

**SARDAR PATEL UNIVERSITY**  
**Programme & Subject: M.Sc (Electronics & Communication)**  
**Semester: II**  
**Syllabus with Effect from: June - 2011**

<b>Paper Code: PS02CELC01</b>	<b>Total Credit: 4</b>
<b>Title Of Paper: Analog &amp; Digital Communication</b>	

Unit	Description in Detail	Weightage (%)
I	Fourier series, Power Spectral Density, Convolution, Correlation between waveforms, Auto and Cross correlation, Sampling Theorem.	20%
II	Amplitude Modulation: Equation for AM, modulation index, spectrum of AM, DSB and SSB transmission with and without carriers, VSB transmission, DSB,C amplitude modulators, Envelope detectors, Balanced Modulator, SSB signal generation and Demodulation schemes. ASK, FSK, QAM, BPSK, QPSK, Transmitter and receiver block diagrams.	20%
III	Equations for FM, modulation Index, spectrum calculation for sinusoidal waveform and Bessel's function table, phase modulation, relationship between FM and PM, NBFM and WBFM, frequency modulators and demodulators (Armstrong method) Types of noise : Noise in AM and FM systems.	20%
IV	Various pulse modulation methods, Pulse code modulation PCM, Delta modulation DM. Comparison between PCM and DM, Companding method, Noise in digital systems.	20%
V	Line encoding methods: NRZ, RZ, Manchester, and multilevel encoding methods and comparison of these schemes. Source coding: Linear predictive coding, Huffman coding.	20%

**Basic Text & Reference Books:-**

- Modern digital and analog communication systems: B.P.Lathi, Holt,Sounders (HRW Series) Publication. 1987.
- Electronic communications: Dennis Roddy and John Coolen, PHI 1995.
- Principles of communication. Systems: Taub and Schilling, McGraw Hill Publication, 1992.
- Communication systems: Haykin, John Wiley, 1994.

