**Lesson Plan**

**Name of faculty : Pency**

**Discipline : Computer Engineering**

**Semester : 3**

**Subject : DATA COMMUNICATION**

**Lesson Plan Duration : 21 W**eeks (from Oct, 2022 to Feb, 2023)

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

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| **Week** |  **Theory** |
| **Lecture day** | **Topic****(including assignment /test)** |
| 1st | 1st | Data Communication- Components |
| 2nd | Data representation |
| 3rd | Data flow Networks- Distributed processing, |
| 2nd | 4th | Network criteria |
| 5th | Physical structures Network Category- LAN, WAN, MAN |
| 6th | Physical structures Network Category- LAN, WAN, MAN |
| 3rd | 7th | Analog and Digital data |
| 8th | Analog and digital signals |
| 9th | Periodic and Non Periodic signals |
| 4th | 10th | periodic analog signals Digital Signals |
| 11th | Bit rate, Bit length |
| 12th | Digital signal as a composite analog signal, transmission of digital signals |
| 5th | 13th | Transmission Impairment- Attenuation, Distortion |
| 14th | noise Performance- bandwidth, throughput, latency, jitter |
| 15th | Revision |
| 6th | 16th | Analog transmission- Digital to Analog Conversion- - Analog to digital conversion |
| 17th | ASK, PSK, FSK |
| 18th | Analog to Analog Conversion- AM, PM,FM ( No mathematical treatment) |
| 7th | 19th | Digital transmission |
| 20th | Digital to digital conversion- coding and schemes |
| 21st | - PCM and Delta Modulation (DM) Transmission modes- Serial and parallel transmission |
| 8th | 22nd | Multiplexing – FDM,  |
| 23rd | WDM,  |
| 24th | TDM |
| **Week** |  **Theory** |
| **Lecture day** | **Topic****(including assignment /test)** |
| 9th | 25th | Revision |
| 26th | Revision |
| 27th | Guided media |
| 10th | 28th | Twisted pair cable, Co-axial cable, fibre optics cable |
| 29th | Unguided Media- radio wave, Microwave, Infrared |
| 30th | Revision |
| 11th | 31st | Revision |
| 32nd | Types of Errors |
| 33rd | redundancy, detection v/s correction |
| 12th | 34th | Forward error correction v/s retransmission |
| 35th |  Error detection through Parity bit |
| 36th | Revision |
| 13th | 37th | block parity to detect double errors and correct single errors |
| 38th | block parity to detect double errors and correct single errors |
| 39th | Revision |
| 14th | 40th | General principles of error detection and correction using cyclic redundancy check |
| 41st | General principles of error detection and correction using cyclic redundancy check |
| 42nd | Revision |
| 15th | 43rd to 45th | Revision |
| 16th | 46th to 48th | Revision |
| 17th | 47th to 51st | Revision |
| 18th | 52nd to 54th | Revision |
| 19th | 55th to 57th | Revision |
| 20th | 58th to 60th | Revision |
|  21th  | 61st to 63rd | Revision |

