BHARATHIYAR INSTITUTE OF ENGINEERING FOR WOMEN, DEVIYAKURICHI
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
REGULATION -2013

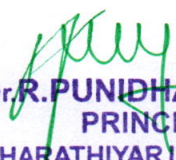| Course/Branch	:	B.E. / ECE	Subject Title	:	Technical English - I
Subject Code	:	HS6151	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C101.1	Define the fundamentals of engineering after learning the rules of English Grammar.
C101.2	Observe and interpret the contextual knowledge by speaking, listening and reading the social issues such as public health, safety, legal and culturally related considerations.
C101.3	Apply the creative, appropriate techniques, resources to analyze complex engineering problems by interactive exercises such as interviews and dialogue-writing.
C101.4	Design the multidisciplinary settings to manage projects as an individual, as a member or leader after taking the exercises like role-play, group discussion and making presentations
C101.5	Model the life-long learning methods suitable for all the environments committed to Professional ethics and responsibilities after inculcating the habit of reading and writing
C101.6	Analyze and identify the root for an effective managerial skills through different spoken discourse and excerpts

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	2	2	-	-	-	-	-	-	-	-	-	1	-
C101.2	3	2	2	-	-	-	-	-	-	-	-	-	1	-
C101.3	3	2	2	-	-	-	-	-	-	-	-	-	1	-
C101.4	3	2	2	-	-	-	-	-	-	-	-	-	1	-
C101.5	3	2	2	-	-	-	-	-	-	-	-	-	1	-
C101.6	3	2	2	-	-	-	-	-	-	-	-	-	1	-
C101	3	2	2	-	-	-	-	-	-	-	-	-	1	-

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Course/Branch	:	B.E. / ECE	Subject Title	:	Engineering Mathematics – I
Subject Code	:	MA6151	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C102.1	Define Eigen values and Eigen vectors and explain how to analyze the stability of a sytem using these concepts and much other real time application in engineering.
C102.2	Explain the physical interpretation of divergence, curl and gradient of a vector field and also how to apply these concepts in solving engineering problems.
C102.3	Define the convergence of a sequence and series and make the student knowledgeable in the area of infinite series and their convergence so that he/ she will be familiar with limitations of using infinite series approximations for solutions arising in mathematical modeling
C102.4	Introduce the concept of multivariable functions of real variables arise inevitably in engineering and physics due to any one physical quantity will generally depend on a number of other quantities and help to solve real time problems.
C102.5	Extend the concept of single integral to multiple integral and explain how to evaluate it. Also explain the idea of change of order of integration and explain how to find Area and volume of solids
C102.6	Understand various mathematical tools and apply it to solve the engineering problems most effectively

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	2	1	1	-	-	-	2	2	2	-	-	1	1	-
C102.2	2	1	1	-	-	-	2	2	2	-	-	1	1	-
C102.3	2	1	1	-	-	-	2	2	2	-	-	1	1	-
C102.4	2	1	1	-	-	-	2	2	2	-	-	1	1	-
C102.5	2	1	1	-	-	-	2	2	2	-	-	1	1	-
C102.6	2	1	1	-	-	-	2	2	2	-	-	1	1	-
C102	2	1	1	-	-	-	2	2	2	-	-	1	1	-

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Engineering Physics - I
Subject Code	:	**PH6151**	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C103.1	To understand the possible crystal structures and to analyze various growth techniques in the view of increasing demand of crystals for various Engineering and Technological applications
C103.2	To understand the basic concepts of elastic behavior of materials and evaluate the structural stability of beams. Remembering functional ideas of thermal physics and compare the thermal conductivity of different materials to meet the specific needs
C103.3	Describe and analyzing the quantum nature of radiation and matter to solve the real time societal and technological problems
C103.4	The significance of frequency dependent sound waves is discussed and to solve the Medical and Engineering problems using ultrasonic's.
C103.5	To discuss the propagation of light in optical fibers, compare various types of fibers and its applications in Medical and Engineering fields
C103.6	To make the students understand the fundamentals of Physics to solve complex engineering problems for benefit of the society

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

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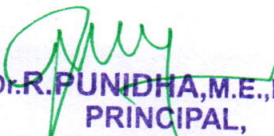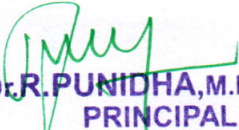**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**
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Course/Branch	:	B.E. / ECE	Subject Title	:	Engineering Chemistry - I
Subject Code	:	CY6151	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C104.1	To apply and implement the knowledge of synthesis and uses of polymers in industries and environment
C104.2	To analyze and understand the concepts of thermodynamic laws in various industrial applications
C104.3	To understand and remember the concepts of photo physical, photochemical process and spectroscopy for getting knowledge in light emitting properties of compounds and identifying the functional groups of molecules
C104.4	Knowledge of alloys gives an idea about the manufacturing process in various industries
C104.5	To create the knowledge of nonmaterial's and their applications in fields like medicinal, electrical, electronic, chemical,etc
C104.6	The knowledge gained on polymer chemistry, Thermodynamics, Spectroscopy, phase rule and nano materials will provide a strong platform to understand the concept on various fields like mechanical, electrical, civil engineering for further learning

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

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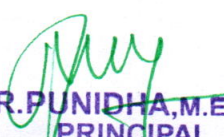## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
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Course/Branch	:	B.E. / ECE	Subject Title	:	Computer Programming
Subject Code	:	GE6151	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C105.1	Understand the organization of a digital computer.
C105.2	Be exposed to the number systems
C105.3	Ability to think logically and write pseudo code or draw flow charts for problems.
C105.4	Ability to use arrays, strings, functions, pointers, structures and unions in C.
C105.5	Design C Programs for problems
C105.6	Write and execute C programs for simple applications

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	3	2	-	3	1	1	-	-	-	-	3	2	2
C105.2	3	3	2	-	3	1	1	-	-	-	-	3	2	2
C105.3	3	3	2	-	3	1	1	-	-	-	-	3	2	2
C105.4	3	3	2	-	3	1	1	-	-	-	-	3	2	2
C105.5	3	3	2	-	3	1	1	-	-	-	-	3	2	2
C105.6	3.	3	2	-	3	1	1	-	-	-	-	3	2	2
C105	3	3	2	-	3	1	1	-	-	-	-	3	2	2

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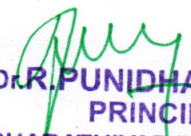## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
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Course/Branch	:	B.E. / ECE	Subject Title	:	Engineering Graphics
Subject Code	:	GE6152	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C106.1	Ability to draw different engineering curves, draw different orthographic projections.
C106.2	Illustrate different views of points, lines and planes inclined to both HP and VP in the first quadrant.
C106.3	Develop the projections of simple solids inclined to any one plane
C106.4	Categorize Section and develop various solids
C106.5	Evaluate to Draw 3D projections of simple solids by Perspective by visual ray method and Isometric projections
C106.6	Build an engineering component using Paper drawing as well as in CAD

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	2	1	-	-	2	-	-	1	-	-	2	1	-
C106.2	2	2	1	-	-	2	-	-	1	-	-	2	1	-
C106.3	2	2	1	-	-	2	-	-	1	-	-	2	1	-
C106.4	2	2	1	-	-	2	-	-	1	-	-	2	1	-
C106.5	2	2	1	-	-	2	-	-	1	-	-	2	1	-
C106.6	2	2	1	-	-	2	-	-	1	-	-	2	1	-
C106	2	2	1	-	-	2	-	-	1	-	-	2	1	-

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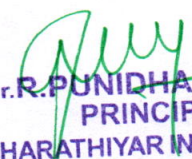
Course/Branch	:	**B.E. / ECE**	Subject Title	:	Computer Practices Laboratory
Subject Code	:	**GE6161**	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C107.1	Conversant with the use of Office software.
C107.2	Knowledge to use presentation and visualization tools.
C107.3	Familiar with problem solving techniques and flow charts.
C107.4	Apply good programming design methods for program development.
C107.5	Design and implement C programs for simple applications.
C107.6	Develop recursive programs.

