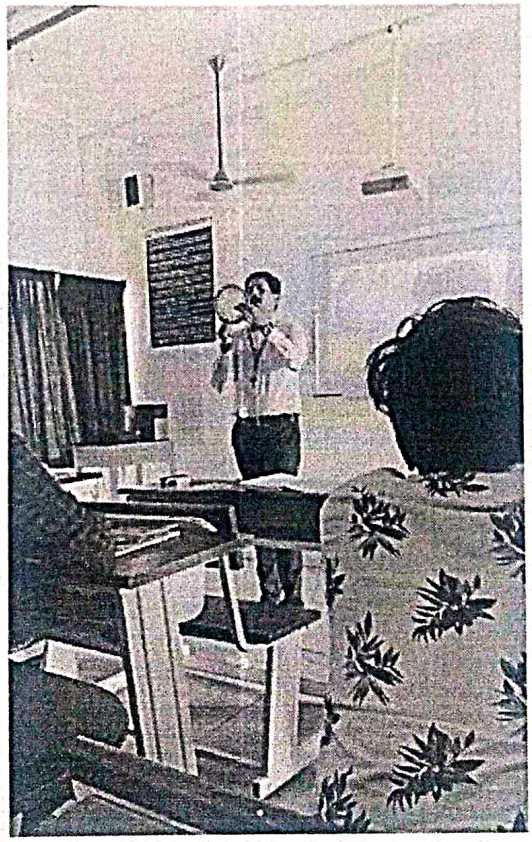
CO	PO 1	PO 2	PO 3	PO 10	PO12	PSO 1
CO3	3	2	1	2	2	2

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	**PO 7**
	1
Justification for correlation	Due to demonstration practice, students understanding level about the constructional features of the electrical machines will increase. Also understand the slight change in the machine design how affect the society. So it is correlated slightly.

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



Reflective Critique:

- ***Feedback of practice from students and other stakeholders:***
  Students told that it is new for us to understand the various parts of electrical machines through this demonstration and the felt good about this demonstration.

- ***Benefit of the practice:***

1. Students can able to understand the impact of engineering solution on society.
2. The assessment of effectiveness of the activity was felt when told most of the points.
3. While conducting the activity, I understood that the students can able to explain the various parts of electrical machines.
4. Students can able to explain the concepts in examination without any confusion.

- ***Challenges faced in implementation:***

1. Time utilization for conducting activity.

References:

- https://omerad.msu.edu/teaching/teaching-strategies/active-learning-strategies/27-teaching/172-demonstrations
- Nagrath, I.J. and Kothari.D.P., Electric Machines', McGraw-Hill Education, 2004

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S.K 07/01/2022

HOD

Department of Electrical and Electronics Engineering
Academic Year 2021 – 2022 (Odd Semester)

Degree, Semester & Branch: III Semester B.E. EEE
Course Code & Title: EE8301 Electrical Machines - I
Name of the Faculty member (s): Mr. D. Karthik Prabhu

Innovative Practice Description

- **Unit / Topic:** Unit IV / Constructional features of D.C. Machines
- **Course Outcome:** CO 4
- **Topic Learning Outcome:** TLO - 10
- **Activity Chosen:** Demonstration
- **Justification:**

The topic constructional feature of D.C. Machines is same for generator and motor. But the way of excitation is different. After teaching the concept, I thought of conducting this activity for making the students to give the difference between the D.C. motor and D.C. generator which enhance the learning level and as a teacher I can judge the understanding level of the students.

- **Time Allotted for the Activity:** 15 minutes
- **Details of the Implementation:**

After teaching the concept, give students one or two minutes to think about the topic without writing anything.

Total Strength is 29,

Photographer: one student - Mr. T. Aswath Arjun (interested in photography)

Reporter: Myself

At the end the Class (Last 15 minutes)

- ✓ I took the students to the electrical machines laboratory and asked the students to think about constructional features of D.C. Machines for 2 minutes.
- ✓ Then I told them to Pair with their neighbours and discuss about the constructional features of D.C. Machines for another 2 minute.
- ✓ Then, I shown the demo D.C. Machine for each student and explained. (8 minutes)
- ✓ Finally I asked each student to tell about constructional feature. (3 Minutes)

- **CO – PO / PSO mapping:**

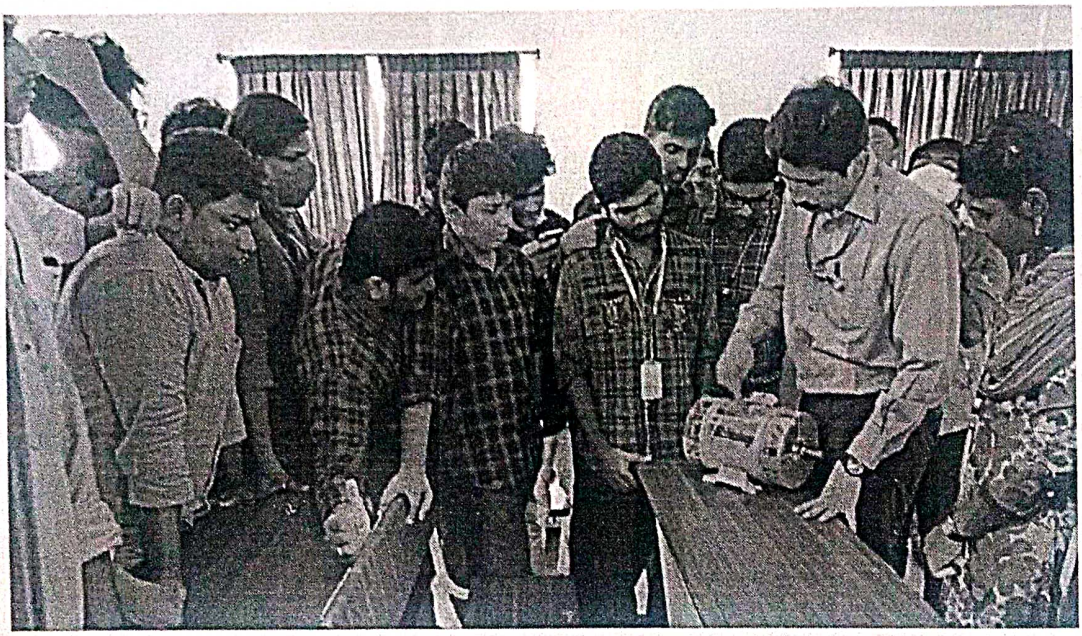
CO	PO 1	PO 2	PO 3	PO8	PO 10	PO12	PSO 1
CO4	3	2	1	1	2	2	2

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO 7
	1
Justification for correlation	Due to demonstration practice, students understanding level about the constructional features and operating principle of DC machine will increased. So it is correlated slightly.

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



Reflective Critique:

- ***Feedback of practice from students and other stakeholders:***
  Students felt good about this demonstration.

- ***Benefit of the practice:***

1. The assessment of effectiveness of the activity was felt when told most of the points.
2. While conducting the activity, I understood that the students can able to explain the core construction of electrical machines.

- ***Challenges faced in implementation:***

1. Time utilization for conducting activity.

References:

- https://omerad.msu.edu/teaching/teaching-strategies/active-learning-strategies/27-teaching/172-demonstrations
- Nagrath, I.J. and Kothari.D.P., Electric Machines', McGraw-Hill Education, 2004

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HOD

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Department of Electrical and Electronics Engineering
Academic Year 2021 – 2022 (Even Semester)

Degree, Semester & Branch: VIII Semester B.E EEE
Course Code & Title: EE8019 – Smart Grid
Name of the Faculty member (s): Dr. K. Karthikeyan

Innovative Practice Description

- **Unit / Topic: Unit IV / Power Quality issues of Grid Connected Renewable Energy Sources**
- **Course Outcome:** CO 4
- **Topic Learning Outcome:** TLO 10
- **Activity Chosen: Ungraded Quiz**
- **Justification:**
  - The chosen topic deals with power quality issues present in the grid and its mitigation methods. Usually the students will find it difficult to understand the methods and also to properly address the power quality issues arises in the grid while interconnecting renewable energy sources to it. By conducting this ungraded quiz, I helped them to understand the concepts better.
- **Time Allotted for the Activity:** 15 minutes
- **Details of the Implementation:**
  - The students are taken to the Power system simulation laboratory and each one is occupying the one system with Internet connectivity.
  - The quiz has been created in the Quizizz online tool and pass code has been shared with the students.
  - All the students have started the quiz at the same time. At the end of the quiz, the correct answers will be shown to them in the screen.
  - Finally, I explained the correct answer for the quiz questions with proper reasons.
- **CO – PO / PSO mapping:**

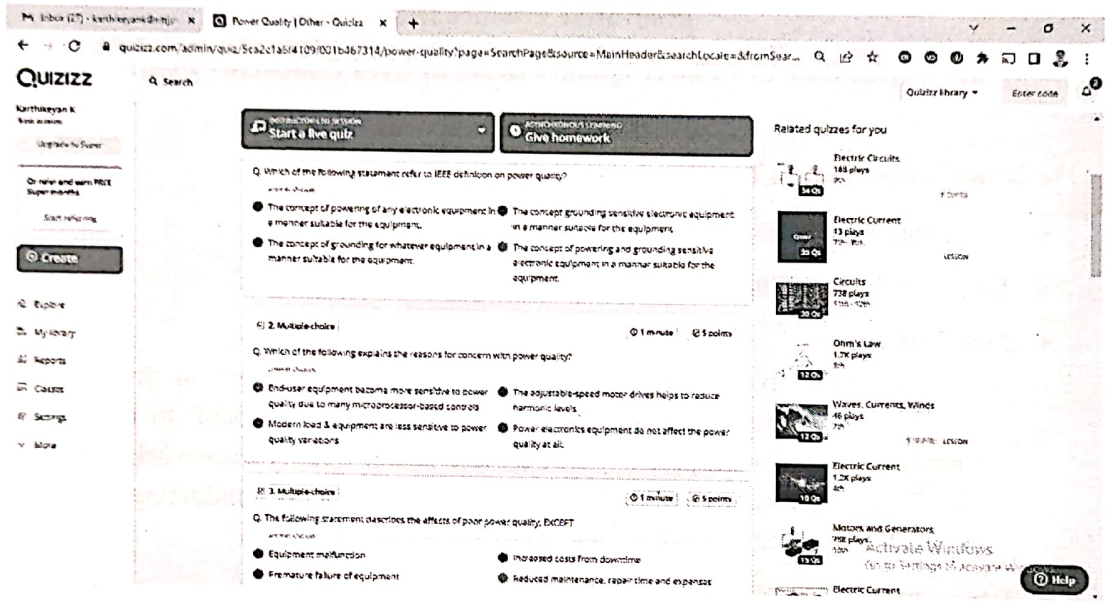
CO	PO 1	PO 2	PO 5	PO 8	PO 12	PSO 1
CO2	3	1	1	1	1	1

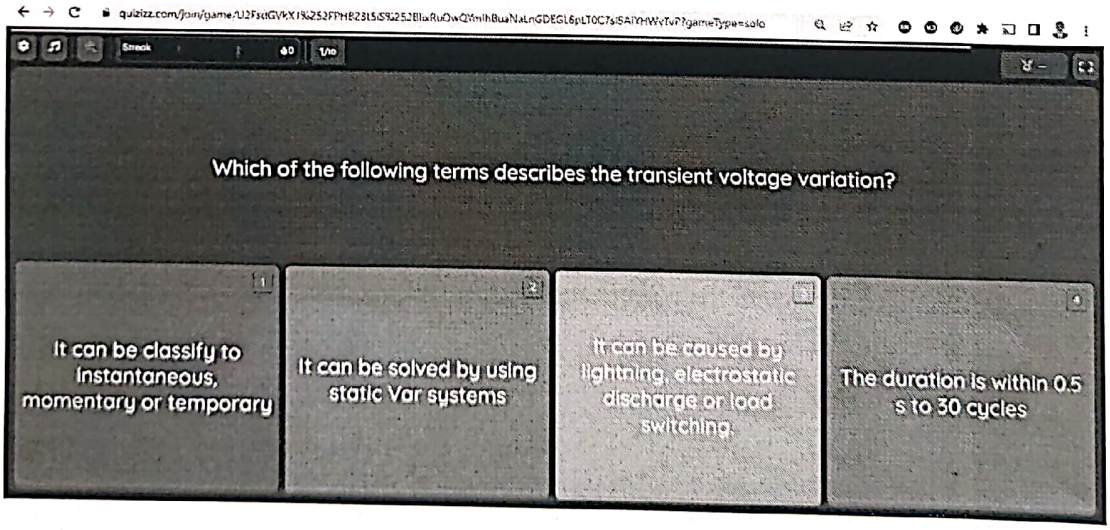
(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO 5	PO 8
	1	1
Justification for correlation	The students are using online tool for doing this quiz. Hence it is mapped with this PO at level 1	The students are doing this quiz without discussing and copying from others. Hence it is mapped with this PO at level 1

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





- **Reflective Critique:**
  - ❖ ***Feedback of practice from students and other stakeholders:***
    - ✓ The students have enjoyed the quiz. They told they have been given with the chance of remembering the concepts in the same class itself.
  - ❖ ***Benefit of the practice:***
    - ✓ The students are getting the feel of involved in the learning process.
    - ✓ Since the quiz is not included in the marks calculation, the students have done the quiz without any test fear. Hence, they participated freely.
  - ❖ ***Challenges faced in implementation:***
    - ✓ Few students have not much interest in attending the quiz sincerely, since the quiz is ungraded. Managing those students and making them to do the quiz is difficult task for me in this activity.

