BHARATHIYAR INSTITUTE OF ENGINEERING FOR WOMEN, DEVIYAKURICHI
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	Subject Title	:	Communicative English
Subject Code	:	**HS8151**	Year/Semester	:	I/I
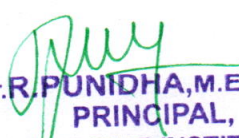
Course Outcomes:

Students must be able to

C101.1	Listen and recognize main ideas from different discourses in different accents.
C101.2	Speak clearly, confidently, comprehensively, and communicate with one or many listeners using appropriate communicative strategies.
C101.3	Read different genres of text adopting various reading strategies.
C101.4	Write cohesively and coherently by using a wide range of vocabulary and organize ideas logically on a topic without grammatical errors.
C101.5	Determine the main and subordinate ideas, draw conclusions and summarize information from written material.
C101.6	Write short essays of a general kind and personal letters and emails in English.

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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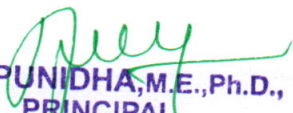| Course/Branch	:	B.E. / ECE	Subject Title	:	ENGINEERING MATHS I
Subject Code	:	MA8151	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C102.1	Diagonalize symmetric matrices and similar matrices using Eigen values and Eigen vectors
C102.2	Explain gradients, potential functions, and directional derivatives of functions of several variables
C102.3	Compute line, surface and volume integral using Gauss divergence, Green's and stoke's theorem.
C102.4	Discuss analytic functions in heat and fluid flow.
C102.5	Extend the concept of contour integrals in evaluating Real integrals.
C102.6	Discuss Laplace Transform methods to solve initial value problems for constant coefficient linear ODEs.

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	3	3	-	-	-	-	-	-	-	-	2	-	-
C102.2	3	3	3	-	-	-	-	-	-	-	-	2	-	-
C102.3	3	3	3	-	-	-	-	-	-	-	-	2	-	-
C102.4	3	3	3	-	-	-	-	-	-	-	-	2	-	-
C102.5	3	3	3	-	-	-	-	-	-	-	-	2	-	-
C102.6	3	3	3	-	-	-	-	-	-	-	-	2	-	-
C102	3	3	3	-	-	-	-	-	-	-	-	2	-	-

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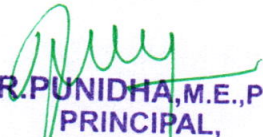| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Physics For Electronics Engineering
Subject Code	:	**PH8253**	Year/Semester	:	I/I

Course Outcomes:

Students must be able to

C103.1	Demonstrate the properties of elasticity and measure the different moduli of elasticity.
C103.2	Examine the characteristics of waves, Laser and optical fiber.
C103.3	Illustrate different modes of heat transfer through objects.
C103.4	Explain the black body radiation, properties of matter waves and schrodinger equations.
C103.5	Classify the bravais lattices and different types of crystal structures.
C103.6	Elucidate the principles of quantum physics and its application.

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	3	2	1	-	1	-	1	-	-	-	-	1	1	1
C103.2	3	2	1	-	1	-	1	-	-	-	-	1	1	1
C103.3	3	2	1	-	1	-	1	-	-	-	-	1	1	1
C103.4	3	2	1	-	1	-	1	-	-	-	-	1	1	1
C103.5	3	2	1	-	1	-	1	-	-	-	-	1	1	1
C103.6	3	2	1	-	1	-	1	-	-	-	-	1	1	1
C103	3	2	1	-	1	-	1	-	-	-	-	1	1	1

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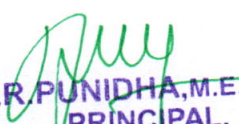| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Engineering Chemistry
Subject Code	:	**CY8151**	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C104.1	Explain the hardness of water, its types and estimation, boiler troubles and treatment of boiler feed water.
C104.2	Explain adsorption, types and theories of adsorption isotherm and its application in pollution abatement, theories of catalysis and applications.
C104.3	Understand the basic concepts of phase rule and its application to one and two component systems, properties, significance and applications of alloys.
C104.4	Relate the significance of solid, liquid and gaseous fuels and to calculate the calorific value of fuels.
C104.5	Illustrate the methods of harvesting energy from non-conventional energy sources.
C104.6	State the principles and methods of generation of energy in batteries, nuclear reactors, solar cells, wind mills and fuel cells.

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	2	1	1	1	1	2	2	-	-	-	2	-	-
C104.2	3	2	1	-	-	-	2	2	-	-	-	2	-	-
C104.3	3	2	-	-	-	-	-	2	-	-	-	2	-	-
C104.4	3	2	1	-	-	-	-	2	-	-	-	2	-	-
C104.5	3	2	1	1	-	1	-	2	-	-	-	2	-	-
C104.6	3	2	1	-	1	-	2	2	-	2	-	2	-	-
C104	3	2	1	1	1	1	2	2	-	2	-	2	-	-

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Course/Branch	:	B.E. / ECE	Subject Title	:	Problem Solving And Python Programming
Subject Code	:	GE8151	Year/Semester	:	I/I

Course Outcomes:

Students must be able to

C105.1	Develop algorithmic solutions to simple computational problems.
C105.2	Demonstrate programs using simple Python statements and expressions.
C105.3	Explain control flow and functions concept in Python for solving problems.
C105.4	Use Python data structures – lists, tuples & dictionaries for representing compound data.
C105.5	Explain files, exception, modules and packages in Python for solving problems.
C105.6	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	1	-	-	1	-	-	-	-	-	1	2	1
C105.2	3	2	1	-	2	1	-	-	-	-	-	1	2	1
C105.3	3	2	1	-	2	1	-	-	-	-	-	1	2	1
C105.4	3	2	1	-	2	1	-	-	-	-	-	1	2	1
C105.5	3	2	1	1	2	1	-	-	-	-	-	1	2	1
C105.6	3	2	1	-	-	1	-	-	-	-	-	1	2	1
C105	3	2	1	1	2	1	-	-	-	-	-	1	2	1

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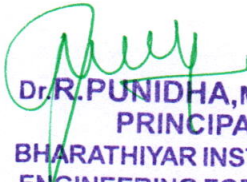| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Engineering Graphics
Subject Code	:	**GE8152**	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C106.1	Familiarize the fundamentals and standards of engineering graphics
C106.2	Perform free hand sketching of basic construction and machine equipments.
C106.3	Project orthographic projection of lines and plane surfaces
C106.4	Draw the projection of solids and development of solid.
C106.5	Visualize and project isometric perspective section of solids and surfaces.
C106.6	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
C106.1	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C106.2	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C106.3	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C106.4	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C106.5	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C106.6	2	1	-	-	1	-	-	-	1	-	-	-	1	1
C106	2	1	-	-	1	-	-	-	1	-	-	-	1	1

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Problem Solving And Python Programming Laboratory
Subject Code	:	**GE8161**	Year/Semester	:	I/I

Course Outcomes:

Students must be able to

C107.1	Develop solutions to simple computational problems using Python programs.
C107.2	Solve problems using conditionals and loops in Python.
C107.3	Develop Python programs by defining functions and calling them.
C107.4	Use Python lists, tuples and dictionaries for representing compound data.
C107.5	Develop Python programs to implement file handling.
C107.6	Develop Python programs to implement matrix operations.

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	-	2	1	-	-	2	-	-	1	2	2
C107.2	3	2	2	-	2	1	-	-	2	-	-	1	2	2
C107.3	3	3	1	-	2	1	-	-	2	-	-	1	2	2
C107.4	3	2	1	-	2	1	-	-	2	-	-	1	2	2
C107.5	3	2	1	-	2	1	-	-	2	-	-	1	2	2
C107.6	3	2	1	1	2	1	-	-	2	-	-	1	2	2
C107	3	2	1	1	2	1	-	-	2	-	-	1	2	2

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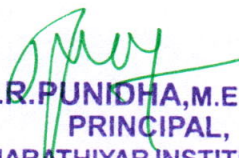| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Physics And Chemistry Laboratory
Subject Code	:	**BS8161**	Year/Semester	:	I/I

Course Outcomes:

Students must be able to

C108.1	Determine and estimate the types of alkalinity & hardness of given water sample & Evaluate moment of inertia of disc and rigidity modulus for thin wire using torsion pendulum.
C108.2	Estimate the amount of copper content present in a given sample & Appraise Young's modulus of the beam by Non - Uniform bending method.
C108.3	Determine the strength of an acid by using pH meter & Measure the wavelength of laser, particle size and basic parameters of optical fiber using semiconductor diode laser.
C108.4	Determine the strength of a pure acid and mixture of acids by using conductivity meter. & Examine the thermal conductivity of bad conductors using Lee's disc apparatus.
C108.5	Estimate the amount of iron content present in a given solution by means of potentiometric titration &Determine the wavelength of the prominent spectral lines.
C108.6	Determine the molecular weight of polymer by Ostwald viscometer & Utilize experiment kits for useful applications.

