**LESSON PLAN-2022-23**

**SWAMI VIVEKANANDA SCHOOL OF ENGG & TECH, BBSR**

| DISCIPLINE-ETC | Semester- 5th | Name of teaching faculty-ER. ASHOK KUMAR PRUSTY |
|---|---|---|
| SUBJECT-ADC | No of days/ per week class alloted-4 | SEM From date- 15/09/2022<br>No of weeks-16 |
| **Week** | **Class day** | **Theory Topics** |
| 3RD | 15.09.22 | **Elements of Communication Systems.** |
| | 16.09.22 | Communication Process- Concept of Elements of Communication System & its Block diagram |
| | 17.09.22 | Source of information & Communication Channels. |
| 4TH | 21.09.22 | Classification of Communication systems ( Line & Wireless or Radio) |
| | 22.09.22 | Modulation Process, Need of modulation and classify modulation process |
| | 23.09.22 | Analog and Digital Signals & its conversion. |
| | 24.09.22 | Basic concept of Signals & Signals classification (Analog and Digital) |
| 5TH | 28.09.22 | Bandwidth limitation |
| | 29.09.22 | **Amplitude (linear) Modulation System** |
| | 30.09.22 | Amplitude modulation & derive the expression for amplitude modulation signal, power relation in AM wave & find Modulation Inde |
| 1ST | 01.10.22 | Generation of Amplitude Modulation(AM)- Linear level AM modulation only |
| 2ND | 06.10.22 | Demodulation of AM waves (liner diode detector, square law detector & PLL) |
| | 07.10.22 | Explain SSB signal and DSBSC signal |
| | 08.10.22 | Methods of generating & detection SSB-SC signal (Indirect method only) |
| 3RD | 12.10.22 | Methods of generation DSB-SC signal (Ring Modulator ) and detection of DSB-SC signal (Synchronous detection) |
| | 13.10.22 | Concept of Balanced modulators |
| | 14.10.22 | Vestigial Side Band Modulation |
| | 15.10.22 | **Angle Modulation Systems.** |
| 4TH | 19.10.22 | Concept of Angle modulation & its types (PM & FM) |
| | 20.10.22 | Basic principle of Frequency Modulation & Frequency Spectrum of FM Signal. |
| | 21.10.22 | Expression for Frequency Modulated Signal & Modulation Index and sideband of FM signal |
| | 22.10.22 | Explain Phase modulation & difference of FM & PM)- working principle with Block Diagram |
| 5TH | 26.10.22 | Compare between AM and FM modulation (Advantages & Disadvantages) |
| | 27.10.22 | Methods of FM Generation (Indirect (Armstrong) method only) working principle with Block Diagram |
| | 28.10.22 | Methods of FM Demodulator or detector (Forster-Seely & Ratio detector)-working principle with Block Diagram |
| | 29.10.22 | **AM & FM TRANSMITTER & RECEIVER** |
| | 02.11.22 | Classification of Radio Receivers |

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| 1ST | 03.11.22 | Define the terms Selectivity, Sensitivity, Fidelity and Noise Figure |
| | 04.11.22 | AM transmitter - working principle with Block Diagram |
| | 05.11.22 | Concept of Frequency conversion, RF amplifier & IF amplifier ,Tuning, S/N ratio |
| 2ND | 09.11.22 | Working of super heterodyne radio receiver with Block diagram |
| | 10.11.22 | Working of FM Transmitter & Receiver with Block Diagram. |
| | 11.11.22 | **ANALOG TO DIGITAL CONVERSION & PULSE MODULATION SYSTEM.** |
| | 12.11.22 | Concept of Sampling Theorem , Nyquist rate & Aliasing |
| 3RD | 16.11.22 | Sampling Techniques ( Instantaneous, Natural, Flat Top |
| | 17.11.22 | Analog Pulse Modulation - Generation and detection of PAM, PWM & PPM system with the help of Block diagram & comparison of all above. |
| | 18.11.22 | Concept of Quantization of signal & Quantization error. |
| | 19.11.22 | Generation & Demodulation of PCM system with Block diagram & its applications. |
| 4TH | 23.11.22 | Companding in PCM & Vocoder |
| | 24.11.22 | Time Division Multiplexing & explain the operation with circuit diagram. |
| | 25.11.22 | Generation & demodulation of Delta modulation with Block diagram. |
| | 26.11.22 | Generation & demodulation of DPCM with Block diagram. |
| 5TH | 30.11.22 | Comparison between PCM, DM , ADM & DPCM |
| 1ST | 01.12.22 | **DIGITALMODULATION TECHNIQUES.** |
| | 02.12.22 | Concept of Multiplexing (FDM & TDM)- ( Basic concept , Transmitter & Receiver) & Digital modulation formats. |
| | 03.12.22 | Advantages of digital communication system over Analog system |
| 2ND | 07.12.22 | Digital modulation techniques & types. |
| | 08.12.22 | Generation and Detection of binary ASK, FSK, PSK, QPSK, QAM, MSK, GMSK. |
| | 09.12.22 | Working of T1-Carrier system. |
| | 10.12.22 | Spread Spectrum & its applications |
| 3RD | 14.12.22 | Working operation of Spread Spectrum Modulation Techniques (DS-SS & FH-SS). |
| | 15.12.22 | Define bit, Baud, symbol & channel capacity formula.(Shannon Theorems) |
| | 16.12.22 | Application of Different Modulation Schemes. |
| | 17.12.22 | Types of Modem & its Application |

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