COURSE PLAN

Name of the Course Teacher : Rajesh Ishwar
Subject : Analog Communication
Branch: ECE Semester: II Year: II
Course Code: EC 205 L-T-P-C: 3-1-1-5 ***w.e.f. 29.12.2009***

Sr. No.	Topic	Contact Hours (Lectures)
1.	Elements of communication system, communication process, Source of information, communication channels	1
2.	Modulation and demodulation, Need of modulation, bandwidth requirements, Types of modulation	1
3.	Types of communication system, block diagram of analog communication system, advantages & disadvantages of analog communication	1
4.	Sources of noise, external & internal noise	1
5.	Thermal noise, Shot noise, Problem based on thermal noise and shot noise ,Partition noise, Flicker noise,	1
6.	Burst noise, Avalanche noise, Bipolar Transistor Noise, Field-effect Transistor Noise, Distortion- Intermodulation and harmonic,	1
7.	Signal to noise ratio, S/N Ratio of a tandem connection, Noise calculations	1
8.	Noise figure, Amplifier Input Noise in Terms of F, Noise Factor of Amplifiers in Cascade, Noise Factor of a lossy Network, Noise temperature , Measurement of Noise Temperature and Noise Factor,	1
9.	Amplitude modulation, modulation index, AM equation for single tone frequency	1
10.	AM power and current calculations	1
11.	Numerical problems based on AM	1
12.	Low level and high level modulation, AM transmitter	1
13.	Principle of AM generation , square law modulation	1
14.	AM detector , square law detector, envelope or diode detector, distortion in diode detectors ,	1
15.	AM detector circuits using transistor, AM receiver characteristics	1
16.	AM broadcast transmitter,	1
17.	Single sideband principles, Comparison of SSB transmission to conventional AM	1
18.	Suppressed carrier AM generation, Balanced modulators, Ring modulator, product modulator	1
19.	SSB Generation methods- Filter method, phase shift method, third method	1
20.	Single side band transmitter & receivers, Modified SSB system, Vestigial side band transmission (VSB), Comparison of various AM systems	1
21.	Tuned RF receiver, Problems in TRF receiver	1
22.	Block diagram of super hetrodyne receiver	1
23.	RF amplifier, Mixer, Local oscillator	1

24.	IF amplfier , Numerical problems	1
25.	Sensitivity and Gain, Fidelity, Image Rejection, double spotting	1
26.	Adjacent channel selectivity, AGC, AFC	1
27.	Double Conversion, Electronically Tuned Receivers (etrs), Integrated-Circuit Receivers.	1
28.	Problem based on Superheterodyne Receivers	1
29.	Frequency modulation, sinusoidal fm , Frequency Spectrum for Sinusoidal FM, Average Power in Sinusoidal FM,	1
30.	Modulation Index and deviation ratio for Sinusoidal FM, Frequency Spectrum for Sinusoidal FM, Average Power in Sinusoidal FM	1
31.	Problem based on FM	1
32.	Phase Modulation, Equivalence Between PM and FM, Sinusoidal Phase Modulation,	1
33.	Angle Modulator Circuits, FM generation- varactor diode modulator	1
34.	FM generation- reactance modulator	1
35.	Indirect generation of FM- Armstrong method , FM transmitter	1
36.	Angle Modulation Detectors, FM demodulation: Slope detector, balanced slope detector,	1
37.	Quadrature detector, Foster seeley discriminator	1
38.	Ratio detector, Phase locked loop	1
39.	Noise in FM System, pre-emphasis and de-emphasis,	1
40.	FM broadcast transmitters & receivers, FM Stereo Receivers.	1
	Total	40

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