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	2	-	-	1	1	-	2	2	1	-	1	-	-
C108.2	3	2	-	-	1	1	-	2	2	1	-	1	-	-
C108.3	3	2	-	-	1	1	-	2	2	1	-	1	-	-
C108.4	3	2	-	-	1	1	-	2	2	1	-	1	-	-
C108.5	3	2	-	-	1	1	-	2	2	1	-	1	-	-
C108.6	3	2	-	-	1	1	-	2	2	1	-	1	-	-
C108	3	2	-	-	1	1	-	2	2	1	-	1	-	-

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REGULATION : 2017

Course/Branch	:	B.E. / ECE	Subject Title	:	Technical English
Subject Code	:	HS8251	Year/Semester	:	I/II

Course Outcomes:
Students must be able to

C109.1	Read technical texts and write area- specific texts effortlessly
C109.2	Listen and comprehend lectures and talks in their area of specialization successfully
C109.3	Speak appropriately and effectively in varied formal and informal contexts
C109.4	Write reports and winning job applications.
C109.5	Use appropriate technologies to organize, present, and communicate information to address a range of audiences, purposes, genres
C109.6	Execute the method of participation in group discussion.

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	3	-	2	-	-
C109.2	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C109.3	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C109.4	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C109.5	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C109.6	-	-	-	-	-	-	-	-	3	3	-	2	-	-
C109	-	-	-	-	-	-	-	-	3	3	-	2	-	-

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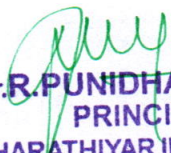## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

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Course/Branch	:	B.E. / ECE	Subject Title	:	Engineering Maths II
Subject Code	:	MA8251	Year/Semester	:	I/II

Course Outcomes:
Students must be able to

C110.1	Calculate the eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices
C110.2	Evaluate the line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
C110.3	Determine Analytic functions, conformal mapping and Bilinear transformation.
C110.4	Evaluate the Cauchy's integrals, Taylor's and Laurent's and residue theorem for evaluation for real integrals using circular and semicircular, contour
C110.5	Solve the Laurent expansions and contours problems
C110.6	Define Laplace transform, unit step function and impulse functios.

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	2	1	-	-	-	-	-	-	-	-	-	3	-
C110.2	3	2	1	-	-	-	-	-	-	-	-	-	3	-
C110.3	3	2	1	-	-	-	-	-	-	-	-	-	3	-
C110.4	3	2	1	-	-	-	-	-	-	-	-	-	3	-
C110.5	3	2	1	-	-	-	-	-	-	-	-	-	3	-
C110.6	3	2	1	-	-	-	-	-	-	-	-	-	3	-
C110	3	2	1	-	-	-	-	-	-	-	-	-	3	-

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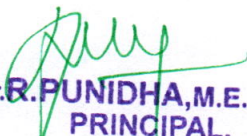## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Physics for Electronics Engineering
Subject Code	:	**PH8253**	Year/Semester	:	I/II

Course Outcomes:
Students must be able to

C111.1	Gain knowledge on classical and quantum electron theories and energy band structures.
C111.2	Acquire knowledge on basis of semiconductor physics and its applications in various devices.
C111.3	Get knowledge on magnetic and dielectric properties of materials.
C111.4	Have the necessary understanding on the functioning of optical materials for opto electronics.
C111.5	Illustrate the basics of quantum structures and their applications in spintronics.
C111.6	Introduction to Carbon nanotubes and explain its properties and applications

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	2	-	2	-	1	-	-	-	-	2	2	1
C111.2	3	2	2	-	2	-	1	-	-	-	-	2	2	1
C111.3	3	2	2	-	2	-	1	-	-	-	-	2	2	1
C111.4	3	2	2	-	2	-	1	-	-	-	-	2	2	1
C111.5	3	2	2	-	2	-	1	-	-	-	-	2	2	1
C111.6	3	2	2	-	2	-	1	-	-	-	-	2	2	1
C111	3	2	2	-	2	-	1	-	-	-	-	2	2	1

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Basic Electrical Electrical and Measurement Engineering
Subject Code	:	**BE8255**	Year/Semester	:	I/II

Course Outcomes:
Students must be able to

C112.1	Explain the operation of three phase electrical circuit and power measurement.
C112.2	Explain the operation and circuit model of transformer.
C112.3	Comprehend the concepts in electrical generators, motors and transformers.
C112.4	Demonstrate the principle of operation, starting and speed control of D.C machines.
C112.5	Describe the construction , principle of operation and performance of A.C machines
C112.6	Explain the working principle of various measuring instruments and the classification of transducers

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	3	2	2	-	-	-	-	2	-	-	-	1	1	1
C112.2	3	2	2	-	-	-	-	2	-	-	-	1	1	1
C112.3	3	2	2	-	-	-	-	2	-	-	-	1	1	-
C112.4	3	2	2	1	-	-	-	2	-	-	-	1	1	-
C112.5	3	2	2	-	-	-	-	2	-	-	-	-	1	-
C112.6	3	2	2	1	-	-	-	2	-	-	-	1	1	1
C112	3	2	2	1	-	-	-	2	-	-	-	1	1	1

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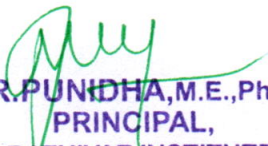## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	Subject Title	:	Circuit Analysis
Subject Code	:	**EC8251**	Year/Semester	:	I/II

Course Outcomes:
Students must be able to

C113.1	Apply Kirchhoff's law in electrical circuits.
C113.2	Apply circuit theorems to evaluate AC & DC circuits.
C113.3	Compute resonance parameters for AC Circuits.
C113.4	Illucidate self inductance and coupled inductance and analysis of coupled circuits
C113.5	Find the transient response for AC & DC circuits
C113.6	Apply the properties of Two port networks to find the parameters of the given network

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	-	-	-	-	2	-	-	-	-	2	1
C113.2	3	2	1	-	-	-	-	2	-	-	-	-	2	1
C113.3	3	2	1	-	-	-	-	2	-	-	-	-	2	-
C113.4	3	2	1	-	-	-	-	2	-	-	-	-	2	-
C113.5	3	2	1	-	-	-	-	2	-	-	-	-	2	-
C113.6	3	2	1	-	-	-	-	2	-	-	-	-	2	1
C113	3	2	1	-	-	-	-	2	-	-	-	-	2	1

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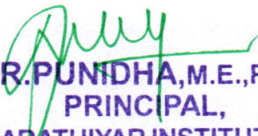## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	Subject Title	:	Electronic Devices
Subject Code	:	**EC8252**	Year/Semester	:	I/II

Course Outcomes:
Students must be able to

C114.1	Describe the theory, construction and operations of semiconductor diodes.
C114.2	Explain the operation and characteristics of bipolar junction devices
C114.3	Explain field effect transistor characteristics and their operations..
C114.4	Illustrate working of various types of special semiconductor devices
C114.5	Operate the basic electronic devices such as PN junction diode, Illustrate bipolar effect and field effect
C114.6	Explain the construction, operation and applications of power and display devices.

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	2	1	1	-	-	-	-	2	2	1	-	-	1	1
C114.2	2	1	1	-	-	-	-	2	2	1	-	-	1	1
C114.3	2	1	1	-	-	-	-	2	2	1	-	-	1	-
C114.4	2	1	1	-	-	-	-	2	2	1	-	-	1	-
C114.5	2	1	1	-	-	-	-	2	2	1	-	-	1	-
C114.6	2	1	1	-	-	-	-	2	2	1	-	-	1	1
C114	2	1	1	-	-	-	-	2	2	1	-	-	1	1

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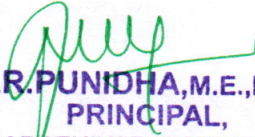## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	Subject Title	:	Circuits and Devices Laboratory
Subject Code	:	**EC8261**	Year/Semester	:	I/II

Course Outcomes:
Students must be able to

C115.1	Estimate the characteristics of diodes and regulator using zener diode.
C115.2	Calculate the input and output characteristics of BJT , FET and SCR
C115.3	Determine the characteristics of clipper, clamper & Full Wave Rectifier circuits.
C115.4	Apply KVL, KCL, Thevenin, Norton, Superposition, and maximum power transfer and reciprocity theorems in DC circuits.
C115.5	Compute the resonance frequency of series & parallel RLC Circuits
C115.6	Compute the transient response 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	1	1	-	-	-	2	2	2	-	-	2	-
C115.2	3	2	1	1	-	-	-	2	2	2	-	-	2	-
C115.3	3	2	1	1	-	-	-	2	2	2	-	-	2	-
C115.4	3	2	1	1	-	-	-	2	2	2	-	-	2	-
C115.5	3	2	1	1	-	-	-	2	2	2	-	-	2	-
C115.6	3	2	1	1	-	-	-	2	2	2	-	-	2	-
C115	3	2	1	1	-	-	-	2	2	2	-	-	2	-

