

BHARATHIYAR INSTITUTE OF ENGINEERING FOR WOMEN, DEVIYAKURICHI
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATION : 2021

Course/Branch	:	B.E. / ECE	Subject Title	:	Professional English – I
Subject Code	:	HS3151	Year/Semester	:	I/I

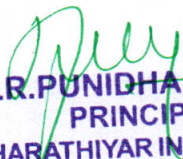
Course Outcomes:

Students must be able to

C101.1	Listen, Comprehend and Correspond with others at various contexts
C101.2	Speak legibly and fluently under various life-time situations by applying proper communication modules
C101.3	Read and understand a variety of writings and technical text by analyzing the meaning and language
C101.4	Apply clear and legible writing skills in error free style in coherent manner
C101.5	Remember and use various communicative skills in precise and efficient way on technological contexts
C101.6	Form situational conversations and technical writing styles for interpersonal and effective communication

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C101.1	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C101.2	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C101.3	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C101.4	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C101.5	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C101.6	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C101	-	-	-	-	-	-	-	-	3	3	-	2	-	-


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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATION : 2021

Course/Branch	:	B.E. / ECE	Subject Title	:	Matrices and Calculus – I
Subject Code	:	MA3151	Year/Semester	:	I/I

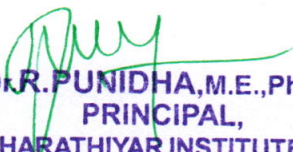
Course Outcomes:

Students must be able to

C102.1	Determine the Eigen values, Eigen vectors to diagonalize a matrix and reduce quadratic form to canonical form.
C102.2	Apply the concept of limits, continuity, rules of differentiation, and techniques of differentiation to differentiate standard functions.
C102.3	Apply the concepts of Concavity, Convexity to determine the critical points, point of Inflection, Maxima and Minima of Single variable functions.
C102.4	Compute the derivatives of functions of two variables and apply them to calculate the maxima and minima.
C102.5	Determine integrals using techniques of integration, such as substitution, partial fractions and integration by parts.
C102.6	Apply various techniques to solve higher order differential equations with constant and variable Coefficients

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C102.1	3	2	1	-	-	-	-	1	1	-	-	-	2	-
C102.2	3	2	1	-	-	-	-	1	1	-	-	-	2	-
C102.3	3	2	1	-	-	-	-	1	1	-	-	-	2	-
C102.4	3	2	1	-	-	-	-	1	1	-	-	-	2	-
C102.5	3	2	1	-	-	-	-	1	1	-	-	-	2	-
C102.6	3	2	1	-	-	-	-	1	1	-	-	-	2	-
C102	3	2	1	-	-	-	-	1	1	-	-	-	2	-


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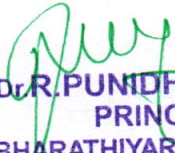
Course/Branch	:	B.E. / ECE	Subject Title	:	Engineering Physics
Subject Code	:	PH3151	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C103.1	Demonstrate the properties of elasticity and measure the different moduli of elasticity
C103.2	Discuss the characteristics of laser and optical fiber
C103.3	Explain the concepts of ultrasonics in engineering
C103.4	Explain black body radiation, properties of matter waves and Schrodinger equation
C103.5	Classify the Bravais lattices and different types of crystal structures
C103.6	Summarize the information on growth of crystals and deformations

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C103.1	2	-	1	-	-	-	-	-	-	-	-	-	1	-
C103.2	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C103.3	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C103.4	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C103.5	-	-	1	-	-	-	-	-	-	-	-	-	1	-
C103.6	2	1	-	-	-	-	-	1	1	1	-	-	1	-
C103	2	1	1	-	-	-	-	1	1	1	-	-	1	-


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	Subject Title	:	Engineering Chemistry
Subject Code	:	CY3151	Year/Semester	:	I/I

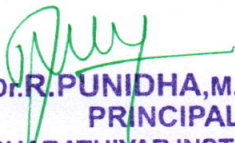
Course Outcomes:

