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

Degree, Semester & Branch: V Semester B.Tech. CSBS
Course Code & Title: CS3691 Embedded Systems and IoT
Name of the Faculty member: Mr.D.Gopinath

Innovative Practice Description

- **Unit / Topic:** Unit V / Development of IoT Applications – Smart Cities
- **Course Outcome: CO5** The students will be able to design IoT applications using Arduino/Raspberry Pi /open platform.
- **Topic Learning Outcome:** The students will be able to develop the Smart Cities using IoT
- **Activity Chosen: Flipped Classroom**
- **Justification:**

  Smart cities require critical thinking about sustainability, technology, and policy trade-offs. In-class activities such as case studies, design thinking sessions, or debates enable students to grapple with real-world challenges and apply theoretical concepts. The topic of smart cities spans multiple fields: technology, urban planning, environmental science, and sociology. A flipped classroom enables learners to explore resources tailored to their discipline before class, then collaborate to integrate diverse perspectives during class activities.

- **Time Allotted for the Activity:** 15.11.2024-45 minutes

- **Details of the Implementation:**

  The students were given with the reference materials to get prepared. The students were asked to make a group among them. The questions were asked from the topic they have prepared. As it is Smart Cities using IoT, most of the questions were related to the system polices, rules and guidelines. As a group, they have discussed and came up with answer for the questions. After that, they were asked to get the class back together to share the individual's group work with everyone. While discussing like this, they can get an in-depth knowledge about the topic and they can clearly express their ideologies related to that topic.

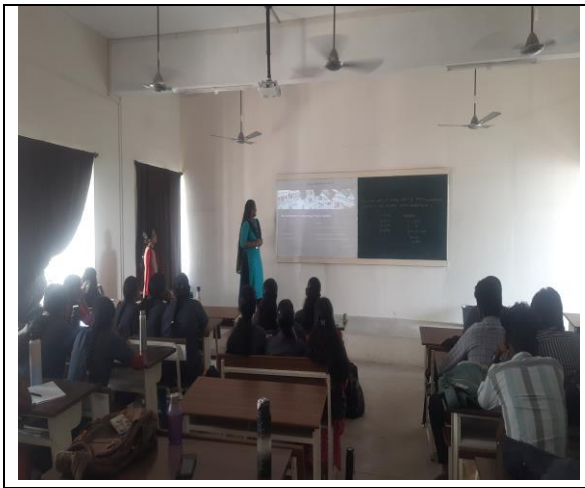
- **CO – PO / PSO mapping:**

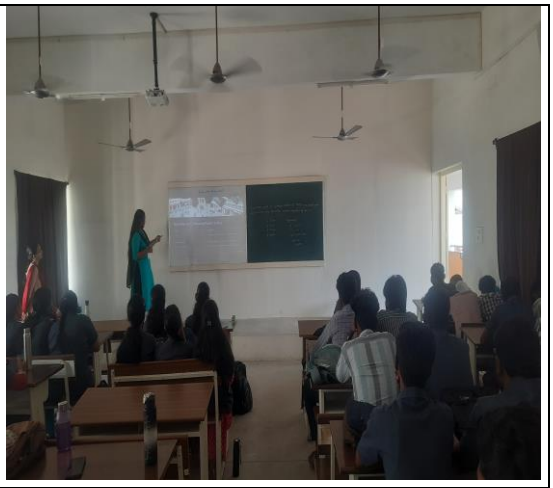
CO	PO1	PO2	PO5	PO9	PO10	PSO3
CO5	2	2	2	2	1	2

- **PO / PSO mapped:**

Innovative practice	**PO1**	**PO9**	**PO10**	**PSO3**
	2	**2**	**2**	**3**
Justification for correlation	Basic engineering fundamentals are applied	Needs individual and team work	Effective communication is required	Students got know about the rules and guidelines to design Smart Cities using IoT

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





- **Reflective Critique:**
  - ***Feedback of practice from students and other stakeholders:***
    1. They can get engaged in class for the entire 50 minutes.
    2. The activity acts as a better platform for discussion.
    3. It is quite interesting.

  - ***Benefit of the practice:***
    1. They will get exposed to text books and reference materials.
    2. Better interaction and communication due to group activity.
    3. All the students can effectively take part in the activity and the idea about the topic has been reached more students.

  - ***Challenges faced in implementation:***
    1. To organize the activity little more time has been consumed than expected.