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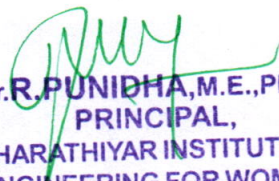## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	Subject Title	:	Engineering Practices Laboratory
Subject Code	:	**GE8261**	Year/Semester	:	I/II

Course Outcomes:
Students must be able to

C116.1	Use wiring circuits for residential house, fluorescent lamp and stair case.
C116.2	Classify the electrical quantities of V, I & PF in RLC and energy with single phase energy meter.
C116.3	Verify the truth table of the logic gates.
C116.4	Manipulate PCB with electronic components, devices and circuits for general purposes.
C116.5	Perform HWR & FWR with ripple factor and clock signal generation.
C116.6	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
C116.1	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C116.2	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C116.3	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C116.4	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C116.5	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C116.6	3	2	2	-	-	-	-	1	1	2	-	-	1	-
C116	3	2	2	-	-	-	-	1	1	2	-	-	1	-

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REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	SubjectTitle	:	**Linear Algebra And Partial Differential Equations**
SubjectCode	:	**MA8352**	Year/Semester	:	II/III
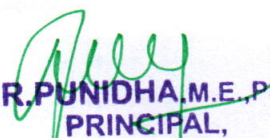
CourseOutcomes:

Studentsmustbe able to

C201.1	Explainthefundamentalconceptsofadvancedalgebraandtheirroleinmodernmathematicsandappliedcontexts.
C201.2	Demonstrateaccurateandefficientuseofadvancedalgebraictechniques.
C201.3	Demonstratetheirmasterybysolvingnon-trivialproblemsrelatedtotheconcepts.
C201.4	Able to solve various types of partial differential equations.
C201.5	Able to solve engineering problems using Fourier series.
C201.6	Analyze various theorems and Transformation Techniques.

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	1	-	-	-	-	-	-	-	-	1	1
C201.2	3	2	2	1	-	-	-	-	-	-	-	-	1	1
C201.3	3	2	2	1	-	-	-	-	-	-	-	-	1	1
C201.4	3	2	2	1	-	-	-	-	-	-	-	-	1	1
C201.5	3	2	2	1	-	-	-	-	-	-	-	-	1	1
C201.6	3	2	2	1	-	-	-	-	-	-	-	-	1	1
C201	3	2	2	1	-	-	-	-	-	-	-	-	1	1

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REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	Subject Title	:	**Fundamentals of Data Structures in C**
Subject Code	:	**EC 8393**	Year/Semester	:	II/III

Course Outcomes:

Students must be able to

C202.1	Implement linear and non-linear data structure operations using C.
C202.2	Suggest appropriate linear / non-linear data structure for any given data set.
C202.3	Apply hashing concepts for a given problem.
C202.4	Modify or suggest new data structure for an application.
C202.5	Appropriately choose the sorting algorithm for an application.
C202.6	Analyze basic sorting and searching algorithms.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

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

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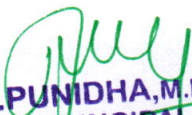| Course/Branch	:	**B.E. /ECE**	SubjectTitle	:	ELECTRONIC CIRCUITS-I
SubjectCode	:	EC8351	Year/Semester	:	II/III

CourseOutcomes:

Studentsmustbe able to

C203.1	Design the amplifier circuits using various biasing methods.
C203.2	Analyze the single stage and multistage BJT amplifiers.
C203.3	Analyze the performance of JFET amplifiers.
C203.4	Analyze the performance of MOSFET amplifiers using small signal equivalent model.
C203.5	Determine the frequency response of single stage and multistage amplifiers.
C203.6	Design and analyze DC power supplies.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C203.1	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C203.2	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C203.3	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C2034	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C203.5	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C203.6	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C203	3	2	1	-	-	-	-	2	2	-	-	-	2	1

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Course/Branch	:	B.E. / ECE	SubjectTitle	:	SIGNALS AND SYSTEMS
SubjectCode	:	EC 8352	Year/Semester	:	II/III

CourseOutcomes:

Studentsmustbe able to

C204.1	Analyze various methods of signals and systems.
C204.2	Determine the frequency components in a deterministic signal.
C204.3	Characterizing LTI systems in the time domain and frequency domain.
C204.4	Compute the output of an LTI system in the time and frequency domains.
C204.5	Correlation, CDF, PDF and probability of a given event.
C204.6	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
C204.1	3	2	1	-	-	-	-	2	2	-	-	-	1	1
C204.2	3	2	1	-	-	-	-	2	2	-	-	-	1	1
C204.3	3	2	1	-	-	-	-	2	2	-	-	-	1	1
C2044	3	2	1	-	-	-	-	2	2	-	-	-	1	1
C204.5	3	2	1	-	-	-	-	2	2	-	-	-	1	1
C204.6	3	2	1	-	-	-	-	2	2	-	-	-	1	1
C204	3	2	1	-	-	-	-	2	2	-	-	-	1	1

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REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	SubjectTitle	:	**DIGITAL ELECTRONICS**
SubjectCode	:	**EC 8392**	Year/Semester	:	II/III

CourseOutcomes:

Studentsmustbe able to

C205.1	Design various combinational digital circuits using logic gates.
C205.2	Analyze and design procedures for synchronous and asynchronous sequential circuits
C205.3	Demonstrate the semiconductor memories and related technology
C205.4	Analyze electronic circuits involved in the design of logic gates
C205.5	Analyze various memory devices and digital integrated circuits.
C205.6	Familiarize withDigital fundamentals, Boolean algebra and its Applications in digital 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	2	1	1	-	-	-	2	-	-	-	-	1	1
C205.2	3	2	1	1	-	-	-	2	-	-	-	-	1	1
C205.3	3	2	1	1	-	-	-	2	-	-	-	-	1	1
C205.4	3	2	1	1	-	-	-	2	-	-	-	-	1	1
C205.5	3	2	1	1	-	-	-	2	-	-	-	-	1	1
C205.6	3	2	1	1	-	-	-	2	-	-	-	-	1	1
C205	3	2	1	1	-	-	-	2	-	-	-	-	1	1

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REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	SubjectTitle	:	**CONTROL SYSTEMS ENGINEERING**
SubjectCode	:	**EC 8391**	Year/Semester	:	II/III

CourseOutcomes:
Studentsmustbe able to

C206.1	Identify the various control system components and their representations.
C206.2	Analyze the various time domain parameters.
C206.3	Analysis the various frequency response plots and its system.
C206.4	Apply the concepts of various system stability criterions.
C206.5	Design various transfer functions of digital control system using state variable models.
C206.6	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
C206.1	3	2	1	1	-	-	-	-	1	1	-	-	2	1
C206.2	3	2	1	1	-	-	-	-	1	1	-	-	2	1
C206.3	3	2	1	1	-	-	-	-	1	1	-	-	2	1
C206.4	3	2	1	1	-	-	-	-	1	1	-	-	2	1
C206.5	3	2	1	1	-	-	-	-	1	1	-	-	2	1
C206.6	3	2	1	1	-	-	-	-	1	1	-	-	2	1
C206	3	2	1	1	-	-	-	-	1	1	-	-	2	1

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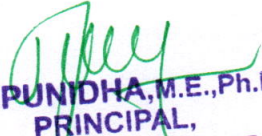| Course/Branch	:	**B.E. / ECE**	Subject Title	:	**FUNDAMENTALS OF DATA STRUCTERS IN C**
Subject Code	:	**EC 8381**	Year/Semester	:	II/III

Course Outcomes:

Students must be able to

C207.1	Implement basic and advanced programs in C.
C207.2	Implement functions and recursive functions in C.
C207.3	Implement data structures using C.
C207.4	Apply linear and non-linear data structures in problem solving.
C207.5	Implement sorting algorithm in a modularized way for an application.
C207.6	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
C207.1	3	3	2	1	2	-	-	-	2	1	1	-	2	1
C207.2	3	3	2	1	2	-	-	-	2	1	1	-	2	1
C207.3	3	3	2	1	2	-	-	-	2	1	1	-	2	1
C207.4	3	3	2	1	2	-	-	-	2	1	1	-	2	1
C207.5	3	3	2	1	2	-	-	-	2	1	1	-	2	1
C207.6	3	3	2	1	2	-	-	-	2	1	1	-	2	1
C207	3	3	2	1	2	-	-	-	2	1	1	-	2	1

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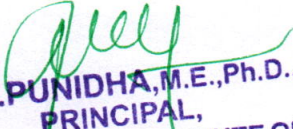| Course/Branch	:	B.E. / ECE	Subject Title	:	ANALOG AND DIGITAL CICUITS LABORATORY
Subject Code	:	EC 8361	Year/Semester	:	II/III

Course Outcomes:

