



ADITYA ENGINEERING COLLEGE

An Autonomous Institution

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Recognised by UGC under sections 2(f) and 12(B) of UGC Act, 1956

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Department of Electronics and Communication Engineering

B.Tech - AR20 - Course Articulation Matrix

Note: Correlation Levels are 1 or 2 or 3. Where 1- Slight(Low), 2 - Moderate(Medium), 3 - Substantial (High).

	CO Statements	POs												PSOs	
Course Code	201BS1T04 - ENGINEERING CHEMISTRY	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Compare the quality of drinking water and problems associated with hard water	3	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	Explain the fundamentals and applications of Electrochemical Energy Systems	2	-	-	-	-	-	-	-	-	-	-	-	-	-
CO3	Explain the fundamentals and applications of Advance materials.	3	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	Explain about renewable energy sources and their manufacturing methods	2	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	Summarize the importance of Nano materials and Green chemistry.	3	-	-	-	-	-	-	-	-	-	-	-	-	-
Course Code	201ES1T02 - PROGRAMMING FOR PROBLEM SOLVING USING C	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Illustrate the fundamental concepts of computers and basics of computer programming	2	3	2	-	2	-	-	-	-	-	-	2	-	-
CO2	Make use of control structures and arrays in solving complex problems.	3	2	1	-	-	-	-	-	-	-	-	2	-	-
CO3	Develop modular program aspects and strings fundamentals	2	2	3	-	-	-	-	-	-	-	-	1	-	-
CO4	Demonstrate the ideas of pointers usage.	2	3	1	-	-	-	-	-	-	-	-	2	-	-
CO5	Solve real world problems using the concept of structures, unions and File operations.	3	2	2	-	-	-	-	-	-	-	-	2	-	-
Course Code	201ES1I01 - ENGINEERING GRAPHICS AND DESIGN	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Make use of fundamentals of Engineering Drawing to sketch basic curves, conic sections, cycloid and involute.	2	-	-	-	-	-	-	-	-	3	-	1	-	-
CO2	Apply the principles of orthographic projections for points, lines and planes.	2	-	-	-	-	-	-	-	-	3	-	1	-	-
CO3	Apply the principles of orthographic projections for solids.	2	-	-	-	-	-	-	-	-	3	-	1	-	-
CO4	Explain the basic functions of drawing software.	2	-	-	-	2	-	-	-	-	3	-	1	-	-

	CO Statements	POs												PSOs	
CO5	Apply the software for the orthographic projection of the machine parts.	2	-	-	-	2	-	-	-	-	3	-	1	-	-
Course Code	201HS1L01 - COMMUNICATIVE ENGLISH LAB	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Make use of the concepts to communicate confidently and competently in English Language in all spheres.	-	-	-	-	1	-	-	-	-	3	-	1	-	-
CO2	Express Creative skills to construct Dialogues / Conversations in Spoken and Written forms.	-	-	-	-	1	-	-	-	-	3	-	2	-	-
CO3	Identify Accent for intelligibility	-	-	-	-	1	-	-	-	-	3	-	2	-	-
CO4	Demonstrate communicative ability in everyday Conversation, JAM Sessions and Public Speaking.	-	-	-	-	1	-	-	-	-	3	-	1	-	-
CO5	Demonstrate nuances of Language through Audio – Visual Experience and group activities.	-	-	-	-	1	-	-	-	-	3	-	1	-	-
Course Code	201BS1L03 - ENGINEERING CHEMISTRY LAB	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Analyze & generate experimental skills	2	-	-	-	-	-	-	-	1	1	-	1	-	-
CO2	Calculate the hardness of water.	2	-	-	-	-	-	-	-	1	1	-	1	-	-
CO3	Calculate the strength of acids & bases by instrumental analysis.	2	-	-	-	-	-	-	-	1	1	-	1	-	-
CO4	Prepare advanced polymer materials.	2	-	-	-	-	-	-	-	1	1	-	1	-	-
CO5	Prepare alternative fuel like Bio-Diesel.	2	-	-	-	-	-	1	-	1	1	-	1	-	-
Course Code	201ES1L02 - PROGRAMMING FOR PROBLEM SOLVING USING C LAB	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Develop the basic programs in C and draw the flowcharts using Raptor	2	1	-	-	3	-	-	-	-	2	-	-	-	-
CO2	Make use of conditional and iterative statements to solve real time scenarios in C	3	2	-	-	-	-	-	-	-	-	1	2	-	-
CO3	Apply the concept of arrays, modularity and strings to handle complex problems.	3	2	-	-	-	-	-	-	-	-	1	2	-	-

