# Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058-India
(Autonomous Institute Affiliated to University of Mumbai)

| Course Code | Course Name | Teaching Scheme (Hrs/week) | | | Credits Assigned | | | |
|---|---|---|---|---|---|---|---|---|
| | | L | T | P | L | T | P | Total |
| CEL32 | Digital Logic Design & Analysis Lab | - | - | 2 | - | - | 1 | 1 |
| | | Examination Scheme | | | | | | |
| | | ISE | | | ESE | | | Total |
| | | | | | Practical | | Oral | |
| | | 40 | | | 10 | | 10 | 60 |

| Pre-requisite Course Codes | | ES11 (Basic Electrical and Electronics Engineering)<br>CE32 (Digital Logic Design and Analysis) |
|---|---|---|
| After successful completion of the course, student will be able to: | | |
| Course Outcomes | CO1 | Construct and test logic circuits using logic gates to realize given function. |
| | CO2 | Construct and Test logic circuits using MSI ICs to realize given function. |
| | CO3 | Validate and test the design of combinational and sequential logic circuits by hardware implementation. |
| | CO4 | Develop an application using concepts of digital circuits. |

| Exp. No. | Experiment Details | Ref. | Marks |
|---|---|---|---|
| 1 | To implement the combinational logic for given function using basic gates/MSI ICs. | 1,2 | 5 |
| 2 | To interface TTL and CMOS logic families with each other. | 1,2 | 5 |
| 3 | To implement 4-bit, 5-bit and 8 bit comparator using MSI ICs | 1,2 | 5 |
| 4 | To implement gate level multiplexers and MSI multiplexers | 1,2 | 5 |
| 5 | To design and implement MSI circuits of flip-flops | 1,2 | 5 |
| 6 | To design and implement mod 4 synchronous up/down counter using JK flip-flop | 1,2 | 5 |
| 7 | To configure MSI devices as asynchronous counter, synchronous counter as synchronous counters and universal shift register. | 1,2 | 5 |
| 8 | **Mini-Project:** Design and implement an application using digital circuit concepts. | 1,2 | 5 |
| | | **Total Marks** | 40 |

**References:**


[1] For datasheet refer: http://www.datasheetcatalog.com.

[2] R. P. Jain and M. M. S. Anand ,"*Digital Electronics Practice Using Integrated Circuits,"* Tata McGraw Hill Education, 1983.