**3EC22P2-ANALOG AND DIGITAL COMMUNICATIONS LAB**

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| **CourseCategory:** | | ProgramCore | | **Credits:** | 1.5 |
| **CourseType:** | | Theory | | **Lecture-Tutorial-Practical:** | 0-0-3 |
| **Prerequisite:** | | Signals&Systems | | **Sessional Evaluation:ExternalEvaluation:**  **TotalMarks:** | 30  70  100 |
| **CourseObjectives** | Students under going this course are expected to : | | | | |
| 1. Understand the basics of analog and digital modulation techniques. 2. Integrate theory with experiments so that the students appreciate the knowledge gained from the theory course. 3. Design and implement different modulation and demodulation techniques and their applications. 4. Develop cognitive and behavioral skills for performance analysis of various modulation techniques. | | | | |
| **CourseOutcomes** | At the end of this course the student will be able to: | | | | |
| **CO1** | | Know about the usage of equipment/components/software tools used to conduct  Experiments in analog and digital modulation techniques.(L2) | | |
| **CO2** | | Conduct the experiment based on the knowledge acquired in the theory about  modulation and demodulation schemes to find the important metrics of the communication system experimentally.(L3) | | |
| **CO3** | | Analyze the performance of a given modulation scheme to find the important metrics of the system theoretically.(L4) | | |
| **CO4** | | Compare the experimental results with that of theoretical ones and infer the  conclusions.(L4) | | |
| **CourseContent** | **List of Experiments:**  Design the circuits and verify the following experiments taking minimum of six from each section shown below.  **Section-A**   1. AM Modulation and Demodulation 2. DSB-SC Modulation and Demodulation 3. Frequency Division Multiplexing 4. FM Modulation and Demodulation 5. Radio receiver measurements 6. PAM Modulation and Demodulation 7. PWM Modulation and Demodulation 8. PPM Modulation and Demodulation   **Section-B**   1. Sampling Theorem. 2. Time Division Multiplexing 3. Delta Modulation and Demodulation 4. PCM Modulation and Demodulation 5. BPSK Modulation and Demodulation 6. BFSK Modulation and Demodulation 7. QPSK Modulation and Demodulation 8. DPSK Modulation and Demodulation   **Note:** Faculty members (who are handling the laboratory) are requested to instruct the students not to use ready made kits for conducting the experiments. They are advised to make the students work in the laboratory by constructing the circuits and analyzing them during the lab sessions. | | | | |

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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 | - | - | - | 2 | - | - | - | 3 | 3 |
| CO2 | 3 | 3 | 3 | 2 | 2 | - | - | - | 2 | - | - | - | 3 | 3 |
| CO3 | 3 | 3 | 3 | - | 2 | - | - | - | 2 | - | - | 3 | 3 | 3 |
| CO4 | 3 | 3 | 3 | - | 2 | - | - | - | 2 | - | - | 3 | 3 | 3 |