AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER

Department of Electronics and Telecommunication Engineering

Course Outcomes

Third Year: 2015 Course			
Course Code	**Course Name**	**Course Outcomes**	
Semester- I			
304181	Digital Communication	CO1	Demonstrate working of waveform coding techniques and analyze their performance.
		CO2	Understand processing of digital data in terms of its representation, multiplexing, synchronization, scrambling and inter symbol interference.
		CO3	Examine the basic stationarity property of a random process and analyze effect on it when passed through a LTI system and understand the role of noise in communication system.
		CO4	Analyze the performance of a baseband and pass band digital communication system in terms of error rate and spectral efficiency.
		CO5	Describe working of spread spectrum communication system and analyze its performance in terms of jamming margin, processing gain and bandwidth.
		CO6	Demonstrate working of building blocks of a digital communication system and given the specifications design the block of digital communication system in a group and as an individual.
304182	Digital Signal Processing	CO1	Select proper tools for analog to digital conversion. Use concepts of trigonometry, Complex algebra, vector algebra and matrices to analyze the operations on signals and Acquire knowledge about Systems.
		CO2	Understand the use of different transforms and analyze the discrete time signals and Systems. Also compare these transforms on the basis of computational complexity.
		CO3	Use of Z transform to carry out analysis of discrete time systems. Also give its Relationship with other transforms
		CO4	Design, implementation, analysis and comparison of digital filters for processing of Discrete time signals
		CO5	Understand the real world applications of digital signal processing and Multidisciplinary team activities.
		CO6	Assess the techniques, skills, and modern engineering tools necessary for analysis of different signals and filtering out noise signals in engineering practice. Also develop Creative and innovative algorithms that achieve desired performance criteria within Specified objectives and constraints, understand the need for lifelong learning a continuing professional education.
304183	Electromagnetics	CO1	Solve the problems on Electric Field Intensity, Electric Flux Density and Electric Potential using the concepts of Del Operator, Gradient, Divergence, Curl, Coulomb's law, Gauss Law for Electrostatic environment.
		CO2	Apply the fundamentals of electrostatics to solve the problems on Boundary Conditions.
		CO3	Solve the problems on Magnetic Field Intensity, Magnetic Flux Density, Boundary Conditions using Biot–Savart‘s Law, Ampere‘s Circuit Law for Magnetostatics environment.
		CO4	Solve the problems on electrodynamic Fields using Faraday‘s law, Maxwell‘s equations and Poynting theorem.
		CO5	Apply the fundamentals of transmission line theory to solve the problems on reflection, dissipation, standing waves.
		CO6	Understand the fundamentals of uniform plane waves (UPW).
304184	Microcontrollers	CO1	Clarify the fundamentals architecture of microcontroller 8051.
		CO2	Understand the various input output peripheral devices and Recognize the use of various programming environments (IDE’s).
		CO3	Design and develop a code for interfacing to input-output peripherals with 8051.
		CO4	Review the fundamentals of architecture of PIC18F microcontroller and its basics.

