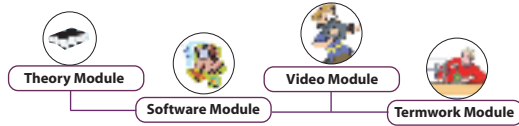


Digital Communication Systems

Introduces Global e-Learning System in Education & Training in the form of Learning Resources with Computer Aided Instructions



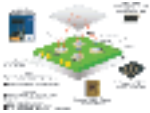
System Requirement:- IBM-PC Compatible with Window-OS, 128 MB RAM/Multimedia Kit

Theory module

Features : Theory, Figures, Photographs, Animations with controller, Highlighter tool, Note creation facility, Systematic page navigation, Printing facility, Access to Videos at appropriate locations.

List of Topics

Introduction to Digital communication

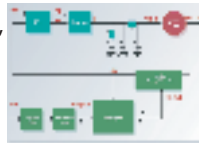


Analog to digital conversion, Comparison of analog digital transmission, sampling theorem in frequency and time domain, nyquist criteria, Reconstruction using interpolation filters, ideal, Natural, Flatsamples, Aliasing, Aperture effect.

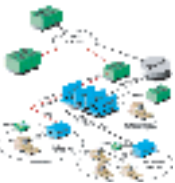
Waveform Coding

Pulse code modulation- PCM generation and reconstruction, Quantization noise, Non uniform quantization and companding, PCM with noise.

Delta modulation and predictive coding- delta modulation, Differential PCM, LPC speech synthesis.



Multiplexing Techniques



Concept , Types multiplexing- Frequency and Time division multiplexing, Synchronization in TDM System, Comparison of FDM and TDM, Synchronous and Asynchronous multiplexing.

Performance In The Presence of Noise and Line Codes

Performance in the presence of noise of PCM, DPCM, DM, ADM Digital Multiplexers Data Formats- Unipolar and Polar NRZ, RZ, Bipolar (AMI) , Manchester, synchronisation Bit and Frame , Scrambling- Unscrambling.

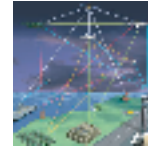


Digital continuous wave modulation

Binary phase shift keying, Different phase shift keying, Differential phase shift keying, Differentially Encoded PSK, Quadrature phase shift keying, M-Ary PSK, Quadrature Amplitude shift keying, Binary frequency shift keying, similarity of BFSK and BPSK , M-Ary FSK, Minimum shift keying(MSK), GMSK.



Detection and Performance analysis of Digital Signal



Base band signal receiver, probability of error, Optimum filter, White noise-Matched filter, probability of error or matched filter, Correlation,FSK,PSK, NON-coherent detection of FSK,DPSK,QPSK, Calculation, of error probability for BPSK & BFSK, Signal space to calculate P_e

Spread Spectrum

PN sequences, DSSS with coherent BPSK, Signal space representation and Processing Gain, Probability of error, Frequency hopped Spread Spectrum. Introduction to Multiple Access Techniques- TDMA, FDMA and CDMA.



Software Module

Problems on Internal Energy, pressure of Gas, change in enthalpy and entropy, Problems on Heat added by steam, Problems on Pressure of steam and air, Vacuum efficiency of Condenser, Problems on thermal efficiency of the cycle, power developed by engine, Problems on Power required to drive the Compressor, Problems on Coefficient of Performance.



Video Module



Testing of I. C. Engines, Hydraulic Power Plant, Steam Turbines, Air Conditioners, Boilers, Air Compressors

Teamwork Module

Contains assignments on various topics covering Subjective questions, Objective questions, Random selection of Objective type questions, Numerical assignments, Video assignments, Drawing assignments.