	CO Statements	POs												PSOs	
CO4	Apply the dynamic memory allocation functions using pointers	2	3	-	-	-	-	-	-	-	2	-	1	-	-
CO5	Develop programs using structures, and Files.	3	2	-	-	-	-	-	-	-	-	2	2	-	-
Course Code	201MC1A01 - ENVIRONMENTAL SCIENCE	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Outline the natural resources and their importance for the sustenance of the life.	-	-	-	-	-	1	2	-	-	-	-	-	-	-
CO2	Explain about the biodiversity of India, threats and its conservation methods.	-	-	-	-	-	1	2	-	-	-	-	-	-	-
CO3	Illustrate various attributes of the pollution, impacts and measures to control the pollution along with waste management practices.	-	-	-	-	-	1	2	-	-	-	-	-	-	-
CO4	Describe social issues of both rural and urban environment to combat the challenges and the legislations of India in environmental protection.	-	-	-	-	-	1	2	-	-	-	-	-	-	-
CO5	Explain the population growth and its implications.	-	-	-	-	-	1	2	-	-	-	-	-	-	-

II SEM

	CO Statements	POs												PSOs	
CO2	Apply Laplace transform to solve Initial value problems.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO3	Compute the Fourier series of a given function and study the convergence of the series.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO4	Compute the Fourier transforms for certain functions and apply the properties of Fourier transforms.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
CO5	Compute the Z- transforms for certain functions and apply the properties of Z- transforms to solve difference equations.	3	2	-	-	-	-	-	-	-	-	-	-	-	-
Course Code	201ES2I03- OBJECT ORIENTED PROGRAMMING THROUGH JAVA	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Apply object oriented programming features and concepts for solving given problem.	3	2	2	-	-	-	-	-	-	-	-	-	-	-
CO2	Solve real time problems using the concepts of class, inheritance, interface and packages.	2	2	3	-	-	-	-	-	-	-	-	-	-	-
CO3	Develop GUI applications using event handlers, adapter classes, awt and swings.	2	2	3	-	-	-	-	-	-	-	-	-	-	-
CO4	Test for runtime exceptions arise in java applications.	2	1	1	-	-	-	-	-	-	-	-	-	-	-
CO5	Develop real time applications using multithreading and I/O streams.	2	3	2	-	-	-	-	-	-	-	-	-	-	-
Course Code	201ES2T10 -BASIC ELECTRICAL ENGINEERING	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain about the working principle of DC Motor.	2	1	-	2	-	-	-	-	-	-	1	-	1	-
CO2	Summarize the working principle of DC generator.	2	1	-	-	-	-	2	-	-	-	-	-	-	1
CO3	Explain the working and construction of single-phase transformer, efficiency and regulation using OS and SC test.	2	1	-	-	-	-	3	-	-	-	2	-	1	-
CO4	Explain the working of three phase induction motor, efficiency and starting methods.	2	1	-	-	-	-	3	-	-	-	2	-	1	-
CO5	Analyze the basic principle of single-phase induction motor using double field revolving theory and cross field theory.	3	2	2	-	-	-	-	-	-	-	-	-	1	-
CO6	Analyze the concept of special electrical machines.	2	1	-	-	-	-	3	-	-	-	-	-	-	1
Course Code	201ES2T14-NETWORK ANALYSIS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Analyze circuits using direct application of Kirchhoff's Current and Voltage laws along with Ohms Law.	3	2	2	-	-	-	-	-	-	-	-	2	3	-

