**20EC31P2-DIGITAL COMMUNICATIONS LAB**

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| **Course Category:** | Program Core | **Credits:** | 2 |
| **Course Type:** | Practical | **Lecture-Tutorial- Practice:** | 0 - 0 - 3 |
| **Prerequisite:** | Electronic Devices and Circuits,Signals and Systems, Analog and Digital Communications. | **Sessional Evaluation:****External Evaluation :****Total Marks:** | 4060100 |

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| **Course****Objectives** | Students undergoing this course are expected to understand: |
| 1. The design and analysis of various digital communication circuits.2. To study and verify the various digital modulation techniques. |
| **Course Outcomes** | Upon successful completion of the course, the students will be able to: |
| CO1 | Verify Sampling Theorem experimentally. |
| CO2 | Study Time Division Multiplexing and De-multiplexing. |
| CO3 | Examine the PCM and DPCM practically |
| CO4 | Demonstrate Amplitude Shift Keying: Modulation and Demodulation. |
| CO5 | Understand the performance of QPSK generation and detection circuits. |
| CO6 | Analyze the Linear Block code Encoder and Decoder. |
| **Course****Content** | Minimum of 10 experiments to be completed out of the following:**LIST OF EXPERIMENTS**1. Verification of Sampling Theorem.
2. Time Division Multiplexing and De-Multiplexing.
3. Pulse Code Modulation and Demodulation.
4. Differential Pulse Code Modulation and Demodulation.
5. Delta Modulation and Demodulation.
6. Amplitude Shift Keying: Generation and Detection.
7. Frequency Shift Keying: Generation and Detection.
8. Binary Phase Shift Keying: Generation and Detection.
9. Differential Phase Shift Keying: Generation and Detection.
10. Quadrature Phase Shift Keying :Generation and Detection.
11. Linear Block Code Encoder and Decoder.
12. Binary Cyclic Code Encoder and Decoder.
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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 | 1 | - | - | - | - | - | - | 2 | 3 | 3 |
| CO2 | 3 | 3 | 2 | 2 | 1 | - | - | - | - | - | - | 2 | 3 | 2 |
| CO3 | 3 | 3 | 3 | 1 | 1 | - | - | - | - | - | - | 2 | 2 | 3 |
| CO4 | 3 | 3 | 2 | 2 | 1 | - | - | - | - | - | - | 2 | 2 | 3 |
| CO5 | 3 | 3 | 2 | 2 | 1 | - | - | - | - | - | - | 2 | 3 | 2 |
| CO6 | 3 | 3 | 2 | 2 | 1 | - | - | - | - | - | - | 2 | 3 | 2 |