

1.	Title of the course	Digital Logic Design
2.	Course number	CS210M
3.	Structure of credits (L-T-P-C)	2-1-2-4
4.	New course/modification to	Modified with CS208M/Digital Logic Design
5.	To be offered by	Computer Science and Engineering
6.	Proposed by	JAYNARAYAN THAKURDAS TUDU
7.	Prerequisite	None
8.	Course Objective(s): To introduce principles of digital logic and discuss various circuit design methodologies. To design and develop digital circuit components and systems.	
9.	Course Content: Data representation: integer number system, IEEE 754 standard for floating point number system, arithmetic operations, codes; Boolean logic: Boolean algebra, application, logic optimization; Combinational circuit: basic gates, multi-level circuit, multiplexer, demultiplexer, encoder, decoder, parity circuit, tristate buffers; Arithmetic and logic unit (ALU): adder, subtractor, multiplier, divider, comparator, floating point arithmetic; Sequential logic: clock, latches, flip-flops, registers, counters, synchronous and asynchronous design, sequential ALU; Digital systems: state machines, programmable logic device, field programmable gate array, hardware descriptor language, simulation.	
10.	Textbook(s): 1. Roth C H and Kinney L L, Fundamentals of Logic Design, 7th Edition, Cengage Learning (2014).	
11.	Reference(s): 1. Brown S and Vranesic Z, Fundamentals of Digital Logic with Verilog Design, 3rd Edition, McGraw Hill (2014). 2. Mano M M and Ciletti M D, Digital Design: with Introduction to the Verilog HDL, VHDL and SystemVerilog, 6th Edition, Pearson (2018). 3. Kil Lee B, Roth C and John L K, Digital Systems Design Using Verilog, Cengage Learning (2015).	