BITE202P	Digital Logic and Microprocessors Lab	L	T	P	C
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Pre-requisite	**NIL**	**Syllabus version**			
		1.0			

Course Objectives

1. To acquire the basic knowledge of digital logic components and circuits.
2. To prepare students to perform the design and analysis of digital electronic circuits.
3. To understand the architecture and the 8086 programming for the Intel microprocessors.

Course Outcome

1. Understanding the structure of various number systems and Illustrate simplification of Boolean functions to achieve optimized design of digital logic circuits.
2. Demonstrate the design, and analysis of various combinational logic circuits and sequential logic circuits using flip flops and logic gates.
3. Deploy the sequential logic design techniques for developing various counters and Registers.
4. Demonstrate the knowledge of 8086 Microprocessor architecture to develop assembly language programs by applying various addressing modes, instructions sets, and assembler directives of the 8086 microprocessors.
5. Organizing working of different peripherals interfaced with 8086 Microprocessor.

Indicative Experiments

1.	Basic Logic gates verification and Boolean expression resolving.	2 hours
2.	Design Boolean function using universal gates	2 hours
3.	Design of combinational circuits: Adders and Subtractors.	2 hours
4.	Design of Parallel Adder and Magnitude Comparator	2 hours
5.	Decoder and Encoder, BCD to seven segment encoder and code converters.	2 hours
6.	De-multiplexers, multiplexer, implementing Boolean function using multiplexers and decoders.	2 hours
7.	Verification of Flip flops and conversion of flip flops.	2 hours
8.	Design of sequential circuits using various Flips-flops and logic gates.	2 hours
9.	Design of Synchronous counter and its types.	2 hours
10.	Design of Asynchronous counter and its types.	2 hours
11.	Design of various Registers.	2 hours
12.	Programs to demonstrate the application of shift registers.	2 hours
13.	8086 Assembly language sample programs-I • Program to separate odd and even number from a given sequence. • Program to convert BCD to decimal number. • Program to search the given value in an array. • Program to perform 16- bit arithmetic operation using register pair.	2 hours
14.	8086 Assembly language sample programs-II • Program to find factorial of a given number. • Program to generate the average of n numbers.	2 hours

	• Find the smallest among three numbers. • Program to transfer block of ten 16-bit data to from one location to the other location in the memory.	
15.	8086 Assembly language sample programs-III • Program to get the count of even numbers from the list of n numbers. • Program to generate a Fibonacci sequence. • Program to sort a given array of elements. • Program to perform block transfer.	2 hours
	Total Laboratory Hours	**30 hours**
Mode of assessment: Lab assessments / Lab FAT / Oral examination		
Recommended by Board of Studies	15-11-2021	
Approved by Academic Council	No. 64 Date 16-12-2021	