

Subject Name	Description
Advanced Optical Communication	Optical systems are today used extensively in modern electronic communication. This Course makes the student industry ready and for research. This is a must for masters' degree in telecommunications.
Digital Signal Processing	All modern electronics systems are digital in nature. This subject teaches students how to process and analyze the digital signals (input to digital systems) and how to draw the right conclusions from them. This subject is a pre-requisite to digital image processing and digital speech processing. It has many applications in industry and after studying it makes the student employable in industries and in research labs.
Data Communication Networks	Most computers (and mobile phones) are connected to either internet or private /organizational networks. It enables these devices to access distant resources/ information instantly and also share each others' assets, if desired, and permitted. This course enables students to learn the basics of networking technology and to solve problems arising out of it like traffic congestion, delay, sequencing, error rate etc. After studying it, students will find employment in computer/ internet industries
Network Security	Networks are everywhere to-day from internet to private/organizational networks. Organizations depend on these networks for inter-communication between their distant offices and also within the same office. After studying this course students will be able to appreciate the need for security and also advise their employers the importance of network security. This is a top employment earner in modern organizations the world over.
Speech Processing	Digital signal processing (DSP) is a pre-requisite for this course. Speech processing analyses human speech and studies speech characteristics of different persons. This course teaches ways to distinguish between peoples' speech i.e. how to distinguish between voices of two persons. This course is very useful for govt. security establishment and also for industry for example mobile phone manufacturers.
Wireless and Mobile Communication	Wireless mobile communication has spread to all corners of the world. The sale of mobiles runs into millions and generates a large number of jobs. In such a scenario it is natural that this course is offered to our students. All aspects of mobile communication are taught in this course, be it modes of transmission/ receiving, wireless networking, radio propagation etc. After studying this course our students would find employment in the big mobile phones industry, APP-making industry and a host of ancillary industries set up in support.
Internet Protocols	Today Internet is prevailing throughout. We depend upon internet in almost all walks of our lives, be it internet telephony, remote control of our home appliances from any place on this earth. In such an environment, knowledge of Internet and its many protocols becomes essential for its optimum use. This course would make our students not only more tech savvy but also responsible social beings and good and efficient citizens.

Transport Access Technology	This is another course related to the internet and private organizational networks. In this course emphasis is laid on physical transportation of messages /bytes from one host to another in the network. In addition to the transport mechanism of messages/ bytes, latest methods of setting up various typologies in the network, routers, protocols, interfaces, ATM, signal hierarchies, sonnets, multiplexing techniques are taught. This course is a must for all electronics engineers in this age of internet.
Advance Microprocessor and Interfacing	Microprocessors are found in all electronic gadgets and systems. These help in controlling the electronic system through the accompanying software. This Course will impart thorough knowledge of microprocessor which is essential for any engineer, whether in industry or in service. Students are taught latest microprocessors, their peripheral along with their applications to meet them industry ready.
Advance Radar system	This is a sequel to the first course in radar engineering taught at UG level. Advanced features of the radar engineering are taught to enable our students to grasp the subject and to become sophisticated radar designers and operators. This course is essential not only for the defense related industries but also for users in the defense services.
Digital Communication lab	This course enables our students to practically deal with theory of digital communications. Different types of signaling techniques, modulation/ demodulation techniques, their error rates are observed practically. It gives a deep insight to the students about the current digital communication techniques which can only come when theoretical concepts are demonstrated practically in the laboratory.
Commsim Lab	Feasibility of all electronic systems is first checked using simulation techniques. Indeed simulation has because a very important tool in the hands of the design engineer.. Thus COMSIM is software for evaluating a communication system before physically making it. It is an inexpensive method for checking the feasibility of a system. Study of this software enables the students to check the system without wasting expensive components.
Multimedia Communication	This course intends to give a thorough learning of the multimedia communication standards and compression techniques, Internet protocols, to learn the Multimedia communication across the networks, etc. It also helps to characterize the types of multimedia contents, to identify different standards for multimedia communication and gives the understanding of required networks for multimedia communication. There is great scope of this subject in telecommunication Industry
Satellite Communication	To provide students with good depth of knowledge in Satellite Communication and Remote Sensing, this course has been introduced in the curriculum. The knowledge of theory and practice of advanced communication techniques e.g. TDMA, CDMA FDMA will equip the students for further studies and research. It will also familiarize the students with the modern applications in Remote Sensing area
Optical Networks	This course will make the students skilled about the basic elements of optical fiber transmission link, fiber modes configurations and structures. The different kind of losses, signal distortion in optical wave guides and other signal degradation factors are necessary in Industrial applications along with

