SRI BHARATHI

ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

Kaikkurichi, Pudukkottai -622 303

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NAAC DOCUMENTS

Quality Indicator Frame Work

Criterion – 2

Teaching-Learning and Evaluation

Submitted by

IQAC

Internal Quality Assurance Cell

Sri Bharathi Engineering College for Women

SRI BHARATHIENGINEERING COLLEGE FORWOMEN

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Kaikkurichi,Pudukkottai, Tamil Nadu – 622 303, India

Criteria 2	Teaching-Learning and Evaluation	350

Key Indicator-2.6 Student Performances and Learning Outcome(90)

2.6.1 ***Programme Outcomes (POs) and Course Outcomes (COs) for all programmes offered by the institution are stated and displayed on website***

COURSE OUTCOMES AND PROGRAMME OUTCOMES

DEPARTMENT OF
ELECTRONICS AND COMMUNICATION ENGINEERING
R2021

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

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Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

I SEMESTER

Dr. S.THILAGAVATHI M.E.,Ph.D.,
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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

I YEAR/I SEMESTER -REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
HS3152	PROFESSIONAL ENGLISH I	**C101.1:** Use appropriate words in a professional context
		C101.2: Explain the basic grammatic structures and use them in right context.
		C101.3: Describe the denotative and connotative meanings of technical texts
		C101.4: Summarize about the definitions, descriptions, narrations and essays on various topics
		C101.5: Apply language effectively in professional contexts
		C101.6: Discuss the importance of read and write complex texts, summaries, articles, blogs,definitions, essays and user manuals.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C101.1	2	2	2	2	2	2	2	2	2	2	-	2	-	-	-
C101.2	2	2	2	2	2	2	2	2	2	2	-	2	-	-	-
C101.3	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-
C101.4	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-
C101.5	2	2	2	2	-	2	2	2	2	2	-	2	-	-	-
C101.6	2	2	2	2	2	2	2	2	2	2	2	2	-	-	-
C101	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**-**	**-**	**-**

***3-High correlation; 2- Medium correlation; 1-Low correlation; '-' No correlation**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
MA3151	MATRICES AND CALCULUS	**C102.1:** Use the matrix algebra methods for solving practical problems
		C102.2: Apply differential calculus tools in solving various application problems
		C102.3: Describe the partial differential equations with initial and Lagrange's method by using certain techniques with engineering applications.
		C102.4: Carry out the differentiation to solve maxima and minima problems.
		C102.5: Explain different methods of integration in solving practical problems
		C102.6: Determine multiple integral ideas in solving areas, volumes and other practical problems

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C102.1	3	3	2	2	-	-	-	-	-	1	-	1	-	1	-
C102.2	3	3	2	2	-	-	-	-	-	1	-	1	-	1	-
C102.3	3	3	2	2	-	-	-	-	-	1	-	1	-	1	-
C102.4	3	3	2	2	-	-	-	-	-	1	-	1	-	1	-
C102.5	3	3	2	2	-	-	-	-	-	1	-	1	-	1	-
C102.6	3	3	2	2	-	-	-	-	-	1	-	1	-	1	-
C102	**3**	**3**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**-**	**1**	**-**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
PH3151	ENGINEERING PHYSICS	**C103.1:**Acknowledge the importance of mechanics
		C103.2: Express their knowledge in electromagnetic waves.
		C103.3: Demonstrate a strong foundational knowledge in oscillations,
		C103.4: Establish the knowledge on optics and lasers
		C103.5: Comprehend the importance of quantum physics
		C103.6: Comprehend and apply quantum mechanical principles towards the formation of energy bands.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C103.1	3	3	2	2	2	1	-	-	-	-	-	-	-	-	-
C103.2	3	3	2	2	2	1	-	-	-	-	-	-	-	-	-
C103.3	3	3	2	2	2	1	-	-	-	-	-	1	-	-	-
C103.4	3	3	2	2	2	1	-	-	-	-	-	-	-	-	-
C103.5	3	3	2	2	2	1	-	-	-	-	-	-	-	-	-
C103.6	3	3	2	2	2	1	-	-	-	-	-	-	-	-	-
C103	**3**	**3**	**2**	**2**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION 2021
B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
CY3151	ENGINEERING CHEMISTRY	**C104.1:** Describe the quality of water from quality parameter data and propose suitable treatment methodologies to treat water.
		C104.2: Apply basic concepts of nanoscience and nanotechnology in designing the synthesis of nanomaterials for engineering and technology applications.
		C104.3: Use the knowledge of phase rule and composites for material selection requirements.
		C104.4: Explain the suitable fuels for engineering processes and applications.
		C104.5: Discuss different forms of energy resources and apply them for suitable applications in energy sectors
		C104.6: Determine the importance of engineering materials, fuels, energy sources and water treatment techniques will facilitate better understanding of engineering processes and applications for further learning.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C104.1	3	2	2	1	-	1	1	-	-	-	-	1	-	-	-
C104.2	3	2	2	1	-	1	1	-	-	-	-	-	-	-	-
C104.3	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-
C104.4	3	2	2	-	-	1	1	-	-	-	-	-	-	-	-
C104.5	3	2	2	-	-	1	1	-	-	-	-	-	-	-	-
C104.6	3	2	2	1	-	1	1	-	-	-	-	1	-	-	-
C104	**3**	**2**	**2**	**1**	**-**	**1**	**1**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**