Students must be able to

C208.1	Design and Test rectifiers, filters and regulated power supplies.
C208.2	Measure CMRR in differential amplifier.
C208.3	Design and Test BJT/JFET amplifiers.
C208.4	Analyze the limitation in bandwidth of single stage and multi stage amplifier.
C208.5	Simulate and analyze amplifier circuits using Pspice.
C208.6	Design and Test the digital logic circuits.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO
C208.1	3	3	2	1	-	-	-	-	2	-	2	1	2	1
C208.2	3	3	2	1	-	-	-	-	2	-	2	1	2	1
C208.3	3	3	2	1	-	-	-	-	2	-	2	1	2	1
C208.4	3	3	2	1	-	-	-	-	2	-	2	1	2	1
C208.5	3	3	2	1	-	-	-	-	2	-	2	1	2	1
C208.6	3	3	2	1	-	-	-	-	2	-	2	1	2	1
C208	3	3	2	1	-	-	-	-	2	-	2	1	2	1

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REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	SubjectTitle	:	**INTERPERSONAL SKILLS / LISTENING & SPEAKING LABORATORY**
SubjectCode	:	**HS 8381**	Year/Semester	:	II/III

CourseOutcomes:

Studentsmustbe able to

C209.1	Analyze the components of effective interpersonal communication skills.
C209.2	Examine personal communication styles and the attitudes, beliefs and values.
C209.3	Utilize effective communication skills appropriate to the purpose, audience, and situation.
C209.4	Equip primary emphasis on academic speaking and listening skills.
C209.5	Provide guidance and practice in basic general and classroom conversation and to engage in specific academic speaking activities.
C209.6	Participate confidently and appropriately in conversations both formal and informal

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

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

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	SubjectTitle	:	**PROBABILITY AND RANDOM PROCESSES**
SubjectCode	:	**MA 8451**	Year/Semester	:	II/IV

Course Outcomes:

Students must be able to

C210.1	Impart the fundamental knowledge of probability and standard distributions.
C210.2	Apply the basic concepts of one and two dimensional random variables in engineering applications.
C210.3	Apply the concept random processes in engineering disciplines.
C210.4	Apply the concept of correlation and spectral densities.
C210.5	Analyze various distribution functions, acquiring skills in handling situations involving more than one variable.
C210.6	Analyze the response of random inputs to linear time invariant systems.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

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

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Course/Branch	:	**B.E. / ECE**	SubjectTitle	:	**ELECTRONIC CIRCUITS- II**
SubjectCode	:	EC8452	Year/Semester	:	II/IV

CourseOutcomes:

Studentsmustbe able to

C211.1	Analyze different types of feedback amplifier.
C211.2	Design & Analysis of transistorized amplifier and oscillator circuits.
C211.3	Analyze transistorized tuned amplifiers.
C211.4	Analysis of wave shaping circuits.
C211.5	Design & Analysis of Multivibrators.
C211.6	Design and Analyze the operation of power amplifiers and DC converters.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

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

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REGULATION : 2017

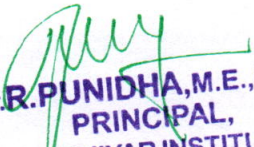| Course/Branch	:	B.E. / ECE	Subject Title	:	COMMUNICATION THEORY
SubjectCode	:	EC 8491	Year/Semester	:	II/IV

Course Outcomes:

Students must be able to

C212.1	Describe the concepts of amplitude modulation system.
C212.2	Summarize the concepts of angle modulation system.
C212.3	Solve communication engineering problems by applying the concepts of random process.
C212.4	Compare the noise performance of AM and FM systems.
C212.5	Analyze the principles of Sampling and quantization.
C212.6	Design the PCM 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	-	-	-	-	2	2	-	-	-	1	1
C212.2	3	3	2	-	-	-	-	2	2	-	-	-	1	1
C212.3	3	3	2	-	-	-	-	2	2	-	-	-	1	1
C212.4	3	3	2	-	-	-	-	2	2	-	-	-	1	1
C212.5	3	3	2	-	-	-	-	2	2	-	-	-	1	1
C212.6	3	3	2	-	-	-	-	2	2	-	-	-	1	1
C212	3	3	2	-	-	-	-	2	2	-	-	-	1	1

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REGULATION : 2017

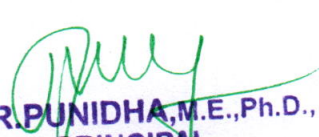| Course/Branch	:	**B.E. / ECE**	Subject Title	:	**ELECTROMAGNETIC FIELDS**
Subject Code	:	**EC 8451**	Year/Semester	:	II/IV

Course Outcomes:

Students must be able to

C213.1	Analyze fundamental electromagnetic laws and concepts.
C213.2	Impart Maxwell's equations in integral, differential and phasor forms.
C213.3	Explain electromagnetic wave propagation in lossy and in lossless media.
C213.4	Estimation of electric and magnetic field quantities based on the concepts and laws.
C213.5	Analyze electric and magnetic fields through Faraday's law, displacement current and Maxwell's equations.
C213.6	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
C213.1	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C213.2	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C213.3	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C213.4	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C213.5	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C213.6	3	2	1	-	-	-	-	2	2	-	-	-	2	1
C213	3	2	1	-	-	-	-	2	2	-	-	-	2	1

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REGULATION : 2017

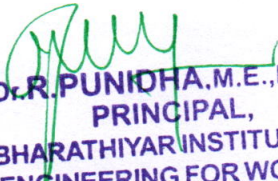| Course/Branch	:	**B.E. / ECE**	Subject Title	:	**LINEAR INTEGRATED**
Subject Code	:	**EC 8453**	Year/Semester	:	II/IV

Course Outcomes:

Students must be able to

C214.1	Design linear and non linear applications of OP – AMPS.
C214.2	Design applications using analog multiplier.
C214.3	Design applications using PLL.
C214.4	Design ADC and DAC using OP – AMPS.
C214.5	Generate waveforms using OP – AMP Circuits.
C214.6	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
C214.1	3	3	2	1	-	-	-	-	-	-	-	-	1	1
C214.2	3	3	2	1	-	-	-	-	-	-	-	-	1	1
C214.3	3	3	2	1	-	-	-	-	-	-	-	-	1	1
C214.4	3	3	2	1	-	-	-	-	-	-	-	-	1	1
C214.5	3	3	2	1	-	-	-	-	-	-	-	-	1	1
C214.6	3	3	2	1	-	-	-	-	-	-	-	-	1	1
C214	3	3	2	1	-	-	-	-	-	-	-	-	1	1

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REGULATION : 2017

Course/Branch	:	B.E. / ECE	Subject Title	:	ENVIRONMENTAL SCIENCE AND ENGINEERING
SubjectCode	:	GE 8291	Year/Semester	:	II/IV

Course Outcomes:

Students must be able to

C215.1	Analyze fundamental concept behind Environment, Ecosystem and Biodiversity.
C215.2	To study environmental pollution, policies and practices.
C215.3	Analyze about Environmental disasters.
C215.4	Analyze various forms of Natural resources.
C215.5	To study human population and environmental ethics.
C215.6	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
C215.1	3	2	-	-	-	3	2	1	1	-	-	-	2	1
C215.2	3	2	-	-	-	3	2	1	1	-	-	-	2	1
C215.3	3	2	-	-	-	3	2	1	1	-	-	-	2	1
C215.4	3	2	-	-	-	3	2	1	1	-	-	-	2	1
C215.5	3	2	-	-	-	3	2	1	1	-	-	-	2	1
C215.6	3	2	-	-	-	3	2	1	1	-	-	-	2	1
C215	3	2	-	-	-	3	2	1	1	-	-	-	2	1

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REGULATION : 2017

Course/Branch	:	**B.E. / ECE**	Subject Title	:	**CIRCUITS DESIGN & SIMULATION LABORATORY**
Subject Code	:	**EC 8461**	Year/Semester	:	II/IV
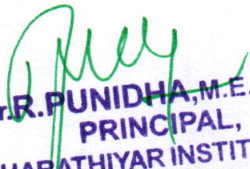
Course Outcomes:

Students must be able to

C216.1	Analyze various types of feedback amplifiers.
C216.2	Design oscillators, tuned amplifiers.
C216.3	Design Wave-shaping circuits and multivibrators
C216.4	Design and simulate feedback amplifiers, oscillators, tuned amplifiers using SPICE Tool.
C216.5	Design and simulate Wave-shaping circuits and multivibrators using SPICE Tool.
C216.6	Differentiate the operation of various multivibrators.

MAPPING OF COURSEOUTCOMES WITHTHE PROGRAM OBJECTIVES:

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

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REGULATION : 2017

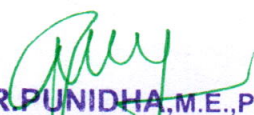| Course/Branch	:	**B.E. / ECE**	SubjectTitle	:	**LINEAR INTEGRATED CIRCUITS LABORATORY**
SubjectCode	:	**EC 8462**	Year/Semester	:	II/IV

CourseOutcomes:
Studentsmustbe able to

C217.1	Design amplifiers, oscillators, D-A converters using operational amplifiers.
C217.2	Design filters using op-amp and performs an experiment on frequency response.
C217.3	Analyze the working of PLL and describe its application as a frequency multiplier.
C217.4	Design DC power supply using ICs.
C217.5	Analyze the performance of filters, multivibrators, A/D converter and analog multiplier using SPICE.
C217.6	Apply operational amplifiers in linear and nonlinear applications.