References:

- ❖ I.S. Jha, Subir Sen, Rajesh Kumar, and D.P. Kothari, "Smart Grid Fundamentals & Applications", New Age International Publishers, 1st Edition, 2019.
- ❖ Bharat Modi, Anu Prakash, and Yogesh Kumar, "Fundamentals of Smart Grid Technology", S. K. Kataria & Sons, 1st Edition, 2019.
- ❖ https://article.sciencepublishinggroup.com/html/10.11648.j.ijepe.s.2015040501.14.html
- ❖ https://www.icrepq.com/icrepq'10/505-Khadem.pdf

19/4/2022
Signature of Faculty Member
(K. Karthikeyan)

19/04/22
HoD/EEE

Department of Electrical and Electronics Engineering
Academic Year 2021 – 2022 (Even Semester)

Degree, Semester & Branch: VIII Semester B.E EEE
Course Code & Title: EE8019 – Smart Grid
Name of the Faculty member (s): Dr. K. Karthikeyan

Innovative Practice Description

- **Unit / Topic: Unit II / Plugin Hybrid Electric Vehicles (PHEV)**
- **Course Outcome:** CO 2
- **Topic Learning Outcome:** TLO 6
- **Activity Chosen:** Think – Pair - Share
- **Justification:**
  - The concept of Electric Vehicle is relatively a new concept for the students. Especially the operation of IC engine based vehicles completely new to the EEE students. The PHEV is a hybrid of IC engine and EV and hence the students may find it difficult to understand the concepts. Therefore, the team activity "Think-Pair-Share" has been planned for this topic.
- **Time Allotted for the Activity:** 15 minutes
- **Details of the Implementation:**
  - The students have been grouped into smaller groups of four members, with one bright student, two average learners and one slow learner in each group. One average learner from each group has been made as a recorder.
  - I have shown the power point presentation for the quick recap of the concepts like Vehicle types, benefits of Electric Vehicle, and the constructional difference between IC engine vehicle and Electric Vehicle.
  - The detailed operation procedure of the IC engine vehicle has been explained to the students.
  - The students have been told to recollect the concepts of Plug-in Hybrid Vehicle (PHEV) and then asked to discuss about it within the group for 5 minutes.
  - Finally, two recorders have been asked to share their results to the whole class through chalk and talk technique. All other students interacted with them for proper understanding the concepts.

- **CO – PO / PSO mapping:**

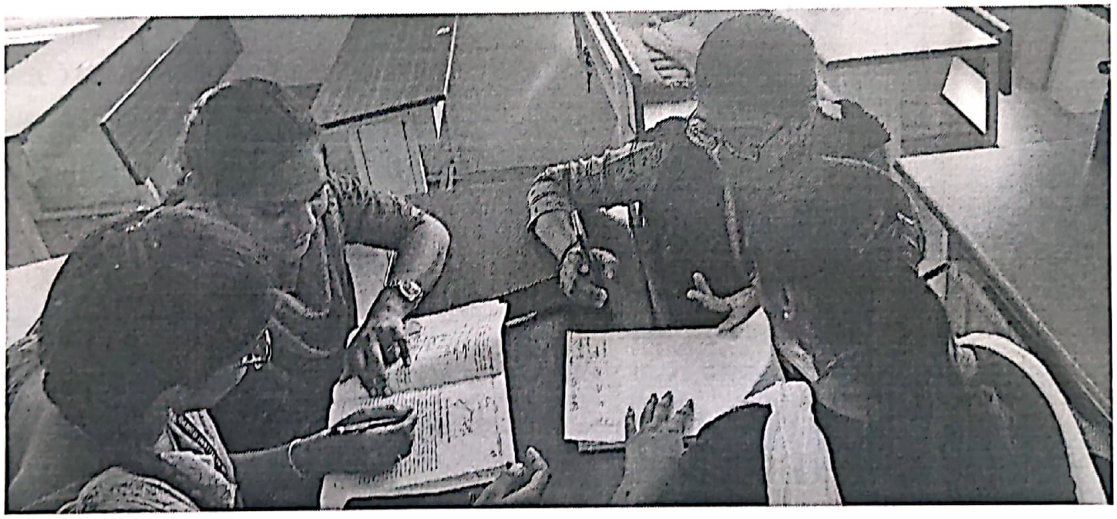
CO	PO 1	PO 2	PO 5	PO 8	PO12	PSO 1
CO2	3	1	1	1	1	1

(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO 9	PO 10
	1	1
Justification for correlation	The students will do this activity in team. Hence it is mapped with PO 9 with level 1.	The students will communicate with each other and do the oral presentation. Hence this activity is mapped with PO 10 with level 1.

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



- **Reflective Critique:**
  - ❖ ***Feedback of practice from students and other stakeholders:***
    - ✓ The students have enjoyed the activity. Most of the students requested me to conduct such activities in the classes. When I did this activity, they had a great confidence in learning the new concept.
  - ❖ ***Benefit of the practice:*** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)
    - ✓ The students have understood the concepts clearly and it has been evident from the points they have shared with the classroom.
    - ✓ The students have presented the points to the class; it cleared any ambiguity in understanding the important points in the chosen topic.

- ***Challenges faced in implementation:***
  - ✓ The activity has been planned for 15 minutes, but it has been completed after 16 minutes only. Next time, I should plan the activity with proper time.
  - ✓ The group has to form as heterogeneous, and then only I can take care about the non-participating students.

References:

- I.S. Jha, Subir Sen, Rajesh Kumar, and D.P. Kothari, "Smart Grid Fundamentals & Applications", New Age International Publishers, 1st Edition, 2019.
- Bharat Modi, Anu Prakash, and Yogesh Kumar, "Fundamentals of Smart Grid Technology", S. K. Kataria & Sons, 1st Edition, 2019.
- https://afdc.energy.gov/vehicles/electric_basics_phev.html

G. C 25/3/22
Signature of Faculty Member
(K. Karthikeyan)

S. Lee 28/3/22
HoD/EEE

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Department of Electrical and Electronics Engineering
Academic Year 2021 – 2022 (Even Semester)

Degree, Semester & Branch: VIII Semester B.E EEE
Course Code & Title: EE8019 – Smart Grid
Name of the Faculty member (s): Dr. K. Karthikeyan

Innovative Practice Description

- **Unit / Topic: Unit 1 / National Initiatives in Smart Grid**
- **Course Outcome:** CO 1
- **Topic Learning Outcome:** TLO 3
- **Activity Chosen: Case Study Report**
- **Justification:**
  - The chosen topic will be of facts and figures about the pilot projects in India. The current status of the Smart Grid projects needs to be checked and presented. If all these data are presented in the conventional class room lecture, the students may not be interested and may not understand fully.
  - If the students are encouraged to present these data in any Info graphic form / table form, then they will understand the concepts better and also enjoy the session. That is the reason for choosing this activity "Case Study Report".
- **Time Allotted for the Activity:** 50 minutes
- **Details of the Implementation:**
  - The students are taken to the Power System Simulation Laboratory and they are provided with individual computer system with internet connectivity.
  - The components/technologies of the smart grid and the Smart Grid pilot projects of the India have been briefly explained to the students.
  - The students are asked to prepare the case study report on the topic Smart Grid Initiatives in India.
  - The guidelines for the contents of the report and formatting of the report have been told to the students.
  - At the end of the period, the students have submitted their report in the CANVAS – LMS.
- **CO – PO / PSO mapping:**

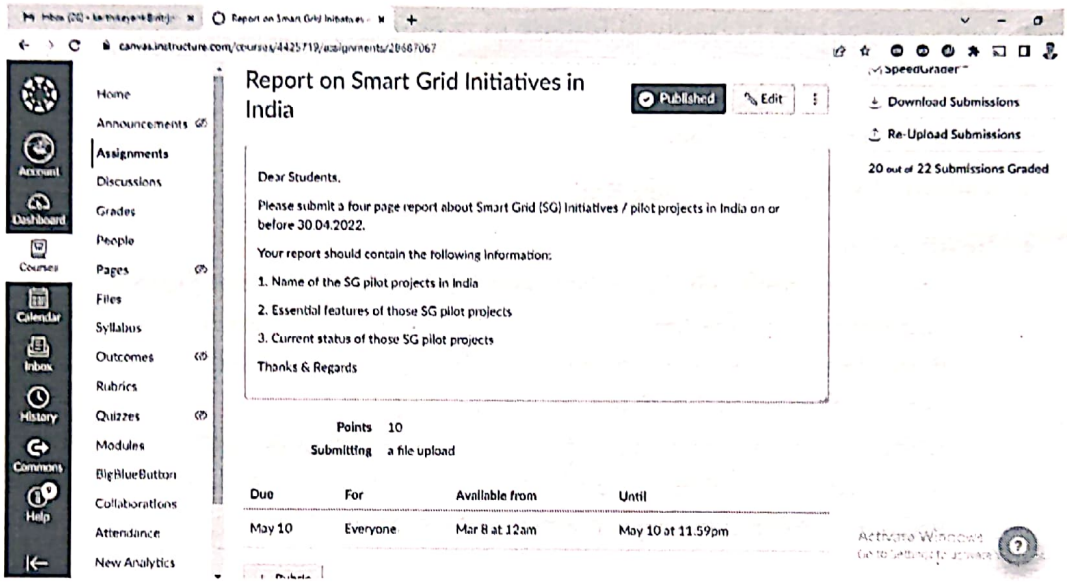
CO	PO 1	PO 2	PO 5	PO 12	PSO 1
CO2	3	1	1	1	1

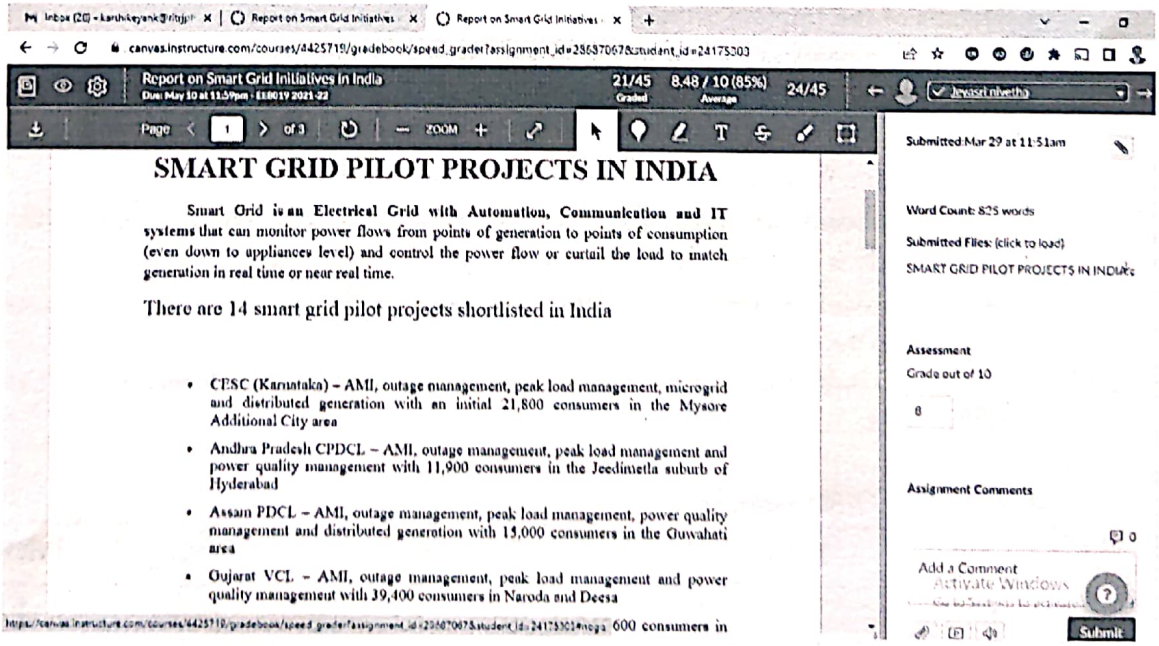
(1 – Low 2 – Moderate 3 – High)

- **PO / PSO mapped:**

Innovative practice	PO 5	PO 8	PO 10
	1	1	1
Justification for correlation	The students will be using the internet, drawing tools etc., for preparing the report.	The students will follow the ethics and they will not be allowed to copy from other students.	The students are writing the report; hence their written communication is improved.

