

Branch	Year	Subject And COs	
E&TC Engineering	SE Sem I	Course : Signals & Systems Course Code: 204181	
		Co. No.	Course Outcomes
		CO1	Understand mathematical description and representation of continuous and discrete time signals and systems.
		CO2	Develop input output relationship for linear shift invariant system and understand the convolution operator for continuous and discrete time system
		CO3	Understand and resolve the signals in frequency domain using Fourier series and Fourier transforms.
		CO4	Understand the limitations of Fourier transform and need for Laplace transform and develop the ability to analyze the system in s- domain.
		CO5	Understand the basic concept of probability, random variables & random signals and develop the ability to find correlation, CDF, PDF and probability of a given event.
		Course : Electronic Devices & Circuits Course Code: 204182	
		Co. No.	Course Outcomes
		CO1	Comply and verify parameters after exciting devices by any stated method.
		CO2	Implement circuit and test the performance.
		CO3	Analyze small signal model of FET and MOSFET .
		CO4	Explain behavior of FET at low frequency.
		CO5	Design an adjustable voltage regulator circuits.
		Course : Electrical Circuits and Machines Course Code: 204183	
		Co. No.	Course Outcomes
		CO1	Analyze basic AC & DC circuit for voltage, current and power by using KVL, KCL, and network theorems.
		CO2	Explain the working principle of different electrical machines.
		CO3	Select proper electrical motor for given application.
		CO4	Design and analyze transformers.
		Course : Data Structures and Algorithms Course Code: 204184	
		Co. No.	Course Outcomes
		CO1	Discuss the computational efficiency of the principal algorithms such as sorting & searching.
		CO2	Write and understand the programs that use arrays & pointers in C
		CO3	Describe how arrays, records, linked structures are represented in memory and use them in algorithms
		CO4	Implement stacks & queues for various applications.
		CO5	Understand various terminologies and traversals of trees and use them for various applications
		CO6	Understand various terminologies and traversals of graphs and use them for various applications.
		Course : Digital Electronics Course Code: 204185	
		Co. No.	Course Outcomes
		CO1	Use the basic logic gates and various reduction techniques of digital logic circuit in detail.
		CO2	Design combinational and sequential circuits
		CO3	Design and implement hardware circuit to test performance and application
		CO4	Understand the architecture and use of microcontrollers for basic operations and Simulate using simulation software.
		Course : Electronic Measuring Instruments & Tools Course Code: 204186	
		Co. No.	Course Outcomes
		CO1	Understand fundamental of various electrical measurements.
		CO2	Understand and describe specifications, features and capabilities of electronic instruments
		CO3	Finalize the specifications of instrument and select an appropriate instrument for given measurement
		CO4	Carry out required measurement using various instruments under different setups.
		CO5	Able to compare measuring instruments for performance parameters
		CO6	Select appropriate instrument for the measurement of electrical parameter professionally.
		Course : Engineering Mathematics III Course Code: 207005	

Co. No.	Course Outcomes
CO1	Solve higher order linear differential equation using appropriate techniques for modeling and analyzing electrical circuits.
CO2	Solve problems related to Fourier transform, Z-transform and applications to Communication systems and Signal processing.
CO3	Obtain Interpolating polynomials, numerically differentiate and integrate functions, numerical solutions of differential equations using single step and multi-step iterative methods used in modern scientific computing.
CO4	Perform vector differentiation and integration, analyze the vector fields and apply to Electro-Magnetic fields.
CO5	Analyze conformal mappings, transformations and perform contour integration of complex functions in the study of electrostatics and signal processing.
Course : Integrated Circuits Course Code: 204187	
Co. No.	Course Outcomes
CO1	Understand the characteristics of IC and Op-Amp and identify the internal structure.
CO2	Understand and identify various manufacturing techniques.
CO3	Derive and determine various performances based parameters and their significance for Op-Amp.
CO4	Comply and verify parameters after exciting IC by any stated method.
CO5	Analyze and identify the closed loop stability considerations and I/O limitations.
CO6	Analyze and identify linear and nonlinear applications of Op-Amp.
CO7	Understand and verify results (levels of V & I) with hardware implementation.
CO8	Implement hardwired circuit to test performance and application for what it is being designed.
CO9	Understand and apply the functionalities of PLL to Frequency synthesizer, multiplier, FM, and AM demodulators
Course : Control Systems Course Code: 204188	
Co. No.	Course Outcomes
CO1	Determine and use models of physical systems in forms suitable for use in the analysis and design of control systems.
CO2	Determine the (absolute) stability of a closed-loop control system.
CO3	Perform time domain and frequency domain analysis of control systems required for stability analysis.
CO4	Perform time domain and frequency domain correlation analysis.
CO5	Apply root-locus, Frequency Plots technique to analyze control systems.
CO6	Express and solve system equations in state variable form.
Course : Analog Communication Course Code: 204189	
Co. No.	Course Outcomes
CO1	Understand and identify the fundamental concepts and various components of analog communication systems.
CO2	Explain signal to noise ratio, noise figure and noise temperature for single and cascaded stages in a communication system.
CO3	Describe analog pulse modulation techniques and digital modulation technique.
CO4	Develop the ability to compare and contrast the strengths and weaknesses of various communication systems.
Course : Object Oriented Programming Course Code: 204190	
Co. No.	Course Outcomes
CO1	Describe the principles of object oriented programming.
CO2	Apply the concepts of data encapsulation, inheritance in C++.
CO3	Understand basic program constructs in Java
CO4	Apply the concepts of classes, methods and inheritance to write programs Java.
CO5	Use arrays, vectors and strings concepts and interfaces to write programs in Java.
CO6	Describe and use the concepts in Java to develop user friendly program
Course : Employability Skill Development Course Code: 204191	
Co. No.	Course Outcomes
CO1	Have skills and preparedness for aptitude tests.
CO2	Be equipped with essential communication skills (writing, verbal and non-verbal)
CO3	Master the presentation skill and be ready for facing interviews.
CO4	Build team and lead it for problem solving.
Course : Digital Communication Course Code: 304181	

