RAMCO INSTITUTE OF TECHNOLOGY

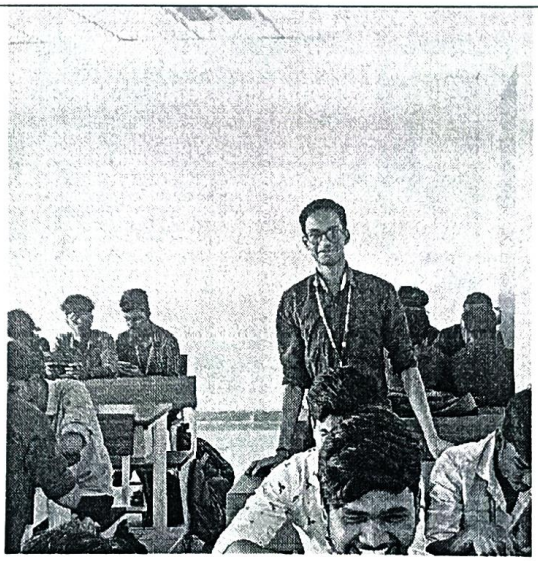
Department of Electronics and Communication Engineering

Academic Year: 2024 - 2025 (Odd Semester)

Active Learning Practices

Degree, Semester& Branch: III Semester B.Tech IT
Course Code & Title: CS3351 & Digital principles and Computer Organization
Name of the Faculty member: Mr.P.Gunasekaran

Date: 17.08.24

Active Learning Practices Execution
UNIT I Combinational Logic
Activity: Zero Minute Speech **Topic:** Magnitude Comparator


28/11/24
Signature of the faculty

28/11
HOD

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Active Learning Practices

Degree, Semester& Branch: III Semester B.Tech IT

Course Code & Title: CS3351 & Digital principles and Computer Organization

Name of the Faculty member: Mr.P.Gunasekaran

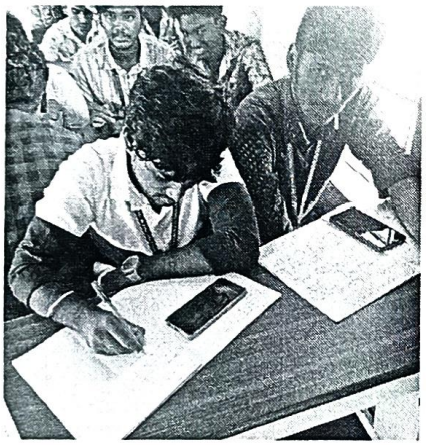
Date: 21.09.24

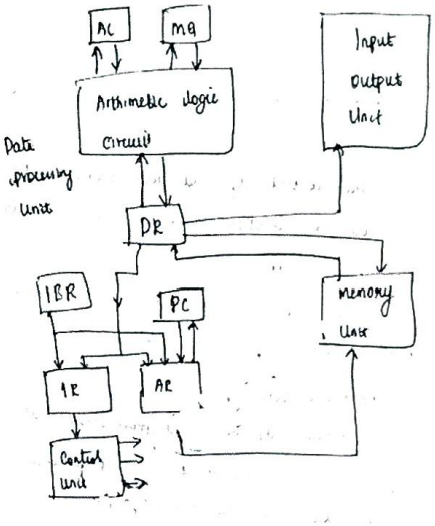
Active Learning Practices Execution

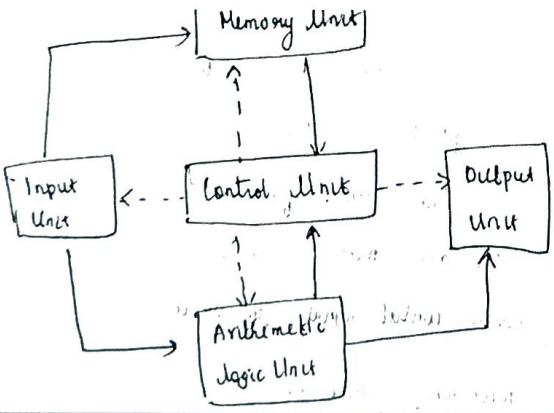
UNIT III Computer Fundamentals

Activity: Write Pair Share

Topic: Von Neumann Architecture







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Department of Electronics and Communication Engineering

Academic Year: 2024 - 2025 (Odd Semester)

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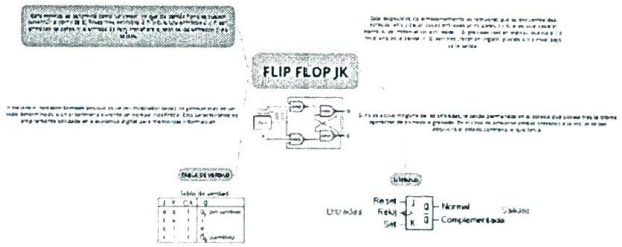
Degree, Semester& Branch: III Semester B.Tech IT

