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CE234	Fundamentals of communication	2 Hours/Week	2 Units

Contents of Syllabus	Hours
❖ **Introduction** • Data and signals • Components of communication system • Need for modulation • Amplitude modulation • Detection of Am waves	6
❖ **DSB modulation** • DSB-SC modulation. • Generation of DSB-SC waves. • Balanced Modulator. • Ring Modulator. • Coherent detection of DSB-SC. • Modulated waves, COSTAS Loop, Radio transmitter, Classification. • AM Transmitter block diagram	4
❖ **SSB modulation** • Frequency domain description. • Frequency discrimination method for generation of AM-SSB Modulated wave. • Time domain description. • Phase discrimination method for generating of AM-SSB Modulated waves. • Demodulation of SSB Waves, Vestigial side band modulation, Generation of VSB modulated wave.	4
❖ **Frequency modulation** • Frequency Modulation. • Single tone frequency modulation. • Spectrum Analysis of Sinusoidal FM Wave. • Narrow band FM, Wide band FM. • Constant Average Power. • Transmission band width of FM wave.	6

• Generation of FM Waves. • Comparison of AM & FM	
❖ **Angle modulation** • Generation of FM wave: Direct method, Parametric variation method, varactor diode, Reactance modulator, Armstrong method. • Detection of FM waves, frequency discriminator, Zero crossing detector, Phase locked loop, Foster seely discriminator. • Ratio detector, FM transmitter block diagram. •	6
❖ **Pulse modulation** • Types of pulse modulation PAM, PWM. • Generation and Demodulation of PWM. • Generation and Demodulation of PPM.	4

References

1. Communication systems, 4th edition, Simon Haykin.
2. Data communications and networking, 4th edition, Behrouz A. Forouzan

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