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## Report on Add on lecture - "Analysis and Design of Digital Circuits (ECE) and Internet of Things and Artificial Intelligence (IIOT)"

The department of Electronics and Communication Engineering organized an Add-on Lecture session on “Analysis and Design of Digital Circuits” of 6 hours for 3<sup>rd</sup> semester ECE students commencing from 17.01.2024 to 30.01.2024 and 2 hours for 5<sup>th</sup> semester IIOT students commencing from 26.02.2024 and 28.02.2024.

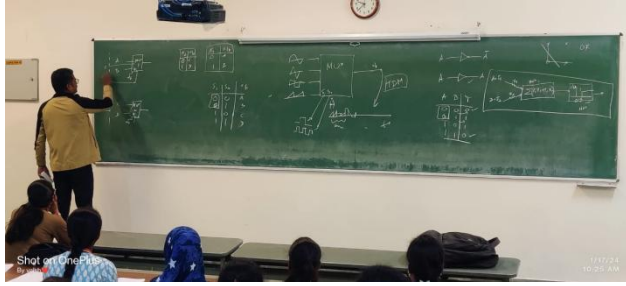
The objective of Add on lecture is to explore the subject with interaction with industry experts. These sessions will provide a platform to students to express their ideas and views. Our students will get a benefit to relate theoretical with practical inputs of field. Series of such sessions pour an extra enthusiasm to student to give practical approach to their study. They provide students with alternative perspectives, opinions, and personal experiences that can reinforce the teachings of the instructor as well.

The Industry Resource Person was Dr. Apurba Das, Head, Cognitive AI, from Tata Consultancy Services, Bangalore. The details of the sessions are as mentioned below;

### DAY-1:

17.01.2024

Time	Topics Covered	Participants
9:30 – 10:30	<ul style="list-style-type: none"><li>• Concepts of Logic Gates</li><li>• Representing Gates as classification problem</li><li>• Single order polynomial for basic logic gates</li><li>• Higher order polynomial for basic logic gates</li><li>• Controlled buffer and inverter from EX-OR.</li><li>• Time division multiplexing concept</li><li>• Multiplexer (2:1 &amp; 4:1 MUX Design)</li></ul>	3C Students (65)



**DAY-2:**  
**19.01.2024**

Time	Topics Covered	Participants
9:30 – 10:30	<ul style="list-style-type: none"> <li>• Design of Flip Flops</li> <li>• Design of Counters</li> <li>• Concept of State Transition and Application</li> </ul>	3C Students (66)



**DAY-3:**  
**23.01.2024**

Time	Topics Covered	Participants
9:30 – 10:30	<ul style="list-style-type: none"> <li>• Concepts of Logic Gates</li> <li>• Representing Gates as classification problem</li> <li>• Single order polynomial for basic logic gates</li> <li>• Higher order polynomial for basic logic gates</li> <li>• Controlled buffer and inverter from EX-OR.</li> <li>• Time division multiplexing concept</li> <li>• Multiplexer (2:1 &amp; 4:1 MUX Design)</li> </ul>	3A Students (67)



**DAY-4:**

**25.01.2024**

Time	Topics Covered	Participants
9:30 – 10:30	<ul style="list-style-type: none"> <li>• Design of Flip Flops</li> <li>• Design of Counters</li> <li>• Concept of State Transition and Application</li> </ul>	3A Students (68)



**DAY-5:**

**29.01.2024**

Time	Topics Covered	Participants
9:30 – 10:30	<ul style="list-style-type: none"> <li>• Concepts of Logic Gates</li> <li>• Representing Gates as classification problem</li> <li>• Single order polynomial for basic logic gates</li> <li>• Higher order polynomial for basic logic</li> </ul>	3B Students (61)

	<p>gates</p> <ul style="list-style-type: none"> <li>• Controlled buffer and inverter from EX-OR.</li> <li>• Time division multiplexing concept</li> <li>• Multiplexer (2:1 &amp; 4:1 MUX Design)</li> </ul>	
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**DAY-6:**

**30.01.2024**

<b>Time</b>	<b>Topics Covered</b>	<b>Participants</b>
9:30 – 10:30	<ul style="list-style-type: none"> <li>• Design of Flip Flops</li> <li>• Design of Counters</li> <li>• Concept of State Transition and Application</li> </ul>	3B Students (68)



**DAY-7:****26.02.2024**

<b>Time</b>	<b>Topics Covered</b>	<b>Participants</b>
9:30 – 10:30	<ul style="list-style-type: none"> <li>• Evolution of IoT</li> <li>• Why AI is important in IoT</li> <li>• Smart Systems (IoT Systems)</li> <li>• Machine Learning, Artificial Intelligence, Cognitive AI</li> <li>• Use Cases</li> </ul>	5IIOT Students (15)

**DAY-8:****28.02.2024**

<b>Time</b>	<b>Topics Covered</b>	<b>Participants</b>
9:30 – 10:30	<ul style="list-style-type: none"> <li>• 7 Principles and Choosing Right Choices of Architecture in IoT Systems</li> <li>• INTEL E11</li> <li>• High Reliability</li> <li>• Industry Case Study</li> </ul>	5IIOT Students (15)