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





- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    - ✓ Many students requested to conduct this type of activity frequently, because it provided them an opportunity to have hands on training with MS-word and some drawing tool.

  - ***Benefit of the practice:*** (E.g.: Outcome attainment would have increased due to innovative practice over conventional practice)
    - ✓ The students have prepared their report and hence they got better understanding about the concept, it was evident once I asked few to comprehend the points written in their report.
    - ✓ The student's presentation skills got improved since they prepared report and it was also useful for their exam preparation.

  - ***Challenges faced in implementation:***
    - ✓ Initially the students hesitated to prepare a report. I explained them to understand the work they need to complete and helped them in doing so in all the phases.
    - ✓ Managing the non performing students was quite difficult. They used to login some other websites and not doing the task.

References:

- I.S. Jha, Subir Sen, Rajesh Kumar, and D.P. Kothari, "Smart Grid Fundamentals & Applications", New Age International Publishers, 1st Edition, 2019.
- Bharat Modi, Anu Prakash, and Yogesh Kumar, "Fundamentals of Smart Grid Technology", S. K. Kataria & Sons, 1st Edition, 2019.
- https://www.iitk.ac.in/npsc/Papers/NPSC2014/1569993451.pdf
- https://indiasmartgrid.org/nsgm_about.php
- https://events.development.asia/system/files/materials/2018/04/201804-smart-grid-developments-india.pdf

15/3/2022
Signature of Faculty Member
(K. Karthikeyan)

15/03/22
HoD/EEE

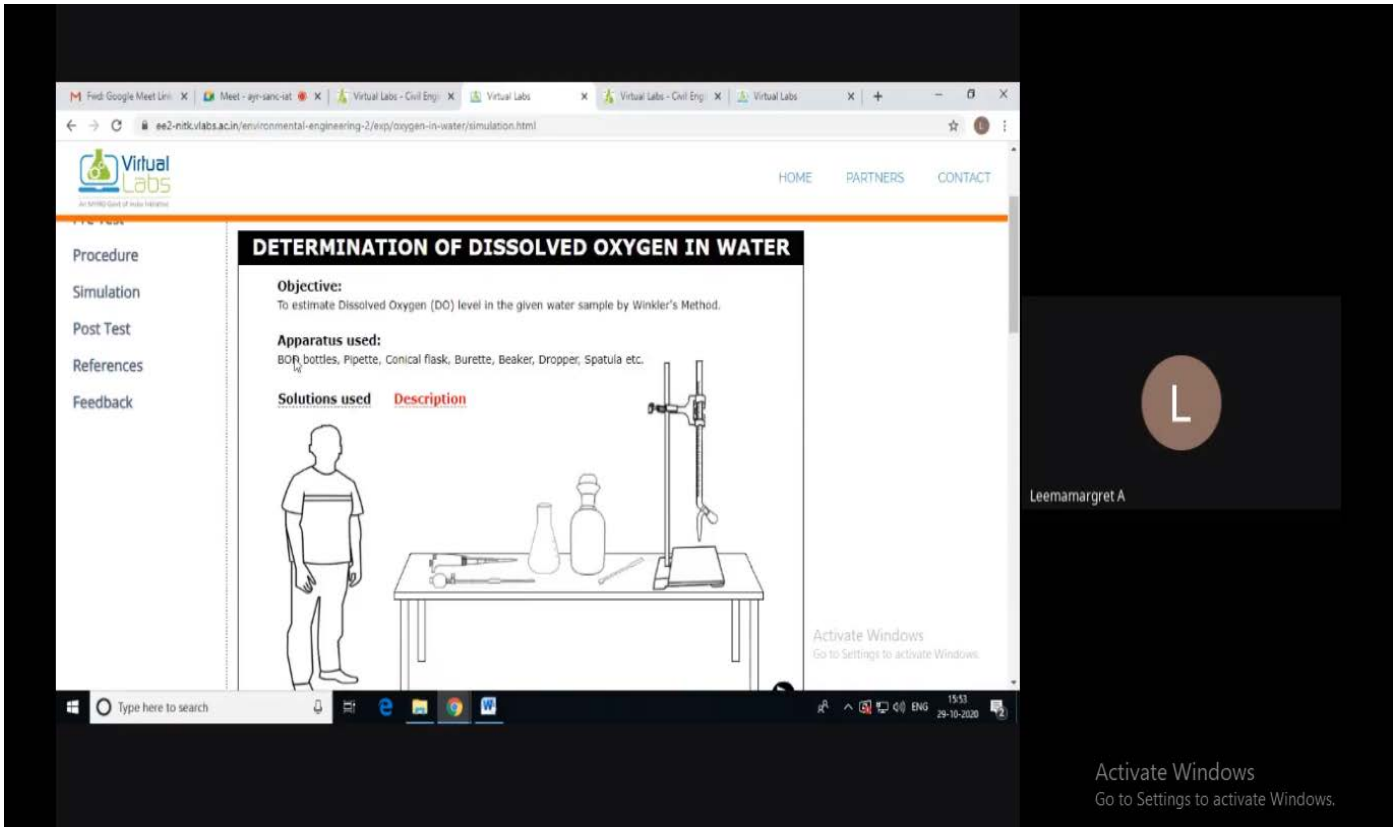
RAMCO Institute of Technology, Rajapalayam

Department of Civil Engineering

RIT- IITM PALS VLAB Initiative

Virtual Laboratory Session Handling Details

Name of the Faculty	:	C. SUBHA & A.LEEMA MARGRET
Subject Code and Title	:	CE8512 – Water and Waste Water Analysis Laboratory
Year and Branch	:	III – Civil Engineering
Topics Covered	:	Determination of Dissolved Oxygen in Water
Website Link	:	https://ee2-nitk.vlabs.ac.in/environmental-engineering-2/exp/oxygen-in-water/simulation.html
No.of Students participated	:	22/22
Assignment given if any (If Yes share the uploaded folder link)	:	No


ee2-nitk.vlabs.ac.in/environmental-engineering-2/exp/oxygen-in-water/simulation.html
Virtual Labs
HOME
PARTNERS
CONTACT
Procedure
Simulation
Post Test
References
Feedback
DETERMINATION OF DISSOLVED OXYGEN IN WATER
Objective:
To estimate Dissolved Oxygen (DO) level in the given water sample by Winkler's Method.
Apparatus used:
BOD bottles, Pipette, Conical flask, Burette, Beaker, Dropper, Spatula etc.
Solutions used
Description
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RAMCO INSTITUTE OF TECHNOLOGY

Approved by AICTE, New Delhi & Affiliated to Anna University
Accredited by NAAC & An ISO 9001:2015 Certified Institution
NBA Accredited UG Programs: CSE, EEE, ECE and MECH

Department of Mechanical Engineering

Academic Year 2021 – 2022 (Odd Semester)

Innovative practice(s) description

Course code and Title: ME8381-Computer Aided Machine Drawing

Class/Semester: III Semester B.E. Mechanical Engineering 'A & B'

Name of the Instructor(s): Mr.R.Venkatesh, AP/Mech & Mr.S.Valaiganesh, AP/Mech

Mr.C.Gururaj, AP(SG)/Mech, Mr.M.Ramar, AP/Mech

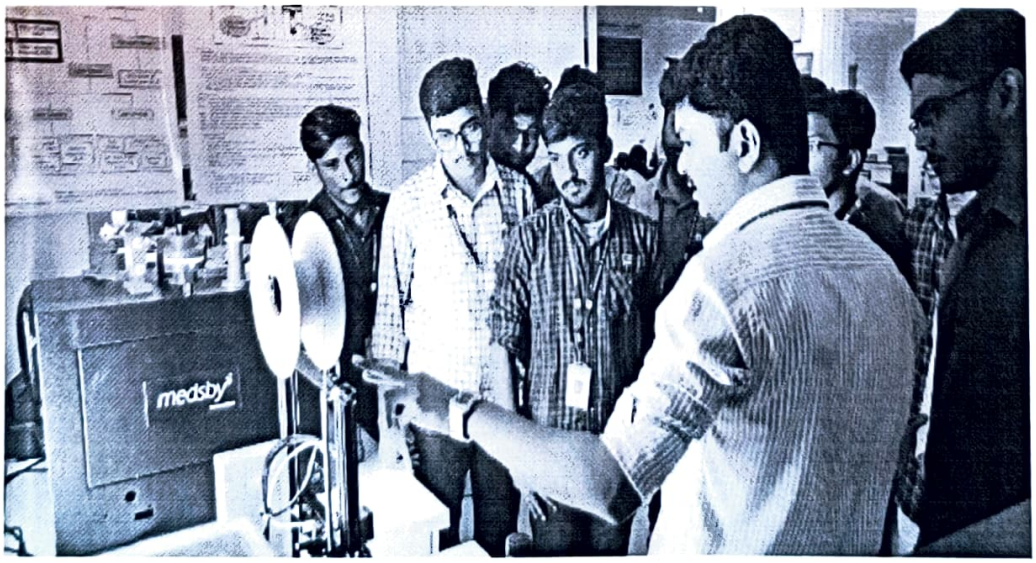
Date & Time: 29.09.2021 & 1.20 PM to 3.50 PM

Demo & Hands on Practice

Explaining the assembling procedure by using the machine components fabricated by AM Techniques

3D printing, also known as additive manufacturing (AM), is the process of creating a three-dimensional object from a CAD model or digital 3D model. The "3D printing" can refer to a number of procedures in which material is deposited, combined, or solidified under computer control to form a three-dimensional object.

Students were separated into groups to fabricate 3D printed components; initially, students were taught CAD modelling and assembly techniques using 3D modelling software. They were involved in adjusting the process settings and slicing the components using the *Cura* slicing programme after the design stage. The output of G code is feed into the FDM machine to fabricates the final components.



Outcomes:

- Gaining practical experience with 2D and 3D drawing software systems.
- Students will demonstrate a basic technical understanding of the physical principles, materials, and operation of the types of AM processes.
- Students will understand models of material processing phenomena and apply them to simulate AM process operations.
- When the students have finished assembling the components, they create a prototype of machine components.

This activity (demo & hands on practice) helps in attaining the following CO – PO & PSO Mapping:

Course Outcome / Programme Outcomes/ Programme Specific Outcomes	**PO1**	**PO5**	**PO9**	**PSO1**
CO5 – Manipulate the modeling and modifying commands of 3D CAD Modeling Package.	3	3	-	3
CO6 – Assemble the 3D model of Machine components.	3	3	2	3

References:

1. Gopalakrishna K.R., "Machine Drawing", 22nd Edition, Subhas Stores Books Corner, Bangalore, 2013
2. N. D. Bhatt and V.M. Panchal, "Machine Drawing", 48th Edition, Charotar Publishers, 2013.

