



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

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

Course Code & Title : CEC368 IOT Based Systems Design

Name of the Faculty member : Mr.A.Rameshbabu

### Innovative Practice Description

- **Unit / Topic:** Unit IV - IoT Implementation Tools - Implementation of IoT with Raspberry Pi
- **Course Outcome:** CO 4
- **Topic Learning Outcome:** TLO14
- **Activity Chosen:** Flipped Classroom
- **Justification:**
  - A flipped classroom is a type of blended learning where students are introduced to content at home and practice working through it at College.
- **Time Allotted for the Activity:** 50 Minutes
- **Details of the Implementation:**
  - This is the reverse of the more common practice of introducing new content at college, then assigning homework and projects to complete by the students independently at home.
  - In this blended learning approach, face-to-face interaction is mixed with independent study—usually via technology. In a common Flipped Classroom scenario, students might watch pre-recorded videos at home, then come to school to do the homework armed with questions and at least some background knowledge.
  - The concept behind the flipped classroom is to rethink when students have access to the resources they need most. If the problem is that students need help doing the work rather than being introduced to the new thinking behind the work, then the solution the flipped classroom takes is to reverse that pattern.

- **CO – PO / PSO mapping:**

CO	PO 1	PO 2	PO 4	PO 9	PO 10	PO 12	PSO 3
CO3	3	3	2	1	1	2	3

(1 – Low      2 – Moderate      3 – High)

• **PO / PSO mapped:**

Innovative practice	PO 9	PO 10	PSO 3
<b>Justification for correlation</b>	Students will function effectively as an individual, and as a member or leader in Flipped Classroom activity to discuss about Implementation of IoT with Raspberry Pi, So Course outcome is mapped at level 1	In Flipped Classroom activity students will make effective presentations on Different IoT Applications using Raspberry Pi, hence Course outcome is mapped at level 1	Knowledge of Raspberry Pi implementation is used to Design, analyze and develop electronic products in the area of VLSI Design, So Course outcome is mapped at level 3

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



• **Reflective Critique:**

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

- Students eagerly participated and enjoyed this activity.

❖ **Benefit of the practice:**

- Outcome attainment would have increased due to innovative practice over conventional practice.
- Students easily understand the concepts of IoT Implementations with Raspberry Pi.
- Students can answer easily about different types of IoT Applications & Its Interfaces with Raspberry Pi.

❖ **Challenges faced in implementation:**

- Faced issues while make the students to understand about Flipped Class room Activity rules.

## References:

- ❖ [https://robocraze.com/blogs/post/raspberry-pi-in-iot?srsltid=AfmBOoquj9pBpumHrz1U\\_HtKs7mtAdmZ3LlumiGX\\_SRPZ93s0eus8tq](https://robocraze.com/blogs/post/raspberry-pi-in-iot?srsltid=AfmBOoquj9pBpumHrz1U_HtKs7mtAdmZ3LlumiGX_SRPZ93s0eus8tq)
- ❖ [https://www.ntirawen.com/2019/05/implementation-of-iot-with-raspberry-pi.html#google\\_vignette](https://www.ntirawen.com/2019/05/implementation-of-iot-with-raspberry-pi.html#google_vignette)
- ❖ <https://www.42gears.com/white-papers/building-iot-solutions-with-managed-raspberry-pi/>



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**ACTIVE LEARNING TEACHING METHODS**

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

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Sl. No.	Date	Topic(s)	Activity*	Reference
<b>UNIT I - INTRODUCTION TO INTERNET OF THINGS</b>				
1.	14.08.24	IoT levels and deployment templates	One Minute Paper	<a href="https://oncourseworkshop.com/self-awareness/one-minute-paper/">https://oncourseworkshop.com/self-awareness/one-minute-paper/</a>
				



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Sl. No.	Date	Topic(s)	Activity*	Reference
<b>UNIT II - INTRODUCTION TO INTERNET OF THINGS</b>				
1.	06.09.24	Resource management in IoT	Class Poll	<a href="https://www.mentimeter.com/templates/poll-templates-examples/classroom">https://www.mentimeter.com/templates/poll-templates-examples/classroom</a>
				



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<b>UNIT III - COMMUNICATION AND NETWORKING</b>				
1.	05.10.24	Application Layer Protocols: CoAP and MQTT, Data aggregation & dissemination.	Role Play	<a href="https://www.niu.edu/citl/resources/guides/instructional-guide/role-playing.shtml">https://www.niu.edu/citl/resources/guides/instructional-guide/role-playing.shtml</a>
				



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<b>UNIT V - APPLICATIONS AND CASE STUDIES</b>				
1.	09.11.24	Industry – IoT Application	Head & Talk	<a href="https://www.teacherspayteachers.com/browse?search=talking%20head">https://www.teacherspayteachers.com/browse?search=talking%20head</a>
				