



B.Sc. (Electronics) SEMESTER IV

Paper I

(Basic Communication Electronics)

Unit I

Communication systems: Introduction, Elements of communication system:

https://www.youtube.com/watch?v=rt08yTGv_z4

Need of modulation, types of modulation,

https://www.youtube.com/watch?v=mHvV_Tv8HDQ

Frequency spectrum, TDM, FDM, Noise, signal to noise ratio, noise figure, and noise temperature, noise calculation in single and cascaded stages.

<https://www.youtube.com/watch?v=WmPRMFqT8Uw>

<https://www.youtube.com/watch?v=7JXkqSLc18g&t=2s>

<https://www.youtube.com/watch?v=UwWmDwbsDBs>

<https://www.youtube.com/watch?v=6TcD6DcSRUE&list=PLgwJf8NK-2e7IjjiS6qqnNK55ZqgpntKi>

Unit II

Modulation techniques:

<https://www.youtube.com/watch?v=VecsHKPzmFA&list=PLgwJf8NK-2e7uyUYrpgUUQowmRuKxRdwp&index=7>

Time domain equation of AM wave, Modulation index, effects of over modulation, frequency spectrum and bandwidth, power and voltage calculations of AM signal, Suppressed carrier and single side band techniques,

<https://www.youtube.com/watch?v=wqTv6jdUPL4&list=PLgwJf8NK-2e7uyUYrpgUUQowmRuKxRdwp&index=8>

Time domain equation of FM wave, Modulation index, frequency spectrum and bandwidth, side bands, power of side bands, frequency deviation, merits and demerits of FM over AM.

<https://www.youtube.com/watch?v=6Y9n8dMYL-o>

Unit III

Transmitters and Receivers: Specifications of transmitters, low level modulation, high level modulation,

<https://www.youtube.com/watch?v=JYsii7Efzqw>

heterodyne type transmitters,SSB transmitter, FM transmitter, Armstrong method of FM generation, sensitivity, selectivity, fidelity of receiver, TRF receiver, super heterodyne AM receiver, selection of IF, IF amplifier circuits, AVC, FM receiver, Comparison of AM receiver and FM receiver



https://www.youtube.com/watch?v=i7IFqCTL_rQ

Unit IV

Transmission Lines and Wave Propagation: Electrical equivalent of transmission lines, characteristic impedance, reflection coefficient, SWR, transmission line losses, impedance matching, Electromagnetic waves, wave polarization and its types, ground wave propagation, space wave propagation; LOS, sky wave propagation, ionosphere layers, critical frequency, MUF, virtual height.

<https://www.youtube.com/watch?v=2OeIIL0lzFY&t=19s>

<https://www.youtube.com/shorts/GIRum8FzTsg>

<https://www.youtube.com/watch?v=M3GpS7buQAA>

<https://www.youtube.com/watch?v=tWSz7Xm8mMk>