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Engineering Practices Laboratory
Subject Code	:	**GE6162**	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C108.1	Hands on experience on welding, sheet metal and lathe works
C108.2	Experience the plumbing and carpentry work
C108.3	Demonstration on centrifugal pump and air conditioning working principles
C108.4	Measurement of Electrical quantities, earthing procedures, wiring methods etc
C108.5	Study of Electronic components and equipments – Resistor, colour coding measurement of AC signal parameter, Gates , Circuits etc
C108.6	Provide exposure to the students with hands-on experience on various basic engineering practices in Civil, Mechanical, Electrical and Electronics Engineering.

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

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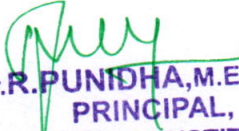**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**
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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Physics and Chemistry Laboratory
Subject Code	:	**GE6163**	Year/Semester	:	I/I

Course Outcomes:
Students must be able to

C109.1	To apply the physics principles of Thermal physics and Properties of Matter to evaluate properties of materials
C109.2	To understand measurement technique and usage of new instrument in Optics for real time application in Engineering.
C109.3	Apply the concept of Ultrasonic to determine the physical parameters.
C109.4	Able to analyze the quality of water for domestic and industrial purpose.
C109.5	Used to find out the emf for different metallic solutions from which electrode potential is determined.
C109.6	To acquire knowledge about the conductivity of acids and bases.

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	2	1	1	-	-	1	-	2	2	1	-	1	-	-
C109.2	2	1	1	-	1	1	-	2	2	1	-	1	-	-
C109.3	2	1	1	-	1	1	-	2	2	1	-	1	-	-
C109.4	2	1	1	-	1	1	-	2	2	1	-	1	-	-
C109.5	2	1	1	-	1	1	-	2	2	1	-	1	-	-
C109.6	2	1	1	-	1	1	-	-	2	1	-	1	-	-
C109	2	1	1	-	1	1	-	2	2	1	-	1	-	-

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Technical English - II
Subject Code	:	**HS6251**	Year/Semester	:	I/II
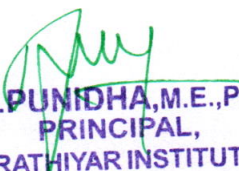
Course Outcomes:

Students must be able to

C110.1	Define the impact of the professional engineering solution in societal and environmental contexts with the help of the basic grammar taught to communicate effectively and confidently.
C110.2	Observe the usage of modern engineering and IT tools in designing and developing solutions after developing their reading skills with different types of reading strategies.
C110.3	Apply the creative, appropriate techniques, resources to analyze complex engineering problems by interactive exercises like sample interviews and dialogue – writing.
C110.4	Analyze the engineering and Project management principles in consequence of the listening and speaking skills acquired during the classroom activities.
C110.5	Model the time varying natural and engineering sciences after learning to write an imaginary reports, essays, process description, and visualizing materials.
C110.6	Understand the responsibilities relevant to the professional engineering practice after reading the different genres of texts.

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

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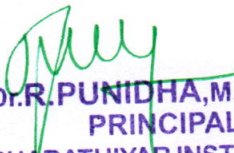| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Engineering Mathematics - II
Subject Code	:	**MA6251**	Year/Semester	:	I/II

Course Outcomes:
Students must be able to

C111.1	Apply the knowledge of techniques in solving ordinary differential equations that model Engineering problems.
C111.2	Define and understand the concepts of vector calculus, needed for problems in all engineering disciplines.
C111.3	Develop an understanding of the standard techniques of complex variable theory so as to enable the student to apply them with confidence, in application areas such as heat conduction, elasticity, fluid dynamics and flow the of electric current.
C111.4	Evaluate real integrals by applying concept of complex integration
C111.5	Understand and apply the knowledge of Laplace Transforms in solving system of linear differential equations.
C111.6	Introduces fundamental knowledge in mathematics that is applicable in the Engineering aspects.

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

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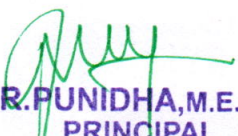| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Engineering Physics- II
Subject Code	:	**PH6251**	Year/Semester	:	I/II

Course Outcomes:

Students must be able to

C112.1	To understand the basic principles of the electrical and thermal conductivity of metals and to analyze the electron behavior by classical and quantum theories.
C112.2	To discuss the electron behavior in conduction and valence band in semiconducting materials, comparing the mobility and carrier concentration of N and P type semiconductors by theoretical method and applying Hall effect experimental method for biasing application.
C112.3	To identify the different types of magnetic materials based on the atomic magnetic dipoles and utilize them for different technological applications. To explain the superconducting behaviors of materials and to solve real time medical and engineering applications.
C112.4	To describe different polarization mechanism in dielectric materials and to meet the specific need in energy sector.
C112.5	State and explain modern engineering materials such as metallic glasses, shape memory alloys, Nonmaterial's and NLO materials to design new engineering devices.
C112.6	To emphasize the role of conventional and modern engineering materials in Technological applications for the sustainable development of the society.

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Engineering Chemistry - II
Subject Code	:	**CY6251**	Year/Semester	:	I/II

Course Outcomes:
Students must be able to

C113.1	To gain knowledge about water quality parameters to analyze and provide them with latest equipment and technologies by using external and internal treatments.
C113.2	To impart knowledge in principles of electrochemical reactions, redox reactions in corrosion of materials and methods for corrosion prevention and protection of materials.
C113.3	To understand the principles and generation of energy in batteries, nuclear reactors, solar cells, wind mills and fuel cells.
C113.4	To get adequate knowledge in preparation, properties and applications of engineering materials.
C113.5	Analyze issues related to fuels and their synthesis and able to understand working of IC and diesel engines.
C113.6	The knowledge gained on engineering materials, fuels, energy sources and water treatment techniques will facilitate better understanding of engineering processes and applications for further learning

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

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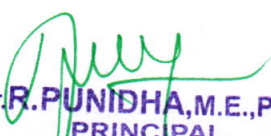| Course/Branch	:	B.E. / ECE	Subject Title	:	Electronic Devices - II
Subject Code	:	EC6201	Year/Semester	:	I/II

Course Outcomes:
Students must be able to

C114.1	Understand the basic idea about semiconductor physics. Study of diode characteristics
C114.2	Understanding the basic operation of bipolar transistor and its various characteristics
C114.3	Understanding the basic operation of Field effect transistor and its various characteristics
C114.4	Design the special semiconductor devices and analysis various characteristics
C114.5	Understanding the operation of semiconductor power devices
C114.6	Explain the theory, construction, and operation of basic electronic 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	3	2	1	1	-	-	-	2	-	1	-	2	-	-
C114.2	3	2	1	1	-	-	-	2	-	1	-	2	-	-
C114.3	3	2	1	1	-	-	-	2	-	1	-	2	-	-
C114.4	3	2	1	1	-	-	-	2	-	1	-	2	-	-
C114.5	3	2	1	1	-	-	-	2	-	1	-	2	-	-
C114.6	3	2	1	1	-	-	-	2	-	1	-	2	-	-
C114	3	2	1	1	-	-	-	2	-	1	-	2	-	-

