

**HEMCHANDRACHARYA, NORTH GUJARAT UNIVERSITY, PATAN**

**B.E SEM. - III (IT)**  
**IT302: Communication Systems- I**  
(In force from June 2006)

TEACHING SCHEME:

THEORY 03 HRS/WEEK  
PRACT 02 HRS/WEEK

TOTAL 05 HRS/WEEK

EXAM SCHEME:

THEORY 100 MARKS(3 HRS)  
PRACT 25 MARKS  
TW/VIVA 25 MARKS

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TOTAL 150 MARKS

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ANALOGUE MODULATION TECHNIQUES:

Principles of Analogue Modulation Techniques VIZ. AM,FM, PM, SSB, their generation principles ( Block Schematic and Mathematical derivations ), FDM, TDM, PAM, PWM, PFM, Sampling Theory.

DIGITAL COMMUNICATION:

PDM, DPCM, DM, ADM, T1 Carrier System, Bandwidth Requirement, Signaling Rate.

DIGITAL MODULATION TECHNIQUES:

ASK, FSK, CPFSK, PSK, BPSK, QPSK, MSK, their comparison.

ERROR CONTROL:

Error Control Coding Methods, Error Detection and Correction Methods like Parity Check, Repetition Coding, Block Code, Cyclic Code etc.

LIGHT COMMUNICATIONS:

Principles of Light Communication in Fiber, Losses in Fiber, Dispersion Losses, Light Sources and Photo Detector, Connectors and Splicers.

SATELLITE COMMUNICATION:

Definitions and Terms of Earth Orbiting Satellites, Orbiting Elements, Apogee and Perigee Heights, Geostationary Orbits, Satellite Multiple Access Methods ( FDMA, TDMA, SSMA ).

Satellite Services-

INSAT, INTELSAT, DBS, MSAT, VSAT, RADARSAT, INMARSAT, GPS, ORBCOMM, IRIDIUM etc.

FAX:

Fax transmission Principle, Scanning and Printing Methods, Digital Fax transmission and methods of Data Compression.

TELEVISION:

TV Transmission and Reception ( Block Diagrams and Working Principles).

REFERENCE BOOKS:

ELECTRONIC COMMUNICATIONS {By RODDY AND COOLAN } PHI