Students must be able to

C104.1	Determine the hardness of water and explain the water treatment methods.
C104.2	Define nanochemistry and its types and process of synthesizing nanoparticles
C104.3	Describe the phase diagram of one component and two component system and various methods of heat treatment of steel.
C104.4	Classify the various types of fuels by their characteristics and explain the flue gas analysis by Orsat method.
C104.5	Illustrate the working of Lead acid battery, lithium ion battery and fuel cell.
C104.6	Apply Nernst equation to determine the EMF of the cell and explain various corrosion control methods.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C104.1	3	3	3	3	2	-	-	-	-	-	2	2	-	-
C104.2	3	3	3	3	2	-	-	-	-	-	2	2	-	-
C104.3	3	3	3	3	2	-	-	-	-	-	2	-	-	-
C104.4	3	3	-	-	2	-	-	-	-	-	-	-	-	-
C104.5	3	-	-	-	2	-	-	-	-	-	-	-	-	-
C104.6	3	-	-	-	2	-	-	-	-	-	-	-	-	-
C104	3	3	3	3	2	-	-	-	-	-	2	2	-	-


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Course/Branch	:	B.E. / ECE	Subject Title	:	Problem Solving and Python Programming
Subject Code	:	GE3151	Year/Semester	:	I/I


Course Outcomes:

Students must be able to

C105.1	Explain Components of a Computer System, types of programming languages, types of software with examples and purpose.
C105.2	Perform problem analysis, use algorithms and prepare flow charts, pseudo code for solving simple problems.
C105.3	Use Conditional, iteration constructs of python programming and apply to solve simple problems
C105.4	Use Functions, recursive function, String functions in python programming and apply to perform linear and binary search
C105.5	Explain the various operations for manipulating Tuples, Dictionaries and Use List toper form simple and sorting operations
C105.6	Explain file handling operations, exception handling, modules and packages and illustrate programs for word count, file copy, merge operations and exception handling.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C105.1	3	2	-	-	-	-	-	-	-	-	-	-	2	1
C105.2	3	2	-	-	-	-	-	-	-	-	-	-	2	1
C105.3	3	2	1	-	-	-	-	-	-	-	-	-	2	1
C105.4	3	2	1	-	-	-	-	-	-	-	-	-	2	1
C105.5	3	2	1	-	-	-	-	-	-	-	-	-	2	1
C105.6	3	2	1	-	-	-	-	-	-	-	-	-	2	1
C105	3	2	1	-	-	-	-	-	-	-	-	-	2	1


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Course/Branch	: B.E. / ECE	Subject Title	: Problem Solving And Python Programming Laboratory
Subject Code	: GE3171	Year/Semester	: I/I


Course Outcomes:

Students must be able to

C106.1	Develop simple Python programs using conditional and iterative constructs
C106.2	Develop simple Python programs using built-in functions and user-defined functions
C106.3	Develop a Python program using recursion to implement linear and binary search
C106.4	Develop a Python program using list to implement selection and insertion sort
C106.5	Develop Python programs to implement matrix operations
C106.6	Develop a Python program to implement file handling

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C106.1	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C106.2	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C106.3	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C106.4	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C106.5	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C106.6	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C106	3	2	1	-	1	-	-	-	-	-	-	-	2	1


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Course/Branch	: B.E. / ECE	Subject Title	: Physics and Chemistry Laboratory
Subject Code	: BS3171	Year/Semester	: I/I


Course Outcomes:

Students must be able to

C107.1	Calculate rigidity modulus and Young's modulus of a given material.
C107.2	Examine the size of a given particle, parameters of optical fiber and compute the thickness of a given thin wire.
C107.3	Discover the velocity of ultrasound, compressibility of a given liquid and band gap of a given semiconductor diode.
C107.4	Estimate the Chemical quality parameter of a water sample.
C107.5	Estimate the strength of acid by conductometric and pH metric titration.
C107.6	Estimate the amount of iron content in a given solution using potentiometer

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C107.1	3	2	1	-	-	-	-	1	1	1	-	-	1	-
C107.2	3	2	1	-	-	-	-	1	1	1	-	-	1	-
C107.3	3	2	1	-	-	-	-	1	1	1	-	-	1	-
C107.4	3	2	1	-	-	-	-	1	1	1	-	-	1	-
C107.5	3	2	1	-	-	-	-	1	1	1	-	-	1	-
C107.6	3	2	1	-	-	-	-	1	1	1	-	-	1	-
C107	3	2	1	-	-	-	-	1	1	1	-	-	1	-


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Course/Branch	:	B.E. / ECE	Subject Title	:	Professional English – II
Subject Code	:	HS3251	Year/Semester	:	I/II


