

ELE 460 - ELECTRONIC COMMUNICATION

Unit I

10 hours

Electronic communication systems, electromagnetic spectrum, noise analysis.

Amplitude modulation: Principles of AM modulator circuits, AM transmitter, AM receivers, SSB communication systems,

Frequency modulation: Principles of FM, FM transmitter, FM receiver

Unit II

10 hours

Transmission lines: Transverse electromagnetic waves, Types of transmission lines, equivalent circuit, wave propagation

Antennas and waveguides: Antenna terminology, basic antennas, antenna loading, antenna arrays, special purpose antennas, UHF and microwave antenna, waveguides

Unit III

10 hours

Data communication:

Data communication codes, synchronization, data communication hardware, RS-232 interface, telephone network, telephone circuit

Data modems: Asynchronization modems, synchronization modems, low speed modems, medium high speed modems.

Data communication network: ISDN, LAN, Ethernet, Cellular telephone, CDMA, GSM for mobile communication, Introduction to satellite communication

Textbooks:

- 1) "Electronic Communication Systems" by Wayne Tomasi, Pearson publication, 5th ed., 2009
- 2) "Communication Systems" by Simon Haykin, John Wiley and Sons Inc., 4th ed., 2001

Ref. Books:

- 1) "Electronic Communication Systems" by Kennedy and Davis, Tata McGraw-Hill Edition, 4th ed.
- 2) "Electronic Communication" by Roddy and Coolen, Pearson Education publication, 4th ed.