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Circuit Theory
Subject Code	:	**EE6201**	Year/Semester	:	I/II

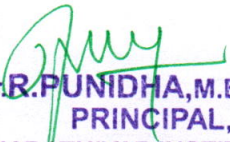## Course Outcomes:

Students must be able to

C115.1	Define and understanding the basic circuit elements and mesh and nodal analysis
C115.2	Understanding the concepts of network theorems
C115.3	Analyze the phenomenon of resonance and coupled circuits.
C115.4	Evaluate the transient response of AC and DC circuits.
C115.5	Understanding and analyzing the three phase circuits.
C115.6	Understanding the applications of circuit theory

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	-	-
C115.2	3	2	1	1	-	-	-	-	-	-	-	2	-	-
C115.3	3	1	1	1	-	-	-	-	-	-	-	2	-	-
C115.4	3	1	1	1	-	-	-	-	-	-	-	2	-	-
C115.5	3	2	1	1	-	-	-	-	-	-	-	2	-	-
C115.6	3	2	1	1	-	-	-	-	-	-	-	2	-	-
C115	3	2	1	1	-	-	-	-	-	-	-	2	-	-

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Physics and Chemistry Laboratory- II
Subject Code	:	**GE6262**	Year/Semester	:	I/II

Course Outcomes:

Students must be able to

C116.1	Apply the knowledge of semiconducting material to evaluate the band gap of the material useful for engineering solutions.
C116.2	Apply the concept of elasticity to analyze the properties related to multidisciplinary field
C116.3	To demonstrate an experiment using spectrometer to determine the refractive index of various color and dispersive power of the material of the given prism and to develop instrument handling skill.
C116.4	Able to analyze the quality of water for domestic and industrial purpose
C116.5	Used to find out the Emf for different metallic solutions from which electrode potential is determined
C116.6	To acquire knowledge about the conductivity of acids and bases

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	-	1	1	1	-	2	2	2	-	1	1	1
C116.2	3	2	-	1	1	1	-	2	2	1	-	1	1	1
C116.3	3	2	-	1	1	1	-	2	2	1	-	1	1	1
C116.4	3	2	-	1	1	1	-	2	2	1	-	1	1	1
C116.5	3	2	-	1	2	1	-	2	1	2	-	2	1	1
C116.6	3	2	-	1	1	1	-	2	2	2	-	1	1	1
C116	3	2	-	1	1	1	-	2	2	2	-	1	1	1

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Circuits and Devices Lab
Subject Code	:	**EC6211**	Year/Semester	:	I/II

Course Outcomes:

Students must be able to

C117.1	Understand the basic idea about semiconductor physics. Study of diode characteristics
C117.2	Understanding the basic operation of bipolar transistor and its various characteristics
C117.3	Understanding the basic operation of Field effect transistor and its various characteristics
C117.4	Design the special semiconductor devices and analysis various characteristics
C117.5	Understanding the operation of semiconductor power devices
C117.6	Explain the theory, construction, and operation of basic electronic devices.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C117.1	3	2	1	-	-	-	-	2	2	2	-	1	1	1
C117.2	3	2	1	-	-	-	-	2	2	1	-	1	1	1
C117.3	3	2	1	-	-	-	-	2	2	1	-	1	1	1
C117.4	3	2	1	-	-	-	-	2	2	1	-	1	1	1
C117.5	3	2	1	-	-	-	-	2	1	2	-	2	1	1
C117.6	3	2	1	-	-	-	-	2	2	2	-	1	1	1
C117	3	2	1	-	-	-	-	2	2	2	-	1	1	1

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Course/Branch	:	B.E. / ECE	Subject Title	:	Transforms and partial differential equations
Subject Code	:	MA 6351	Year/Semester	:	II/III

Course Outcomes:

Students must be able to

C201.1	Analyze different models of homogeneous and non homogeneous partial differential equations that aid in engineering issue solving.
C201.2	Apply the Fourier coefficients in the Fourier series expansion of a given function, which are essential to the analysis of a variety of challenging engineering problems.
C201.3	Employing the Fourier series concept to analyze the one, two and three-dimensional heat equations as well as the one-dimensional wave equation
C201.4	Analysis of differential equations and the application of Fourier transforms to quantum physics for a given function.
C201.5	Analyze the discrete time signals, determine Z transforms and standard function and apply them to solve the difference problem.
C201.6	Analyze the formation of equation by using z transform.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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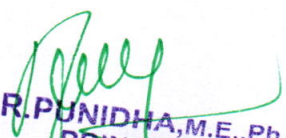| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Electrical engineering and instrumentation
Subject Code	:	**EE 6352**	Year/Semester	:	II/III

Course Outcomes:

Students must be able to

C202.1	Describe the functions, characteristics, and uses of DC generators, motors, and motor applications.
C202.2	Discuss the performance and operation of transformers.
C202.3	Describe the components and functioning of an induction motor with three and single phases, as well as a synchronous motor.
C202.4	Analyze the various transducer types and classify the measurement equipment's static and dynamic characteristics.
C202.5	Discuss how analog measuring devices are used and its application.
C202.6	Discuss the significance of digital measurement equipment.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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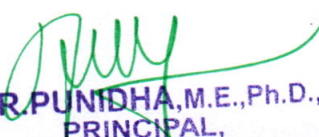| Course/Branch	:	B.E. / ECE	Subject Title	:	object oriented programming and datastructures
Subject Code	:	EC 6301	Year/Semester	:	II/III

Course Outcomes:
Students must be able to

C203.1	Analyze the real world problems using various OOPS concepts and able to produce the results for complex problems.
C203.2	Develop reusable code by manipulating the use of polymorphism and inheritance.
C203.3	Explain the various linear data structures.
C203.4	Design linear and nonlinear data structures, then resolve practical issues.
C203.5	Analyze the several types of searching and sorting.
C203.6	Illustrate Object-Oriented Concepts to Develop 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
C203.1	3	2	1	1	-	-	-	-	-	-	-	-	1	1
C203.2	3	2	1	1	-	-	-	-	-	-	-	-	1	1
C203.3	3	2	1	1	-	-	-	-	-	-	-	-	1	1
C203.4	3	2	1	1	-	-	-	-	-	-	-	-	1	1
C203.5	3	2	1	1	-	-	-	-	-	-	-	-	1	1
C203.6	3	2	1	1	-	-	-	-	-	-	-	-	1	1
C203	3	2	1	1	-	-	-	-	-	-	-	-	1	1

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Digital electronics
Subject Code	:	**EC 6302**	Year/Semester	:	II/III

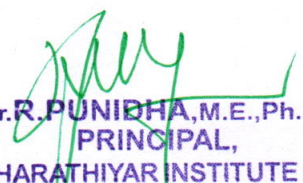**Course Outcomes:**
Students must be able to

C204.1	Design various combinational digital circuits using logic gate.
C204.2	Analysis of various combinational circuits and its internal structures
C204.3	Analysis of characteristics sequential circuits and circuit implementation of register and counter.
C204.4	Analyze various memory devices and digital integrated circuits.
C204.5	Analyze and design procedures for synchronous and asynchronous sequential circuits.
C204.6	Design of Combinational and Sequential circuits using VERILOG.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Signals and systems
Subject Code	:	**EC 6303**	Year/Semester	:	II/III

