**19EC21P4 – ANALOG & DIGITAL ELECTRONICS LAB**

(**EEE**)

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| **Course Category:** | Professional Core | **Credits:** | 1 |
| **Course Type:** | Laboratory | **Lecture-Tutorial- Practice:** | 0 - 0 - 2 |
| **Pre-requisite:** | Basic Electrical Sciences and Electronic Devices | **Sessional Evaluation:**  **External Exam Evaluation :**  **Total Marks:** | 40  60  100 |

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| **Course**  **Objectives:** | Students undergoing this course are expected to learn: | |
| 1. The V-I characteristics of various semiconductor devices. 2. The design & analysis of the rectifiers(With & Without filters). 3. The response of the RC coupled amplifier & feedback practically. 4. The realization of logic gates using NAND and NOR Gates 5. About the full adder and full subtractor operation & the operation of decoder and expression using decoder 6. About the multiplexer and expression using MUX. | |
| **Course Outcomes:** | Upon successful completion of the course, the students will be able to: | |
| CO1 | Plot the characteristics of various semiconductor devices and Transistors experimentally. |
| CO2 | Design & analyse the rectifiers (With & Without filters). |
| CO3 | Calculate the frequency response of the RC coupled amplifier & understand the performance of feedback amplifiers practically. |
| CO4 | Understand the realization of logic gates using NAND and NOR Gates |
| CO5 | Understand the full adder, full subtractor operation & operation of decoder and expression using decoder. |
| CO6 | Understand about the multiplexer and MUX & design and analysis of various combinational circuits and sequential circuits. |
| **Course**  **Content:** | Minimum of 10 experiments to be completed out of the following:  **LIST OF EXPERIMENTS**  1.P-N Junction & Zener Diode Characteristics  2. a) Bi-Polar Junction Transistor Characteristics (CE Configuration)  b) Junction Field Effect Transistor Characteristics  c) Uni-Junction Transistor Characteristics  3. a) Rectifiers without Filters (HWR, FWR, BR)  b) Rectifiers with Filters (C, LC, CLC)  4. a) R-C Coupled Amplifier  b) FET Amplifier  5. Current Series Feedback Amplifier (With & Without feedback)  6. a) Basic Gates using Diode and Transistors  b) Logic Gates  7. Realization of logic gates using NAND and NOR Gates  8. a) Full Adder  b) Full Subtractor  9 a) Decoder & Implement Expression using Decoder  b) Multiplexer & Implement Expression using MUX  10. Divide by N-Ripple Counter  11.Divide by N-Synchronous Counter  12. Shift Register | |