Experimentwise CO Mapping

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C217.1	3	3	2	1	-	-	-	2	3	1	-	-	1	-
C217.2	3	3	2	1	-	-	-	2	3	1	-	-	1	-
C217.3	3	3	2	1	-	-	-	2	3	1	-	-	1	-
C217.4	3	3	2	1	-	-	-	2	3	1	-	-	1	-
C217.5	3	3	2	1	-	-	-	2	3	1	-	-	1	-
C217.6	3	3	2	1	-	-	-	2	3	1	-	-	1	-

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	DIGITAL COMMUNICATION
Subject Code	EC8501	Year/Semester	III/V
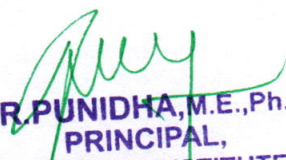
COURSE OUTCOMES

Students must be able to

C301.1:	**Discuss** the concepts of sampling and quantization
C301.2:	**Analyze** the various source coding techniques
C301.3:	**Design** and implement baseband transmission schemes
C301.4:	**Describe** the different modulation schemes and equalization techniques
C301.5:	**Examine** the spectral characteristics of band pass signaling schemes and their noise performance
C301.6:	**Design** the different error control codes

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C301.1	3	3	2	1	-	-	-	-	-	1	-	-	-	1
C301.2	3	3	2	1	-	-	-	-	-	1	-	-	-	1
C301.3	3	3	2	1	-	-	-	-	-	1	-	-	-	-
C301.4	3	3	2	1	-	-	-	-	-	1	-	-	-	1
C301.5	3	3	2	1	-	-	-	-	-	1	-	-	-	-
C301.6	3	3	2	1	-	-	-	-	-	1	-	-	-	1
C301	3	3	2	1	-	-	-	-	-	1	-	-	-	1

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	DISCRETE-TIME SIGNAL PROCESSING
Subject Code	EC8553	Year/Semester	III/V

COURSE OUTCOMES

Students must be able to

C302.1:	**Compute** DFT for the analysis of digital signals and systems
C302.2:	**Design** the Discrete Fourier Transform (DFT) and Fast Fourier transform (FFT).
C302.3:	**Describe** IIR and FIR Filters
C302.4:	**Realize** the effects of finite precision representation on digital filters
C302.5:	**Describe** various types of finite word length effects.
C302.6:	**Generate** adaptive filters appropriately in communication systems

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C302.1	3	3	2	1	1	-	-	-	-	1	-	-	1	-
C302.2	3	3	2	1	1	-	-	-	-	1	-	-	1	-
C302.3	3	3	2	1	1	-	-	-	-	1	-	-	1	-
C302.4	3	3	2	1	1	-	-	-	-	1	-	-	1	-
C302.5	3	3	2	1	1	-	-	-	-	-	-	-	1	-
C302.6	3	3	-	1	1	-	-	-	-	1	-	-	1	-
C302	3	3	2	1	1	-	-	-	-	1	-	-	1	-

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	COMPUTER ARCHITECTURE AND ORGANIZATION
Subject Code	EC8552	Year/Semester	III/V

COURSE OUTCOMES

Students must be able to

C303.1:	**Discuss** data representation, instruction formats and the operation of a digital computer
C303.2:	**Describe** the fixed point and floating-point arithmetic for ALU operation
C303.3:	**Illustrate** about implementation schemes of control unit and pipeline performance
C303.4:	**Discuss** the concept of various memories, interfacing and organization of multiple processors
C303.5:	**Describe** parallel processing technique and unconventional architectures
C303.6:	**Analyze** pipelined control units and various types of hazards in the instructions

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C303.1	3	3	2	1	-	-	1	-	-	2	-	-	-	1
C303.2	3	3	2	1	-	-	1	-	-	2	-	-	-	1
C303.3	3	3	2	1	-	-	1	-	-	2	-	-	-	1
C303.4	3	3	2	1	-	-	1	-	-	2	-	-	-	1
C303.5	3	3	2	1	-	-	1	-	-	2	-	-	-	1
C303.6	3	3	2	1	-	-	1	-	-	2	-	-	-	1
C303	3	3	2	1	-	-	1	-	-	2	-	-	-	1

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	COMMUNICATION NETWORKS
Subject Code	EC8551	Year/Semester	III/V
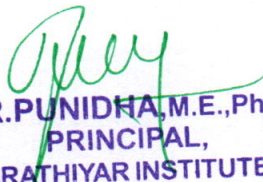
COURSE OUTCOMES

Students must be able to

C304.1:	**Analyze** the components required to build different types of networks
C304.2:	**Identify** the required functionality at each layer for given application
C304.3:	**Summarize** the solution for each functionality at each layer
C304.4:	**Compare** the flow of information from one node to another node in the network
C304.5:	**Discuss** about network software
C304.6:	**Apply** various routing protocols and algorithms for a given network along with IP addresses

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C304.1	3	3	2	1	1	-	1	-	-	-	-	-	2	-
C304.2	3	3	2	1	1	-	1	-	-	-	-	-	2	-
C304.3	3	3	2	1	1	-	1	-	-	-	-	-	2	-
C304.4	3	3	2	1	1	-	1	-	-	-	-	-	2	-
C304.5	3	3	2	1	1	-	1	-	-	-	-	-	2	-
C304.6	3	3	2	1	1	-	1	-	-	-	-	-	2	-
C304	3	3	2	1	1	-	1	-	-	-	-	-	2	-

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	MEDICAL ELECTRONICS
Subject Code	EC8073	Year/Semester	III/V
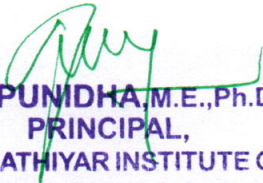
COURSE OUTCOMES
Students must be able to

C305.1:	**Describe** the characteristics of the bioelectric signals
C305.2:	**Illustrate** the measurement techniques for various non-electrical parameters.
C305.3:	**Discuss** the working of human assist devices
C305.4:	**Describe** the operation of diathermy equipment.
C305.5:	**Discuss** the principle of Bio -Telemetry.
C305.6:	**Analyze** the recent trends in diagnosis & Therapy

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C305.1	3	-	2	1	-	2	1	-	-	-	-	-	-	1
C305.2	3	-	2	1	-	2	1	-	-	-	-	-	-	1
C305.3	3	-	2	1	-	2	1	-	-	-	-	-	-	1
C305.4	3	-	2	1	-	2	1	-	-	-	-	-	-	1
C305.5	3	-	2	1	-	2	1	-	-	-	-	-	-	1
C305.6	3	-	2	1	-	2	1	-	-	-	-	-	-	1
C305	3	-	2	1	-	2	1	-	-	-	-	-	-	1

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	RENEWABLE ENERGY SOURCES
Subject Code	ORO551	Year/Semester	III/V
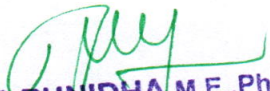
COURSE OUTCOMES

Students must be able to

C306.1:	**Understanding** the physics of solar radiation.
C306.2:	**Ability** to classify the solar energy collectors and methodologies of storing solar energy.
C306.3:	**Knowledge** in applying solar energy in a useful way.
C306.4:	**Knowledge** in wind energy and biomass with its economic aspects.
C306.5:	**Knowledge** in capturing and applying other forms of wind energy
C306.6:	**Knowledge** in capturing and applying other forms of energy sources like biogas and geothermal energies

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C306.1	3	2	1	1	-	2	1	1	-	-	-	1	2	1
C306.2	3	2	1	1	-	2	1	1	-	-	-	1	2	1
C306.3	3	2	1	1	-	2	1	1	-	-	-	1	2	1
C306.4	3	2	1	1	-	2	1	1	-	-	-	1	2	1
C306.5	3	2	1	1	-	2	1	1	-	-	-	1	2	1
C306.6	3	2	1	1	-	2	1	1	-	-	-	1	2	1
C306	3	2	1	1	-	2	1	1	-	-	-	1	2	1

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REGULATION : 2017

ourse/Branch	B.E / ECE	Subject Name	DIGITAL SIGNAL PROCESSING LABORATORY
Subject Code	EC8562	Year/Semester	III/V

COURSE OUTCOMES

Students must be able to

C307.1:	**Carryout** basic signal processing operations
C307.2:	**Demonstrate** their abilities towards MATLAB based implementation of various DSP systems
C307.3:	**Analyze** the architecture of a DSP Processor
C307.4:	**Design and Implement** the FIR and IIR Filters in DSP Processor for performing filtering operation over real-time signals
C307.5:	**Design** a DSP system for various applications of DSP
C307.6:	**Generation** of random noise and elementary Discrete-Time sequences

