

AMRUTVAHINI COLLEGE OF ENGINEERING, SANGAMNER
Department of Electronics and Telecommunication Engineering
Course Outcomes

Second Year: 2015 Course			
Course Code	Course Name	Course Outcomes	
Semester- I			
204181	Signals and Systems	CO1	Develop the mathematical equations of continuous and discrete time signals and systems and perform fundamental specific as well as multiple operations on signals and categorize signals and systems into different categories
		CO2	Predict the output of continuous and discrete time Linear Time Invariant (LTI) systems by applying convolution integral and convolution sum methods respectively.
		CO3	Apply Fourier series for continuous and discrete time signals and decompose into equivalent components.
		CO4	Apply Fourier transform and Laplace transform for appropriate signals and perform continuous time system analysis. Also understand the basics of discrete time Fourier transform.
		CO5	Apply the basic statistical concepts and develop the ability to find probability, CDF, PDF of a given event. Also understand correlation, energy spectral density and power spectral density.
		CO6	To solve the numerical by applying concepts of Signals and Systems individually and in group through discussion and interactions.
204182	Electronic Devices and Circuits	CO1	Describe the operation of semiconductor devices FET, MOSFET and apply it for circuit designing and problem solving (Circuit Design & Analysis)
		CO2	Analyze the FET and MOSFET circuits for small signal at low and high frequencies.
		CO3	Describe different applications of MOSET
		CO4	Apply the concepts of positive and negative feedback for design of oscillator and Amplifier
		CO5	Explore different types of voltage regulators and design Adjustable regulated power supply using of LM317 & LM337
		CO6	Carry out experiments as an individual and in a team, comprehend and write a laboratory record and draw conclusions at a technical level
204183	Electrical Circuits and Machines	CO1	Analyze basic AC & DC circuit for voltage, current and power by using KVL, KCL and network theorems.
		CO2	Design and analyze transformers and their applications.
		CO3	Explain the working principle of AC machines, Select proper electrical motor for given application.
		CO4	Explain the working principle of DC machines, Select proper electrical motor for given application.
		CO5	Identify Special purpose motors and their applications
		CO6	Aware about all the types of motors their working principle which will help them to apply practically
204184	Data Structures and Algorithms	CO1	Recall the concept of algorithm; compute computational efficiency of principal algorithms of sorting and searching.
		CO2	Apply the knowledge of fundamental concepts of arrays, strings, pointers and functions in C to develop the programs.
		CO3	Describe how arrays, records and linked structures are represented in memory; and use these in programs.
		CO4	Describe the concepts of stacks and queues; and apply these for expression evaluation & conversion and recursion.
		CO5	Illustrate the terminologies and traversals of trees and graphs; and apply an algorithm for finding shortest path in a connected graph.
		CO6	Carry out experiments on data structures as an individual or team, comprehend and write a laboratory record and draw conclusions at a technical level.
204185		CO1	Design of combinational logic circuits such as adder, subtractor, Mux , Demux etc.

