Subject Name: EC2311 Communication Engineering

Staff Name : S.ParthibanAssistantProfessor

Year : Third Year –EEE

**UNIT I ANALOG COMMUNICATION**

AM – Frequency spectrum – vector representation – power relations – generation of AM – DSB, DSB/SC, SSB, VSB, AM Transmitter & Receiver; FM and PM – frequency spectrum – power relations : NBFM & WBFM, Generation of FM and DM, Amstrong method & Reactance modulations: FM & PM frequency.

**UNIT II DIGITAL COMMUNICATION**

Pulse modulations – concepts of sampling and sampling theormes, PAM, PWM, PPM, PTM, quantization and coding : DCM, DM, slope overload error. ADM, DPCM, OOK systems – ASK, FSK,

PSK, BSK, QPSK, QAM, MSK, GMSK, applications of Data communication.

**UNIT III SOURCE CODES, LINE CODES & ERROR CONTROL**

Primary communication – entropy, properties, BSC, BEC, source coding :Shaum, Fao, Huffman coding : noiseless coding theorum, BW – SNR trade off codes: NRZ, RZ, AMI, HDBP, ABQ, MBnB codes : Efficiency of transmissions, error control codes and applications: convolutions & block codes.

**UNIT IV MULTIPLE ACCESS TECHNIQUES**

SS&MA techniques : FDMA, TDMA, CDMA, SDMA application in wire and wireless communication : Advantages (merits) :

**UNIT V SATELLITE, OPTICAL FIBER – POWERLINE, SCADA**

Orbits : types of satellites : frequency used link establishment, MA techniques used in satellite communication, earth station; aperture actuators used in satellite – Intelsat and Insat: fibers – types: sources, detectors used, digital filters, optical link: power line carrier communications: SCADA

**TOTAL: 45 PERIODS**

**TEXT BOOKS**

1. Taub&Schiling “Principles of communication systems” Tata McGraw hill 2007
2. J.Das “Principles of digital communication” New Age International, 1986

**REFERENCES**

1. Kennedy and Davis “Electronic communication systems” Tata McGraw hill, 4th edition, 1993.
2. Sklar “Digital communication fundamentals and applications“ Pearson Education, 2001.
3. Bary le, Memuschmidt, digital Communication, Kluwer Publication, 2004.
4. B.P.Lathi “Modern digital and analog communication systems” Oxford University Press, 1998.