Course Objectives
The objectives are to study

1. To acquire the basic knowledge of digital logic levels and application of knowledge to understand digital electronics circuits.
2. To prepare students to perform the analysis and design of various digital electronic circuits.

Course Outcomes
After studying this course the students would gain enough knowledge

1. Have a thorough understanding of the fundamental concepts and techniques used in digital electronics.
2. To understand and examine the structure of various number systems and its application in digital design.
3. The ability to understand, analyze and design various combinational and sequential circuits.
4. Ability to identify basic requirements for a design application and propose a cost effective solution.
5. The ability to identify and prevent various hazards and timing problems in a digital design.
6. To develop skill to build, and troubleshoot digital circuits.

Course Contents

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<td>2.</td>
<td><strong>Boolean function representation and minimization techniques</strong>: Standard and canonical representation and minimization of Boolean expressions using Karnaugh map.</td>
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<td>Combinational Logic Circuits: Half Adder, Full Adder, Half Subtractor, Full Subtractor, Full adder using half adder, BCD Adder, Carry Look ahead, Multipliers, Multiplexer/de-multiplexers, Encoders and Decoders.</td>
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<td>Shift registers: Shift register functions, Serial in/serial out shift registers, serial in parallel out/shift registers, Parallel In/Parallel out shift registers, bidirectional Shift registers, Shift register counters, Shift register Applications.</td>
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<td>Analog to Digital &amp; Digital to Analog Converters: Design of various A to D and D to A Converters.</td>
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**Total Number of Lectures** 44

**Evaluation Scheme**

1. Test 1: 15 marks
2. Test 2: 25 marks
3. Test 3: 35 marks
4. Internal Assessment: 25 marks
   - 10 Marks: Class performance, Tutorials & Assignments
   - 10 Marks: Quizzes
   - 5 marks: Attendance
Text Books

1. Thomas L Floyd “Digital Fundamentals”

Reference Books