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REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3151	PROBLEM SOLVING AND PYTHON PROGRAMMING	**C105.1:**Develop algorithmic solutions to simple computational problems
		C105.2: Develop and execute simple Python programs.
		C105.3: Write simple Python programs using conditionals and loops for solving problems.
		C105.4: Describe a Python program into functions.
		C105.5: Describe compound data using Python lists, tuples, dictionaries etc.
		C105.6: Explain the importance of Read and write data from/to files in Python programs.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C105.1	3	3	2	2	2	-	-	-	-	-	2	2	3	3	-
C105.2	3	3	2	2	2	-	-	-	-	-	2	2	3	-	-
C105.3	3	3	2	2	2	-	-	-	-	-	2	-	3	-	-
C105.4	3	3	2	2	2	-	-	-	-	-	2	-	3	-	-
C105.5	3	3	2	2	2	-	-	-	-	-	2	-	3	-	-
C105.6	3	3	2	2	2	-	-	-	-	-	2	-	3	-	-
C105	**3**	**3**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**2**	**2**	**3**	**3**	**-**

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REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3152	HERITAGE OF TAMILS	**C106.1:**Discuss the Tamil language and literature.
		C106.2: Explain about the modern-art sculpture.
		C106.3: Illustrate the folk and martial arts.
		C106.4: Describe the Thinai concepts of Tamil.
		C106.5: Summarize the contribution of Tamil in Indianculture.
		C106.6: Define the role of siddha medicine.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C106.1	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C106.2	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C106.3	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C106.4	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C106.5	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C106.6	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C106	**-**	**-**	**-**	**-**	**-**	**3**	**3**	**2**	**-**	**2**	**-**	**2**	**-**	**-**	**-**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3171	PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY	**C107.1:**Develop algorithmic solutions to simple computational problems
		C107.2: Develop and execute simple Python programs.
		C107.3: Implement programs in Python using conditionals and loops for solving problems.
		C107.4: Describe functions to decompose a Python program.
		C107.5: Explain compound data using Python data structures.
		C107.6: Utilize Python packages in developing software applications.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C107.1	3	3	2	2	2	-	-	-	-	-	2	2	3	3	-
C107.2	3	3	2	2	2	-	-	-	-	-	2	2	3	-	-
C107.3	3	3	2	2	2	-	-	-	-	-	2	-	3	-	-
C107.4	3	3	2	2	2	-	-	-	-	-	2	-	3	-	-
C107.5	3	3	2	2	2	-	-	-	-	-	2	-	3	-	-
C107.6	3	3	2	2	2	-	-	-	-	-	2	-	3	-	-
C107	**3**	**3**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**2**	**2**	**3**	**3**	**-**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
BS3171	PHYSICS AND CHEMISTRY LABORATORY	**C108.1:** Explain the functioning of various physics laboratory equipment
		C108.2: Use graphical models to analyze laboratory data
		C108.3: Apply mathematical models as a medium for quantitative reasoning and describing physicalreality
		C108.4: Describe products and processes and explain their uses and purposes clearly and accurately C Access, process and analyze scientific information.
		C108.5: Solve problems individually and collaboratively
		C108.6: Determine the amount of metal ions through volumetric and spectroscopic techniques.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C108.1	3	3	3	1	1	-	-	-	-	-	-	-	-	-	-
C108.2	3	3	3	1	1	-	-	-	-	-	-	-	-	-	-
C108.3	3	3	3	1	1	-	-	-	-	-	-	-	-	-	-
C108.4	3	3	3	1	1	-	-	-	-	-	-	-	-	-	-
C108.5	3	3	3	1	1	-	-	-	-	-	-	-	-	-	-
C108.6	3	3	3	1	1	-	-	-	-	-	-	-	-	-	-
C108	**3**	**3**	**3**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3172	ENGLISH LABORATORY	**C109.1:**Describe and comprehend general as well as complex academic information
		C109.2: Explain different points of view in a discussion
		C109.3: Explain formal and informal communicative contexts
		C109.4: Describe products and processes and explain their uses and purposes clearly and accurately
		C109.5: Express their opinions effectively in both formal and informal discussions
		C109.6: Use language efficiently in expressing their opinions via various media.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C109.1	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C109.2	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C109.3	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C109.4	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C109.5	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C109.6	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C109	**3**	**3**	**3**	**3**	**2**	**2**	**2**	**2**	**1**	**1**	**1**	**1**	**-**	**-**	**-**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