Course Outcomes:
Students must be able to

C205.1	Analyze various methods of signals and systems.
C205.2	Apply the Laplace and Fourier transforms while analyzing continuous time signals.
C205.3	Characterizing LTI systems in the time domain and frequency domain.
C205.4	Apply Z transform and DTFT in discrete time signal analysis.
C205.5	Analyze the linear time invariant-discrete time systems.
C205.6	Resolve the signals in frequency domain using Fourier series and Fourier transforms.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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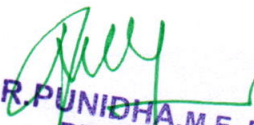| Course/Branch	:	B.E. / ECE	Subject Title	:	Electronic circuits-I
Subject Code	:	EC 6304	Year/Semester	:	II/III

Course Outcomes:
Students must be able to

C206.1	Design the amplifier circuits using various biasing methods.
C206.2	Analyze the single stage and differential BJT amplifiers.
C206.3	Analyze the performance of JFET and MOSFET amplifiers.
C206.4	Analyze the frequency response performance of BJT and MOSFET amplifiers.
C206.5	Examine several IC MOSFET amplifiers.
C206.6	Design and analyze amplifier with active load and CMOS circuits.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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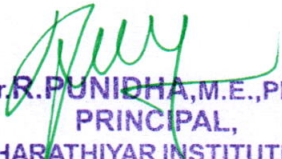| Course/Branch	:	B.E. / ECE	Subject Title	:	Analog and digital circuits laboratory
Subject Code	:	EC 6311	Year/Semester	:	II/III

Course Outcomes:

Students must be able to

C207.1	Measure the frequency response of CE/CC/CB/CS.
C207.2	Measure CMRR in differential amplifier.
C207.3	Analyze the limitation in bandwidth of single stage and multi stage amplifier.
C207.4	Design combinational circuits for arithmetic, code conversions and comparison operations.
C207.5	Implementation of Multiplexer and De-multiplexer using logic gates
C207.6	Develop sequential circuits that operate counters and shift registers.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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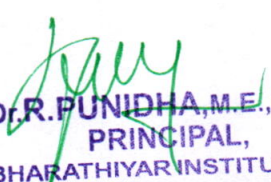| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Oops- and data structures laboratory
Subject Code	:	**EC 6312**	Year/Semester	:	II/III

Course Outcomes:

Students must be able to

C208.1	Implement basic and advanced programs in C++.
C208.2	Implement functions of array implementation of List Abstract Data Type .
C208.3	Implement the appropriate data structure for given problems
C208.4	Apply linear and non-linear data structures in problem solving.
C208.5	Implement sorting algorithm in a modularized for an application.
C208.6	Implement searching and sorting 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
C208.1	3	3	2	1	-	-	-	-	-	-	1	1	1	1
C208.2	3	3	2	1	-	-	-	-	-	-	1	1	1	1
C208.3	3	3	2	1	-	-	-	-	-	-	1	1	1	1
C208.4	3	3	2	1	-	-	-	-	-	-	1	1	1	1
C208.5	3	3	2	1	-	-	-	-	-	-	1	1	1	1
C208.6	3	3	2	1	-	-	-	-	-	-	1	1	1	1
C208	3	3	2	1	-	-	-	-	-	-	1	1	1	1

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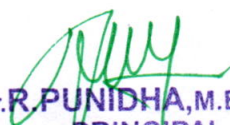| Course/Branch	:	B.E. / ECE	Subject Title	:	Probability and random processes
Subject Code	:	MA 6451	Year/Semester	:	II/IV

Course Outcomes:
Students must be able to

C209.1	Impart the fundamental knowledge of probability and standard distributions.
C209.2	Apply the basic concepts of one and two dimensional random variables in engineering applications.
C209.3	Apply the concept random processes in engineering disciplines.
C209.4	Apply the concept of correlation and spectral densities.
C209.5	Analyze various distribution functions, acquiring skills in handling situations involving more than one variable.
C209.6	Analyze the response of random inputs to linear time invariant 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
C209.1	3	2	2	2	-	-	-	-	-	-	-	1	2	1
C209.2	3	2	2	2	2	-	-	-	-	-	-	1	2	1
C209.3	3	2	2	2	2	-	-	-	-	-	-	1	2	1
C209.4	3	2	2	2	2	-	-	-	-	-	-	1	2	1
C209.5	3	2	2	2	2	-	-	-	-	-	-	1	2	1
C209.6	3	2	2	2	2	-	-	-	-	-	-	1	2	1
C209	3	2	2	2	2	-	-	-	-	-	-	1	2	1

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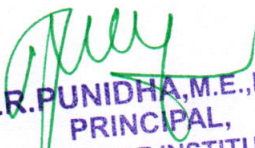| Course/Branch	:	B.E. / ECE	Subject Title	:	Electronic circuits- II
Subject Code	:	EC 6401	Year/Semester	:	II/IV

Course Outcomes:

Students must be able to

C210.1	Describe the concepts of feedback amplifiers.
C210.2	Design & Analysis of transistorized amplifier and oscillator circuits.
C210.3	Design different types of tuned amplifiers and analyze its performance.
C210.4	Discuss various types of wave shaping circuits and multivibrators.
C210.5	Explain the different types of blocking oscillator with its application.
C210.6	Design and Analyze the time base generator by different waveform generation.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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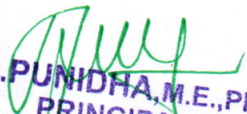| Course/Branch	:	B.E. / ECE	Subject Title	:	Communication theory
Subject Code	:	EC 6402	Year/Semester	:	II/IV

Course Outcomes:

Students must be able to

C211.1	Describe the concepts of amplitude modulation system.
C211.2	Summarize the concepts of angle modulation system.
C211.3	Solve communication engineering problems by applying the concepts of random process.
C211.4	Compare the noise performance of AM and FM systems.
C211.5	Discuss about information theory of Discrete Memory less channels with its capacity.
C211.6	Compute the Huffman and Shannon-fano encoding models.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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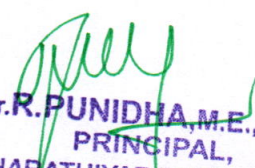| Course/Branch	:	B.E. / ECE	Subject Title	:	Electromagnetic fields
Subject Code	:	EC 6403	Year/Semester	:	II/IV

Course Outcomes:
Students must be able to

C212.1	Analyze field potentials due to static charges using theorems and laws such as Coulomb's Law, Gauss Law.
C212.2	Discuss various electric field boundary conditions and use Poisson's & Laplace's equations to calculate capacitance.
C212.3	Examine the field potentials caused by charges in stationary magnetic fields.
C212.4	Discuss the laws of static magnetic field and explain how materials affect magnetic fields.
C212.5	Estimation of magnetic and electric field quantities using the laws and theroms.
C212.6	Analyze the relation between the fields under time varying situations.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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Course/Branch	:	B.E. / ECE	Subject Title	:	Linear integrated circuits
Subject Code	:	EC 6404	Year/Semester	:	II/IV

Course Outcomes:

Students must be able to

C213.1	Describe the operational amplifier's performance features.
C213.2	Design your skills with adders, subtractors, integrators, differentiators, filters, log amplifiers, and other non-linear and linear operational amplifier applications..
C213.3	Explain the analog multiplier & PLL circuits and its applications.
C213.4	Design ADC and DAC using OP – AMPS.
C213.5	Describe the uses and operation of waveform generation circuits employing special function ICs.
C213.6	Analyze special function ICs.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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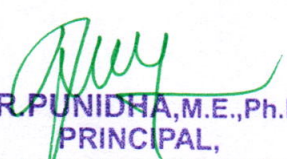| Course/Branch	:	B.E. / ECE	Subject Title	:	Control system engineering
Subject Code	:	EC 6405	Year/Semester	:	II/IV

