

UNIT I ANALOG MODULATION

9

Amplitude Modulation – AM, DSBSC, SSBSC, VSB – PSD, modulators and demodulators – Angle modulation – PM and FM – PSD, modulators and demodulators – Superheterodyne receivers

UNIT II DIGITISATION

9

Low pass sampling theorem – Quantisation - PAM – Line coding - PCM, DPCM, DM, ADPCM and ADM, Channel Vocoder, – Time Division Multiplexing, frequency Division Multiplexing

UNIT III DIGITAL MODULATION AND TRANSMISSION

9

Phase shift keying – BPSK, DPSK, QPSK - Principles of M-ary signaling M-ary PSK & QAM – Comparison, ISI – Pulse shaping – Duo binary encoding - Cosine filters – Eye pattern, equalizers

UNIT IV INFORMATION THEORY AND CODING

9

Measure of information – Entropy – Source coding theorem - Shannon-Fano coding, Huffman Coding, LZ Coding– Channel capacity – Shannon-Hartley law – Shannon's limit- Error control Codes – Cyclic codes, Syndrome calculation – Convolutional Coding, Sequential and Viterbi decoding

UNIT V SPREAD SPECTRUM AND MULTIPLE ACCESS

9

PN sequences – properties – m-sequence –DSSS –Processing gain, Jamming – FHSS –Synchronisation and tracking - Multiple Access – FDMA, TDMA, CDMA

TOTAL= 45 PERIODS**TEXT BOOKS:**

1. H Taub, D L Schilling, G Saha, "Principles of Communication Systems", 3/e, TMH 2007
2. S. Haykin "Digital Communications", John Wiley 2005

REFERENCES:

1. B.P.Lathi, "Modern Digital and Analog Communication Systems", 3/e, Oxford University Press, 2007
2. H P Hsu, Schaum Outline Series - "Analog and Digital Communications" TMH 2006
3. B.Sklar, "Digital Communications Fundamentals and Applications", 2/e Pearson Education, 2007