

1.	Title of the course	Digital Systems
2.	Course number	EE208L
3.	Structure of credits (L-T-P-C)	3-0-0-3
4.	New course/modification to	Modified with EE206L/DIGITAL SYSTEMS
5.	To be offered by	Electrical Engineering
6.	Prerequisite	None
7.	<b>Course Objective(s):</b> To explore the fundamentals of digital logic. To discuss the design principles of digital circuits and systems.	
8.	<b>Course Content:</b> Evolution of digital system design; Boolean logic minimization techniques; Combinational logic design: multiplexers, demultiplexers, encoders, decoders, ripple carry adder, parallel adders, subtractors, comparator, multiplier and divider; Sequential logic design: clocking and timing analysis, shift registers, universal shift register, linear feedback shift register (LFSR), synchronous and asynchronous counters, state machines (Mealy's, Moore's, and algorithm state machine), state tables and state minimization; Advanced topics: sequential multipliers, look-up table design, programmable logic device (PLD), field programmable gate array (FPGA), read-only memory, content addressable memory, random access memory.	
9.	<b>Textbook(s):</b> 1. Roth C H and Kinney L L, Fundamentals of Logic Design, Cengage Learning (2014). 2. Mano M M and Ciletti M D, Digital Design: with Introduction to the Verilog HDL, VHDL, and SystemVerilog, Pearson (2018).	
10.	<b>Reference(s):</b> 1. Brown S and Vranesic Z, Fundamentals of Digital Logic with VHDL Design, McGraw Hill (2009).	