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C307.1	3	3	3	2	1	-	-	-	2	1	1	-	1	1
C307.2	3	3	3	2	1	-	-	-	2	1	1	-	1	1
C307.3	3	3	3	2	1	-	-	-	2	1	1	-	1	1
C307.4	3	3	3	2	1	-	-	-	2	1	1	-	1	1
C307.5	3	3	3	2	1	-	-	-	2	1	1	-	1	1
C307.6	3	3	3	2	1	-	-	-	2	1	1	-	1	1
C307	3	3	3	2	1	-	-	-	2	1	1	-	1	1

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	COMMUNICATION SYSTEMS LABORATORY
Subject Code	EC8561	Year/Semester	III/V

COURSE OUTCOMES
Students must be able to

C308.1:	**Simulate & validate** the various functional modules of a communication system
C308.2:	**Implement** sampling theorem and Time Division Multiplexing
C308.3:	**Demonstrate** their knowledge in base band signaling schemes through implementation of digital modulation schemes
C308.4:	**Apply** various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of communication system
C308.5:	**Simulate** Error Control Coding Schemes in Communication System
C308.6:	**Simulate** end-to-end communication Link

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C308.1	3	3	3	2	1	-	-	-	2	1	-	-	2	1
C308.2	3	3	3	2	1	-	-	-	2	1	-	-	2	1
C308.3	3	3	3	2	1	-	-	-	2	1	-	-	2	1
C308.4	3	3	3	2	1	-	-	-	2	1	-	-	2	1
C308.5	3	3	3	2	1	-	-	-	2	1	-	-	2	1
C308.6	3	3	3	2	1	-	-	-	2	1	-	-	2	1
C308	3	3	3	2	1	-	-	-	2	1	-	-	2	1

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	COMMUNICATION NETWORKS LABORATORY
Subject Code	EC8563	Year/Semester	III/V
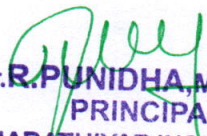
COURSE OUTCOMES

Students must be able to

C309.1:	**Communicate** between two desktop computers
C309.2:	**Implement** the different protocols
C309.3:	**Implement** the Program using sockets.
C309.4:	**Implement** and compare the various routing algorithms
C309.5:	Use the simulation tool.
C309.6:	**Implement** the various error Technique and Algorithms

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C309.1	3	3	2	2	1	1	-	-	2	1	-	-	-	2
C309.2	3	3	2	2	1	1	-	-	2	1	-	-	-	2
C309.3	3	3	2	2	1	1	-	-	2	1	-	-	-	2
C309.4	3	3	2	2	1	1	-	-	2	1	-	-	-	2
C309.5	3	3	2	2	1	1	-	-	2	1	-	-	-	2
C309.6	3	3	2	2	1	1	-	-	2	1	-	-	-	2
C309	3	3	2	2	1	1	-	-	2	1	-	-	-	2

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	MICROPROCESSORS AND MICROCONTROLLERS
Subject Code	EC8691	Year/Semester	III/VI
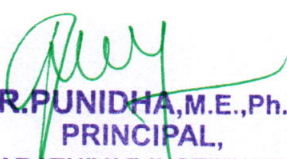
COURSE OUTCOMES
Students must be able to

C310.1:	**Understand** the architecture of 8086
C310.2:	**Comprehends** about the 8086 system bus structure
C310.3:	**Understand** how interfacing works
C310.4:	**Design and implement** interface I/O circuits and Memory Interfacing circuits..
C310.5:	**Analyze** the concepts of microcontroller
C310.6:	**Design and implement** 8051 microcontroller based system

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C310.1	3	3	2	1	1	1	-	-	-	-	-	-	2	1
C310.2	3	3	2	1	1	1	-	-	-	-	-	-	2	1
C310.3	3	3	2	1	1	1	-	-	-	-	-	-	2	1
C310.4	3	3	2	1	1	1	-	-	-	-	-	-	2	1
C310.5	3	3	2	1	1	1	-	-	-	-	-	-	2	1
C310.6	3	3	2	1	1	1	-	-	-	-	-	-	2	1
C310	3	3	2	1	1	1	-	-	-	-	-	-	2	1

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REGULATION : 2017

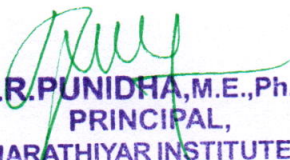| Course/Branch	B.E / ECE	Subject Name	VLSI DESIGN
Subject Code	EC8095	Year/Semester	III/VI

COURSE OUTCOMES

Students must be able to

C311.1:	**Discuss** the Electrical characteristics of MOS Transistor and its layout conversion
C311.2:	**Illustrate** various logic gates and functions using different logic families
C311.3:	**Describe** various sequential circuits using various logic family and classify various memory in Synchronous and asynchronous
C311.4:	**Compare** various arithmetic building blocks and its characteristics
C311.5:	**Discuss** about the implementation strategies for FPGA.
C311.6:	**Discuss** about the implementation strategies for Testing Methodologies.

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C311.1	3	3	2	1	-	-	1	-	2	-	-	-	2	1
C311.2	3	3	2	1	-	-	1	-	2	-	-	-	2	1
C311.3	3	3	2	1	-	-	1	-	2	-	-	-	2	1
C311.4	3	3	2	1	-	-	1	-	2	-	-	-	2	1
C311.5	3	3	2	1	-	-	1	-	2	-	-	-	2	1
C311.6	3	3	2	1	-	-	1	-	2	-	-	-	2	1
C311	3	3	2	1	-	-	1	-	2	-	-	-	2	1

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	WIRELESS COMMUNICATION
Subject Code	EC8652	Year/Semester	III/VI
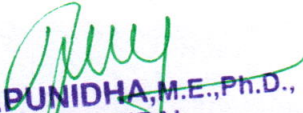
COURSE OUTCOMES

Students must be able to

C312.1:	**Understand** the characteristics of Fading in Wireless Channel
C312.2:	**Discuss** the fundamental of Cellular Architecture
C312.3:	**Design** the various signaling schemes for wireless communication channels
C312.4:	**Analyze** the performance of channel using various propagation models
C312.5:	**Examine** the various mitigation techniques to address fading in multipath propagation
C312.6:	**Design and Demonstrate** MIMO system and also Evaluate capacity of fading and non fading channels

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C312.1	3	2	2	1	-	-	2	-	-	1	-	-	2	1
C312.2	3	2	2	1	-	-	2	-	-	1	-	-	2	1
C312.3	3	2	2	1	-	-	2	-	-	1	-	-	2	1
C312.4	3	2	2	1	-	-	2	-	-	1	-	-	2	1
C312.5	3	2	2	1	-	-	2	-	-	1	-	-	2	1
C312.6	3	2	2	1	-	-	2	-	-	1	-	-	2	1
C312	3	2	2	1	-	-	2	-	-	1	-	-	2	1

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	PRINCIPLES OF MANAGEMENT
Subject Code	MG8591	Year/Semester	III/VI
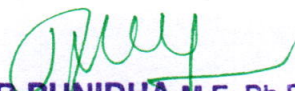
COURSE OUTCOMES

Students must be able to

C313.1:	**Understand** the management evolution
C313.2:	**Summarizing** different types of business organization.
C313.3:	**Describe** planning and decision making process of management
C313.4:	**Discuss** organizing by Job design, HR planning, training and development
C313.5:	**Discuss** directing through motivation, leadership and effective communication.
C313.6:	**Illustrate** performance controlling process, techniques of control and reporting to the management.

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C313.1	3	2	2	1	-	-	2	2	1	-	-	-	-	2
C313.2	3	2	2	1	-	-	2	2	1	-	-	-	-	2
C313.3	3	2	2	1	-	-	2	2	1	-	-	-	-	2
C313.4	3	2	2	1	-	-	2	2	1	-	-	-	-	2
C313.5	3	2	2	1	-	-	2	2	1	-	-	-	-	2
C313.6	3	2	2	1	-	-	2	2	1	-	-	-	-	2
C313	3	2	2	1	-	-	2	2	1	-	-	-	-	2

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	TRANSMISSION LINES AND RF SYSTEMS
Subject Code	EC8651	Year/Semester	III/VI

COURSE OUTCOMES
Students must be able to

C314.1:	**Describe** the characteristics of transmission lines and its losses
C314.2:	**Discuss** network theory concepts to derive the line parameters, line equations
C314.3:	**Analyze** the concept of standing wave ratio and input impedance in high frequency transmission lines
C314.4:	**Design** impedance matching by stubs using smith charts
C314.5:	**Discuss** the characteristics of TE and TM waves
C314.6:	**Ability** to design a RF transceiver system for wireless communication

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C314.1	3	2	2	1	-	-	1	-	-	1	-	-	1	2
C314.2	3	2	2	1	-	-	1	-	-	1	-	-	1	2
C314.3	3	2	2	1	-	-	1	-	-	1	-	-	1	2
C314.4	3	2	2	1	-	-	1	-	-	1	-	-	1	2
C314.5	3	2	2	1	-	-	1	-	-	1	-	-	1	2
C314.6	3	2	2	1	-	-	1	-	-	1	-	-	1	2
C314	3	2	2	1	-	-	1	-	-	1	-	-	1	2

