Course Title	**Digital Logic Design (Lab)**		
Course Code	**CC-110L**		
Credit Hours	1 (0,1)		
Category	Computing core		
Prerequisite	None		
Co-Requisite	None		
Follow-up	CC-111 Computer Organization & Architecture		
Course Introduction	The course introduces the concept of digital logic, gates and the digital circuits. Further, it focuses on the design and analysis combinational and sequential circuits. It also serves to familiarize the student with the logic design of basic computer hardware components.		
Course Learning Outcomes (CLOs)	At the end of the course, the students will be able to:	**BT**	**PLO**
	CLO1: Acquire the basic knowledge of Digital Electronic Trainer	C1 (Acquire)	1
	CLO2: Understand the pin configuration and working of commonly used ICs for digital circuit design	C2 (Understand)	1,2
	CLO3: Demonstrate the working of the standard digital circuits.	C3 (Demonstrate)	3,4
	CLO4: Designing a digital circuit for implementing a given scenario.	C5 (Design)	3,4
Syllabus	**Topics:** Familiarization with Digital Electronic Trainer, Implementation of logic gates using ICs, Illustration of basic properties and theorems Boolean algebra using circuit design, Implementation of given Boolean functions, Half Adder, Full Adder, Half Subtractor, Full Subtractor, Design of 7-Segment Display, BCD To 7-Segment Display, Decoder, Multiplexer, Demultiplexer, Implementation of Boolean function(s) using Decoder and Multiplexer, Magnitude Comparator, D Latch and Flip-Flop Operation, Latching BCD Data for Displaying On 7- Segment Display, JK Flip-Flop Operation, Random Access Memories		
Suggested Instructional/ Reading Material	1. M. Morris Mano, Digital Logic and Computer Design, 1st Edition, Pearson, 1979, ISBN: 0132145103. 2. Thomas L. Floyd, Digital Fundamentals, 10th Edition, Prentice Hall, 2008, ISBN: 0132359235. 3. Fundamental of Digital Logic with Verilog Design, Stephen Brown, 2/e		