	Digital Electronics	CO2	Design of sequential logic circuits such as synchronous and asynchronous counter, shift register, pulse train generator.
		CO3	Design state machines for Moore & Mealy Circuit.
		CO4	Understand and Classify different types of logic family such as TTL, CMOS, and ECL and compare them.
		CO5	Understand types of semiconductor memories, PLD's & operation of microcontroller and perform programming of microcontroller.
		CO6	Apply knowledge of combinational & sequential logic circuit and implement it.
204186	Electronic Measuring Instruments and Tools	CO1	Understand operating principle, and block diagram of CRO, DSO, DMM, Spectrum Analyser, DC power supply.
		CO2	Understand specifications, features and capabilities of CRO, DSO, DMM, Spectrum Analyser, DC power supply.
		CO3	Select appropriate instrument for the measurement of electrical parameter professionally
		CO4	Analyze the measured AC and DC signal in time domain using CRO and DSO for different input configurations.
		CO5	Analyze the measured AC and DC signal in frequency domain using DRO and Spectrum Analyser for different input configurations.
		CO6	Comprehend and write a laboratory record following academic ethics.
Semester- II			
207005	Engineering Mathematics III	CO1	Solve higher order linear differential equation using approximate techniques for modelling and analysing electrical circuits.
		CO2	Solve problems related to Fourier transform, Z transform & applications to communication system & signal processing.
		CO3	Obtain interpolating polynomial, numerically differentiate & integrate functions, numerical solution of differential equation using single step & multi-step iterative method used in modern scientific computing
		CO4	Perform vector differentiation, analyze the vector field & apply to electromagnetic fields.
		CO5	Perform vector integration, analyze the vector field & apply to electromagnetic fields.
		CO6	Analyze conformal mapping, transformation & perform contour integration of complex function in the study of electrostatics & signal processing.
204187	Integrated Circuits	CO1	Understand internal structure of op amp IC and op-amp parameters like input and output offset voltage, bias current, slew rate, common mode rejection ratio.
		CO2	Design linear applications of Op-Amp such as summing amplifier, difference amplifier, integrator, differentiator, Instrumentation amplifier etc.
		CO3	Design nonlinear applications of Op-Amp such as, comparator, Schmitt trigger, precision rectifier, clipper and clampers etc.
		CO4	Explain types of signal converter, their advantages, disadvantages and design of signal converter using op-amp.
		CO5	Understand the functionalities of PLL and Design different types of active filters using op amp.
		CO6	Design and Analyze linear and nonlinear applications of Op-Amp such as integrator, differentiator, Schmitt trigger, precision rectifier and verify its operation. Also comprehend and write laboratory record.
204188	Control Systems	CO1	Model a physical system and express its internal dynamics and input output relationships by Means of block diagrams, mathematical model and transfer functions.
		CO2	Comprehend and explain the relationships between the parameters of a control system and its Stability, accuracy, transient behaviour.
		CO3	Discover the parameters that the system is sensitive to. Determine the stability of a system and Parameter ranges for a desired degree of stability.
		CO4	Plot the Bode plot, Nyquist plot, Root Locus diagrams for a given control system and Recognize the Parameters to carry out the stability analysis.
		CO5	Model and analyze the control systems using state space analysis.
		CO6	Design a P, PD, PI, or PID controller based on the transient and steady state response criteria, Investigate sampled data systems for stability and response and acquire knowledge of the PLC. To apply for real world problems.

204189	Analog Communication	CO1	Analyze the techniques of generation, transmission and reception of amplitude modulation (AM) and evaluate the performance of AM system in presence of additive white noise.
		CO2	Analyze the techniques of generation, transmission and reception of frequency modulation (FM) and Phase Modulation.
		CO3	Compute signal to noise ratio, noise figure and noise temperature for single and cascaded stages of an amplifier in an analog communication system
		CO4	Describe components of an analog pulse modulation techniques and digital modulation technique.
		CO5	Describe and identify the various components of given analog communication system and develop the ability to compare various analog communication systems
204190	Object Oriented Programming	CO1	Describe the basic concepts of object oriented programming and apply basic program construct in C++.
		CO2	Apply the concepts of object oriented programming in C++.
		CO3	Understand and apply the basic program construct in Java.
		CO4	Apply the concepts of classes, methods and objects to write programs Java.
		CO5	Implement inheritance, package, interfaces, multithreading, exception handling and applets in Java programs.
		CO6	Carry out experiments on object oriented programming, comprehend and write a laboratory record, and draw conclusions at a technical level.
204191	Employability Skill Development	CO1	Demonstrate essential communication skills (resume writing, verbal and non-verbal)
		CO2	Acquire Arithmetic and Mathematical Reasoning skills for aptitude tests.
		CO3	Acquire Analytical Reasoning and Quantitative Ability skills for aptitude tests.
		CO4	Develop English writing skills through different methods.
		CO5	Present the soft skills and develop preparedness for facing interviews.
		CO6	Build team and lead it for problem solving.