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	WIRELESS NETWORKS
Subject Code	EC8004	Year/Semester	III/VI
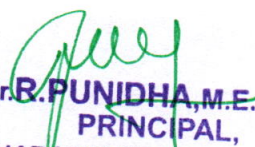
COURSE OUTCOMES

Students must be able to

C315.1:	**Discuss** about various Wireless Network and different type of wireless LAN
C315.2:	**Describe** about and IEEE Standards and layer structure
C315.3:	**Discuss** about the Mobile Network layer ,Routing protocols and Network Solutions
C315.4:	**Describe** about 3G Network with applications
C315.5:	**Discuss** about internetworking between WLANS and WWANS
C315.6:	**Examine** Mobile 4G network and applications

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C315.1	3	2	2	1	-	-	1	-	-	1	-	-	2	1
C315.2	3	2	2	1	-	-	1	-	-	1	-	-	2	1
C315.3	3	2	2	1	-	-	1	-	-	1	-	-	2	1
C315.4	3	2	2	1	-	-	1	-	-	1	-	-	2	1
C315.5	3	2	2	1	-	-	1	-	-	-	-	-	2	1
C315.6	3	2	2	1	-	-	1	-	-	-	-	-	2	1
C315	3	2	2	1	-	-	1	-	-	1	-	-	2	1

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	MICROPROCESSORS AND MICROCONTROLLERS LABORATORY
Subject Code	EC8681	Year/Semester	III/VI
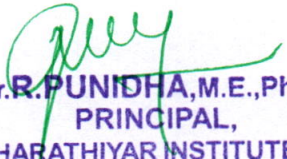
COURSE OUTCOMES

Students must be able to

C316.1:	**Understand** the basic concepts and features of ALP using 8086 and 8051
C316.2:	**Analyze** the arithmetic and logical operations using 8086 and 8051 kit.
C316.3:	**Design** of code converters and waveform generation using 8086 and 8051.
C316.4:	**Interface** various I/O devices with 8086 processor.
C316.5:	**Simulate** arithmetic operation using MASM
C316.6:	**Simulate** logical and BCD operation using MASM

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C316.1	3	2	2	1	-	-	-	-	2	1	-	-	2	1
C316.2	3	2	2	1	-	-	-	-	2	1	-	-	2	1
C316.3	3	2	2	1	-	-	-	-	2	1	-	-	2	1
C316.4	3	2	2	1	-	-	-	-	2	1	-	-	2	1
C316.5	3	2	2	1	-	-	-	-	2	1	-	-	2	1
C316.6	3	2	2	1	-	-	-	-	2	1	-	-	2	1
C316	3	2	2	1	-	-	-	-	2	1	-	-	2	1

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	VLSI DESIGN LABORATORY
Subject Code	EC8661	Year/Semester	III/VI
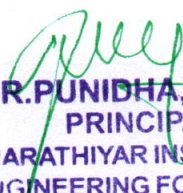
COURSE OUTCOMES

Students must be able to

C317.1:	**Design** HDL code for advanced digital integrated circuits
C317.2:	**Illustrate** the logic modules in to FPGA boards
C317.3:	**Examine** sequential logic circuits and synthesis, place and route digital IPS
C317.4:	**Simulate** the layouts of analog IC blocks using EDA tools
C317.5:	**Extract** the layouts of analog IC blocks using EDA tools
C317.6:	**Discuss** layout diagram in all the digital expressions

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C317.1	3	2	2	1	2	1	-	-	-	-	-	-	2	1
C317.2	3	2	2	1	2	1	-	-	-	-	-	-	2	1
C317.3	3	2	2	1	2	1	-	-	-	-	-	-	2	1
C317.4	3	2	2	1	2	1	-	-	-	-	-	-	2	1
C317.5	3	2	2	1	2	1	-	-	-	-	-	-	2	1
C317.6	3	2	2	1	2	1	-	-	-	-	-	-	2	1
C317	3	2	2	1	2	1	-	-	-	-	-	-	2	1

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	TECHNICAL SEMINAR
Subject Code	EC8611	Year/Semester	III/VI

COURSE OUTCOMES

Students must be able to

C318.1:	**Discuss** the selection of a subject, narrowing the subject into a topic and stating an objective
C318.2:	**Illustrate** to collect the relevant bibliography and preparing a working outline.
C318.3:	**Configure** the understanding of papers and authors contributions
C318.4:	**Understand** the critically analyzing each paper.
C318.5:	**Configure** the linking of papers and preparing a draft of the paper
C318.6:	**Describe** the writing of final Paper and giving final Presentation

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C318.1	3	3	2	1	-	-	-	-	-	2	-	-	1	2
C318.2	3	3	2	1	-	-	-	-	-	2	-	-	1	2
C318.3	3	3	2	1	-	-	-	-	-	2	-	-	1	2
C318.4	3	3	2	1	-	-	-	-	-	2	-	-	1	2
C318.5	3	3	2	1	-	-	-	-	-	2	-	-	1	2
C318.6	3	3	2	1	-	-	-	-	-	2	-	-	1	2
C318	3	3	2	1	-	-	-	-	-	2	-	-	1	2

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REGULATION : 2017

Course/Branch	B.E / ECE	Subject Name	PROFESSIONAL COMMUNICATION
Subject Code	HS8581	Year/Semester	III/V

COURSE OUTCOMES
Students must be able to

C319.1:	**Enhance** the Employability & Career Skills
C319.2:	**Make** effective presentations
C319.3:	**Participate** confidently in Group Discussions.
C319.4:	Attend job interviews and be successful in them.
C319.5:	**Develop** adequate Soft Skills required for the workplace
C319.6:	**Generate** communication employment-based communication competence by making students self reliant and analytical

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C319.1	3	3	2	1	-	-	-	-	2	2	-	1	2	1
C319.2	3	3	2	1	-	-	-	-	2	2	-	1	2	1
C319.3	3	3	2	1	-	-	-	-	2	2	-	1	2	1
C319.4	3	3	2	1	-	-	-	-	2	2	-	1	2	1
C319.5	3	3	2	1	-	-	-	-	2	2	-	1	2	1
C319.6	3	3	2	1	-	-	-	-	2	2	-	1	2	1
C319	3	3	2	1	-	-	-	-	2	2	-	1	2	1

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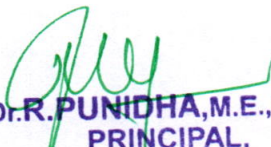| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Antennas and Microwave Engineering
Subject Code	:	EC8701	Year/Semester	:	IV/VII

Course Outcomes:
Students must be able to

C401.1	Apply the basic principles and evaluate antenna parameters and link power budgets
C401.2	Acquire the basic knowledge of various antenna designs.
C401.3	Analyze the importance of frequency independent antennas.
C401.4	Analyze various antenna arrays and smart antennas.
C401.5	Describe the concept of active and passive microwave devices.
C401.6	Design of microwave system consisting of amplifier, filter and mixers.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C401.1	3	3	2	1	-	1	1	-	-	1	-	1	1	-
C401.2	3	3	2	1	-	1	1	-	-	1	-	1	1	-
C401.3	3	3	2	1	-	1	1	-	-	1	-	1	1	-
C401.4	3	3	2	1	-	1	1	-	-	1	-	1	1	-
C401.5	3	3	2	1	-	1	1	-	-	1	-	1	1	-
C401.6	3	3	2	1	-	1	1	-	-	1	-	1	1	-
C401	3	3	2	1	-	1	1	-	-	1	-	1	1	-

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Optical Communication
Subject Code	:	EC 8751	Year/Semester	:	IV/VII

Course Outcomes:

Students must be able to

C402.1	Realize basic elements in optical fibers, different modes and configurations.
C402.2	Analyze the transmission characteristics associated with dispersion and polarization techniques.
C402.3	Design optical sources and detectors with their use in optical communication system.
C402.4	Construct fiber optic receiver systems, measurements and coupling techniques.
C402.5	Design optical communication systems and its networks.
C402.6	Analyze Optical power measurement-attenuation measurement-dispersion measurement

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C402.1	3	3	2	1	-	2	-	-	-	2	-	1	2	1
C402.2	3	3	2	1	-	2	-	-	-	2	-	1	2	1
C402.3	3	3	2	1	-	2	-	-	-	2	-	1	2	1
C402.4	3	3	2	1	-	2	-	-	-	2	-	1	2	1
C402.5	3	3	2	1	-	2	-	-	-	2	-	1	2	1
C402.6	3	3	2	1	-	2	-	-	-	2	-	1	2	1
C402	3	3	2	1	-	2	-	-	-	2	-	1	2	1

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Embedded Real Time Systems
Subject Code	:	EC 8791	Year/Semester	:	IV/VII

Course Outcomes:
Students must be able to

C403.1	Describe the architecture and programming of ARM processor
C403.2	Outline the concepts of embedded systems
C403.3	Explain the basic concepts of real time operating system design
C403.4	Differentiate between the general purpose operating system and the real time operating system.
C403.5	Explain the concept of design methodologies techniques for embedded system.
C403.6	Model real-time applications using embedded-system concepts