	methodical study of fiber optical receivers, noise performance in photo detector, receiver operation and configuration.
Biomedical Engineering	The course is designed to prepare the student for work in the biopharmaceutical or biotechnology industry. It provides an ability to identify, formulate, and solve chemical and biological engineering problems. The broad education is necessary to understand the impact of chemical and biological engineering solutions in a global, economic, environmental, and societal context. Students get the opportunity to be highly successful, as defined by accomplishments, advanced certifications, and job satisfaction, in chemical and biological engineering practice.
Statistical and Adaptive Signal Processing	This course provides a unified treatment of the theory, implementation, and applications of methods for spectral estimation, signal modeling, adaptive filtering, and array processing. The goal is to help students understand the fundamental mathematical principles underlying the operation of a method; appreciate its practical limitations, and grasp, with sufficient details, its practical implementation. This course focuses on problems algorithms and solutions for processing signals in a manner that is responsive to a changing environment.
Digital VLSI Design	The course introduces the fundamental principles of VLSI circuit design and to examine the basic building blocks of large-scale digital integrated circuits. The students will be able to design logic circuit layouts for both static CMOS and dynamic clocked CMOS circuits, extract the analog parasitic elements from the layout and analyze the circuit timing using a logic simulator and an analog simulator.
CDMA and GSM System	The subject focuses on different standards of mobile communication systems, Maintain Global System for Mobile (GSM) systems, Troubleshoot GSM mobile handsets, Test the functionality of various modules of CDMA cellular systems, Test the functionality of various modules of 4G systems. This course provides employment opportunities in areas dealing with communications, automatic control, and aviation industry.
Neural Networks	To help understand the students about role of neural networks in engineering, artificial intelligence, and cognitive modeling, this course has been introduced. This course will provide supervised learning in neural networks, knowledge of computation and dynamical systems using neural networks etc. The course is a comprehensive foundation to Artificial Neural Networks and Machine Learning with applications to Pattern Recognition and Data Mining.
Advance communication System	This course is designed to develop a thorough understanding of the main concepts, techniques and performance criteria used in the analysis and design of communication systems. Such systems lie at the heart of the information and communication technologies (ICT) that underpin modern society. Advanced communications have become the preferred option for many communication devices, replacing analogue systems, due to their robustness to noise, ease of standardization and increased scale of integration.

Detection and Estimation Theory	Signal detection and estimation is the area of study that deals with the processing of information-bearing signals for the purpose of extracting information from them. This course provides employment opportunities in areas dealing with communications, automatic control, radar/ sonar, speech and image processing and medical signal processing.
Digital Signal Processing using MATLAB	This lab is introduced to solve real world problems using the MATLAB software package. Simple program modules to implement single numerical methods and algorithms are covered through this course. Testing the program output for accuracy using hand calculations and debugging techniques can be done. Analysis of applicability and accuracy of numerical solutions to diverse engineering problems can be done.
Communication Lab Using MATLAB	This course presents the theory and practice of digital communication including signal design, modulation methods, demodulation methods, wireless channel basics and the application of this to the design of modern OFDM systems. Simulation exercises are included in MATLAB and SIMULINK throughout for practice. Upon successful completion of this Lab, the students will be able to understand the basic concepts of digital communication systems and apply different modulation schemes to baseband signals, analyze the modulated signals, etc.
Image processing	This course enables the students to design and implement algorithms that perform basic image processing (e.g., noise removal and image enhancement), illustration of algorithms for advanced image analysis (e.g., image compression, image segmentation); and assessment of performance of image processing algorithms and systems. This course provides employment opportunities in areas dealing with Image, Digital signal Processing, Radar and sonar engineering.
Hardware Description Language	HDL is a computer language used for designing electronic circuits particularly microelectronics/VLSI circuits. Modern electronic circuitry is being increasingly miniaturized thus the importance of VHDL. This course enables our students to join electronic circuits design industry.
Microwave Devices and Circuits	This course focuses on properties and application areas of microwave like analysis of Transmission Lines, verification of different types of waveguides, mathematical modeling of waveguides using scattering matrices, use of smith chart for single & double stub matching techniques, microwave generation & detection devices and the practical application of different types of radar systems.
Advance Microcontrollers	Students can understand the evolution of microprocessors and microcontrollers. Besides the understanding of architecture of microprocessor and 8051 microcontroller, students can get the fundamental concepts of advanced microprocessors and architectures. After the completion of the course the students are able to write advanced programs in for the advanced families of microcontrollers. Designing of different real-time projects (minor and major) is possible after the completion of this course.

Embedded System	This course is introduced to familiarize the students with the modern embedded systems, their architecture and programming aspects. Awareness of interrupts, hyper threading and software optimization is imparted along with the knowledge of designing real time embedded systems and analysis of various examples of embedded systems.
Nano Technology	Theoretical and practical knowledge related to modern materials chemistry, materials physics, energy physics and nanotechnology is imparted. It is the necessary foundation of nano-science and mathematics to follow protocols, conduct science or engineering procedures, fabricate products, make conclusions about results, troubleshoot, etc. Students get to independently seek out innovations in the rapidly changing field of nano-technology.
Avionics Navigation System	This course provides the students with knowledge of communications, electronics and electrical aspects of avionics, including aircraft electrical systems, aircraft instruments and integrated systems, and navigation systems. Students can apply their knowledge, skills and hand-on experience to design, develop, manufacture, and analyze new products with advanced avionics systems for desired needs
Optical communication lab	The operating principles of single mode, multimode fibers, light sources, detectors, amplifiers and passive optical devices are realized through the practical implementations This course gives a chance to understand, describe, analyze and compare the most important devices: light sources, fibers and detectors from both physical and system point of view. Comparison of the structural characteristics of different optical fibers and the different fabrication processes of optical fiber cables can be done practically..