Course Outcomes:

Students must be able to

C108.1	Listen, Understand and create technical correspondence at advanced level.
C108.2	Respond or answer to the contextual questions, interview questions, form instructions, draft reports
C108.3	Speak and analyze social issues, come out with effective ideas for discussion, understand the passages for meaning and vocabulary
C108.4	Assess error free technical writings, create legible and coherent technical papers, derive ideas of the given texts in a precise form
C108.5	Remember the updated elements of communication skills, nuances of non- verbal communication, business communication
C108.6	Create technical instructions, process instructions, self-appraisals, Resumes, reports on various situations

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C108.1	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C108.2	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C108.3	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C108.4	-	-	-	-	-	-	-	-	2	3	-	2	-	-
C108.5	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C108.6	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C108	-	-	-	-	-	-	-	-	3	3	-	2	-	-


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	Subject Title	:	Statistics and Numerical Methods
Subject Code	:	MA3251	Year/Semester	:	I/II


Course Outcomes:

Students must be able to

C109.1	Determine the Laplace transform of standard functions using properties
C109.2	Apply Laplace transform and inverse transform to solve the initial value problems
C109.3	Solve the multiple integrals and apply the concept to find areas, volumes
C109.4	Determine the line, surface and volume integrals using Green's, Gauss and Stokes theorems
C109.5	Determine Analytic functions, Bilinear Transformations and apply the concept of conformal mapping to find the images of given curves.
C109.6	Determine the Contour Integrals using Cauchy's Integral and Residue theorems.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C109.1	3	2	1	-	-	-	-	1	1	-	-	-	-	-
C109.2	3	2	1	-	-	-	-	1	1	-	-	-	-	-
C109.3	3	2	1	-	-	-	-	1	1	-	-	-	-	-
C109.4	3	2	1	-	-	-	-	1	1	-	-	-	1	-
C109.5	3	2	1	-	-	-	-	1	1	-	-	-	1	-
C109.6	3	2	1	-	-	-	-	1	1	-	-	-	1	-
C109	3	2	1	-	-	-	-	1	1	-	-	-	1	-


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REGULATION : 2021

Course/Branch	: B.E. / ECE	Subject Title	: Physics for Electronics Engineering
Subject Code	: PH3254	Year/Semester	: I/II

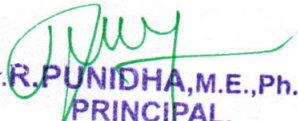
Course Outcomes:

Students must be able to

C110.1	Illustrate the basics of crystallography and its importance in materials
C110.2	Describe the electrical properties of materials including free electron theory
C110.3	Discuss the applications of quantum mechanics and magnetic materials
C110.4	Instil the knowledge on physics of semiconductors, determination of charge carriers and device applications
C110.5	Establish a sound grasp of knowledge on different optical properties of materials and its applications
C110.6	Inculcate an idea of significance of nano structures, quantum confinement and ensuing nano device applications

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C110.1	3	1	1	-	-	-	-	2	1	-	-	-	1	-
C110.2	3	1	1	-	-	-	-	2	1	-	-	-	1	-
C110.3	3	1	1	-	-	-	-	2	1	-	-	-	1	-
C110.4	3	1	1	-	-	-	-	2	1	-	-	-	1	-
C110.5	3	1	1	-	-	-	-	2	1	-	-	-	1	-
C110.6	3	1	1	-	-	-	-	2	1	-	-	-	1	-
C110	3	1	1	-	-	-	-	2	1	-	-	-	1	-


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	Subject Title	:	Electrical and Instrumentation Engineering
Subject Code	:	BE3254	Year/Semester	:	I/II


Course Outcomes:

Students must be able to

C111.1	Explain the working principles of electrical machines
C111.2	Analyze the output characteristics of electrical machines
C111.3	Impart knowledge in types, construction and working od AC rotating machines
C111.4	Basic knowledge to choose appropriate electrical machines for various applications
C111.5	Introduce the functional elements and working of measuring instruments
C111.6	Establish a sound grainroduce the basics of power system and protection schemes