Course Outcomes:
Students must be able to

C214.1	Compute the transfer function of different physical systems.
C214.2	Analyze the time domain specifications and calculate the steady state error.
C214.3	Illustrate the frequency response characteristics of open loop and closed loop system response.
C214.4	Analyze the stability using Routh and root locus techniques.
C214.5	Illustrate the state space model of a physical system.
C214.6	Discuss the concepts of sampled data control 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
C214.1	3	3	2	2	-	1	-	-	-	-	-	-	2	1
C214.2	3	3	2	2	-	1	-	-	-	-	-	-	2	1
C214.3	3	3	2	2	-	1	-	-	-	-	-	-	2	1
C214.4	3	3	2	2	-	1	-	-	-	-	-	-	2	1
C214.5	3	3	2	2	-	1	-	-	-	-	-	-	2	1
C214.6	3	3	2	2	-	1	-	-	-	-	-	-	2	1
C214	3	3	2	2	-	1	-	-	-	-	-	-	2	1

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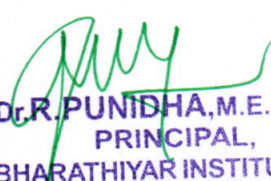| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Circuit and simulation integrated laboratory
Subject Code	:	**EC 6411**	Year/Semester	:	II/IV

Course Outcomes:

Students must be able to

C215.1	Analyze various types of feedback amplifiers.
C215.2	Design of oscillators, tuned amplifiers, wave-shaping circuits and multivibrators.
C215.3	Demonstrate the oscillators and tuned amplifiers using SPICE Tool.
C215.4	Design and simulate feedback amplifiers, oscillators, tuned amplifiers using SPICE Tool.
C215.5	Design and simulate Wave-shaping circuits and multivibrators using SPICE Tool.
C215.6	Demonstrate the voltage and current time base circuits using SPICE Tool.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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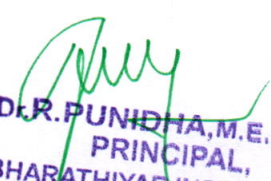| Course/Branch	:	**B.E. / ECE**	Subject Title	:	**Linear integrated circuits laboratory**
Subject Code	:	**EC 6412**	Year/Semester	:	II/IV

Course Outcomes:
Students must be 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	Design CMOS Inverter, NAND and NOR applications using SPICE tool.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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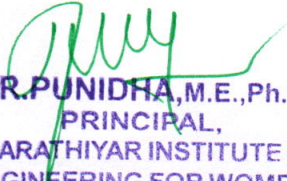| Course/Branch	:	**B.E. / ECE**	Subject Title	:	Electrical engineering and control system
Subject Code	:	**EE 6461**	Year/Semester	:	II/IV

Course Outcomes:

Students must be able to

C217.1	Examine the characteristics of DC shunt machines under various settings and classify the starters for various applications.
C217.2	Determine a DC shunt generator's transfer function and a three-phase alternator's regulation.
C217.3	Analyze AC machine performance curves and a single phase transformer's performance.
C217.4	Develop a bridge network circuit to evaluate the stability of a linear system through simulation software, measuring the value of passive components.
C217.5	Apply MATLAB to illustrate the effects of P, PI, and PID controllers on a linear system.
C217.6	Design the Lead & Lag compensator.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	DIGITAL COMMUNICATION
Subject Code	:	EC6501	Year/Semester	:	III/V

Course Outcomes:
Students must be able to

C301.1	To comprehend the fundamental components of the digital communication system.
C301.2	To establishing a mathematical foundation for communication signal analysis.
C301.3	Analyzing and comprehending the signal flow in a digital communication system
C301.4	To assess a digital communication system's error performance in the presence of noise.
C301.5	To comprehend the spread spectrum communication system concept.
C301.6	Analyze the noise performance and spectral features of band pass signaling methods.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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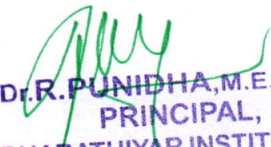| Course/Branch	:	**B.E. / ECE**	Subject Title	:	PRINCIPLES OF DIGITAL SIGNAL PROCESSING
Subject Code	:	EC6502	Year/Semester	:	III/V

Course Outcomes:
Students must be able to

C302.1	To analyze digital signals and systems, use DFT.
C302.2	To construct IIR and FIR filters.
C302.3	Describe the impact of finite word length on filters.
C302.4	To create the Multirate Filters
C302.5	Use adaptive filters for equalization.
C302.6	Recognize how DSP is used in speech processing and spectrum analysis.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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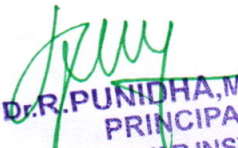| Course/Branch	:	B.E. / ECE	Subject Title	:	TRANSMISSION LINES AND WAVE GUIDES
Subject Code	:	EC6503	Year/Semester	:	III/V

Course Outcomes:
Students must be able to

C303.1	Describe how signals are travelling in a transmission lines.
C303.2	Identify and evaluate radio frequency signal propagation
C303.3	Explain guided systems' use of radio for communication.
C303.4	To solve problems using the Smith chart.
C303.5	To provide information regarding waveguide and filter theories
C303.6	Make use of cavity.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	ENVIRONMENTAL SCIENCE AND ENGINEERING
Subject Code	:	GE6351	Year/Semester	:	III/V

C304.1	Examine how living things and their environment interact.
C304.2	Identify the nuances of the environment and how we interact with it.
C304.3	Develop your analytical, logical, and creative thinking abilities
C304.4	Apply quantitative analysis and field research methods to your work.
C304.5	Utilize geographical information systems based on computers to investigate environmental change.
C304.6	Adopt sustainability as a way of life, a way of society, a way of business.

Course Outcomes:

Students must be able to

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	MICROPROCESSOR AND MICRO CONTROLLER
Subject Code	:	EC6504	Year/Semester	:	III/V
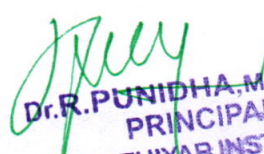
Course Outcomes:
Students must be able to

C305.1	Create and use programmes for the 8086 microprocessor.
C305.2	Examine the Assembly language 8086 programmes.
C305.3	To Construct I/O circuits.
C305.4	Discuss the input/output, memory interface, serial communication, and bus interface devices.
C305.5	Design memory interface circuits.
C305.6	Create and implement systems using 8051 microcontrollers.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	DIGITAL SIGNAL PROCESSING LABORATORY
Subject Code	:	EC6511	Year/Semester	:	III/V

Course Outcomes:
Students must be able to

C306.1	Experiment concepts of DSPand its applications usingMATLABSoftware
C306.2	Implement DSP system simulation.
C306.3	Demonstrate their skills in the implementation of DSP systems using DSP processors
C306.4	Examine the impact of finite word length on DSP systems.
C306.5	Apply FFT to DSP in a demonstration.
C306.6	Apply adaptive filters to various DSP applications.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	COMMUNICATION SYSTEMS LABORATORY
Subject Code	:	EC6512	Year/Semester	:	III/V
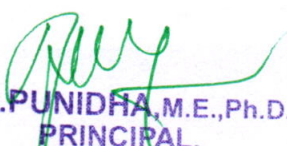
Course Outcomes:
Students must be able to