29/09/2021

Signature of the Faculty member(s)

29/9/21

HoD/Mech

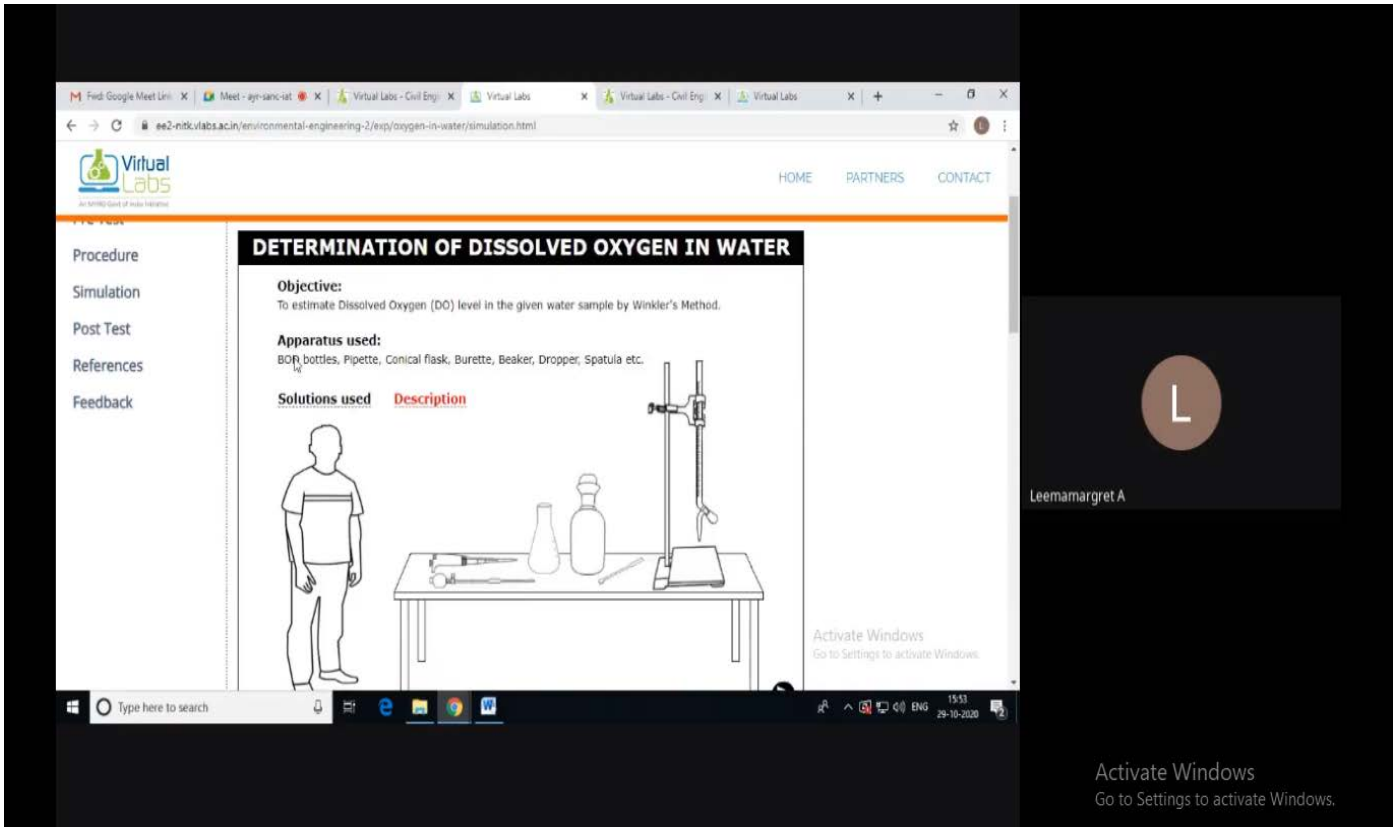
RAMCO Institute of Technology, Rajapalayam

Department of Civil Engineering

RIT- IITM PALS VLAB Initiative

Virtual Laboratory Session Handling Details

Name of the Faculty	:	C. SUBHA & A.LEEMA MARGRET
Subject Code and Title	:	CE8512 – Water and Waste Water Analysis Laboratory
Year and Branch	:	III – Civil Engineering
Topics Covered	:	Determination of Dissolved Oxygen in Water
Website Link	:	https://ee2-nitk.vlabs.ac.in/environmental-engineering-2/exp/oxygen-in-water/simulation.html
No.of Students participated	:	22/22
Assignment given if any (If Yes share the uploaded folder link)	:	No


ee2-nitk.vlabs.ac.in/environmental-engineering-2/exp/oxygen-in-water/simulation.html
Virtual Labs
HOME
PARTNERS
CONTACT
Procedure
Simulation
Post Test
References
Feedback
DETERMINATION OF DISSOLVED OXYGEN IN WATER
Objective:
To estimate Dissolved Oxygen (DO) level in the given water sample by Winkler's Method.
Apparatus used:
BOD bottles, Pipette, Conical flask, Burette, Beaker, Dropper, Spatula etc.
Solutions used
Description
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Fax / Dir : 22352272

CENTRE FOR ACADEMIC COURSES
ANNA UNIVERSITY
CHENNAI - 600 025

Dr. S.HOSIMIN THILAGAR
DIRECTOR

Letter No: 2913/AU/VA/CAC/2021

17.08.2021

To
The Controller of Examinations
Anna University
Chennai - 25.

Sir,

Sub : AU - CAC – Affiliated Institutions - Value Added Courses - Reg.
Ref : Letter No. RIT/CIVIL/VAC/2021/02, dated 05.08.2021.

******

With reference to the letter cited above, the following Value Added Course offered by Ramco Institute of Technology, Virudhunagar, Affiliated Institutions is allotted the course code as detailed below.

S. No	Code Allotted	Title	L	T	P	C
1.	CVA036	Quality Assurance & Quality Control in Construction	1	0	2	2

This is for your kind information and necessary action at your end.

Yours faithfully,

17/8/2021

DIRECTOR

Copy to:

1. The Chairperson, Faculty of Civil Engineering, Anna University, Chennai - 25.
2. The Principal, Ramco Institute of Technology, Ayyanar Kovil Road, Venganallur, Virudhunagar District, Rajapalayam, Tamil Nadu 626117.
3. The Stock File

Off: 22357077 / 73
22357074
Fax / Dir : 22352272

CENTRE FOR ACADEMIC COURSES
ANNA UNIVERSITY
CHENNAI – 600 025

Dr. S. HOSIMIN THILAGAR
DIRECTOR
Letter No.2649/AU/VA/CAC/2021

02.09.2021

To
The Controller of Examinations
Anna University
Chennai - 25.

Sir/Madam,

Sub: A.U. - CAC - Affiliated Institutions - Value Added Course - Reg.
Ref : Letter No.RIT/MECH/VAC/2021/04 dated 27.07.2021.

******

With reference to the letter cited, the following Value Added Course offered by Ramco Institute of Technology, Virudhunagar District, Affiliated Institution is allotted the Course Code as detailed below.

SL. No.	Code Allotted	Title	Credits			
			L	T	P	C
1.	MVA023	IoT and Augmented Reality Applications in Mechanical Engineering	1	0	2	2

This is for your kind information and necessary action at your end.

Yours faithfully,

2/9/2021

DIRECTOR

Copy to:

1. The Chairperson, Faculty of Mechanical Engineering, A.U., Ch -25.
2. The Principal, Ramco Institute of Technology, North Venganallur, Ayyanarkovil Road, Rajapalayam – 626 117.
3. The Stock File – CAC.

2/9/2021

RAMCO INSTITUTE OF TECHNOLOGY

(Approved by AICTE - New Delhi and Affiliated to Anna University - Chennai)
NAAC Accredited and An ISO 9001:2015 certified institution

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ISO 9001:2015
ID 9108633093

RIT/CIVIL/VAC/2021/01

05.08.2021

To

The Director,

Centre for Academic Courses,

Anna University,

Chennai - 600025.

Respected Sir,

Sub: Requesting permission to offer below mentioned approved Value Added Course– V Semester B.E. Civil Engineering – Academic Year 2021-2022 – reg.

Ref: List of approved Value Added Courses – Letter No: 2858/AU/VA/CAC/2019 on 08.07.2019.

With reference to the above, we have proposed to offer the following approved value added courses to our V semester B.E Civil Engineering Students for the academic year 2021 – 2022 (ODD Semester). The syllabus and schedule of the approved value added courses along with approved letter received from Centre for Academic Courses, Anna University, Chennai are enclosed for your kind perusal.

Sl. No.	Course Code	Course Name	Credits
1	CVA007	PROJECT PLANNING AND MANAGEMENT	2

Hereby, we request your kind approval and permission to offer these value added courses to our V semester B.E Civil Engineering Students for the academic year 2021 – 2022 (ODD Semester).

Thanking you,

Yours faithfully,

05/08/21
HOD/Incharge

Vice Principal

5-8-21
Principal

RAMCO INSTITUTE OF TECH R.I.T. Rajapalayam

North Venganallur, Ayyanarkovil Road, Rajapalayam - 626 117.
Virudhunagar District, Tamil Nadu. Tel : 04563 233400
E-mail : rit@ritrjpm.ac.in Web : www.ritrjpm.ac.in

Off: 22357077 / 73
22357074
Fax / Dir : 22352272

CENTRE FOR ACADEMIC COURSES
ANNA UNIVERSITY
CHENNAI – 600 025

Dr. R. RAJU
DIRECTOR
Letter No. 2858/AU/VA/CAC/2019

08.07.2019

To
The Controller of Examinations
Anna University
Chennai - 25.

Sir,

Sub : A.U. - CAC – Affiliated Institutions - Value Added Course - Reg.
Ref : Letter received from the Principal, Ramco Institute of Technology, dated 24.06.2019

******

With reference to the letter cited above, the following Value Added Course offered by Ramco Institute of Technology, Affiliated Institutions is allotted the course code as detailed below.

S.No	Code Allotted	Title	L T P C
1.	CVA007	Project Planning and Management	1 0 2 2

This is for your kind information and necessary action at your end.

Yours faithfully,

DIRECTOR

Copy to:

1. The Chairperson, Faculty of Civil Engineering, Anna University, Chennai - 25.
2. The Principal, Ramco Institute of Technology, North Venganallur, Rajapalayam – 626117.
3. The Stock File

CVA007 **Project Planning and Management (PPM)** **L T P C**
1 0 2 2

OBJECTIVES:

- To learn about planning of construction projects using Primavera P6
- To schedule the construction activities

I PROJECT PLANNING 15

Introduction about Project Management, Understanding P6 Data - Describing Enterprise and Project-Specific data – Logging In - Opening an Existing Project - Opening and Customizing Layouts, Enterprise Project Structure - Describing Components of EPS, Creating a Project - Creating a Project - Viewing Project Details, Creating a Work Breakdown Structure - Creating the WBS Hierarchy, Adding Activities - Describing an Activity and its Components - Describing Activity Types - Adding Activities - Adding a Notebook Topic - Adding Steps to an Activity - Assigning Activity Codes, Creating Calendar, Creating Relationships - Viewing a Network Logic Diagram - Relationship Types.

II PROJECT SCHEDULING 15

Scheduling - Performing a Forward and Backward Pass - Describing Float, Assigning Constraints - Applying an Overall Deadline to a Project - Apply a Constraint to an Activity, Using Reflection Projects - Creating a Reflection Project - Merging Changes Formatting Schedule Data - Grouping Activities –Sorting – Filtering, Roles and Resources - Describing Roles and Resources - Viewing Dictionaries, Assigning Roles to an Activity - Assign Rates on Roles, Assigning Resources - Adjusting Budgeted Units/Time, Analyzing Resources - Displaying the Resource Usage Profile - Optimizing the Project Plan - Analyzing Schedule Dates - Shortening a Project Schedule - Analyzing Resource Availability, Baselining the Project Plan - Display Baseline Bars on the Gantt Chart, Project Execution and Control - Describing Methods for Updating the Schedule - Using Progress Spotlight - Rescheduling the Project, Rescheduling the Project - Describing Reporting Methods - Running a Schedule Report -Creating a report with the Report Wizard.

TOTAL: 30 PERIODS

OUTCOMES:

Upon the completion of this course the students will be able to

1. Apply the fundamental knowledge of construction planning using Primavera P6 for solving complex engineering problems.
2. Schedule and monitor the project

.Assessment Method (Weightage 100 %)				
V Semester B.E. Civil	Assessment I	Assessment II		
	Project Planning	Project Scheduling	Viva Voce	Total
	50 %	40 %	10 %	100 %

REFERENCES:

1. Chitkara, K.K. "Construction Project Management Planning", Scheduling and Control, Tata McGraw Hill Publishing Co., New Delhi, 2009
2. Chris Hendrickson and Tung Au, "Project Management for Construction – Fundamentals Concepts for Owners", Engineers, Architects and Builders, Prentice Hall, Pitsburgh, 2000
3. Moder.J., Phillips. C. and Davis E, "Project Management with CPM", PERT and Precedence Diagramming, Van Nostrand Reinhold Co., 3rd Edition, 1985.
4. Oracle Primavera P6 Project Management Reference Manual

Course Designer & Coordinator	HOD/Incharge	Vice Principal	Principal

RAMCO INSITIUTE OF TECHNOLOGY, RAJAPALAYAM
DEPARTMENT OF CIVIL ENGINEERING
VALUE ADDED COURSE TIME TABLE
ACADEMIC YEAR 2021-2022

Title of the Course : CVA007 - Project Planning and Management
Year / Branch / Semester : III / Civil / V
Course Handling Faculty :

Industrial Experts :

1. Mr. K. Iyappan, Functional Consultant, IBM Global Business Services, Bangalore
2. Er. S. Suganya, Manager – Delivery & Services, IPMCS, Chennai
3. Er. B. Janani, Manager – Professional Services, IPMCS, Chennai

Internal Faculty Members :

1. Mr. G. Karthikeyan, Assistant Professor (Sr.Gr.)/Civil, Ramco Institute of Technology, Rajapalayam
2. Mrs.C.Subha, Assistant Professor (Sr.Gr.)/Civil, Ramco Institute of Technology, Rajapalayam
3. Mrs.D.Darling Helen Lydia, Assistant Professor Civil, Ramco Institute of Technology, Rajapalayam
4. Mr. T. Chockalingam, Assistant Professor Civil, Ramco Institute of Technology, Rajapalayam
5. Mrs.R.Kalaimani, Assistant Professor Civil, Ramco Institute of Technology, Rajapalayam
6. Mr.R.Muruganantham, Assistant Professor Civil, Ramco Institute of Technology, Rajapalayam
7. Mr.J.Ram Prashath, Assistant Professor Civil, Ramco Institute of Technology, Rajapalayam
8. Mr.A.Manicka Mamallan, Assistant Professor Civil, Ramco Institute of Technology, Rajapalayam