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C111.1	3	2	1	1	-	-	-	2	-	-	-	2	2	-
C111.2	3	2	1	1	-	-	-	2	-	-	-	2	2	-
C111.3	3	2	1	1	-	-	-	2	-	-	-	2	2	-
C111.4	3	2	1	1	-	-	-	2	-	-	-	2	2	-
C111.5	3	2	1	1	-	-	-	2	-	-	-	2	2	-
C111.6	3	2	1	1	-	-	-	2	-	-	-	2	2	-
C111	3	2	1	1	-	-	-	2	-	-	-	2	2	-


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Course/Branch	: B.E. / ECE	Subject Title	: Engineering Graphics
Subject Code	: GE3251	Year/Semester	: I/II


Course Outcomes:

Students must be able to

C112.1	Familiarize the fundamentals and standards of engineering graphics
C112.2	Perform free hand sketching of basic construction and machine equipments.
C112.3	Project orthographic projection of lines and plane surfaces
C112.4	Draw the projection of solids and development of solid.
C112.5	Visualize and project isometric perspective section of solids and surfaces.
C112.6	Draw the free hand sketching of simple objects.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C112.1	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C112.2	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C112.3	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C112.4	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C112.5	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C112.6	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C112	2	1	-	-	1	-	-	-	1	-	-	-	1	1


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REGULATION : 2021

Course/Branch	: B.E. / ECE	Subject Title	: Circuit Analysis
Subject Code	: EC3251	Year/Semester	: I/II


Course Outcomes:

Students must be able to

C113.1	Apply the basic concepts of circuit analysis such as Kirchoff's laws, mesh current and node voltagemethod for analysis of DC and AC circuits
C113.2	Applt suitable network theorems and analyze AC and DC circuits
C113.3	Analyze steady state response of any R, L, C circuits
C113.4	Analyze the transient response of any RC, RL, RLC circuits
C113.5	Determine the frequency response of parallel ans series resonance circuits
C113.6	Analyze the coupled circuits and network topologies

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C113.1	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C113.2	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C113.3	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C113.4	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C113.5	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C113.6	3	2	1	-	1	-	-	-	-	-	-	-	2	1
C113	3	2	1	-	1	-	-	-	-	-	-	-	2	1


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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATION : 2021

Course/Branch	: B.E. / ECE	Subject Title	: Engineering Practices Laboratory
Subject Code	: GE3271	Year/Semester	: I/II

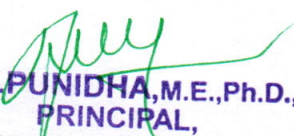
Course Outcomes:

Students must be able to

C114.1	Use wiring circuits for residential house, fluorescent lamp and stair case.
C114.2	Classify the electrical quantities of V, I & PF in RLC and energy with single phase energy meter.
C114.3	Verify the truth table of the logic gates.
C114.4	Manipulate PCB with electronic components, devices and circuits for general purposes.
C114.5	Perform HWR & FWR with ripple factor and clock signal generation.
C114.6	Carry out the measurement of resistance to earth of an electrical equipment

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C114.1	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C114.2	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C114.3	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C114.4	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C114.5	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C114.6	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C114	3	2	2	-	-	-	-	1	1	2	-	-	1	-


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REGULATION : 2021

Course/Branch	: B.E. / ECE	Subject Title	: Circuit Analysis Laboratory
Subject Code	: EC3271	Year/Semester	: I/II

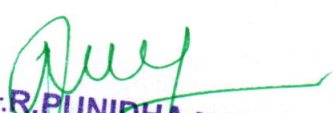
Course Outcomes:

Students must be able to

C115.1	Provide hands - on training in Thevenin & Notton theorem
C115.2	Verify KVL & KCL and Super position theorems
C115.3	Explain the working of RL, RC. And RLC circuits
C115.4	Verify maximum power transfer theorem
C115.5	Determination of resonance frequency of series & parallel RLC circuits
C115.6	Transient analysis of RL and RC circuits

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C115.1	3	2	2	-	-	-	-	1	1	2	-	-	1	1
C115.2	3	2	2	-	-	-	-	1	1	2	-	-	1	1
C115.3	3	2	2	-	-	-	-	1	1	2	-	-	1	1
C115.4	3	2	2	-	-	-	-	1	1	2	-	-	1	1
C115.5	3	2	2	-	-	-	-	1	1	2	-	-	1	1
C115.6	3	2	2	-	-	-	-	1	1	2	-	-	1	1
C115	3	2	2	-	-	-	-	1	1	2	-	-	1	1