References:

1. https://omerad.msu.edu/teaching/teaching-skills-strategies/27-teaching/162-what-why-and-how-to-implement-a-flipped-classroom-model

19/11/24

Signature of the Faculty member **HOD/ECE**

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Academic Year 2024 – 2025 (Odd Semester)

Active Learning Activity- Unit I-8-Bit Embedded Processor

Degree, Semester & Branch: V Semester B.Tech. CSBS
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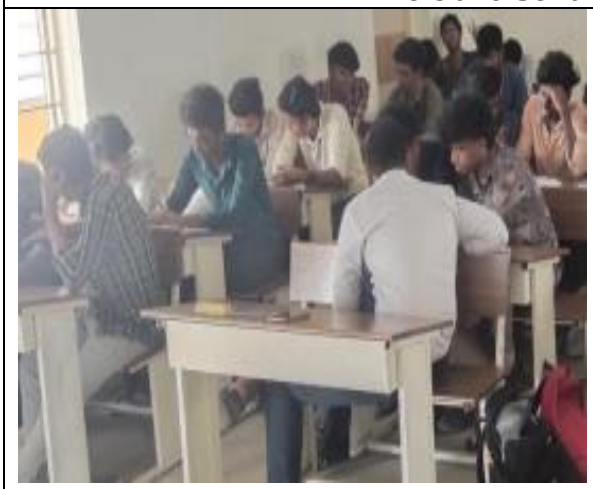
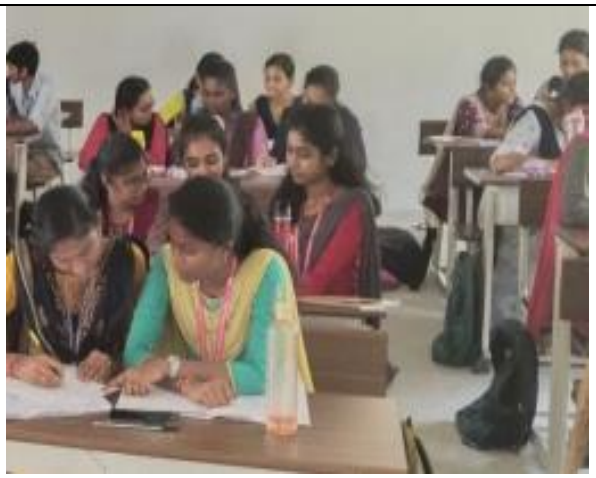
Name of the Faculty member: Mr.D.Gopinath

Name of the Topic	Name of the Activity	Date & Duration
Timers and Serial Port	Think Pair Share	19.08.2024 & 10 Minutes

Timers and Serial Port - Think Pair Share





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Active Learning Activity- Unit II-Embedded C Programming

Degree, Semester & Branch: V Semester B.Tech. CSBS
Course Code & Title: CS3691 Embedded Systems and IoT
Name of the Faculty member: Mr.D.Gopinath

Name of the Topic	Name of the Activity	Date & Duration
Priority Based Scheduling Policies, Revision	Open Book Test	11.09.2024 & 20 Minutes

Priority Based Scheduling Policies, Revision - Open Book Test

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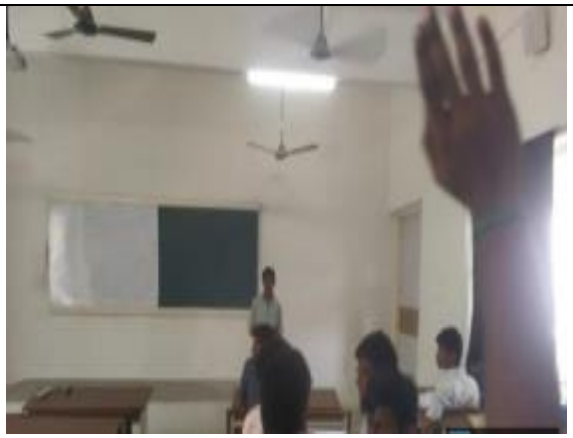
Active Learning Activity- Unit-III- IOT and Arduino Programming

Degree, Semester & Branch: V Semester B.Tech. CSBS
Course Code & Title: CS3691 Embedded Systems and IoT
Name of the Faculty member: Mr.D.Gopinath

Name of the Topic	Name of the Activity	Date & Duration
IoT Devices Versus Computers	Zero Minute Speech	18.09.2024 & 5 Minutes

IoT Devices Versus Computers - Zero Minute Speech



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Active Learning Activity- Unit-IV- IOT Communication and Open Platforms

Degree, Semester & Branch: V Semester B.Tech. CSBS
Course Code & Title: CS3691 Embedded Systems and IoT
Name of the Faculty member: Mr.D.Gopinath

Name of the Topic	Name of the Activity	Date & Duration
Open Platform (like Raspberry Pi) – Architecture	Brain Storming	25.10.2024 & 5 Minutes

Open Platform (like Raspberry Pi) – Architecture - Brain Storming