Evaluation Team Members: 1. Head of the Department
2. Two senior faculty Members Nominated from Head of the Institution

Session	Date/Day	Topics Covered	Theory Sessions	Practical Sessions
I	20.08.2021 Friday	Introduction to Project Management, Understanding P6 Data - Describing Enterprise and Project-Specific data – Logging In - Opening an Existing Project - Opening and Customizing Layout	1	2
II	27.08.2021 Friday	Enterprise Project Structure - Describing Components of EPS, Creating a Project - Creating a Project - Viewing Project Details	1	3
III	03.09.2021 Friday	Creating a Work Breakdown Structure - Creating the WBS Hierarchy, Adding Activities	1	2
IV	10.09.2021 Friday	Describing an Activity and its Components - Describing Activity Types - Adding Activities - Adding a Notebook Topic - Adding Steps to an Activity - Assigning Activity Codes	1	3

Session	Date/Day	Topics Covered	Theory Sessions	Practical Sessions
V	17.09.2021 Friday	Creating a Calendar and Relationships - Viewing a Network Logic Diagram - Relationship Types	1	2
VI	24.09.2021 Friday	Scheduling - Performing a Forward and Backward Pass - Describing Float, Assigning Constraints - Applying an Overall Deadline to a Project - Apply a Constraint to an Activity	1	3
VII	01.10.2021 Friday	Using Reflection Projects - Creating a Reflection Project - Merging Changes Formatting Schedule Data - Grouping Activities –Sorting – Filtering	1	2
VIII	08.10.2021 Friday	Roles and Resources - Describing Roles and Resources - Viewing Dictionaries, Assigning Roles to an Activity	1	3
IX	15.10.2021 Friday	Assign Rates on Roles, Assigning Resources - Adjusting Budgeted Units/Time, Analyzing Resources	1	2
X	22.10.2021 Friday	Displaying the Resource Usage Profile - Optimizing the Project Plan - Analyzing Schedule Dates - Shortening a Project Schedule	2	3
Assessment I	23.10.2021 Saturday	The students are asked to create project activities, calendar, activity code and relationship with network diagram.	-	-
XI	29.10.2021 Friday	Analyzing Resource Availability, Baselining the Project Plan - Display Baseline Bars on the Gantt Chart, Project Execution and Control - Describing Methods for Updating the Schedule - Using Progress Spotlight	2	3
XII	05.11.2021 Friday	Rescheduling the Project, Rescheduling the Project, Describing Reporting Methods, Running a Schedule Report, Creating a report with the Report Wizard	2	2
Assessment II	12.11.2021 Friday	The students are asked to create project scheduling for a given project	-	-
		Total Sessions	**15**	**30**
		Total Periods	**30**	

Note : The assessment for the above course will be conducted by considering all the criteria of rubrics method and will be assessed by Head of the department and senior faculty members.

5/8/21 05/08/21 5/8/21

Course Designer & Coordinator **HoD/Incharge** **Vice-principal** **Principal**

RAMCO INSTITUTE OF TECHNOLOGY

Department of Civil Engineering

Academic Year: 2021 - 2022

Value Added Course – Bill Settlement

Date: 18.04.2022

Submitted to the Principal

Respected Sir,

Sub: Bill settlement for value added course on "CVA 007 - Project Planning and Management"– Reg.

Ref: Letter No: 2858/AU/VA/CAC/2019 dated on 08.07.2019 & RIT/Civil/VAC/2020/01 Budget approval letter dated on 28.08.2021 and Invoice dated on 22.12.2021

We wish to inform you that Anna University approved valued added course on **"CVA007 - Project Planning and Management"** has been conducted successfully by Er.Suganya, Infinity PMC Solutions Pvt. Ltd., Chennai from 11.11.2021 to 15.11.2021 for our Third Year & Final Year B.E. Civil Engineering students.

Herewith we have attached attendance, budget approval and invoice.

Sl. No.	Items	Amount (Rs.)
1.	Training cost for Project Planning and Management using Primavera P6	10,000.00
	Tax GST (SGST 9% and CGST 9%	1,800.00
	Total	**11,800.00**

Head of Account: RIT/Training and Travel (Faculty & Students)/Value added courses

18/4/22

Faculty Coordinator

HOD/Incharge

18/4

Accountant

18/04/22

GM (A)

18/4/22

Vice Principal

18/4/22

Principal

RAMCO INSTITUTE OF TECHNOLOGY

Department of Civil Engineering

Academic Year: 2021 - 2022 (Odd Semester)

Value Added Course - Budget Approval

Date: 28.08.2021

Submitted to the Principal

Respected Sir,

Sub: Budget approval for value added course on "CVA 007 - Project Planning and Management"– Reg.

Ref: Letter No: 2858/AU/VA/CAC/2019 dated on 08.07.2019 & RIT/Civil/VAC/2020/01

IPMCS letter Dated on 18.08.2021

We wish to inform you that Anna University approved valued added course on CVA007 - Project Planning and Management has been planned to conduct in the month of September 2021 for our Third Year B.E. Civil Engineering students (22 Nos) in online Google Meeting.

The approximate expenses are given below.

Sl. No.	Item	Days	Maximum students	Total
1.	Training cost for Project Planning and Management using Primavera P6	3 Days	22 Nos.	10,000.00
	Tax GST (SGST9% and CGST9%)			1,800.00
			Total	**11,800.00**

Mode : Online – Live Session

Payment details : 100% advance

Kindly accord your approval for proceeding further.

Head of Account: RIT/Training and Travel (Faculty & Students)/Value added courses

25/8/21 — **Faculty Coordinator**

28/8/21 — **HOD/Incharge**

28/08/21 — **DGM (A)**

28/8/21 — **Vice Principal**

30.8.21 — **Principal**

IPMCS

INFINITY PMC SOLUTIONS PRIVATE LIMITED

7/380, Kamarajar salai,
Kovilambakkam
chennai Tamil Nadu 600129 India
GST NO : 33AAFCI5602N1ZJ

TAX INVOICE

Invoice No	: IPMCS/IN/21/101	Place Of Supply	Tamil Nadu
Invoice Date	: 22/12/21	GST NO :	
Terms	: 100% advance against Proforma invoice		
P.O. Number	: RIT/001/CIVIL/2021		
P.O. Date	: 04.09.2021		

Bill To

RAMCO INSTITUTE OF TECHNOLOGY

Ayyanar Kovil Road, Venganallur, Virudhunagar District, Rajapalayam, Tamil Nadu 626117

Sl. No	Item & Description	Qty	Rate	Amount
1	Training cost for Project Planning and managementusing Primavera P6	3 days	10,000.00	10,000.00

Rupees Eleven Thousand and Eight Hundred Only

Sub Total	10,000.00
SGST (9%)	900.00
CGST(9%)	900.00
Total	**₹11,800.00**

HSN/SAC Code : 997331

CIN:U74999TN2020PTC134023

TAN No: CHEI09968A

PAN No: AAFCI5602N

TDS deduction is not applicable for software sales and AMC renewal As Per :NOTIFICATION NO. 21/2012 [F.No.142/10/2012-SO(TPL)] S.O. 1323 E

For INFINITY PMC SOLUTIONS PVT LTD,

INFINITY PMC SOLUTIONS PVT LTD CHENNAI 600 129

Autthorized Signature

Digital copy Signature not Required

Terms & Conditions

ACCOUNT INFORMATION
Beneficiary name : INFINITY PMC SOLUTIONS PRIVATE LIMITED
Beneficiary account number : 919020052983376
IFSC/RTGS/NEFT CODE : UTIB0004302
Beneficiary bank : Axis Bank Limited
Payments are subject to realisation. Interest @ 21% will be charged, in case of delay in receiving payment beyond the terms of payment.Subject to Chennai Jurisdiction.

P.RAVIKUMAR

Digitally signed by P.RAVIKUMAR
DN: cn=P.RAVIKUMAR, o=INFINITY PMC SOLUTIONS PVT LTD, ou=IPMCS, email=p.ravikumar@ipmcs.in, c=IN
Date: 2021.12.22 11:00:25 +05'30'

Month NOVEMBER

SUBJECT CVA007 - Project Planning and Management

S. No.	Roll No.	Name	Date	11	11	11	11	11	11	11	12	12	12	12	12	12
			Period	1	2	3	4	5	6	7	1	2	3	4	5	6
			Cumulative Periods	1	2	3	4	5	6	7	8	9	10	11	12	13
1	953619 103001	AAKASH P		/	/	/	/	/	/	/	/	/	/	/	/	/
2	3002	BALAKRISHNAN R		/	/	/	/	/	/	/	a	a	a	a	a	a
3	3003	HARI HARA PANDIYAN V		/	/	/	/	/	/	/	/	/	/	/	/	/
4	3004	JEEVANBABU K		/	/	/	/	/	/	/	/	/	/	/	/	/
5	3005	KEERTHI ROJA A		/	/	/	/	/	/	/	/	/	/	/	/	/
6	3006	MUTHU SANJAY S		/	/	/	/	/	/	/	/	/	/	/	/	/
7	3007	MUTHU SUNDAREESWARAN V		/	/	/	/	/	/	/	/	/	/	/	/	/
8	3008	NARMADA T		/	/	/	/	/	/	/	/	/	/	/	/	/
9	3009	PARTHA SARATHI M		/	/	/	/	/	/	/	/	/	/	/	/	/
10	3010	SANKARALINGAM S		a	a	a	a	a	a	a	/	/	/	/	/	/
11	3011	SIVARAMAKRISHNAN K		/	/	/	/	/	/	/	/	/	/	/	/	/
12	3012	SIVASAKTHIYA M		/	/	/	/	/	/	/	/	/	/	/	/	/
13	3013	VINEETH V		/	/	/	/	/	/	/	/	/	/	/	/	/
14	3301	HARIHARASUDHAN K		/	/	/	/	/	/	/	/	/	/	/	/	/
15	3302	MARIMUTHU P		/	/	/	/	/	/	/	/	/	/	/	/	/
16	3303	PALANINANIKANDAPRABHU V		/	/	/	/	/	/	/	/	/	/	/	/	/
17	3304	SARAVANAN A		/	/	/	/	/	/	/	/	/	/	/	/	/
18	953618 103004	ABDUR RAHMAN A		/	/	/	/	/	/	/	/	/	/	/	/	/
19	3002	AJANDHA DEVI S		/	/	/	/	/	/	/	/	/	/	/	/	/
20	3003	DINESH K		/	/	/	/	/	/	/	/	/	/	/	/	/
21	3004	E THANIKAI SELVAN		/	/	/	/	/	/	/	/	/	/	/	/	/
22	3006	JACKSINGH DHARMA R		/	/	/	/	/	/	/	/	/	/	/	/	/
23	3007	JENITHA G		/	/	/	/	/	/	/	a	a	a	a	a	a
24	3008	MEENA BHARATHI S		/	/	/	/	/	/	/	/	/	/	/	/	/
25	3009	MOHANRAJAN G		/	/	/	/	/	/	/	/	/	/	/	/	/
No. of absentess				1	1	1	1	1	1	1	2	2	2	2	2	2
Initial of the Faculty Member																

Month NOVEMBER

CLASS III & IV YEAR CIVIL

	12	13	13	13	13	13	13	13	14	14	14	14	14	14
	7	1	2	3	4	5	6	7	1	2	3	4	5	6
	14	15	16	17	18	19	20	21	22	23	24	25	26	27
1	/	a	a	a	a	a	a	a	/	/	/	/	/	/
2	a	/	/	/	/	/	/	/	/	/	/	/	/	/
3	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5	/	/	/	/	/	/	/	/	/	/	/	/	/	/
6	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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9	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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16	/	a	a	a	a	a	a	a	/	/	/	/	/	/
17	/	a	a	a	a	a	a	a	/	/	/	/	/	/
18	/	/	/	/	/	/	/	/	/	/	/	/	/	/
19	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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21	/	/	/	/	/	/	/	/	/	/	/	/	/	/
22	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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25	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	2	2	2	2	2	2	2	2	—	—	—	—	—	—

CA (75)	Model Test (25)	Total (100)

