CE234	Communication II	2 Hours/Week	2 Units

Contents of Syllabus	Hours
❖ **The Electromagnetic Spectrum** • Introduction • Radio waves • Microwaves • Infrared	4
❖ **EW** • Reflection, refraction, scattering, diffraction • Maxwell's Equations • Energy and power signals • Energy of Electromagnetic Waves • Momentum of Electromagnetic Waves • Polarization of Electromagnetic Waves • Interference of Electromagnetic Waves	4
❖ **Noise** • White noise • Power spectral density • Gaussian distribution • Phasor representation • Noisy channel: Shannon Capacity • Noiseless: Nyquist bit rate	4
❖ **Noise in modulation (SNR, SNRI)** • DSB-SC • DSB-LC • SSB-SC • Threshold in AM ❖ Noise in angle modulation • Threshold in angle modulation	6
❖ **FM receivers** • FM Slope Demodulator • Slope detector	8

• Bandpass Limiter • Foster seely discriminator • Ratio Detector • superheterodyne receiver • Pre-emphasis and de-emphasis • FM stereo	
❖ **Applications of modulation**	4

References

1. Communication systems, 4th edition, Simon Haykin.
2. Data communications and networking, 4th edition, Behrouz A. Forouzan.
3. Modern digital and analog communication systems, B. P. Lathi. Zhi Ding, 4th edition.

اسم التدريسي: م.م الزا عبد الجبار محمود