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C403.1	3	2	2	1	1	-	-	-	2	1	-	1	3	2
C403.2	3	2	2	1	1	-	-	-	2	1	-	1	3	2
C403.3	3	2	2	1	1	-	-	-	2	1	-	1	3	2
C403.4	3	2	2	1	1	-	-	-	2	1	-	1	3	2
C403.5	3	2	2	1	1	-	-	-	2	1	-	1	3	2
C403.6	3	2	2	1	1	-	-	-	2	1	-	1	3	2
C403	3	2	2	1	1	-	-	-	2	1	-	1	3	2

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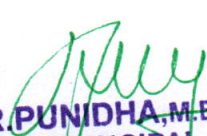| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Adhoc and Wireless Sensor Networks
Subject Code	:	EC 8702	Year/Semester	:	IV/VII

Course Outcomes:

Students must be able to

C404.1	Know the basics of Ad hoc networks and Wireless Sensor Networks
C404.2	Apply this knowledge to identify the suitable routing algorithm based on the network and user requirement
C404.3	Apply the knowledge to identify appropriate physical and MAC layer protocols
C404.4	Understand the transport layer and security issues possible in Ad hoc and sensor networks
C404.5	Be familiar with the OS used in Wireless Sensor Networks and build basic modules
C404.6	Apply Layer wise attacks in wireless sensor networks

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C404.1	3	3	2	1	1	1	-	-	-	-	-	-	1	2
C404.2	3	3	2	1	1	1	-	-	-	-	-	-	1	2
C404.3	3	3	2	1	1	1	-	-	-	-	-	-	1	2
C404.4	3	2	2	1	1	1	-	-	-	-	-	-	1	2
C404.5	3	2	2	1	1	1	-	-	-	-	-	-	1	2
C404.6	3	3	2	1	1	1	-	-	-	-	-	-	1	2
C404	3	3	2	1	1	1	-	-	-	-	-	-	1	2

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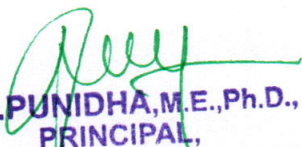| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Disaster Management
Subject Code	:	GE 8071	Year/Semester	:	IV/VII

Course Outcomes:

Students must be able to

C405.1	Analyze the Categories Disasters and the Relationship between Development and Disasters.
C405.2	Promote Prevention and Preparedness for disaster.
C405.3	Induce knowledge to create appropriate planning, preparation and response for emergency treatment in disaster situation.
C405.4	Ability to build capacities for Outbreak investigating disease epidemics during and after disaster.
C405.5	Describe the international cooperation by identification of International Agencies in Disasters Management.
C405.6	Describe the Roles and Responsibilities of Panchayat, urban and Local bodies in Disaster Management.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C405.1	3	2	1	-	1	1	-	2	2	1	-	-	-	1
C405.2	3	2	1	-	1	1	-	2	2	1	-	-	-	1
C405.3	3	2	1	-	1	1	-	2	2	1	-	-	-	1
C405.4	2	2	1	-	1	1	-	2	2	1	-	-	-	1
C405.5	2	2	1	-	1	1	-	2	2	1	-	-	-	1
C405.6	3	2	1	-	1	1	-	2	2	1	-	-	-	1
C405	3	2	1	-	1	1	-	2	2	1	-	-	-	1

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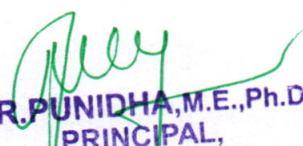### REGULATION : 2017

Course Outcomes:

Course/Branch	:	B.E. / ECE	Subject Title	:	Introduction to C Programming
Subject Code	:	OCS 752	Year/Semester	:	IV/VII

Students must be able to

C406.1	Develop simple applications using basic programming constructs.
C406.2	Develop applications using arrays.
C406.3	Develop applications using strings.
C406.4	Develop applications using pointer.
C406.5	Develop applications using functions.
C406.6	Develop applications using structure.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C406.1	3	2	1	1	-	-	-	-	1	2	-	2	1	1
C406.2	3	2	1	1	-	-	-	-	1	2	-	2	1	1
C406.3	3	2	1	1	-	-	-	-	1	2	-	2	1	1
C406.4	3	2	1	1	-	-	-	-	1	2	-	2	1	1
C406.5	3	2	1	1	-	-	-	-	1	2	-	2	1	1
C406.6	3	2	1	1	-	-	-	-	1	2	-	2	1	1
C406	3	2	1	1	-	-	-	-	1	2	-	2	1	1

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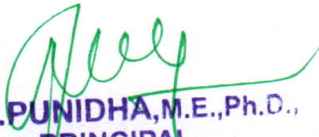| Course/Branch	:	B.E. / ECE	Subject Title	:	Digital Image Processing
Subject Code	:	EC 8093	Year/Semester	:	IV/VII

Course Outcomes:

Students must be able to

C409.1	Know and understand the basics and fundamentals of digital image processing, such as digitization, sampling, quantization, and 2D-transforms.
C409.2	Operate on images using the techniques of smoothing, sharpening and enhancement.
C409.3	Understand the restoration concepts and filtering techniques.
C409.4	Learn the basics of segmentation, features extraction, compression and recognition methods for color models.
C409.5	Use various coding techniques for image compression.
C409.6	Analyze various image descriptors and features of image representation techniques.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C409.1	3	3	2	2	1	2	-	-	-	-	-	-	3	2
C409.2	3	3	2	2	1	2	-	-	-	-	-	-	3	2
C409.3	3	3	2	2	1	2	-	-	-	-	-	-	3	2
C409.4	3	2	2	2	1	2	-	-	-	-	-	-	3	2
C409.5	3	2	2	2	1	2	-	-	-	-	-	-	3	2
C409.6	3	3	2	2	1	2	-	-	-	-	-	-	3	2
C409	3	3	2	2	1	2	-	-	-	-	-	-	3	2

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Satellite Communication
Subject Code	:	EC 8094	Year/Semester	:	IV/VII

Course Outcomes:

Students must be able to

C410.1	Describe the basics of satellite orbits.
C410.2	Analyze the satellite orbits.
C410.3	Analyze the earth segment.
C410.4	Analyze the satellite Link design.
C410.5	Design various satellite applications.
C410.6	Analyze the space segment.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C410.1	3	3	2	1	-	-	-	-	-	2	-	1	3	2
C410.2	3	3	2	1	-	-	-	-	-	2	-	1	3	2
C410.3	3	3	2	1	-	-	-	-	-	2	-	1	3	2
C410.4	3	2	2	1	-	-	-	-	-	2	-	1	3	2
C410.5	3	2	2	1	-	-	-	-	-	2	-	1	3	2
C410.6	3	3	2	1	-	-	-	-	-	2	-	1	3	2
C410	3	3	2	1	-	-	-	-	-	2	-	1	3	2

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Project Work
Subject Code	:	EC 8811	Year/Semester	:	IV/VII

Course Outcomes:

Students must be able to

C411.1	Demonstrate profound technical knowledge of the project.
C411.2	Identify a real world problem, review literature and suggest its solution.
C411.3	Demonstrate solutions to complex engineering problems utilizing a systems approach
C411.4	Provide solutions to meet the specified needs of the society.
C411.5	Create a system and validate its conformance
C411.6	Perform data analysis, interpret and provide valid conclusions.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C411.1	3	3	2	2	1	-	-	-	2	1	2	1	1	1
C411.2	3	3	2	2	1	-	-	-	2	1	2	1	1	1
C411.3	3	3	2	2	1	-	-	-	2	1	2	1	1	1
C411.4	3	2	2	2	1	-	-	-	2	1	2	1	1	1
C411.5	3	2	2	2	1	-	-	-	2	1	2	1	1	1
C411.6	3	3	2	2	1	-	-	-	2	1	2	1	1	1
C411	3	3	2	2	1	-	-	-	2	1	2	1	1	1

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REGULATION : 2017

Course/Branch	:	B.E. / ECE	Subject Title	:	Embedded Laboratory
Subject Code	:	EC 8711	Year/Semester	:	IV/VII

Course Outcomes:

Students must be able to

C407.1	Write programs in ARM for a specific Application
C407.2	Interface A/D and D/A convertors with ARM system
C407.3	Interface memory and Write programs related to memory operations
C407.4	Analyze the performance of interrupt
C407.5	Write programs for interfacing keyboard, display and motor
C407.6	Formulate a mini project using embedded system

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C407.1	3	3	2	1	-	-	-	-	1	2	-	2	1	1
C407.2	3	3	2	1	-	-	-	-	1	2	-	2	1	1
C407.3	3	3	2	1	-	-	-	-	1	2	-	2	1	1
C407.4	3	3	2	1	-	-	-	-	1	2	-	2	1	1
C407.5	3	3	2	1	-	-	-	-	1	2	-	2	1	1
C407.6	3	3	2	1	-	-	-	-	1	2	-	2	1	1
C407	3	3	2	1	-	-	-	-	1	2	-	2	1	1

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