	CO Statements	POs												PSOs	
CO2	Apply phasor analysis to AC circuits in sinusoidal steady state.	3	2	2	-	-	-	-	-	-	-	-	1	3	-
CO3	Interpret the significance of resonant and non resonant circuits.	3	2	1	-	-	-	-	-	-	-	-	1	2	-
CO4	Analyze circuits using network theorems.	3	2	2	-	-	-	-	-	-	-	-	2	2	-
CO5	Explain parameters of two-port networks.	3	2	2	-	-	-	-	-	-	-	-	1	2	-
CO6	Apply transient conditions for any first order and second order systems.	3	2	2	-	-	-	-	-	-	-	-	1	2	-
Course Code	201BS2L04-APPLIED PHYSICS LAB	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Use spectrometer, travelling microscope for making measurements.	3	2	-	-	-	-	-	-	1	-	-	1	-	-
CO2	Determine energy gap of a semiconductor, draw characteristic curvesto estimate thermal coefficient of a thermistor, Zener diode.	2	2	-	-	-	-	-	-	1	-	-	1	-	-
CO3	Determine the dielectric constant and resistivity.	3	1	-	-	-	-	-	-	1	-	-	1	-	-
CO4	Determine wavelength of source and width of the narrow slits.	3	2	-	-	-	-	-	-	1	-	-	1	-	-
CO5	Find the strength of magnetic field.	3	2	-	-	-	-	-	-	1	-	-	1	-	-
Course Code	201ES2L08 - ELECTRONICS ENGINEERING WORKSHOP	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Find the values of Resistance /capacitance by using color coding.	3	-	-	-	-	-	-	-	2	-	-	1	1	-
CO2	Demonstrate the working of power supply and cathode ray oscilloscope.	3	1	-	-	-	-	-	-	2	-	-	1	2	-
CO3	Use testing and measuring instruments for different applications.	3	2	-	-	-	-	-	-	2	-	-	1	3	-
CO4	Design PCBs for simple applications.	3	2	-	-	-	-	-	-	2	-	-	1	3	-
CO5	Demonstrate the working of sensors.	3	1	-	-	-	-	-	-	2	-	-	1	2	-

	CO Statements	POs												PSOs	
CO4	Compare the decentralization of power between central, state and local selfgovernment.	-	-	-	-	-	1	-	-	-	-	-	-	-	-
CO5	Extend the knowledge in strengthening of the constitutional institutions like CAG, Election Commission and UPSC for sustaining democracy.	-	-	-	-	-	1	-	-	-	-	-	-	-	-

III SEM

Course Code	201BS3T10-NUMERICAL METHODS AND VECTOR CALCULUS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Apply numerical methods to solve equations and interpolation of polynomials.	3	2	-	-	-	-	-	-	-	-	-	2	-	-
CO2	Apply numerical methods to initial value problems and problems involving integration.	3	2	-	-	-	-	-	-	-	-	-	2	-	-
CO3	Compute double integral over a region and triple integral over a volume.	3	2	-	-	-	-	-	-	-	-	-	2	-	-
CO4	Compute the gradient of a scalar function, divergence and curl of a vector function.	3	2	-	-	-	-	-	-	-	-	-	2	-	-
CO5	Apply line, surface and volume integrals.	3	2	-	-	-	-	-	-	-	-	-	2	-	-
Course Code	201EC3T01-ELECTRONIC DEVICES AND CIRCUITS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Interpret the characteristics of semiconductor diodes	3	2	2	-	-	-	-	-	-	-	-	1	3	-
CO2	Compare the characteristics of rectifiers with and without filters.	3	2	2	-	-	-	-	-	-	-	-	1	3	-
CO3	Explain the characteristics of BJT and FET in different configurations.	3	2	1	-	-	-	-	-	-	-	-	1	2	-
CO4	Apply biasing methods for stabilization of BJT and FET amplifiers	2	2	2	-	-	-	-	-	-	-	-	1	2	-
CO5	Construct a small signal low frequency equivalent model of BJT and FET.	2	2	1	-	-	-	-	-	-	-	-	1	2	-
Course Code	201EC3T02-SIGNALS AND SYSTEMS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Apply the knowledge of linear algebra topics like vector space, dot product and orthogonal basis to signals.	3	1	-	-	-	-	-	-	-	-	-	2	2	-
CO2	Analyze the spectral characteristics of continuous-time periodic and aperiodic signals using Fourier analysis.	2	2	1	-	-	-	-	-	-	-	-	1	2	-

