**20EC22P3– PULSE AND DIGITAL CIRCUITS LAB**

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| **Course Category:** | Program Core | **Credits:** | 1.5 |
| **Course Type:** | Practical | **Lecture-Tutorial- Practice:** | 0 - 0 - 3 |
| **Prerequisite:** | Electronic Devices and Circuits, Pulse and Analog Circuits, Switching Theory and Logic design. | **Sessional Evaluation:**  **External Evaluation :**  **Total Marks:** | 40  60  100 |

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| **Course**  **Objectives** | Students undergoing this course are expected to understand: | |
| 1. The behaviour of various semiconductor devices. 2. The V-I characteristics of various semiconductor devices. | |
| **Course Outcomes** | Upon successful completion of the course , the students will be able to: | |
| CO1 | Understand function of logic gates and can implement logic circuits using gates. |
| CO2 | Implement the combinational logic circuits. |
| CO3 | Elucidate differences between synchronous and asynchronous circuits. |
| CO4 | Demonstrate linear and non-linear wave Shaping. |
| CO5 | Design Multivibrators. |
| CO6 | Design Schmitt Trigger |
| **Course**  **Content** | Minimum of **TEN** experiments to be completed out of the following:  **LIST OF EXPERIMENTS**   1. (a). Logic Gates   (b). Realization of logic gates using NAND and NOR Gates   1. Full Adder 2. Decoder 3. Divide by N-Ripple Counter 4. Multiplexer 5. Divide by N-Synchronous Counter 6. RC Differentiator and Integrator 7. Diode Clippers & Clampers 8. Astable Multivibrator using BJT 9. Bistable Multivibrator using BJT 10. Schmitt Trigger using BJT 11. Bootstrap sweep circuit. | |

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| Contribution of Course Outcomes towards achievement of Program Outcomes (3-High, 2-Medium, 1-Low) | | | | | | | | | | | | | | |
|  | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| CO1 | 3 | 3 | 2 | 2 | 1 | - | - | 1 | - | - | - | 2 | 3 | 3 |
| CO2 | 3 | 3 | 2 | 2 | 1 | - | - | 1 | - | - | - | 2 | 3 | 3 |
| CO3 | 3 | 3 | 3 | 1 | 1 | - | - | - | 1 | - | - | 2 | 3 | 3 |
| CO4 | 3 | 3 | 2 | 2 | 1 | - | - | 1 | - | - | - | 2 | 3 | 3 |
| CO5 | 3 | 3 | 2 | 2 | 1 | - | - | 1 | - | - | - | 2 | 3 | 3 |
| CO6 | 3 | 3 | 2 | 2 | 1 | - | - | 1 | - | - | - | 2 | 3 | 3 |