SE Sem II

TE Sem I	Co. No.	Course Outcomes	
	CO1	Understand working of waveform coding techniques and analyze their performance.	
	CO2	Analyze the performance of a baseband and pass band digital communication system in terms of error rate and spectral efficiency.	
	CO3	Perform the time and frequency domain analysis of the signals in a digital communication system.	
	CO4	Design of digital communication system.	
	CO5	Understand working of spread spectrum communication system and analyze its performance.	
	Course : Digital Signal Processing		Course Code: 304182
	Co. No.	Course Outcomes	
	CO1	Analyze the discrete time signals and system using different transform domain techniques.	
	CO2	Design and implement LTI filters for filtering different real world signals.	
	CO3	Develop different signal processing applications using DSP processor.	
	Course : Electromagnetics		Course Code: 304183
	Co. No.	Course Outcomes	
	CO1	Understand the basic mathematical concepts related to electromagnetic vector fields.	
	CO2	Apply the principles of electrostatics to the solutions of problems relating to electric field and electric potential, boundary conditions and electric energy density.	
	CO3	Apply the principles of magnetostatics to the solutions of problems relating to magnetic field and magnetic potential, boundary conditions and magnetic energy density.	
	CO4	Understand the concepts related to Faraday's law, induced emf and Maxwell's equations.	
	CO5	Apply Maxwell's equations to solutions of problems relating to transmission lines and uniform plane wave propagation.	
	Course : Microcontrollers		Course Code: 304184
	Co. No.	Course Outcomes	
	CO1	Learn importance of microcontroller in designing embedded application.	
	CO2	Learn use of hardware and software tools.	
	CO3	Develop interfacing to real world devices.	
	Course : Mechatronics		Course Code: 304185
	Co. No.	Course Outcomes	
	CO1	Identification of key elements of mechatronics system and its representation in terms of block diagram	
	CO2	Understanding basic principal of Sensors and Transducer.	
CO3	Able to prepare case study of the system given.		
Course : Electronics System Design		Course Code: 304193	
Co. No.	Course Outcomes		
CO1	Apply the fundamental concepts and working principles of electronics devices to design electronics systems.		
CO2	Shall be able to interpret datasheets and thus select appropriate components and devices		
CO3	Select appropriate transducer and signal conditioning circuit to design prototype of Data Acquisition system.		
CO4	Design an electronic system/sub-system and validate its performance by simulating the same.		
CO5	Shall be able to use an EDA tool for circuit schematic and simulation.		
CO6	Create, manage the database and query handling using suitable tools		
Course : Power Electronics		Course Code: 304186	
Co. No.	Course Outcomes		
CO1	Design & implement a triggering / gate drive circuit for a power device		
CO2	Understand, perform & analyze different controlled converters		
CO3	Evaluate battery backup time & design a battery charger.		
CO4	Design & implement over voltage / over current protection circuit.		
Course : Information Theory, Coding and Communication Networks		Code: 304187	
Co. No.	Course Outcomes		
CO1	Perform information theoretic analysis of communication system.		
CO2	Design a data compression scheme using suitable source coding technique		