C307.1	Synthesize a communication link
C307.2	Implementing FSK, PSK, and DPSK will allow users to demonstrate their understanding of base band signalling systems.
C307.3	Apply several channel coding techniques and highlight their benefits for enhancing communication system noise performance.
C307.4	Simulate and test the various communication system functional modules.
C307.5	Analyze tradeoffs in various communication systems while designing and building amplitude modulation systems.
C307.6	Investigate sampling, quantization, and coding techniques for transforming analogue input into digital data.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	MICRO PROCESSOR AND MICRO CONTROLLER LABORATORY
Subject Code	:	EC6513	Year/Semester	:	III/V

Course Outcomes:
Students must be able to

C308.1	Create Fixed and Floating Point and Arithmetic ALP programmes.
C308.2	connect several I/Os to the processor
C308.3	Utilize microprocessors to produce waveforms
C308.4	Execute 8051 programmes
C308.5	Describe the distinctions between a simulator and an emulator.
C308.6	Investigation of bus interfaces and communication.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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REGULATION : 2013

Course/Branch	:	**B.E. / ECE**	Subject Title	:	PRINCIPLES OF MANAGEMENT
Subject Code	:	MG6851	Year/Semester	:	III/VI
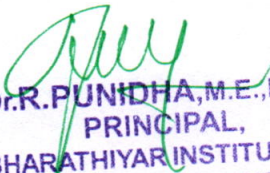
Course Outcomes:

Students must be able to

C309.1	Awareness of managerial duties such as planning, as well as having a foundational understanding of the global management aspects.
C309.2	Describe the MBO planning process and its advantages while prescribing the decision-making paradigm for various scenarios.
C309.3	To grasp the idea of organization
C309.4	Demonstrate the ability to directing ,leadership and communicate effectively.
C309.5	Identifying problems through analysis, then developing the best means of control.
C309.6	To learn the fundamentals of managing on a global scale.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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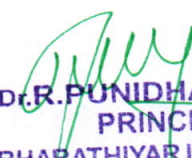| Course/Branch	:	**B.E. / ECE**	Subject Title	:	COMPUTER ARCHITECTURE
Subject Code	:	CS6303	Year/Semester	:	III/VI

Course Outcomes:
Students must be able to

C310.1	Create an algebraic and logical unit.
C310.2	Construct and evaluate pipelined control units.
C310.3	Analyze the memory systems' performance.
C310.4	Recognize parallel computing .
C310.5	Explain the various architectures for parallel processing.
C310.6	Describe how memory and I/O systems perform.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	COMPUTER NETWORKS
Subject Code	:	CS6551	Year/Semester	:	III/VI

Course Outcomes:

Students must be able to

C311.1	Determine the elements needed to construct various types of networks.
C311.2	Describe the data link layer functionality that is necessary for an application.
C311.3	Analyze the network's routing path.
C311.4	Create a rough sketch of the transport layer protocol's functionality.
C311.5	Describe the application-layer protocols.
C311.6	Analyze the network's information flow from one node to another node.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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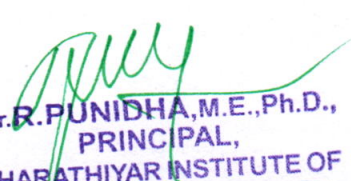| Course/Branch	:	**B.E. / ECE**	Subject Title	:	VLSI DESIGN
Subject Code	:	EC6601	Year/Semester	:	III/VI

Course Outcomes:
Students must be able to

C312.1	Describe the fundamentals of CMOS semiconductor technology.
C312.2	Discuss the design principles of various combinational logic circuits for digital operations.
C312.3	Learn the principles of designing different sequential logic circuits for digital processes.
C312.4	Create the various arithmetic components for combinational and sequential circuits.
C312.5	Describe the various methods used to create combinational and sequential logic circuits.
C312.6	Utilize Hardware Description Language to simulate the digital system.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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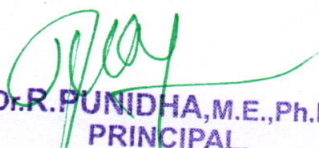| Course/Branch	:	**B.E. / ECE**	Subject Title	:	ANTENNA AND WAVE PROPOGATION
Subject Code	:	EC6602	Year/Semester	:	III/VI

Course Outcomes:
Students must be able to

C313.1	Explain the foundations of impedance matching, dipole antennas, and antenna parameters.
C313.2	Define aperture antennas, and comprehend how they are designed.
C313.3	Explain and evaluate the many forms of antenna arrays, N element antenna arrays, and pattern multiplication.
C313.4	Design special antennas, describe EBG structures, and describe how to measure an antenna's radiation pattern and gain.
C313.5	Comprehend the structure of ionosphere and its electrical properties due to the magnetic field of earth.
C313.6	To raise knowledge of the various ways that radio waves can propagate at various frequencies.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	MEDICAL ELECTRONICS
Subject Code	:	EC6001	Year/Semester	:	III/VI

Course Outcomes:
Students must be able to

C314.1	Discuss the terminologies of electro-physiology and its recording.
C314.2	Describe the procedures for measuring biochemical and non-electrical parameters.
C314.3	Sort the many assistive technology subcategories.
C314.4	Describe the different bio-telemetry and diathermy methods.
C314.5	Create the most recent developments in medical technology.
C314.6	To raise knowledge of medical terms that is pertinent to biomedical instrumentation.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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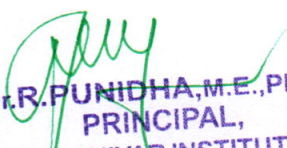| Course/Branch	:	**B.E. / ECE**	Subject Title	:	VLSI DESIGN LABORATORY
Subject Code	:	EC6612	Year/Semester	:	III/VI

Course Outcomes:
Students must be able to

C316.1	Create HDL code for both simple and complex digital integrated circuits.
C316.2	Embedding the logic modules on FPGA Boards.
C316.3	Create Xilinx FPGA Boards using integrated circuit logics.
C316.4	Create the different arithmetic building blocks for combinational and sequential digital operations circuits.
C316.5	Describe the various sequential and combinational logic circuit implementation techniques.
C316.6	Using EDA tools, create, simulate, and extract the layouts of analogue IC blocks.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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Course/Branch	:	**B.E. / ECE**	Subject Title	:	Computer Networks Laboratory
Subject Code	:	EC6611	Year/Semester	:	III/VI
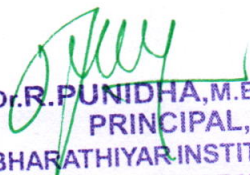
Course Outcomes:

Students must be able to

C315.1	Connect two desktop computers and communicate.
C315.2	Implement the various OSI layer protocols.
C315.3	Implement and evaluate different routing algorithms.
C315.4	Apply the cryptographic methods.
C315.5	Create wired and wireless networks.
C315.6	Employ a simulation tool.