	CO Statements	POs												PSOs	
Course Code	CO Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO3	Apply convolution and correlation for signal generation and signal extraction.	2	2	2	-	-	-	-	-	-	-	-	2	3	-
CO4	Classify the systems based on their properties and determine the response of LTI Systems.	2	2	1	-	-	-	-	-	-	-	-	1	3	-
CO5	Apply Laplace and Z-transform techniques for the analysis of continuous-time and discrete-time signals and Systems.	2	2	2	-	-	-	-	-	-	-	-	2	3	-
CO6	Utilize the concept of sampling theorem in communication systems.	2	2	1	-	-	-	-	-	-	-	-	2	3	-
Course Code	201EC3T03-DIGITAL ELECTRONICS AND LOGIC DESIGN	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Interpret numeric information in different code formats.	3	2	1	-	-	-	-	-	-	-	-	1	2	-
CO2	Develop optimized logic by using various optimization algorithms.	2	2	2	-	-	-	-	-	-	-	-	1	3	-
CO3	Design various combinational logic circuits for required specifications.	2	2	2	-	-	-	-	-	-	-	-	1	3	-
CO4	Design different sequential logic circuits for required specifications.	2	2	2	-	-	-	-	-	-	-	-	1	3	-
CO5	Evaluate different Finite State Machines (FSMs).	2	2	2	-	-	-	-	-	-	-	-	1	2	-
Course Code	201EC3T04-RANDOM VARIABLES AND STOCHASTIC PROCESSES	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Summarize the characteristics of standard random variables.	3	2	-	-	-	-	-	-	-	-	-	-	3	-
CO2	Compare the random variables with respect to moments.	3	2	1	-	-	-	-	-	-	-	-	-	2	-
CO3	Develop multiple random variable with the help of single random variable	2	2	1	-	-	-	-	-	-	-	-	-	3	-
CO4	Categorize the random processes in time domain.	2	2	-	-	-	-	-	-	-	-	-	-	2	-
CO5	Analyze the LTI system response with random inputs.	2	2	2	1	-	-	-	-	-	-	-	-	2	-
Course Code	201EC3L01-ELECTRONIC DEVICES AND CIRCUITS LAB	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Examine the functional characteristics of semiconductor devices.	2	1	-	-	-	-	-	-	2	1	-	-	2	-