	CO3	Design a channel coding scheme for a communication system.
	CO4	Understand and apply fundamental principles of data communication and networking.
	CO5	Apply flow and error control techniques in communication networks.
	Course : Business Management Course Code: 304188	
	Co. No.	Course Outcomes
	CO1	Get overview of Management Science aspects useful in business.
	CO2	Get motivation for Entrepreneurship
	CO3	Get Quality Aspects for Systematically Running the Business
	CO4	To Develop Project Management aspect and Entrepreneurship Skills.
TE Sem II	Course : Advanced Processors Course Code: 304189	
	Co. No.	Course Outcomes
	CO1	Describe the ARM microprocessor architectures and its feature.
	CO2	Interface the advanced peripherals to ARM based microcontroller
	CO3	Design embedded system with available resources
	CO4	Use of DSP Processors and resources for signal processing applications.
	Course : System Programming and Operating Systems Course Code: 304190	
	Co. No.	Course Outcomes
	CO1	Demonstrate the knowledge of Systems Programming and Operating Systems.
	CO2	Formulate the Problem and develop the solution for same.
	CO3	Compare and analyse the different implementation approach of system programming operating system abstractions.
	CO4	Interpret various OS functions used in Linux / Ubuntu
	Course : Employability Skills and Mini Project Course Code: 304196	
	Co. No.	Course Outcomes
	CO1	Understand, plan and execute a Mini Project with team.
	CO2	Implement electronic hardware by learning PCB artwork design, soldering techniques, testing and troubleshooting etc.
	CO3	Prepare a technical report based on the Mini project.
	CO4	Deliver technical seminar based on the Mini Project work carried out.
	Course : VLSI Design & Technology Course Code: 404181	
	Co. No.	Course Outcomes
	CO1	Model digital circuit with HDL, simulate & synthesis.
	CO2	Make prototype in PLDs.
	CO3	Understand CPLD & FPGA.
	CO4	Understand chip level issues and need of testability.
	CO5	Design analog & digital CMOS circuits for specified applications.
	Course : Computer Networks Course Code: 404182	
	Co. No.	Course Outcomes
	CO1	Understand fundamental underlying principles of computer networking
	CO2	Describe and analyze the hardware, software, components of a network and the interrelations.
	CO3	Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies
	CO4	Have a basic knowledge of the use of cryptography and network security
	CO5	Have a basic knowledge of installing and configuring networking applications.
	CO6	Specify and identify deficiencies in existing protocols, and then go onto select new and better protocols.
	Course : Microwave Engineering Course Code: 404183	
	Co. No.	Course Outcomes
BE Sem I	CO1	Formulate the wave equation in wave guide for analysis.
	CO2	Identify the use of microwave components and devices in microwave applications.
	CO3	Understand the working principles of all the microwave tubes
	CO4	Understand the working principles of all the solid state devices
	CO5	Choose a suitable microwave tube and solid state device for a particular application
	CO6	Carry out the microwave network analysis
	CO7	Choose a suitable microwave measurement instruments and carry out the required measurements.
	Course : Elective I - Embedded Systems & RTOS Course Code: 404184	
	Co. No.	Course Outcomes

CO1	Get insight of design metrics of Embedded systems to design real time applications to match recent trends in technology.
CO2	Understand Real time systems concepts.
CO3	Understand Linux operating system and device drivers.
CO4	Get to know the hardware – software co design issues and testing methodology for Embedded system.
Course : Elective II - Electronic Product Design Course Code: 404185	
Co. No.	Course Outcomes
CO1	Understand various stages of hardware, software and PCB design.
CO2	Importance of product test & test specifications.
CO3	Special design considerations and importance of documentation.
Course : Mobile Communication Course Code: 404189	
Co. No.	Course Outcomes
CO1	Explain and apply the concepts telecommunication switching, traffic and networks
CO2	Analyze the telecommunication traffic.
CO3	Analyze radio channel and cellular capacity.
CO4	Explain and apply concepts of GSM and CDMA system.
Course : Broadband Communication Systems Course Code: 404190	
Co. No.	Course Outcomes
CO1	Students will know the applications of OFC and Satellite communication.
CO2	Students will be able to carry out Link power budget and Rise Time Budget by proper selection of components and check its viability.
CO3	Students will be able to carry out Satellite Link design for Up Link and Down Link.
CO4	Students will know the types and applications of different satellites.
Course : Elective III - Audio Video Engineering Course Code: 404191	
Co. No.	Course Outcomes
CO1	To study the analysis and synthesis of TV Pictures, Composite Video Signal, Receiver, Picture Tubes and Television Camera Tubes.
CO2	To study the various Colour Television systems with a greater emphasis on television standards.
CO3	To study the advanced topics in Digital Television and High Definition Television.
CO4	To study audio recording systems such CD/DVD recording, Audio Standards, and Acoustics principles.
Course : Elective IV - Wireless Networks Course Code: 404192	
Co. No.	Course Outcomes
CO1	Keep himself updated on latest wireless technologies and trends in the communication field.
CO2	Students will keep them self updated with next generation wireless networks.
CO3	Students will keep them self updated with generations in mobile services
CO4	Understand the transmission of voice and data through various networks.

BE Sem II