Course Title: Communications Systems
Course Code: ETEG 301
Credit Hours: 3

Course Description:
The course provides an overview of telecommunications circuits, systems and applications.

Course Contents:

Unit 1: Communications Concepts
Signal properties and their applications in communications; Amplitude modulation and demodulation: AM, SSBSC, DSBSC; Frequency modulation and demodulation: NBFM, WBFM, signal quality; Digital signals, sampling, ADC, DAC, coding principles; Digital modulation and transmission; Bearer circuits, Radio, Microwave, Lightwave

Unit 2: Communication Networks
Networking concepts, Local access, Trunking, International signaling, Call establishment; Analog and digital networks; Speech coding and multiplexing; Data communications concepts, modem operation; Internet, Local & wide area networks (LAN, WAN, WLL); Paging systems

Unit 3: Radio Transmission Systems
Broadcasting concepts and wave propagation; High frequency (HF) systems; Mobile transmission system, Analog history, GSM, CDMA, Cell architecture; Introduction to digital broadcasting; Radar systems

Unit 4: Optical Fiber Systems
Light wave generation and detection, Optical modulation techniques, Fiber performance, Terminating, Splicing

Unit 5: Satellite Systems
Elements of satellite communication system, Orbital dynamics, Geo-stationary, LEO, MEO, GPS, Link budgets, SBR, Antenna concepts, Satellite broadcasting

References:
1. Dennis Roddy, John Coolen**,** *Electronic Communication Systems,*Pearson
2. George Kennedy, Bernard Devis, *Electronic Communication Systems,* Tata Mc Graw Hill
3. Anttalainen T, *Introduction to Telecommunications Network Engineering*, Artech House1999