



MSc Electronics

ELE 460 - ELECTRONIC COMMUNICATION  
(Open Elective)

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, 5<sup>th</sup>ed., 2009
- 2) "Communication Systems" by Simon Haykin, John Wiley and Sons Inc., 4<sup>th</sup>ed., 2001

**Ref. Books:**

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