Month NOVEMBER

SUBJECT CVA007 - Project Planning & Management

CLASS IV Year Civil

S. No.	Roll No.	Name																												CA (75)	Model Test (25)	Total (100)
		Date	11	11	11	11	11	11	11	12	12	12	12	12	12	12	13	13	13	13	13	13	13	14	14	14	14	14	14			
		Period	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6			
		Cumulative Periods	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27			
26	3010	PADMAVATHI P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
27	3011	PRAVEEN B	/	/	/	/	/	/	/	a	a	a	a	a	a	a	/	/	/	/	/	/	/	/	/	/	/	/	/			
28	3012	RAVIKUMAR R	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
29	3013	SHALINI P	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
30	3014	SNEGHAVARDHINI J	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
31	3015	SRIVARSHAN S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
32	3016	SUBALAKSHMI M	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
33	3017	SUDHAKARAN A	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
34	3018	SURESHKUMAR M RA	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
35	3019	TAMIL SELVAN S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
36	3020	YOGA DHANDAPANI S	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
37	3301	JAGAN T	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
38	3302	KARTHICK RAJA P	/	/	/	/	/	/	/	a	a	a	a	a	a	a	/	/	/	/	/	/	/	/	/	/	/	/	/			
39	3303	THANGA GURU K	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			
No. of absentess										2	2	2	2	2	2	2																
Initial of the Faculty Member																																

INFINITY PMC SOLUTIONS PVT LTD

IPMCS

CERTIFICATE OF COMPLETION

"Project Planning and Management Training using Oracle Primavera P6 R19"

This is to certify that **AAKASH P** has attended and successfully completed our Training Program on: 15th NOVEMBER 2021

Total Hours Attended: **45Hrs**

IPPMCS/TR/P6-2122017

INFINITY PMC SOLUTIONS PVT LTD CHENNAI 600 129

Founder & CEO

MR.P.RAVIKUMAR

Authorized Partner:

ORACLE PRIMAVERA

iTWO cost

Asta Powerproject

INFINITY PMC SOLUTIONS PVT LTD

IPMCS

CERTIFICATE OF COMPLETION

"Project Planning and Management Training using Oracle Primavera P6 R19"

This is to certify that **BALAKRISHNAN R** has attended and successfully completed our Training Program on: 15th NOVEMBER 2021

Total Hours Attended: **45Hrs**

IPPMCS/TR/P6-2122020

INFINITY PMC SOLUTIONS PVT LTD CHENNAI 600 129

Founder & CEO

MR.P.RAVIKUMAR

Authorized Partner:

ORACLE PRIMAVERA

iTWO cost

Asta Powerproject

www.ipmcs.in

Off: 22357077 / 73
22357074
Fax / Dir: 22352272

CENTRE FOR ACADEMIC COURSES

ANNA UNIVERSITY
CHENNAI – 600 025

RAMCO INSTITUTE OF TECHNOLOGY ★ RAJAPALAYAM - 626 117 ★
23 AUG 2021

DIRECTOR ACADEMIC COURSES ANNA UNIVERSITY CHENNAI-600 025

Dr. S.HOSIMIN THILAGAR
DIRECTOR
Letter No.2723/AU/VA/CAC/FICE/2021 .08.2021

To

The Controller of Examinations
Anna University
Chennai - 25.

Sir,

Sub: A.U. - CAC - Affiliated Institutions - Value Added Courses - Reg.
Ref : (i) Letter No. RIT/ECE/VAC/2021/01, date:27.07.2021.
(ii) Mail received from the HOD, Ramco Institute of Technology, date:17.08.21.

******

With references to the letter cited, the following Value Added Courses offered by Ramco Institute of Technology, Affiliated Institutions is allotted the course code as detailed below.

Sl. NO.	CODE ALLOTTED	TITLE	CREDITS			
			L	T	P	C
1.	IVA083	Connected Car-Electronics	1	0	2	2
2.	IVA084	Embedded Systems Design Using ARM LPC2148	1	0	2	2
3.	IVA085	Design and Analysis of MOS Circuits	1	0	2	2

This is for your kind information and necessary action at your end.

Yours faithfully,

18.8.2021

DIRECTOR

Copy to:

1. The Principal, Ramco Institute of Technology, Rajapalayam – 626 117, Virudhunagar District.
2. The Chairperson, Faculty of Information and Communication Engineering, A.U., Chennai -25.
3. The Stock File.

AL

ECVAC 2101 **CONNECTED CAR- ELECTRONICS** L T P C
1 0 2 2

OBJECTIVES

- To familiarise with Automotive electronics and Protocols used.
- To identify the main challenges associated with Autonomous Cars.
- To familiarise with Connected cars and its applications.
- To identify the requirements of OBD.
- To develop application modules for Connected Cars and Smart Cars

I BASICS OF ELECTRONICS CONTROL UNIT **10**

Introduction-Automated-Connected and Intelligent Vehicles - Automotive Electronics -Overview CAN-UDS protocol - ECU operation- Networking of ECU- On Board Diagnostics- Advanced OBD -Failure Modes and Self Calibration- Real Time On Board Parameters- Cloud Connectivity- Testing and Validation

II AUTOMOTIVE SENSORS **11**

Connected Car Technology - Connectivity Fundamentals M2M- V2V-V2I- ETSI Standards for V2V Navigation and Other Applications -ADAS- Sensor Technology for Advanced Driver-Assistance Systems - Basics of Radar -LIDAR- Camera -Ultrasonic Sonar-Technology and Systems Integration of Sensor Data to On-Board Control Systems

LIST OF EXPERIMENTS: **24**

1. OBD- Testing
2. Connecting OBD to Control Unit & Testing.
3. Connecting Control Unit to Cloud
4. Online Diagnostic of Data with ML Algorithms
5. Dashboard Design and Integration
6. LIDAR- Sensing & Pattern Analysis

TOTAL: 45 Periods

OUTCOMES:

After completion of the course, it is expected that the students will be able to

- Identify how technology have developed to enable Autonomous Cars
- Classify the standards for V2V Applications
- Design and Test OBD Product
- Identify the role of Sensors in ADAS
- Describe the various types of Advanced driver assistance systems

Assessment Method (Weightage 100%)					
In-semester	Assessment Tool	Design/Modeling/ Assembly/Connection	Report Generation	MCQ/QUIZ / Viva Voce	Total
	Weightage	60 %	20 %	20 %	100 %

TEXT BOOKS:

1. Automotive Embedded Systems Handbook, CRC Press, 2009, ISBN 9781498797986.
2. Hermann Winner, Handbook of Driver Assistance Systems, Springer International Publishing Switzerland 2016

REFERENCE:

1. Bosch Automotive Electrics and Automotive Electronics Systems and Components, Networking and Hybrid Drive, Vieweg, 2014
2. Understanding Automotive Electronics-An Engineering Perspective, W B.Ribbens, Elsevier, 8th edition, 2017

16/8/2021 16/8/21. 11/8/21 16/8/21

Course Designer & Coordinator **HOD/ECE** **Vice Principal**

17.8.21

Principal

ECVAC 2102 DESIGN AND ANALYSIS OF MOS CIRCUITS

L	T	P	C
1	0	2	2

OBJECTIVES

- To understand the characteristics of MOSFET and modelling
- To design NMOS, PMOS and CMOS circuits for basic gates
- To provide a basic idea on design of mixed signal IC design

I INTRODUCTION TO MOS CHARACTERISTICS AND MODELLING **8**

MOS Transistor structure and device modelling, Non-ideal Effects of MOSFET, small signal parameters of MOSFET, MOS capacitance, Concept of transition frequency, introduction to EDA tools, layout versus schematic

II LINEAR AND NON LINEAR CIRCUITS **8**

OP-AMP Fundamentals, IC OP-AMP applications, CCVS and VCCS, Instrumentation Amplifiers, Non Linear Circuits, IC Analog Multiplier applications, Voltage Controlled Oscillator, Phase Locked Loop

III DESIGN OF MOS CIRCUITS **7**

CMOS Circuits for basic gates, CMOS Inverter, CMOS Operational Amplifiers, High Performance CMOS Opamp Design, Design of MOS Comparators, Data Converter Fundamentals, Digital-to-Analog Converters (DAC), Analog-to-Digital Converters(ADC)

LIST OF EXPERIMENTS: **22**

1. Design and Simulation of CMOS Inverting Amplifier and analyse the Transient response
2. Design of CMOS Universal gates and verify its input and output characteristics
3. Design and Analyse the gain and frequency response of single stage operational amplifier
4. Design and Simulation of one bit Analog to Digital converters using CMOS technology
5. Design and Simulation of four bit Digital to Analog converters using CMOS technology
6. Design and Analyse the Voltage Controlled Oscillator (VCO) using CMOS technology
7. Design and Analyse the Phase Locked Loop (PLL) using CMOS technology

TOTAL: 45 Periods

OUTCOMES:

After completion of the course, it is expected that the students will be able to

- Explain the MOS fundamentals, small signal models and analysis of MOSFET based circuits.
- Design and Analyze mixed signal circuits such as ADC, DAC, VCO and PLL
- Solve practical and state of the art analog VLSI design problems to serve VLSI industries.

Assessment Method (Weightage 100%)					
In-semester	Assessment Tool	Design/Modeling / Assembly/ Connection	Report Generation	MCQ/QUIZ/ Viva Voce	Total
	Weightage	60 %	20 %	20 %	100 %

TEXT BOOKS:

1. Behzad Razavi, Design of Analog CMOS Integrated Circuits, 2nd Edition, McGraw-Hill Book company, 2002.

REFERENCE:

1. R.JacobBaker,H.W.Li, and D.E. Boyce CMOS Circuit Design ,Layout and Simulation, Prentice-Hall of, 2002.
2. P.E. Allen and D.R.Holberg, CMOS Analog Circuit Design, Oxford University Press , 2004.
3. R.Gregorian and G.C.Temes, Analog MOS Integrated Circuits for Signal Processing, John Wiley and Sons , 2004.

16/8/21

Course Designer & Coordinator

16/8/21

HOD/ECE

Vice Principal

Principal

17.8.21

ECVAC 2103 **EMBEDDED SYSTEMS DESIGN USING ARM LPC2148** **L T P C**
1 0 2 2

OBJECTIVES

- To understand the fundamentals of ARM Microcontroller and Embedded C programming.
- To familiarise IO/peripherals interface to ARM based Microcontroller using Keil IDE.
- To involve Discussions/ Practice/Exercise to familiarize the concepts for improved employability skills.

Unit I Embedded Systems and Software Development Tools **5**

Introduction to Embedded Systems-Structural units in Embedded processor, selection of processor & memory devices for Embedded applications, introduction to SW development tools, Software Development environment-IDE, assembler, compiler, linker, simulator, debugger, In-circuit emulator.

Unit II ARM Processors **6**

Introduction to ARM processors and its versions, ARM7, ARM9 & ARM11 features, advantages & suitability in embedded application, registers, CPSR, SPSR, ARM and RISC Architecture , ARM7 data flow model, programmers model, modes of operations.

Unit III ARM7 Based Microcontroller **5**

ARM7 Based Microcontroller LPC2148: Features, Architecture (Block Diagram and Its Description), System Control Block (PLL and VPB divider), Memory Map, GPIO, Pin Connect Block, timer, Instruction set, Programming ARM7 Microcontroller using Embedded C.

Unit IV Real World Interfacing with ARM7 Based Microcontroller-1 **6**

Interrupt structure of LPC2148, Interfacing with LED, LCD, KEYPAD, simple LPC2148 GPIO Programming examples using timers of LPC2148 to generate delay, serial communication programming, programming for UART.

Unit V Real World Interfacing with ARM7 Based Microcontroller-2 **5**

Interfacing EEPROM using I2C, SDCARD using SPI and on-chip DAC for waveform generation, PWM Generation using GPIO, Sample Case study of an embedded application using Multi pin configuration.

List of Experiments:

Write an Embedded C program **18**

1. To interface Keypad and LCD.
2. To display output for given analog input using internal ADC. (Use of Analog Sensors like Ultrasonic Sensor, Temperature, Humidity, Soil Moisture Sensor, PIR sensor).
3. To interface relay to control the AC Appliances.
4. To interface DC Motors, Stepper Motor, and Servo Motor rotate clockwise, anticlockwise and in angle (45°, 90°, 180°).
5. To build I2C and SPI communication between two microcontrollers.
6. To implement a Real-Time Clock.

TOTAL: 45 Periods

OUTCOMES:

After completion of the course, it is expected that the students will be able to,

- Describe the architectural features and instructions of 32 bit ARM microcontroller.
- Analyze the basic hardware components and their selection method based on the characteristics and attributes of an Embedded System.
- Identify various Sensors, Actuators & Interfacing Modules.