MAPPING OF COURSE OUTCOMES WITH THE PROGRAM OBJECTIVES:

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

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REGULATION : 2013

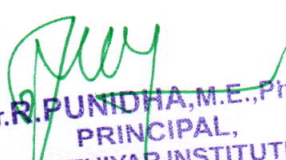| Course/Branch	B.E / ECE	Subject Name	RF and Microwave Engineering
Subject Code	EC6701	Year/Semester	IV/VII

COURSE OUTCOMES

Students must be able to

C401.1	Discuss the various types of transmission lines and propagation of signals.
C401.2	Examine components used in Microwave communication systems.
C401.3	Implement different methods of impedance matching
C401.4	Analyze the field components in guided systems
C401.5	Measure and analyze Microwave signal and parameters.
C401.6	Analyze the RF amplifier power and stability considerations

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	3	3	3	1	-	-	-	1	-	-	2	1
C401.2	3	3	3	-	3	1	-	-	-	1	-	-	-	1
C401.3	3	3	3	-	3	1	-	-	-	1	-	-	-	1
C401.4	3	3	3	-	3	1	1	-	-	1	-	-	2	-
C401.5	3	3	3	-	3	1	1	-	-	1	-	-	-	-
C401.6	3	3	3	-	3	1	-	-	-	-	-	-	-	1
C401	3	3	3	3	3	1	1	0	0	1	0	0	2	1

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Course/Branch	B.E / ECE	Subject Name	OPTICAL COMMUNICATION AND NETWORKS
Subject Code	EC6702	Year/Semester	IV/VII

COURSE OUTCOMES
Students must be able to

C402.1	Discuss about the 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 the digital transmission and its associated parameters on system performance

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	3	3	2	1	-	-	-	1	-	-	3	3
C402.2	3	3	3	-	2	1	-	-	-	1	-	-	-	3
C402.3	3	3	3	-	2	1	-	-	-	1	1	-	3	3
C402.4	3	3	3	-	2	1	1	-	-	1	1	-	3	3
C402.5	3	3	3	-	2	1	1	-	-	1	1	-	-	3
C402.6	3	3	3	-	2	1	-	-	-	1	-	-	-	3
C402	3	3	3	3	2	1	1	0	0	1	1	0	3	3

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REGULATION : 2013

Course/Branch	B.E / ECE	Subject Name	EMBEDDED AND REAL TIME SYSTEMS
Subject Code	EC6703	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	Use the system design techniques to develop software for embedded systems
C403.5	Differentiate between the general purpose operating system and the real time operating 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	3	3	-	2	1	-	-	-	1	-	-	2	1
C403.2	3	3	3	-	2	1	-	-	-	1	-	-	2	1
C403.3	3	3	3	-	2	1	-	-	-	1	1	-	2	1
C403.4	3	3	3	-	2	1	1	-	-	1	1	-	2	1
C403.5	3	3	3	-	2	1	1	-	-	1	1	-	2	1
C403.6	3	3	3	-	2	1	-	-	-	1	-	-	2	1
C403	3	3	3	-	2	1	1	-	-	1	1	-	2	1

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Course/Branch	B.E / ECE	Subject Name	DIGITAL IMAGE PROCESSING
Subject Code	IT6005	Year/Semester	IV/VII
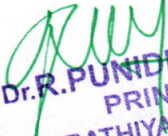
COURSE OUTCOMES

Students must be able to

C404.1	Discuss about the digital image fundamentals.
C404.2	Analyze the performance of image enhancement techniques
C404.3	Apply and Analyze the performance of image restoration techniques
C404.4	Discuss about the image compression methods.
C404.5	Describe about the various techniques used in segmentation
C404.6	Identify the performance improvement of image in form of features

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	3	2	1	-	1	-	-	-	-	-	3	1
C404.2	3	3	3	-	1	1	1	-	-	-	-	-	3	1
C404.3	3	3	3	2	1	1	-	-	-	-	-	-	3	-
C404.4	3	3	3	2	1	-	-	-	-	-	-	-	3	-
C404.5	3	3	3	-	-	-	-	-	-	-	-	1	3	-
C404.6	3	3	3	-	-	-	-	-	-	-	-	-	3	-
C404	3	3	3	2	1	2	1	0	0	-	-	1	3	1

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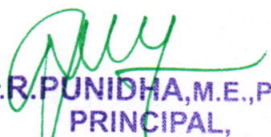| Course/Branch	B.E / ECE	Subject Name	ADVANCED COMPUTER ARCHITECTURE
Subject Code	EC6009	Year/Semester	IV/VII

COURSE OUTCOMES

Students must be able to

C405.1	Evaluate performance of different architectures with respect to various parameters
C405.2	Analyze performance of different ILP techniques
C405.3	Identify cache and memory related issues in multi-processors
C405.4	Discuss about the micro-architectural design of processors
C405.5	Learn about the various techniques used in processors
C405.6	Obtain performance improvement and power savings in current processors.

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	3	3	3	3	-	1	-	-	1	-	1	3	1
C405.2	3	3	3	-	3	2	1	-	-	1	-	1	3	1
C405.3	3	3	3	3	3	2	-	-	-	1	1	1	3	1
C405.4	3	3	3	3	3	-	-	-	-	1	1	1	3	1
C405.5	3	3	3	-	3	-	-	-	-	1	1	1	3	1
C405.6	3	3	3	-	3	-	-	-	-	1	-	1	3	1
C405	3	3	3	3	3	2	1	0	0	1	1	1	3	1

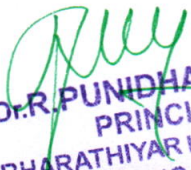| Course/Branch	B.E / ECE	Subject Name	OPTO ELECTRONIC DEVICES
Subject Code	EC6016	Year/Semester	IV/VII

COURSE OUTCOMES
Students must be able to

C406.1	Discuss about the basics of solid state physics
C406.2	Analyze the electronic characteristics of integrated circuits.
C406.3	Design optoelectronic detection devices
C406.4	Construct and analyze the performance of modulators
C406.5	Design the board of display devices
C406.6	Design the optoelectronic integrated circuits and analyze its performance.

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	3	3	3	3	-	-	-	-	2	-	2	3	2
C406.2	3	3	3	-	3	-	-	-	-	2	-	2	3	2
C406.3	3	3	3	-	3	-	-	-	-	2	2	2	3	2
C406.4	3	3	3	-	3	2	-	-	-	2	2	2	3	2
C406.5	3	3	3	-	3	-	-	-	-	2	2	2	3	2
C406.6	3	3	3	-	3	-	-	-	-	2	2	2	3	2
C406	3	3	3	3	3	2	0	0	0	2	2	2	3	2

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Course/Branch	B.E / ECE	Subject Name	EMBEDDED LABORATORY
Subject Code	EC6711	Year/Semester	IV/VII

COURSE OUTCOMES

Students must be able to

C407.1	Develop the programs in ARM for a specific Application
C407.2	Interface memory and Write programs related to memory operations
C407.3	Interface A/D and D/A convertors with ARM system
C407.4	Analyze the performance of interrupt
C407.5	Develop program for interfacing keyboard, display, motor and sensor.
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	3	3	3	-	1	1	1	-	1	-	3	3
C407.2	3	3	3	-	3	2	1	1	1	-	1	-	3	3
C407.3	3	3	3	3	3	2	-	1	1	-	1	-	3	3
C407.4	3	3	3	3	3	-	-	1	1	-	1	-	3	3
C407.5	3	3	3	-	3	-	-	1	1	-	1	1	3	3
C407.6	3	3	3	-	3	-	-	1	1	-	1	-	3	3
C407	3	3	3	3	3	2	1	1	1	0	1	1	3	3

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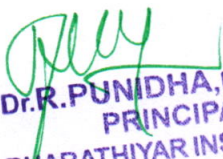| Course/Branch	B.E / ECE	Subject Name	OPTICAL AND MICROWAVE LABORATORY
Subject Code	EC6712	Year/Semester	IV/VII