	CO Statements	POs												PSOs	
CO2	Design rectifier and regulator circuits using basic semiconductor devices.	3	2	-	-	-	-	-	-	2	1	-	-	3	-
CO3	Examine the characteristics of transistor in different configurations.	3	2	-	-	-	-	-	-	2	1	-	-	3	-
CO4	Analyze the frequency response of small signal low frequency amplifiers.	3	2	-	-	-	-	-	-	2	1	-	-	3	-
CO5	Describe the behavior of negative resistance devices	3	2	-	-	-	-	-	-	2	1	-	-	2	-
Course Code	201EC3L02-SIGNALS AND SYSTEMS LAB	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Apply basic signal processing concepts on signals.	2	2	-	-	-	-	-	-	1	-	-	1	3	-
CO2	Analyze generation of various signals.	2	1	-	-	-	-	-	-	1	-	-	1	3	-
CO3	Analyze the various methodologies for signal generation and extraction.	2	2	-	-	-	-	-	-	1	-	-	1	3	-
CO4	Explain LTI properties of a given system.	2	2	-	-	-	-	-	-	1	-	-	1	3	-
CO5	Analyze Laplace, Fourier and Z- Transform of the given signal, and also plotting its magnitude and phase spectrum	2	2	-	-	-	-	-	-	1	-	-	1	2	-
Course Code	201EC3L03-DIGITAL ELECTRONICS AND LOGIC DESIGN LAB	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Choose an appropriate logic gate for the design of digital circuits.	2	2	-	-	-	-	-	-	2	-	-	1	3	-
CO2	Develop circuits to verify Boolean theorem's	2	2	-	-	-	-	-	-	2	-	-	1	3	-
CO3	Construct combinational logic circuits.	2	2	-	-	-	-	-	-	2	-	-	1	3	-
CO4	Interpret the behavior of flip-flops for different combination of inputs.	2	2	-	-	-	-	-	-	2	-	-	1	3	-
CO5	Build registers and counters using flip flops.	2	2	-	-	-	-	-	-	2	-	-	1	3	-
Course Code	201SC3L04-PYTHON PROGRAMMING	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Develop programs using conditional and iterative statements.	-	2	3	-	2	-	-	-	-	-	-	2	-	-

	CO Statements	POs												PSOs	
CO2	Make use of different data structures, comprehensions and generators in solving complex problems.	-	2	3	-	2	-	-	-	-	-	-	2	-	-
CO3	Apply the concepts of functions.	-	3	2	-	2	-	-	-	-	-	-	2	-	-
CO4	Build applications for handling exceptions.	-	3	2	-	2	-	-	-	-	-	-	2	-	-
CO5	Apply the concepts of File I/O.	-	1	2	-	3	-	-	-	-	-	-	2	-	-
Course Code	201MC3T03-BIOLOGY FOR ENGINEERS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Apply biological engineering principles, procedures needed to solve real-world problems.	1	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	Demonstrate the fundamentals of living things, their classification, cell structure and biochemical constituents.	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO3	Apply the concept of plant, animal and microbial systems and growth in real life Situations.	1	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	Explain genetics and the immune system to know the cause, symptoms, diagnosis and treatment of common diseases.	1	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	Demonstrate basic knowledge of the applications of biological systems in relevant industries.	1	-	-	-	-	-	-	-	-	-	-	-	-	-

IV SEM

	Course Code	POs												PSOs	
	201ES4T19-LINEAR CONTROL SYSTEMS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Develop the overall transfer function using block diagram algebra and signal flow graphs.	2	1	1	-	-	-	-	-	-	-	-	-	3	-
CO2	Identify time response specifications, error constants of second order systems.	2	2	1	1	-	-	-	-	-	-	-	-	2	-
CO3	Analyze absolute and relative stability of LTI systems using Routh's stability criterion and the root locus method.	2	2	-	-	-	-	-	-	-	-	-	-	2	-
CO4	Analyze the stability of LTI systems using frequency response methods.	2	2	2	1	-	-	-	-	-	-	-	-	2	-
CO5	Develop state models for physical systems.	2	2	1	1	-	-	-	-	-	-	-	-	2	-