Assessment Method (Weightage 100%)					
In-semester	Assessment Tool	Design/Modeling/ Assembly/Connection	Report Generation	MCQ/QUIZ /Viva Voce	Total
	Weightage	60 %	20 %	20 %	100 %

TEXT BOOKS:

1. Embedded Systems: A Contemporary Design Tool- James K. Peckol ISBN: 978-0-471-72180-2 October 2007, ©2008.
2. ARM System Developer's guide -Andrew N. SLOSS, ELSEVIER Publications, ISBN 978-81-8147-646-3, 2016.

REFERENCE:

1. Programming Embedded Systems in C and C++, First Edition January, Michael Barr, O' Reilly Introduction to embedded systems, Shibu K V Tata McGraw-Hill, 2009
2. ARM System-on-chip Architecture by Steve Furber, Pearson Education, ISBN978-81-317-0840-8, 2E, 2012.
3. Web reference: www.arm.com
4. LPC2148 user Manual.
5. ARM Programming Techniques – from ARM website.

16/08/2021
Course Designer & Coordinator

16/8/21
HoD/ECE

Vice – Principal

Principal

17.8.21

RAMCO INSTITUTE OF TECHNOLOGY

Approved by AICTE, New Delhi & Affiliated to Anna University
Accredited by NAAC & An ISO 9001:2015 Certified Institution
NBA Accredited UG Programs: CSE, EEE, ECE and MECH

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Value Added Course 2021-22 (Odd Semester)

11.11.2021

Submitted to the Principal,

Respected Sir,

Sub: Requesting permission to conduct session with External Expert from Industry for handling Anna University Value Added Courses– reg.

We are conducting the following Anna University Value added course for III year ECE students during 2021-22 odd semester. Few session were planned with External Experts from Industry as given below.

Kindly we request your permission to invite the Resource persons for conducting the session and accord your approval for providing Honorarium from RIT account.

Sl. No.	Date	Year/ Sem	Name of the Course	Resource Person	No. of Students	Total Amount (in Rs.)
1	13.11.2021	III/V	Embedded Systems Design Using ARM LPC2148	Mr. Mohamed Safiyur Rahman Technical Specialist, Robert Bosch engineering and Business Solutions, Coimbatore	30	3,000.00
2	13.11.2021	III/V	Connected Car-Electronics	Dr. Vimalathithan R, Director, Krishtech, Coimbatore	19	3,000.00
3	13.11.2021	III/V	Design and Analysis of MOS Circuits	Mr. G.Harri ram, (Alumni) Senior Verification Engineer, Mobiveil Technology, Bangalore	33	-
					Total Amount	**6,000.00**
					Rupees Six Thousand only	

- Mr. G.Harri ram, 2013- 2017 Batch Alumni will be handling the session with free of cost for the course "Design and Analysis of MOS Circuits"

Head of Accounts: Academics/ECE/Co - Curricular Activities

11/11/2021
Valde Added Course Incharge

11/11/21
HOD

12/11/21
DGM(A)

12/11/21
Vice Principal

12/11/21
Principal

RAMCO INSTITUTE OF TECHNOLOGY

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Value Added Course 2021-22 (Odd Semester)

Date: 13.11.2021

Submitted to the Principal
Respected Sir,

We have conducted a following Anna University Value added Course with External Experts for Third year ECE students on 13.11.2021. The following are the expenses involved in conducting the course.

Sl. No.	Name of the Item	Name of the Course	Resource Person	Total Amount (in Rs.)
1	Honorarium to Resource Person	Embedded Systems Design Using ARM LPC2148	Mr. Mohamed Safiyur Rahman Technical Specialist, Robert Bosch engineering and Business Solutions, Coimbatore **Account Details:** Name: MOHAMED SAFIYUR RAHMAN S Account Number: 615201524706 IFSC Code: ICIC0006152 Bank: ICICI	3,000.00
2		Connected Car-Electronics	Dr. Vimalathithan R, Director, Krishtech, Coimbatore **Account Details:** Name: VIMALATHITHAN R Account Number: 007901-0000-24080 IFSC Code: IOBA0000079 Bank: IOB	3,000.00
			Total Amount	**6,000.00**
			Rupees Six Thousand only	

The above said session was conducted as per schedule and feedbacks were collected from the students. Based upon the feedback, the students felt well satisfied about the course content and content delivery. Hence payment may kindly be released. Herewith the Permission approval is enclosed.

Head of Accounts: Academics/ECE/Co- Curricular Activities

13/11/21
Value Added Course Incharge

13/11/21
HOD/ECE

19/11/21
DGM(A)

20/11
Accountant

22/11/21
Vice Principal

22/11/21
Principal

ECVAC 2102 DESIGN AND ANALYSIS OF MOS CIRCUITS

L	T	P	C
1	0	2	2

OBJECTIVES

- To understand the characteristics of MOSFET and modelling
- To design NMOS, PMOS and CMOS circuits for basic gates
- To provide a basic idea on design of mixed signal IC design

I INTRODUCTION TO MOS CHARACTERISTICS AND MODELLING **8**

MOS Transistor structure and device modelling, Non-ideal Effects of MOSFET, small signal parameters of MOSFET, MOS capacitance, Concept of transition frequency, introduction to EDA tools, layout versus schematic

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OP-AMP Fundamentals, IC OP-AMP applications, CCVS and VCCS, Instrumentation Amplifiers, Non Linear Circuits, IC Analog Multiplier applications, Voltage Controlled Oscillator, Phase Locked Loop

III DESIGN OF MOS CIRCUITS **7**

CMOS Circuits for basic gates, CMOS Inverter, CMOS Operational Amplifiers, High Performance CMOS Opamp Design, Design of MOS Comparators, Data Converter Fundamentals, Digital-to-Analog Converters (DAC), Analog-to-Digital Converters(ADC)

LIST OF EXPERIMENTS: **22**

1. Design and Simulation of CMOS Inverting Amplifier and analyse the Transient response
2. Design of CMOS Universal gates and verify its input and output characteristics
3. Design and Analyse the gain and frequency response of single stage operational amplifier
4. Design and Simulation of one bit Analog to Digital converters using CMOS technology
5. Design and Simulation of four bit Digital to Analog converters using CMOS technology
6. Design and Analyse the Voltage Controlled Oscillator (VCO) using CMOS technology
7. Design and Analyse the Phase Locked Loop (PLL) using CMOS technology

TOTAL: 45 Periods

OUTCOMES:

After completion of the course, it is expected that the students will be able to

- Explain the MOS fundamentals, small signal models and analysis of MOSFET based circuits.
- Design and Analyze mixed signal circuits such as ADC, DAC, VCO and PLL
- Solve practical and state of the art analog VLSI design problems to serve VLSI industries.

Assessment Method (Weightage 100%)					
In-semester	**Assessment Tool**	**Design/Modeling / Assembly/ Connection**	**Report Generation**	**MCQ/QUIZ/ Viva Voce**	**Total**
	Weightage	60 %	20 %	20 %	100 %

TEXT BOOKS:

1. Behzad Razavi, Design of Analog CMOS Integrated Circuits, 2nd Edition, McGraw-Hill Book company, 2002.

REFERENCE:

1. R.JacobBaker,H.W.Li, and D.E. Boyce CMOS Circuit Design ,Layout and Simulation, Prentice-Hall of, 2002.
2. P.E. Allen and D.R.Holberg, CMOS Analog Circuit Design, Oxford University Press , 2004.
3. R.Gregorian and G.C.Temes, Analog MOS Integrated Circuits for Signal Processing, John Wiley and Sons , 2004.

16/8/21 16/8/21 16/8/21

Course Designer & Coordinator **HOD/ECE** **Vice Principal**

17.8.21

Principal

RAMCO INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year: 2021-22(Odd Semester)

STUDENTS NAMELIST FOR VALUE ADDED COURSE

IVA085 – Design and Analysis of MOS Circuits

Semester and Branch: V Semester B.E. Electronics and Communication Engineering – A & B

Sl.No	Register Number	Name of the Student
1.	953619106006	ARAVIND M
2.	953619106009	CHIDHAMBARANATHAN R
3.	953619106010	DEEPAK CHAKRAVARTHI P
4.	953619106016	ELAVARASI A
5.	953619106021	GIRITHARAN D
6.	953619106022	GOMATHI NAAYAGAM I S
7.	953619106032	KAMALESH S
8.	953619106302	KUMARAGURUPARAN A
9.	953619106041	MAHENDRA PRAKASH R
10.	953619106042	MANJULA G
11.	953619106044	MARIKRISHNAUTHAMI S
12.	953619106046	MONIKA R
13.	953619106051	PADMA PRIYA C
14.	953619106053	PRAKATHI S
15.	953619106054	PRIYADHARSHINI R
16.	953619106057	SABRIYAH M
17.	953619106058	SAI VISHNU L
18.	953619106059	SAKTHI ABIRAMI N
19.	953619106061	SANGHAVI G
20.	953619106062	SANTHOSH I
21.	953619106064	SEETHA DEVI M
22.	953619106066	SHARON TRESHA A
23.	953619106067	SHRINITHIMEENA M
24.	953619106068	SNEHA P
25.	953619106069	SNEKHA B
26.	953619106071	SUJITHA K
27.	953619106073	SUSHMA A
28.	953619106074	SUSHMITHA K
29.	953619106075	VAISHNAVI M
30.	953619106079	VIJAYASANKARI P
31.	953619106080	VINOTHINI RAJAM R
32.	953619106301	BALAJI S
33.	953619106303	NAVEEN AJAY KUMAR T

3/9/21

Faculty Coordinators

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HOD

ECVAC 2103 **EMBEDDED SYSTEMS DESIGN USING ARM LPC2148** **L T P C**
1 0 2 2

OBJECTIVES

- To understand the fundamentals of ARM Microcontroller and Embedded C programming.
- To familiarise IO/peripherals interface to ARM based Microcontroller using Keil IDE.
- To involve Discussions/ Practice/Exercise to familiarize the concepts for improved employability skills.

Unit I Embedded Systems and Software Development Tools **5**

Introduction to Embedded Systems-Structural units in Embedded processor, selection of processor & memory devices for Embedded applications, introduction to SW development tools, Software Development environment-IDE, assembler, compiler, linker, simulator, debugger, In-circuit emulator.

Unit II ARM Processors **6**

Introduction to ARM processors and its versions, ARM7, ARM9 & ARM11 features, advantages & suitability in embedded application, registers, CPSR, SPSR, ARM and RISC Architecture , ARM7 data flow model, programmers model, modes of operations.

Unit III ARM7 Based Microcontroller **5**

ARM7 Based Microcontroller LPC2148: Features, Architecture (Block Diagram and Its Description), System Control Block (PLL and VPB divider), Memory Map, GPIO, Pin Connect Block, timer, Instruction set, Programming ARM7 Microcontroller using Embedded C.

Unit IV Real World Interfacing with ARM7 Based Microcontroller-1 **6**

Interrupt structure of LPC2148, Interfacing with LED, LCD, KEYPAD, simple LPC2148 GPIO Programming examples using timers of LPC2148 to generate delay, serial communication programming, programming for UART.

Unit V Real World Interfacing with ARM7 Based Microcontroller-2 **5**

Interfacing EEPROM using I2C, SDCARD using SPI and on-chip DAC for waveform generation, PWM Generation using GPIO, Sample Case study of an embedded application using Multi pin configuration.

18

List of Experiments:

Write an Embedded C program

1. To interface Keypad and LCD.
2. To display output for given analog input using internal ADC. (Use of Analog Sensors like Ultrasonic Sensor, Temperature, Humidity, Soil Moisture Sensor, PIR sensor).
3. To interface relay to control the AC Appliances.
4. To interface DC Motors, Stepper Motor, and Servo Motor rotate clockwise, anticlockwise and in angle (45^o, 90^o, 180^o).
5. To build I2C and SPI communication between two microcontrollers.
6. To implement a Real-Time Clock.

TOTAL: 45 Periods

OUTCOMES:

After completion of the course, it is expected that the students will be able to,

- Describe the architectural features and instructions of 32 bit ARM microcontroller.
- Analyze the basic hardware components and their selection method based on the characteristics and attributes of an Embedded System.
- Identify various Sensors, Actuators & Interfacing Modules.

Assessment Method (Weightage 100%)					
In-semester	**Assessment Tool**	**Design/Modeling/ Assembly/Connection**	**Report Generation**	**MCQ/QUIZ /Viva Voce**	**Total**
	Weightage	60 %	20 %	20 %	100 %

TEXT BOOKS:

1. Embedded Systems: A Contemporary Design Tool- James K. Peckol ISBN: 978-0-471-72180-2 October 2007, ©2008.
2. ARM System Developer's guide –Andrew N. SLOSS, ELSEVIER Publications, ISBN 978-81-8147-646-3, 2016.

REFERENCE:

1. Programming Embedded Systems in C and C++, First Edition January, Michael Barr, O' Reilly Introduction to embedded systems, Shibu K V Tata McGraw-Hill, 2009
2. ARM System-on-chip Architecture by Steve Furber, Pearson Education, ISBN978-81-317-0840-8, 2E, 2012.
3. Web reference: www.arm.com
4. LPC2148 user Manual.
5. ARM Programming Techniques – from ARM website.