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	Random Process and Linear Algebra
SubjectCode	:	MA 3355	Year/Semester	:	II/III


CourseOutcomes:

Students mustbe able to

C201.1	Explain the basic concepts of probability, conditional probability and Bayes' theorem
C201.2	Identify and explain one and two dimensional random variables along with their distributions and statistical averages
C201.3	Apply some probability distributions to various discrete and continuous problems.
C201.4	Solve the problems related to the component and system reliabilities.
C201.5	Identify the random processes and compute their averages
C201.6	Solve the problems on Ergodic process, Poisson process and Markov chain.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C201.1	3	2	2	2	-	-	-	-	-	-	-	1	1	1
C201.2	3	2	2	2	-	-	-	-	-	-	-	1	1	1
C201.3	3	2	2	2	-	-	-	-	-	-	-	1	1	1
C201.4	3	2	2	2	-	-	-	-	-	-	-	1	1	1
C201.5	3	2	2	2	-	-	-	-	-	-	-	1	1	1
C201.6	3	2	2	2	-	-	-	-	-	-	-	1	1	1
C201	3	2	2	2	-	-	-	-	-	-	-	1	1	1


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Course/Branch	:	B.E. / ECE	SubjectTitle	:	C PROGRAMMING AND DTA STRUCTURES
SubjectCode	:	CS3353	Year/Semester	:	II/III


CourseOutcomes:

Students mustbe able to

C202.1	Explain the concepts of programming language, the general problems and methods related to syntax and semantics.
C202.2	Interpret the structured data objects, sub programs and programmer defined data type.
C202.3	Define data structures like array, stack, queues and linked list.
C202.4	Design advance data structures using non linear data structures.
C202.5	Choose appropriate data structure while designing the algorithms.
C202.6	Compare various searching and sorting techniques.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C202.1	3	-	-	-	-	-	-	-	-	-	-	-	-	-
C202.2	3	-	1	-	-	-	-	-	-	-	-	-	-	-
C202.3	3	2	-	-	-	-	-	-	-	-	-	-	-	-
C202.4	3	2	2	-	-	-	-	-	-	-	-	-	-	2
C202.5	3	2	2	2	-	-	-	-	-	-	-	-	-	2
C202.6	3	2	2	2	-	-	-	-	-	-	-	-	-	2
C202	3	2	2	2	-	-	-	-	-	-	-	-	-	2


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	SIGNALS AND SYSTEMS
SubjectCode	:	EC 3354	Year/Semester	:	II/III


CourseOutcomes:

Students mustbe able to

C203.1	Analyze various methods of signals and systems.
C203.2	Determine the frequency components in a deterministic signal.
C203.3	Characterizing LTI systems in the time domain and frequency domain.
C203.4	Compute the output of an LTI system in the time and frequency domains.
C203.5	Correlation, CDF, PDF and probability of a given event.
C203.6	Resolve the signals in frequency domain using Fourier series and Fourier transforms.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C203.1	3	3	2	2	-	-	-	-	-	-	-	-	2	1
C203.2	3	3	2	2	-	-	-	-	-	-	-	-	2	1
C203.3	3	3	2	2	-	-	-	-	-	-	-	-	2	1
C203.4	3	3	2	2	-	-	-	-	-	-	-	-	2	1
C203.5	3	3	2	2	-	-	-	-	-	-	-	-	2	1
C203.6	3	3	2	2	-	-	-	-	-	-	-	-	2	1
C203	3	3	2	2	-	-	-	-	-	-	-	-	2	1


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REGULATION : 2021

Course/Branch	:	B.E. /ECE	SubjectTitle	:	ELECTRONIC DEVICES AND CIRCUITS
SubjectCode	:	EC3353	Year/Semester	:	II/III


CourseOutcomes:

Students mustbe able to

C204.1	Understand and Know the characteristics of various components and their Applications
C204.2	Analyze the Bipolar Junction Transistor characteristics and the biasing techniques
C204.3	Analyze the Field Effect Transistor characteristics and its applications
C204.4	Design and analyze the Small Signal BJT Amplifiers
C204.5	Design the Small Signal MOS and FET Amplifiers
C204.6	Analyze the Small Signal MOS and FET Amplifiers

