**19EC21P3 – ELECTRONIC CIRCUIT DESIGN AND SIMULATION LAB**

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| **Course Category:** | Program Core | **Credits:** | 1 |
| **Course Type:** | Practical | **Lecture-Tutorial- Practice:** | 0 - 0 - 2 |
| **Prerequisite:** | Electronic Devices, Signals and Systems | **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 design and analysis of various electronic circuits.  2. The behaviour of various rectifiers and amplifiers. | |
| **Course Outcomes** | Upon successful completion of the course, the students will be able to: | |
| CO1 | Simulate and Verification the Class-A Power Amplifier. |
| CO2 | Design & simulate the Rectifiers. |
| CO3 | Analyse& Calculate the frequency response CE and CS Amplifier. |
| CO4 | Analyse the Transistor Voltage Regulator. |
| CO5 | Design and Verification the Pre-emphasis and De-emphasis circuits. |
| CO6 | Simulation and Verification of Logic Gates. |
| **Course**  **Content** | Minimum of **TEN** experiments to be completed out of the following:  **LIST OF EXPERIMENTS**   1. Verification of Half–Wave and Full-Wave Rectifier 2. Frequency Response of CE Amplifier 3. Frequency Response of CS Amplifier 4. Half adder / Full adder circuits using gates 5. Design and Verification of Pre-emphasis and De-emphasis circuits 6. Verification of Clippers 7. Verification of Clampers 8. Design and Verification of RC coupled amplifier 9. Design and Verification of Voltage Regulator 10. Design and Verification of Logic Gates 11. Characteristics of the UJT 12. Astable multivibrator | |

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