16/08/2021
Course Designer & Coordinator

16/8/21
HoD/ECE

16/8/21
Vice – Principal

Principal

17824

RAMCO INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year: 2021-22(Odd Semester)

STUDENTS NAMELIST FOR VALUE ADDED COURSE

IVA084 – Embedded Systems Design Using ARM LPC2148

Semester and Branch: V Semester B.E. Electronics and Communication Engineering – A & B

Sl.No	Register Number	Name of the Student
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3.	953619106007	ARUMUGA VISWANATH P
4.	953619106008	ASIBA MINA K R
5.	953619106013	DHARSHINI P
6.	953619106014	DIVYA SHREE R
7.	953619106017	GAAYATRI V S
8.	953619106018	GANESH G
9.	953619106019	GANESHAMOORTHY I
10.	953619106020	GAYATHRI K
11.	953619106023	HARIHARAN S
12.	953619106024	HARINI U
13.	953619106025	INDHUMATHI C
14.	953619106027	JAYA MAHIMA M
15.	953619106030	KALIDAS P
16.	953619106031	KALIMUTHU K
17.	953619106034	KAVIYA S
18.	953619106037	KESAVANAND M
19.	953619106038	KESHAVA MUGESH KUMAR C M
20.	953619106043	MANOJKUMAR R
21.	953619106045	MARIMUTHU B
22.	953619106047	MUGESH M
23.	953619106049	NAVEEN KUMAR S
24.	953619106050	NHIDHEES LAKSH KUMAR
25.	953619106055	RAJESHWARAN R
26.	953619106063	SARAVANAKUMAR S
27.	953619106070	SUBHASH S
28.	953619106076	VEERAMANIMARAN P
29.	953619106077	VIJAYALAXMANASEN A
30.	953619106078	VIJAYARAMMSEN A

3/1/21

Faculty Coordinators

3/1/21

HOD

ECVAC 2101	CONNECTED CAR- ELECTRONICS	L T P C 1 0 2 2

OBJECTIVES

- To familiarise with Automotive electronics and Protocols used.
- To identify the main challenges associated with Autonomous Cars.
- To familiarise with Connected cars and its applications.
- To identify the requirements of OBD.
- To develop application modules for Connected Cars and Smart Cars

I BASICS OF ELECTRONICS CONTROL UNIT **10**

Introduction-Automated-Connected and Intelligent Vehicles - Automotive Electronics -Overview CAN-UDS protocol - ECU operation- Networking of ECU- On Board Diagnostics- Advanced OBD -Failure Modes and Self Calibration- Real Time On Board Parameters- Cloud Connectivity- Testing and Validation

II AUTOMOTIVE SENSORS **11**

Connected Car Technology - Connectivity Fundamentals M2M- V2V-V2I- ETSI Standards for V2V Navigation and Other Applications -ADAS- Sensor Technology for Advanced Driver-Assistance Systems - Basics of Radar -LIDAR- Camera -Ultrasonic Sonar-Technology and Systems Integration of Sensor Data to On-Board Control Systems

LIST OF EXPERIMENTS: **24**

1. OBD- Testing
2. Connecting OBD to Control Unit & Testing.
3. Connecting Control Unit to Cloud
4. Online Diagnostic of Data with ML Algorithms
5. Dashboard Design and Integration
6. LIDAR- Sensing & Pattern Analysis

TOTAL: 45 Periods

OUTCOMES:

After completion of the course, it is expected that the students will be able to

- Identify how technology have developed to enable Autonomous Cars
- Classify the standards for V2V Applications
- Design and Test OBD Product
- Identify the role of Sensors in ADAS
- Describe the various types of Advanced driver assistance systems

Assessment Method (Weightage 100%)					
In-semester	Assessment Tool	Design/Modeling/ Assembly/Connection	Report Generation	MCQ/QUIZ / Viva Voce	Total
	Weightage	60 %	20 %	20 %	100 %

TEXT BOOKS:

1. Automotive Embedded Systems Handbook, CRC Press, 2009, ISBN 9781498797986.
2. Hermann Winner, Handbook of Driver Assistance Systems, Springer International Publishing Switzerland 2016

REFERENCE:

1. Bosch Automotive Electrics and Automotive Electronics Systems and Components, Networking and Hybrid Drive, Vieweg, 2014
2. Understanding Automotive Electronics-An Engineering Perspective, W B.Ribbens, Elsevier, 8th edition, 2017

16/8/2021 16/8/21.
Course Designer & Coordinator

16/8/21
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16/8/21
Vice Principal

Principal

RAMCO INSTITUTE OF TECHNOLOGY

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Academic Year: 2021-22(Odd Semester)

STUDENTS NAMELIST FOR VALUE ADDED COURSE

IVA083 – Connected Car-Electronics

Semester and Branch: V Semester B.E. Electronics and Communication Engineering – A & B

Sl.No	Register Number	Name of the Student
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2.	953619106004	AMUDHADEVI A S
3.	953619106005	ANUDHARSHINI M
4.	953619106011	DHARINI A
5.	953619106012	DHARSHINI K
6.	953619106015	DIWYA DHARSHINI R
7.	953619106026	ISHWARYA R
8.	953619106028	JEYAGOMATHI S
9.	953619106029	JISHA P S
10.	953619106033	KAVIN KUMAR R
11.	953619106035	KAVYA P
12.	953619106036	KEERTHIKA B
13.	953619106039	LINGESH S
14.	953619106040	LOGGAA SRI AGITHA K
15.	953619106048	NAMASIVAYAM T
16.	953619106052	PRADEEP C
17.	953619106056	RAMESH KUMAR K
18.	953619106065	SHANMUGAVISAL S.V
19.	953619106072	SURENDAR V

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Faculty Coordinators

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RAMCO INSTITUTE OF TECHNOLOGY

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Accredited by NAAC and ISO 9001:2015 certified Institution
NBA Accredited UG Programs: CSE, EEE, ECE and MECH

CERTIFICATE OF PARTICIPATION

This to certify that

SEETHA DEVI M

has completed the value added course on IVA085 Design and Analysis of MOS Circuits from 05.09.2021 to 21.11.2021 organized by the Department of Electronics and Communication Engineering in association with IE(I) Students Chapter of Rameo Institute of Technology, Rajapalayam.

Dr.S.Periyanayagi
Convener

Dr.L.Ganesan
Principal

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Accredited by NAAC and ISO 9001:2015 certified Institution
NBA Accredited UG Programs: CSE, EEE, ECE and MECH

CERTIFICATE OF PARTICIPATION

This to certify that

MARI MUTHU B

has completed the value added course on IVA084 Embedded Systems Design Using ARM LPC2148 from 05.09.2021 to 21.11.2021 organized by the Department of Electronics and Communication Engineering in association with IETE Student Forum of Ramco Institute of Technology, Rajapalayam.

Dr.S.Periyanayagi
Convener

Dr.L.Ganesan
Principal

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CENTRE FOR ACADEMIC COURSES

ANNA UNIVERSITY
CHENNAI – 600 025

Dr. S.HOSIMIN THILAGAR
DIRECTOR
Letter No.3814/AU/VA/CAC/FICE/2021 **22**.10.2021

27 OCT 2021

To

The Controller of Examinations
Anna University
Chennai - 25.

Sir,

Sub: A.U. - CAC - Affiliated Institutions - Value Added Courses - Reg.
Ref : Letter No. RIT/CSE/VAC/2021/02, date:16.09.2021.

******

With references to the letter cited, the following Value Added Course offered by Ramco Institute of Technology, Affiliated Institutions is allotted the course code as detailed below.

SI. NO.	CODE ALLOTTED	TITLE	CREDITS			
			L	T	P	C
1.	IVA086	MERN Stack	1	0	2	2

This is for your kind information and necessary action at your end.

Yours faithfully,

DIRECTOR

Copy to:

1. The Principal, Ramco Institute of Technology, Rajapalayam – 626 117, Virudhunagar District.
2. The Chairperson, Faculty of Information and Communication Engineering, A.U., Chennai -25.
3. The Stock File.

AL

RAMCO INSTITUTE OF TECHNOLOGY

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

DEPARTMENT OF MECHANICAL ENGINEERING

Academic year 2021-22 (Odd Semester)

Anna University approved Value Added Course

Willingness Details

Title of the Course : **MVA009 Surface Coating Technology**
Year / Branch / Semester: **III / Mechanical / V**

S. No.	Register Number	Name of the Students	Signature
1.	953619114002	ARASU T	
2.	953619114004	ARUL PRAKASH K	
3.	953619114007	ATHITH M	
4.	953619114010	BHARATH K	
5.	953619114012	BIJU DANIE S	
6.	953619114021	KABIL BHARATH RAM	
7.	953619114025	MANOJKUMAR K	
8.	953619114026	MUTHU MARIAPPAN M	
9.	953619114029	RAGHUL R	
10.	953619114031	RAMKUMAR.B	
11.	953619114035	SHIRAJ GOKUL N	
12.	953619114038	SYEDTHOWFEEK S	
13.	953619114301	AJITHSANKARRAJ P	
14.	953619114304	MANOJ DHIWAKAR T	
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RAMCO INSTITUTE OF TECHNOLOGY

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

DEPARTMENT OF MECHANICAL ENGINEERING

Academic year 2021-22 (Odd Semester)

Anna University approved Value Added Course

Willingness Details

Title of the Course : **MVA006 Green Energy Technologies and Management**
Year / Branch / Semester: **III / Mechanical / V**

S. No.	Register Number	Name of the Students	Signature
1.	953619114001	ANITH RAJASEELAN	
2.	953619114008	BALAMURUGAN M	
3.	953619114015	DINESHKUMAR. G	
4.	953619114016	ELANGOVAN.K	
5.	953619114017	M GOWTHAM	
6.	953619114019	HARI HARAN VP	
7.	953619114020	JEHAVEERAPANDIYAN	
8.	953619114027	MUTHURAJ M	
9.	953619114030	RAHUL S	
10.	953619114033	K.S.B SANKARA PRASANNA	
11.	953619114036	SHYAMSUNDAR R	
12.	953619114037	SOUMYA SOUVIK KHUNTIA	
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14.	953619114302	A.KANAGARAJ	
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16.	953619114306	MURALIKRISHNAN A	
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NBA Accredited UG Programs: CSE, EEE, ECE and MECH

DEPARTMENT OF MECHANICAL ENGINEERING

Academic year 2021-22 (Odd Semester)

Anna University approved Value Added Course

Willingness Details

Title of the Course : **MVA023- IoT and AR Applications in Mechanical Engineering**
Year / Branch / Semester: **III / Mechanical / V**

S. No.	Register Number	Name of the Students	Signature
1.	953619114003	G ARULKUMAR	
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3.	953619114006	S.ATHISHANKAR	
4.	953619114009	BHARANIDHARAN R	
5.	953619114011	BHARATH M	
6.	953619114013	S S DEV PRASSATH	
7.	953619114014	DINESH R	
8.	953619114022	KARTHIK MAHADEV	
9.	953619114023	A.KRISHNA KUMAR	
10.	953619114024	MAADHESH M	
11.	953619114028	P.R.VIJAY JAGANATH	
12.	953619114032	K.RAMKUMAR	
13.	953619114034	SARAVANAKUMAR S	
14.	953619114039	C.THANGA DINESH	
15.	953619114040	T.K VIJAYA AKASH	

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J. Paranthaman, S.Shakthi, R.U.Rajalakshmi, G.Saravana Jothi, M.Jothilinga Pandian, V.G.Ragavi mentored by **Dr.R.Venkatesh,AP(SG)/CSE, Mr.K.Vignesh Saravanan AP/CSE won Rs. 1,00,000/- in the Smart India Hackathon 2022 grand finale** for providing the best solution to the problem statement tittle **Comprehensive tools to edit the pdf and convert into epub format** given by the Department of Empowerment of Persons with Disabilities (Divyangjan), Ministry of Social Justice and Empowerment during 25.08.2022 to 26.08.2022.

K.M.Architha I CSE (11th rank), M.Makesh Selvalakshmi I (50th Rank) in NCAT - Category I and K.Muthukumar II CSE (27th rank) in NCAT - Category II, G.Jaya Dharsini III CSE (4th Rank) in NCAT - Category III secured All India rank in **National Creativity Aptitude Test 2022 conducted by IIT Delhi.**

M.Jothi linga pandian and M.Gowtham karthikeyan won **Jury Award for Promising Solution** with cash prize Rs.25,000 in **HCL HACK IITK - Cybersecurity Hackathon** organized by IIT Kanpur from 17.09.2021 to 29.01.2022.