	CO Statements	POs												PSOs	
C05	Illustrate the noise performance in Analog Modulation techniques and also the concepts of Pulse Analog Modulation and Demodulation techniques.	3	1	1	1	-	-	-	-	-	-	-	-	3	-
Course Code	201HS4T03-MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Explain the Managerial Economic concepts for decision making and forward planning.	-	-	-	-	-	-	-	-	1	-	-	-	-	1
CO2	Illustrate the law of demand and its exceptions by using different forecasting methods.	-	-	-	-	-	-	-	-	-	2	-	-	-	1
CO3	Identify the cost behavior for managerial decision making and Break Even Point (BEP) of an enterprise	-	-	-	-	-	-	-	-	-	-	3	-	-	1
CO4	Classify the different types of business organizations along with basic knowledge on business cycle.	-	-	-	-	-	-	-	-	-	-	1	-	-	1
CO5	Make use of the process & principles of accounting for the preparation of final accounts.	-	-	-	-	-	-	-	-	-	3	-	-	-	1
CO6	Utilize various techniques on investment project proposals with the help of capital budgeting techniques for decision making.	-	-	-	-	-	-	-	-	-	-	2	-	-	1
Course Code	201EC4L04-ELECTRONIC CIRCUIT ANALYSIS LAB	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Determine the frequency response, impedance and Q-point of different types of multi stage amplifiers.	3	2	-	-	1	-	-	-	2	-	-	-	3	-
CO2	Construct voltage and current feedback amplifiers for given specifications.	2	2	-	-	1	-	-	-	1	-	-	-	2	-
CO3	Analyze LC and RC types of oscillators for given specifications.	2	2	-	-	2	-	-	-	2	-	-	-	3	-
CO4	Analyze the efficiency of class A power amplifier for given specifications.	2	1	-	-	-	-	-	-	2	-	-	-	2	-
CO5	Determine the frequency response of single tuned amplifier for given specifications.	2	2	-	-	1	-	-	-	1	-	-	-	2	-
Course Code	201EC4L05-INTEGRATED CIRCUITS AND APPLICATIONS LAB	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Experiment with Op-Amp circuits for linear and non linear applications with the given specifications.	3	2	2	-	-	-	-	-	2	-	-	-	3	-
CO2	Design Butterworth filters using Op-Amps with given specification.	2	2	1	-	-	-	-	-	2	-	-	-	2	-

	CO Statements	POs												PSOs	
Course Code	201EC4L06-ANALOG COMMUNICATION LAB	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO3	Design Waveform Generator using IC555 with variable duty cycle.	3	2	2	-	-	-	-	-	2	-	-	-	2	-
CO4	Evaluate Capture and Lock range using PLL.	2	2	1	-	-	-	-	-	2	-	-	-	3	-
CO5	Design Dual Power Supply using 78XX and 79XX.	2	2	1	-	-	-	-	-	2	-	-	-	2	-
CO1	Demonstrate analog, pulse analog modulation and demodulation for baseband signal.	3	2	-	-	2	-	-	-	2	-	-	-	2	-
CO2	Infer mixer and receiver characteristics.	2	2	-	-	2	-	-	-	2	-	-	-	2	-
CO3	Interpret frequency response of pre-emphasis and de-emphasis circuits.	2	2	-	-	2	-	-	-	2	-	-	-	2	-
CO4	Demonstrate different types of sampling and reconstruction circuits.	2	1	-	-	2	-	-	-	2	-	-	-	2	-
CO5	Identify frequency spectra of AM/FM modulated signal using spectrum analyzer.	2	2	-	-	2	-	-	-	2	-	-	-	3	-
CO6	Test for the functionality of all experiments using MATLAB.	2	2	-	-	2	-	-	-	2	-	-	-	3	-
Course Code	201EC4S02 -PCB DESIGNING	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	Demonstrate the equipment and components used in PCB design.	3	2	-	-	-	-	-	-	2	-	-	-	1	2
CO2	Apply the different procedural steps for PCB preparation.	2	2	-	-	-	-	-	-	2	-	-	-	1	2
CO3	Make use of chemicals for Etching and Soldering gun for components mounting.	2	2	-	-	-	-	-	-	2	-	-	-	1	2
CO4	Construct PCB for different circuits.	2	2	-	-	-	-	-	-	2	-	-	-	1	2
CO5	Identify the faults in the designed board.	2	2	-	-	-	-	-	-	2	-	-	-	1	2