		CO5	Design and develop a code for interfacing to input-output peripherals with PIC 18F.
		CO6	Build, simulate and verify real word interfacing of various input-output peripherals with microcontrollers 8051 and PICF.
304185	Mechatronics	CO1	Represent key elements of mechatronics system in terms of block diagram and determine the characteristics of the same
		CO2	Select appropriate sensor/transducer given a physical quantity to be measured
		CO3	Describe the components of hydraulic and pneumatic systems.
		CO4	Design circuits (pneumatic/hydraulic/electro-pneumatic/electro-hydraulic) for given set of specifications by choosing appropriate actuators
		CO5	Prepare case study of a given mechatronics system
		CO6	Carry out experiments as an individual and in a team using appropriate engineering tools. Comprehend and write a laboratory record following academic ethics, and draw conclusions at technical level by analysing the output.
304193	Electronic System Design	CO1	Design the Electronic circuits by applying the fundamental concepts & working principles of electronic devices.
		CO2	Compare & select appropriate components & devices by interpreting information from datasheet
		CO3	Design a prototype of Data Acquisition system by appropriate selection of transducer & signal conditioning circuits
		CO4	Design & Performance analysis of Electronic System/subsystem using EDA tools.
		CO5	Create, manage & handle the Query of Database using Suitable software tools
		CO6	Design and develop electronic system designs (SMPS, DC system, DAC and DBMS) in a team and as an individual using appropriate engineering tools. Comprehend and write laboratory record following academic ethics and, draw conclusions at technical level
Semester- II			
304186	Power Electronics	CO1	Select the appropriate power electronics device for required applications by proper analysis of their important specification, features and functional working.
		CO2	Design the AC to variable DC controlled converter for typical applications with proper analysis of various circuit configurations.
		CO3	Analyze the basic configurations of DC to variable DC converter (Inverter) and apply Fourier analysis.
		CO4	Design the AC to variable AC controlled converter and DC to variable DC (Choppers) and analyze with specific loads.
		CO5	Apply the concepts of Power electronics and resonance converters for industrial applications and energy efficient systems.
		CO6	Perform the experiments on Power Electronics Converters in a team and as an individual using appropriate engineering tools. Comprehend and write laboratory record following academic ethics and draw conclusions at technical level.
304187	Information Theory, Coding Techniques & Comm. Network	CO1	Understand fundamentals of information theory and apply algorithms of source coding techniques for data compression like Huffman coding, Shannon-Fano coding, Run length encoding and Lampel Ziv encoding techniques.
		CO2	Design a channel coding scheme for a communication system and understand error detection and correction capability.
		CO3	Design of encoder and decoder for cyclic codes using systematic and non-systematic type cyclic codes
		CO4	Understand methods of BCH and convolutional codes used in communication system.
		CO5	Understand the fundamental concepts of data communication network, physical layer and data link layer.
		CO6	To implement source and channel coding and decoding techniques using MATLAB simulation software. Also comprehend and write laboratory record.
304188	Business Management	CO1	Understand management science aspects useful for business
		CO2	Apply quality aspects for systematically running the business

		CO3	Apply different project management aspect and acquire financial management skills.
		CO4	Understand human resource management principles.
		CO5	Understand the characteristics, roles & responsibilities of entrepreneur
		CO6	Understand marketing strategies for the business.
306189	Advanced Processor	CO1	Understand applications and architectures of ARM7, ARM9, ARM11 and Tiva TM4C123G Series processors.
		CO2	Understand the architecture of LPC2148 microcontroller and its assembly language instruction set.
		CO3	Design interfacing of various input-output peripherals with LPC2148 microcontroller and understand the programming of its on-chip ADC and DAC.
		CO4	Understand the fundamentals of DSP processors and internal architecture and applications of DSP processor TMS320C67X.
		CO5	Understand the functional units, on-chip memories, instruction set, and operational features of TMS320C67X.
		CO6	Interface various input-output peripherals with LPC2148 and TMS320C6748, draw conclusions and write a laboratory record.
304190	System Programming and Operating Systems	CO1	Demonstrate the knowledge of Systems Programming and analyse the structure of OS and basic architectural components involved in OS design.
		CO2	Compare and analyse the different implementation approach of operating system Abstractions. (Process control, Threads, Scheduling,
		CO3	Understand the Mutual exclusion, Deadlock detection and agreement protocols of the operating system.
		CO4	Analyse the various memory management techniques for timesharing and Distributed systems.
		CO5	Interpret various OS functions used in Linux / Ubuntu for I/O management, Disk Scheduling and File Management.
		CO6	Implement shell scripting on Linux, lexical analyser and algorithms for job scheduling, deadlock detection and avoidance and page replacement. Also design macro pass I, Understand the need for lifelong learning and continuing professional education
304196	Employability skills & Mini Project	CO1	Understand, plan and execute a Mini Project with team
		CO2	Implement electronic hardware by learning PCB artwork design, soldering techniques, Trouble shooting
		CO3	Prepare a technical report based on Mini Project
		CO4	Deliver technical seminar based on the Mini Project work carried out