GOVERNMENT POLYTECHNIC, Morni

**Lesson Plan (Odd Semester)**

Name of the Faculty : Deepika

Discipline : Computer Engineering

Department : Computer Engineering

Semester : 3rd

Subject : Data Communication Lesson Plan Duration :15 weeks

**\*\*Work load (Lecture / Practical) per week(in hours): Lectures-03, Practicals –Nil**

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| **Week** | **Theory** | **Practical** |
| **Lect.****day** | **Topic (Including assignment / test)** | **Pract****. Day** | **Topic** |
| 1st | 1st | **1. Introduction** : Data Communication- Components | N/A | N/A |
| 2nd | Data representation | N/A | N/A |
| 3rd | Data flow Networks- Distributed processing, | N/A | N/A |
| 2nd | 1st | Network criteria | N/A | N/A |
| 2nd | Physical structures | N/A | N/A |
| 3rd | Network Category- LAN ,WAN, MAN | N/A | N/A |
| 3rd | 1st | **2. Data and Signals :**Analog and Digital data | N/A | N/A |
| 2nd | Analog and digital signals | N/A | N/A |
| 3rd | Periodic and Non Periodic signals ,Periodic analog signals | N/A | N/A |
| 4th | 1st | Digital Signals- Bit rate, Bit length | N/A | N/A |
| 2nd | Digital signal as a composite analog signal ,Transmission of digital signals | N/A | N/A |
| 3rd | Transmission Impairment- Attenuation, Distortion and noise | N/A | N/A |
| 5th | 1st | Performance- bandwidth, throughput | N/A | N/A |
| 2nd | Latency and Jitter | N/A | N/A |
| 3rd | **3. Digital and Analog Transmission** : Analog transmission- Digital to Analog Conversion- ASK | N/A | N/A |
| 6th | 1st | PSK,FSK | N/A | N/A |
| 2nd | Analog to Analog Conversion- AM ,PM,FM( No mathematical treatment) | N/A | N/A |
| 3rd | Digital transmission- Digital to digital conversion- coding and schemes | N/A | N/A |
| 7th | 1st | Analog to digital conversion- PCM | N/A | N/A |
| 2nd | Delta Modulation (DM) | N/A | N/A |
| 3rd | Transmission modes- Serial transmission | N/A | N/A |
| 8th | 1st | Parallel Transmission | N/A | N/A |

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|  | 2nd | Revision | N/A | N/A |
| 3rd | **4. Multiplexing** – FDM | N/A | N/A |
| 9th | 1st | WDM | N/A | N/A |
| 2nd | WDM | N/A | N/A |
| 3rd | TDM | N/A | N/A |
| 10th | 1st | TDM | N/A | N/A |
| 2nd | Revision | N/A | N/A |
| 3rd | **5. Transmission media**: Guided media | N/A | N/A |
| 11th | 1st | Twisted pair cable | N/A | N/A |
| 2nd | Co-axial cable | N/A | N/A |
| 3rd | Co-axial cable | N/A | N/A |
| 12th | 1st | Fibre optics cable | N/A | N/A |
| 2nd | Unguided Media | N/A | N/A |
| 3rd | Radio wave, Infrared | N/A | N/A |
| 13th | 1st | **6. Error Detection and Correction** : Types of Errors,Redundancy | N/A | N/A |
| 2nd | Detection v/s correction | N/A | N/A |
| 3rd | Forward error correction v/s retransmission. | N/A | N/A |
| 14th | 1st | Error detection through Parity Bit | N/A | N/A |
| 2nd | Block parity to detect double errors and correct single errors. | N/A | N/A |
| 3rd | General principles of error detection and correction using cyclic redundancy check | N/A | N/A |
| 15th | 1st | Revision | N/A | N/A |
| 2nd | Revision | N/A | N/A |
| 3rd | Revision | N/A | N/A |