COURSE OUTCOMES
Students must be able to

C408.1	Discuss about the working principle of optical sources, detector, fibers and microwave components.
C408.2	Learn about the characteristics and measurements in optical fiber
C408.3	Analyze the radiation of pattern of antenna.
C408.4	Analyze the mode characteristics of fiber and Know about the behavior of microwave components.
C408.5	Develop program for interfacing keyboard, display, motor and sensor.
C408.6	Design a mini project using optical 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
C408.1	3	3	2	2	2	2	2	-	-	2	-	-	3	3
C408.2	3	3	2	-	2	2	2	-	-	2	-	1	3	3
C408.3	3	3	2	2	2	2	-	-	-	2	2	-	3	3
C408.4	3	3	2	2	2	2	-	-	-	2	-	-	3	3
C408.5	3	3	2	-	2	2	-	-	-	2	-	1	3	3
C408.6	3	3	2	-	2	2	-	-	-	2	2	-	3	3
C408	3	3	2	2	2	2	2	0	0	2	2	1	3	3

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Course/Branch	B.E / ECE	Subject Name	WIRELESS COMMUNICATION
Subject Code	EC6801	Year/Semester	IV/VIII
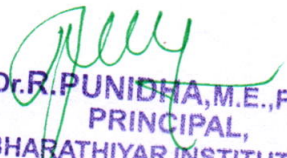
COURSE OUTCOMES

Students must be able to

C409.1	Describe the Characteristics of wireless channels
C409.2	Discuss about the various cellular system based on resource availability and traffic demands
C409.3	Learn various signaling schemes for fading channels
C409.4	Identify multipath mitigation Techniques and analyze their performance for the wireless channel
C409.5	Compare the performance of channel using various propagation models
C409.6	Able to design and implement systems with transmit/receive diversity and MIMO 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
C409.1	3	3	3	2	1	1	1	1	-	-	-	-	2	2
C409.2	3	3	3	2	1	1	1	1	-	1	1	-	-	2
C409.3	3	3	3	2	1	1	-	-	1	-	-	1	2	-
C409.4	3	3	3	2	1	1	-	1	-	-	-	-	-	-
C409.5	3	3	3	2	1	1	1	1	-	1	1	-	-	-
C409.6	3	3	3	2	1	1	1	1	-	-	-	-	-	-
C409	3	3	3	2	1	1	1	1	1	1	1	1	2	2

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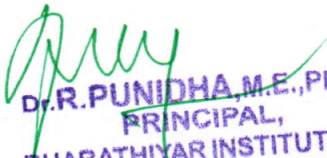| Course/Branch	B.E / ECE	Subject Name	WIRELESS NETWORKS
Subject Code	EC6802	Year/Semester	IV/VIII

COURSE OUTCOMES

Students must be able to

C410.1	Analyze the various protocols and standards of wireless LAN.
C410.2	Describe the protocols for mobile network layer and routing in mobile ad-hoc network
C410.3	Design and implement wireless network environment for any application using latest wireless protocols and standards
C410.4	Discuss about the different wireless WAN architectures
C410.5	Explain the 4G technologies and its applications
C410.6	Implement different type of applications for smart phones and mobile devices with Latest network strategies

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	-	2	-	2	-	-	1	-	-	-	-	2	1
C410.2	3	3	-	2	2	1	1	-	-	1	-	-	2	1
C410.3	3	3	2	2	2	-	-	-		1	1	1	2	1
C410.4	3	-	-	2	2	-	1	-	-	1	-	1	2	1
C410.5	3	-	2	2	2	1	-	-	-	1	-	1	2	1
C410.6	3	-	2	2	2	-	1	-	-	1	-	-	2	1
C410	3	3	2	2	2	1	1	1	1	1	1	1	2	1

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Course/Branch	B.E / ECE	Subject Name	PROFESSIONAL ETHICS IN ENGINEERING
Subject Code	GE6075	Year/Semester	IV/VIII

COURSE OUTCOMES

Students must be able to

C411.1	Create an awareness on human values to appreciate the rights of others.
C411.2	Discuss the ethical issues related to engineering and realize the responsibilities in the society.
C411.3	Describe the responsibilities, rights and assesses of the safety and risk.
C411.4	Apply the social responsibility on multinational corporations related to engineering.
C411.5	Interpret various types of ethics like, environmental ethics and professional rights, employee rights,and intellectual property rights.
C411.6	Take part as engineers as responsible experimenters.

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	3	3	2	1	-	-
C411.2	3	-	-	-	-	-	-	3	3	3	2	1	-	-
C411.3	3	-	-	-	-	-	-	3	3	3	2	1	-	1
C411.4	3	-	-	-	-	-	-	3	3	3	2	1	-	1
C411.5	3	-	-	-	-	-	-	3	3	3	2	1	-	1
C411.6	3	-	-	-	-	-	-	3	3	3	2	1	-	1
C411	3	0	0	0	0	0	0	3	3	3	2	1	0	1

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION : 2013

Course/Branch	B.E / ECE	Subject Name	TOTAL QUALITY MANAGEMENT
Subject Code	GE6757	Year/Semester	IV/VIII

COURSE OUTCOMES

Students must be able to

C412.1	Discuss about the customer care management systems
C412.2	Apply the leadership quality in organization
C412.3	Describe the Benchmark in manufacturing system
C412.4	Execute the Quality Management principles using six sigma
C412.5	Explain about the Auditing system in Management
C412.6	Analyze the tools and techniques of quality management to manufacturing and services processes.

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C412.1	3	-	2	-	-	2	2	2	-	2	-	2	-	-
C412.2	3	-	-	-	-	2	2	2	2	2	-	2	1	-
C412.3	3	-	-	-	-	2	2	2	-	2	-	2	-	-
C412.4	3	-	-	2	-	-	-	2	2	-	2	2	1	1
C412.5	3	-	-	-	-	2	-	2	-	-	2	2	-	-
C412.6	3	-	-	-	-	-	2	2	2	-	-	2	1	1
C412	3	0	2	2	0	2	2	2	2	2	2	2	1	1

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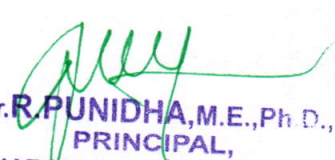| Course/Branch	B.E / ECE	Subject Name	PROJECT WORK
Subject Code	EC6811	Year/Semester	IV/VIII

COURSE OUTCOMES

Students must be able to

C413.1	Ability to solve a specific problem right from its identification
C413.2	Review on literatures and learn more about the problem and its solutions
C413.3	Develop the analytical skills, requirement analysis, design skills.
C413.4	Learn the various system modules for implementing the project useful for the society and testing the data.
C413.5	Study about different literature reviews till the successful solutions of their projects
C413.6	Appraise the solution by formulating proper methodology related to the problem

Mapping of Course Outcomes with the Program Objectives

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C413.1	3	3	3	-	-	-	3	-	-	2	2	2	2	3
C413.2	3	3	3	-	-	-	3	-	-	2	2	2	2	3
C413.3	3	3	3	-	3	3	3	-	-	2	2	2	2	3
C413.4	3	3	3	3	3	3	3	-	-	2	2	2	2	3
C413.5	3	3	3	-	3	3	3	-	-	2	2	2	2	3
C413.6	3	3	3	-	3	3	3	-	-	2	2	2	3	3
C413	3	3	3	3	3	3	3	0	0	2	2	2	2	3

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