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C204.1	3	2	2	2	-	-	-	-	-	-	-	-	2	1
C204.2	3	2	2	2	2	-	-	-	-	-	-	-	2	1
C204.3	3	2	2	2	2	-	-	-	-	-	-	-	2	1
C204.4	3	2	2	2	2	-	-	-	-	-	-	-	2	1
C204.5	3	2	2	2	2	-	-	-	-	-	-	-	2	1
C204.6	3	2	2	2	2	-	-	-	-	-	-	-	2	1
C204	3	2	2	2	2	-	-	-	-	-	-	-	2	1


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	CONTROL SYSTEMS
SubjectCode	:	EC 3351	Year/Semester	:	II/III


CourseOutcomes:

Students mustbe able to

C205.1	Identify the various control system components and their representations.
C205.2	Analyze the various time domain parameters.
C205.3	Analysis the various frequency response plots and its system.
C205.4	Apply the concepts of various system stability criterions.
C205.5	Design various transfer functions of digital control system using state variable models.
C205.6	Analyzing the time response, frequency response and stability of the systems.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C205.1	3	3	2	2	1	-	-	-	-	-	-	1	2	1
C205.2	3	3	2	2	1	-	-	-	-	-	-	1	2	1
C205.3	3	3	2	2	1	-	-	-	-	-	-	1	2	1
C205.4	3	3	2	2	1	-	-	-	-	-	-	1	2	1
C205.5	3	3	2	2	1	-	-	-	-	-	-	1	2	1
C205.6	3	3	2	2	1	-	-	-	-	-	-	1	2	1
C205	3	3	2	2	1	-	-	-	-	-	-	1	2	1


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	DIGITAL SYSTEMS DESIGN
SubjectCode	:	EC3352	Year/Semester	:	II/III


CourseOutcomes:

Students mustbe able to

C206.1	Familiarize with Digital fundamentals, Boolean algebra and its Applications in digital systems.
C206.2	Design various combinational digital circuits using logic gates.
C206.3	Analyze and design procedures for synchronous and asynchronous sequential circuits
C206.4	Analyze various memory devices and digital integrated circuits.
C206.5	Analyze digital integrated circuits.
C206.6	Demonstrate the semiconductor memories and related technology

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C206.1	3	3	2	2	-	-	-	-	-	-	-	1	1	1
C206.2	3	3	2	2	-	-	-	-	-	-	-	1	1	1
C206.3	3	3	2	2	-	-	-	-	-	-	-	1	1	1
C206.4	3	3	2	2	-	-	-	-	-	-	-	1	1	1
C206.5	3	3	2	2	-	-	-	-	-	-	-	1	1	1
C206.6	3	3	2	2	-	-	-	-	-	-	-	1	1	1
C206	3	3	2	2	-	-	-	-	-	-	-	1	1	1


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	ELECTRONIC DEVICES AND CIRCUITS LABORATORY
SubjectCode	:	EC 3361	Year/Semester	:	II/III


CourseOutcomes:

Students mustbe able to

C207.1	Design and Test rectifiers, filters and regulated power supplies.
C207.2	Measure CMRR in differential amplifier.
C207.3	Design and Test BJT/JFET amplifiers.
C207.4	Analyze the limitation in bandwidth of single stage and multi stage amplifier.
C207.5	Simulate and analyze amplifier circuits using Pspice.
C207.6	Design and Test the digital logic circuits.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C207.1	3	3	2	2	1	1	-	-	-	-	1	1	2	2
C207.2	3	3	2	2	1	1	-	-	-	-	1	1	2	2
C207.3	3	3	2	2	1	1	-	-	-	-	1	1	2	2
C207.4	3	3	2	2	1	1	-	-	-	-	1	1	2	2
C207.5	3	3	2	2	1	1	-	-	-	-	1	1	2	2
C207.6	3	3	2	2	1	1	-	-	-	-	1	1	2	2
C207	3	3	2	2	1	1	-	-	-	-	1	1	2	2


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	C PROGRAMMING AND DATA STRUCTURES LABORATORY
SubjectCode	:	CS3362	Year/Semester	:	II/III

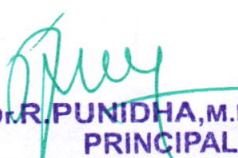
CourseOutcomes:

