Course Type	Course Code	Name of Course	L	T	P	Credit
DSC2	NMCC102	Computer Organization and Architecture Lab	0	0	2	1

Course Objective

To impart an understanding of the basic building blocks of the computer design. Enabling the learner to understand the hardware design to carry out certain basic operations used for computation. The understanding of the basic hardware design along with operations will help the students to visualize the actual computer design along with the operations carried by it.

Learning Outcomes

After successful completion of the course, the students will be able to: ● Design circuits for the basic arithmetic operations, viz. addition, subtraction, comparion etc.● Design circuits for Encoders, Decoders and code conversion ● Design circuits for Counters ● Design circuits for Arithmetic and Logic Unit ● Understand instructions sets of 8085 and write Assembly Language Code

Sl. No	Name of Experiment/Lab	Lab hours	Learning Outcomes
1.	Realisation of Half Adder, Half Subtractor, Full Adder, Full Subtractor using basic gate ICs, MUX etc.	6	Enable to design fundamental adder and subtractor circuits.
2.	Realisation of 1-Bit and 2-Bit Comparator.	2	The students will gain knowledge of Designing comprators.
3.	Realisation of Encoders, Decoders and implementation of combinational circuits etc	4	Establish an understanding to design Encoders, Decoders and application towards implementing combinational circuits.
4.	Realisation of Code Converters: BCD to Excess-3 code, BCD to Grey code etc.	4	Enable to design code converters like BCD to Excess-3, BCD to Grey code etc.
5.	Realisation of Counters	3	The students will gain knowledge of Designing Counters
6.	Realisation of ALU using suitable ICs.	3	Understanding will be developed towards designing arithmetic and logic unit.
7.	Assembly Language Programming	4	Establish an understanding towards instructions sets of 8085 and writing Assembly Language Code.
8	Lab Exam	2	

Text Books:

1. M. Mano, Computer System Architecture, 3rd Ed., Pearson, 1992.
Reference Books:

1. A N Kani, 8085 Microprocessor and Its Applications, 3rd Ed., TMH (INDIA), 2013.