III Year-I Semester		L	T	P	C
		0	0	3	2

Digital System Design & DICA Laboratory(RT31049)

Prerequisite Course:

Need basic idea of STLD, DSD&DICAsubject

Course Description and Objectives:

- The students are required to design and draw the internal structure of the following Digital Integrated Circuits and to develop VHDL source code, perform simulation using relevant simulator and analyze the obtained simulation results using necessary synthesizer. Further, it is required to verify the logic with necessary hardware.

Course Outcomes:

Upon completion of the course, the student will be able to achieve the following outcomes.

COs	Course Outcomes	POs
1	will be able to understand the applications of different digital IC's	**3**
2	will be able to write VHDL program for different digital IC's	**3**
3	will able to synthesize, simulate using ISE simulator and implemented using hardware	**3**
4	will able to do projects with the help of the digital IC's	**3**

SYLLABUS

1. Realization of Logic Gates
2. 3 to 8 Decoder- 74138
3. 8*1 Multiplexer-74151 and 2*1 De-multiplexer-74155
4. 4-Bit Comparator-7485.
5. D Flip-Flop- 7474
6. Decade Counter- 7490
7. 4 Bit Counter-7493
8. Shift Register-7495
9. Universal shift register-74194/195
10. Ram (16*4)-74189 (read and write operations)
11. ALU

Equipment Required:

1. Xilinix ISE software-latest version
2. Personal computer with necessary pheripherals
3. Hardware kits- Various FPGA families.