Course Code & Title: CS3351 & Digital principles and Computer Organization

Name of the Faculty member: Mr.P.Gunasekaran

Date: 30.08.24

Active Learning Practices Execution
UNIT II Synchronous Sequential Logic
Activity: Mindmap **Topic:** Flip Flop
   

Signature of the faculty

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RAMCO INSTITUTE OF TECHNOLOGY

Approved by AICTE, New Delhi & Affiliated to Anna University
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NBA Accredited UG Programs: CSE, EEE, ECE and MECH

Department of Information Technology
Academic Year 2024 – 2025 (Odd Semester)

Degree, Semester & Branch	: III Semester B.Tech IT
Course Code & Title	: CS3351 & Digital Principles and Computer Organization
Name of the Faculty member	: Mr.P.Gunasekaran, AP/ECE

Innovative Practice Description

- **Unit / Topic: Unit V / Cache Memory**
- **Course Outcome:** CO5
- **Topic Learning Outcome:** TLO: To explain cache memory and its mapping technique
- **Activity Chosen: Flipped Classroom**
- **Justification:**

Flipping the classroom is an inverting the classroom approach to teaching. In this approach, the traditional in-class teaching is "flipped" to better meet the needs of individual learners. Students gain control of the learning process through studying course material outside of class, using readings, pre-recorded video lectures. It helps the faculty to redefine in-class activities and include homework problems and keep the students engaged in the content.

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

- **Details of the Implementation:**

(i) Materials for the Activity:

The materials for the preparation of the students will be shared one week before through LMS Canvas. Including the material, students were asked to refer to the web content also.

References:

Book Title/ Author/ Publisher/ Edition	**Page No.**
1. M.Morris Mano & Michael D.Ciletti, "Digital Design: With an Introduction to the Verilog HDL, VHDL, and System Verilog", Edition: Sixth ISBN: 978-9353062019 Publisher: Pearson Education Year: 2018	-
Websites	
1. https://www.youtube.com/watch?v=N9rg5nKrkQU&t=697s	

(ii) Formation of Groups:

Student groups were created as below:

- Class Strength: 62
- Number of groups: 10
- Members per group: 5 to 6

- **Plan for Implementing this Activity:**
  - 10 groups are formed with 5 or 6 members
  - Each group is allotted with a name and its known as Home group.
  - Each expert group is allotted with one topic
    - **Cache Memory Introduction**
    - **Characteristics of Cache Memory**
    - **Levels of Memory**
    - **Cache Performance**
    - **Cache Mapping and Types**
    - **Direct Mapping**
    - **Associative Mapping**
    - **Set-Associative Mapping**
    - **Application of Cache Memory**
    - **Advantages and Disadvantages**
  - The expert group members discuss the topic in detail for 20 minutes with the learning materials already posted in the course website – canvas.
  - The Expert group members should go to their original shape group and discuss the points (30 Minutes) to the other members.
  - All the members in home group learnt about all the topics through expert group members.
  - Finally one from each group should summarize the points of the topic Fixed and Floating point representation to the class (20 Minutes).
  - Review of points and conclusion of the activity (5 minutes)

Expected Difficulties:

- Lack of preparation: Making the students to learn the materials is the challenging task.
- Each student has to read the material posted in the course website.
- Non participation in the activity: All the students should be made involve in the activity
- Time management: The flipped classroom activity should be able to complete in the planned duration.

Plan for preventing these difficulties:

- Making each student accountable by making formative and summative assessment for individual and group performance.
- Including the assessment mark for final internal mark calculation makes each student to participate actively in the flipped classroom activity.
- Each student contribution mark in the assessment will be based on the discussions in the course website and WhatsApp group through which all the students will participate in the activity.
- Posting announcements periodically for learning and preparing the presentation.
- The Time management will be avoided by using timer clock for 10 minutes duration.

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

- **Reflective Critique:**
  - ❖ ***Feedback of practice from students and other stakeholders:***
    - Student felt good, since they can study at their own pace/time.
    - They felt that through such learning, they can explore more.
  - ❖ ***Benefit of the practice:***
    - More one-to-one time between teacher and student.
    - More collaboration time for students.
    - Students learn at their own pace.
    - Practical things – like missing class due to illness – become less problematic.
    - It encourages students to come to class prepared.
  - ❖ ***Challenges faced in implementation:***
    - Relies on student preparation – few students did not come prepared.
    - The depth of the subject can be dictated by the student themselves or the group the student is working with.
    - The time and effort required from a teacher's perspective initially when creating the flipped class material is higher than for a traditional class

References:

- https://www.teachthought.com/learning/the-definition-of-the-flipped-classroom/#:~:text=A%20flipped%20classroom%20is%20a,the%20students%20i

Signature of Faculty Member **HOD**