Students mustbe able to

C208.1	Implement basic and advanced programs in C.
C208.2	Implement functions and recursive functions in C.
C208.3	Implement data structures using C.
C208.4	Apply linear and non-linear data structures in problem solving.
C208.5	Implement sorting algorithm in a modularized way for an application.
C208.6	Implement searching and sorting algorithms.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C208.1	3	3	2	2	1	1	1	-	-	-	2	1	2	2
C208.2	3	3	2	2	1	1	1	-	-	-	2	1	2	2
C208.3	3	3	2	2	1	1	1	-	-	-	2	1	2	2
C208.4	3	3	2	2	1	1	1	-	-	-	2	1	2	2
C208.5	3	3	2	2	1	1	1	-	-	-	2	1	2	2
C208.6	3	3	2	2	1	1	1	-	-	-	2	1	2	2
C208	3	3	2	2	1	1	1	-	-	-	2	1	2	2


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	ELECTROMAGNETIC FIELDS
SubjectCode	:	EC 3452	Year/Semester	:	II/IV

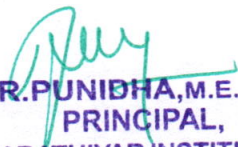
CourseOutcomes:

Students mustbe able to

C209.1	Analyze fundamental electromagnetic laws and concepts.
C209.2	Impart Maxwell's equations in integral, differential and phasor forms.
C209.3	Explain electromagnetic wave propagation in lossy and in lossless media.
C209.4	Estimation of electric and magnetic field quantities based on the concepts and laws.
C209.5	Analyze electric and magnetic fields through Faraday's law, displacement current and Maxwell's equations.
C209.6	Analyze various fields and laws.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C209.1	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C209.2	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C209.3	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C209.4	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C209.5	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C209.6	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C209	3	3	3	2	1	-	-	-	-	-	-	-	2	1


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	NETWORKS AND SECURITY
SubjectCode	:	EC3401	Year/Semester	:	II/IV


CourseOutcomes:

Students mustbe able to

C210.1	Analyze the components required to build different types of networks
C210.2	Identify the required functionality at each layer for given application
C210.3	Summarize the solution for each functionality at each layer
C210.4	Describe the Network Security Mechanisms.
C210.5	Explain the various hardware security attacks and their countermeasures.
C210.6	Demonstrate the blockchain technology.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C210.1	3	3	2	1	1	1	-	-	-	-	1	1	1	2
C210.2	3	3	2	-	1	-	-	-	-	-	1	1	1	2
C210.3	3	3	2	-	1	-	-	-	-	-	1	1	1	-
C210.4	3	3	2	-	1	-	-	-	-	-	-	-	-	2
C210.5	3	3	2	-	1	1	-	-	-	-	-	-	-	2
C210.6	3	3	2	-	1	1	-	-	-	-	1	-	-	-
C210	3	3	2	-	1	1	-	-	-	-	1	1	1	2


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	LINEAR INTEGRATED
SubjectCode	:	EC 8453	Year/Semester	:	II/IV


CourseOutcomes:

Students mustbe able to

C211.1	Design linear and non linear applications of OP – AMPS.
C211.2	Design applications using analog multiplier.
C211.3	Design applications using PLL.
C211.4	Design ADC and DAC using OP – AMPS.
C211.5	Generate waveforms using OP – AMP Circuits.
C211.6	Analyze special function ICs.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C211.1	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C211.2	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C211.3	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C211.4	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C211.5	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C211.6	3	3	3	2	1	-	-	-	-	-	-	-	2	1
C211	3	3	3	2	1	-	-	-	-	-	-	-	2	1


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	DIGITAL SIGNAL PROCESSING
SubjectCode	:	EC 8553	Year/Semester	:	II/IV


CourseOutcomes:

Students mustbe able to

C212.1	Compute DFT for the analysis of digital signals and systems
C212.2	Design the Discrete Fourier Transform (DFT) and Fast Fourier transform (FFT).
C212.3	Describe IIR and FIR Filters
C212.4	Realize the effects of finite precision representation on digital filters
C212.5	Describe various types of finite word length effects.
C212.6	Generate adaptive filters appropriately in communication systems

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C212.1	3	3	2	1	1	-	1	-	-	-	-	-	2	-
C212.2	3	3	2	1	1	-	1	-	-	1	-	-	-	1
C212.3	3	3	2	1	1	-	-	-	-	1	-	-	2	1
C212.4	3	3	-	-	1	-	1	-	-	1	-	-	-	1
C212.5	3	3	2	1	-	-	1	-	-	-	-	-	-	-
C212.6	3	3	-	1	1	-	1	-	-	1	-	-	-	-
C212	3	3	2	1	1	-	1	-	-	1	-	-	2	1


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	COMMUNICATION SYSTEMS
SubjectCode	:	EC3491	Year/Semester	:	II/IV

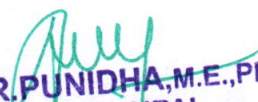
CourseOutcomes:

Students mustbe able to

C213.1	Introduce the Analog Modulation Schemes
C213.2	Impart knowledge in random process
C213.3	Explain the various Digital techniques
C213.4	Describe the importance of sampling & quantization
C213.5	Impart knowledge in demodulation techniques
C213.6	Enhance the class room teaching using smart connectivity

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C213.1	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C213.2	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C213.3	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C213.4	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C213.5	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C213.6	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C213	3	2	-	2	2	2	2	1	-	-	-	-	2	1


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	ENVIRONMENTAL SCIENCES AND SUSTAINABILITY
SubjectCode	:	GE3451	Year/Semester	:	II/IV


CourseOutcomes:

Students mustbe able to

C214.1	Analyze fundamental concept behind Environment, Ecosystem and Biodiversity.
C214.2	To study environmental pollution, policies and practices.
C214.3	Analyze about Environmental disasters.
C214.4	Analyze various forms of Natural resources.
C214.5	To study human population and environmental ethics.
C214.6	Implement scientific, technological, economic and political solutions to environmental problems.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C214.1	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C214.2	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C214.3	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C214.4	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C214.5	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C214.6	3	2	-	2	2	2	2	1	-	-	-	-	2	1
C214	3	2	-	2	2	2	2	1	-	-	-	-	2	1


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	COMMUNICATION SYSTEMS LABORATORY
SubjectCode	:	EC3461	Year/Semester	:	II/IV


CourseOutcomes:

Students mustbe able to

C215.1	Simulate & validate the various functional modules of a communication system.
C215.2	Implement sampling theorem and Time Division Multiplexing
C215.3	Demonstrate their knowledge in base band signaling schemes through implementation of digital modulation schemes
C215.4	Apply various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of communication system
C215.5	SimulateError Control Coding Schemes in Communication System
C215.6	Simulate end-to-end communication Link

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C215.1	3	2	2	2	-	2	1	-	-	-	-	-	2	1
C215.2	3	2	2	2	-	2	1	-	-	-	-	-	2	1
C215.3	3	2	2	2	-	2	1	-	-	-	-	-	2	1
C215.4	3	2	2	2	-	2	1	-	-	-	-	-	2	1
C215.5	3	2	2	2	-	2	1	-	-	-	-	-	2	1
C215.6	3	2	2	2	-	2	1	-	-	-	-	-	2	1
C215	3	2	2	2	-	2	1	-	-	-	-	-	2	1


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REGULATION : 2021

Course/Branch	:	B.E. / ECE	SubjectTitle	:	LINEAR INTEGRATED
SubjectCode	:	EC 3462	Year/Semester	:	CIRCUITS LABORATORY II/IV

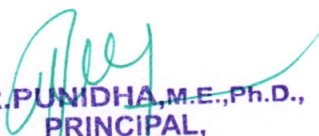
CourseOutcomes:

Students mustbe able to

C216.1	Design amplifiers, oscillators, D-A converters using operational amplifiers.
C216.2	Design filters using op-amp and performs an experiment on frequency response.
C216.3	Analyze the working of PLL and describe its application as a frequency multiplier.
C216.4	Design DC power supply using ICs.
C216.5	Analyze the performance of filters, multivibrators, A/D converter and analog multiplier using SPICE.
C216.6	Apply operational amplifiers in linear and nonlinear applications.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C216.1	3	2	2	2	-	2	1	-	-	-	1	1	2	1
C216.2	3	2	2	2	-	2	1	-	-	-	1	1	2	1
C216.3	3	2	2	2	-	2	1	-	-	-	1	1	2	1
C216.4	3	2	2	2	-	2	1	-	-	-	1	1	2	1
C216.5	3	2	2	2	-	2	1	-	-	-	1	1	2	1
C216.6	3	2	2	2	-	2	1	-	-	-	1	1	2	1
C216	3	2	2	2	-	2	1	-	-	-	1	1	2	1


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