II SEMESTER

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

I YEAR/II SEMESTER-REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
HS3252	PROFESSIONAL ENGLISH-II	**C110.1:** Compare and contrast products and ideas in technical texts.
		C110.2: Identify and report cause and effects in events, industrial processes through technical texts
		C110.3: Analyse problems in order to arrive at feasible solutions and communicate them in thewritten format.
		C110.4: Explain the importance of present their ideas and opinions in a planned and logical manner
		C110.5: Design effective resumes in the context of job search.
		C110.6: Demonstrate an understanding of job applications and interviews for internship and placements.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C110.1	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C110.2	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C110.3	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C110.4	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C110.5	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C110.6	3	3	3	3	2	2	2	2	1	1	1	1	-	-	-
C110	**3**	**3**	**3**	**3**	**2**	**2**	**2**	**2**	**1**	**1**	**1**	**1**	**-**	**-**	**-**

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REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
MA3251	STATISTICS AND NUMERICAL METHODS	**C111.1:**Apply the concept of testing of hypothesis for small and large samples in real life problems. .
		C111.2: Apply the basic concepts of classifications of design of experiments in the field of agriculture.
		C111.3: Describe the numerical techniques of interpolation in various intervals
		C111.4: Apply the numerical techniques of differentiation and integration for engineering problems
		C111.5: :Explain the knowledge of various techniques and methods for solving first and second order ordinary differential equations.
		C111.6 Describe the partial and ordinary differential equations with initial and boundary conditions by using certain techniques with engineering applications.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C111.1	3	3	3	2	2	-	-	-	1	-	1	1	-	-	-
C111.2	3	3	3	2	2	-	-	-	1	-	1	1	-	-	-
C111.3	3	3	3	2	2	-	-	-	1	-	1	1	-	-	-
C111.4	3	3	3	2	2	-	-	-	1	-	1	1	-	-	-
C111.5	3	3	3	2	2	-	-	-	1	-	1	1	-	-	-
C111.1	3	3	3	2	2	-	-	-	1	-	1	1	-	-	-
C111	**3**	**3**	**3**	**2**	**2**	**-**	**-**	**-**	**1**	**-**	**1**	**1**	**-**	**-**	**-**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
PH3254	PHYSICS FOR ELECTRONICS ENGINEERING	**C112.1**:Illustrate basics of crystallography and its importance for varied materials properties
		C112.2:Gain knowledge on the electrical and magnetic properties of materials and their applications
		C112.3:Grasp knowledge on magnetic properties and applications
		C112.4:Explain clearly of semiconductor physics and functioning of semiconductor devices
		C112.5:Decribe the optical properties of materials and working principles of various optical devices
		C112.6:Appreciate the importance of nanotechnology and nano devices.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C112.1	3	2	2	2	1	1	1	-	-	1	-	1	-	-	-
C112.2	3	2	2	2	1	1	1	-	-	1	-	1	-	-	-
C112.3	3	2	2	2	1	1	1	-	-	1	-	1	-	-	-
C112.4	3	2	2	2	1	1	1	-	-	1	-	1	-	-	-
C112.5	3	2	2	2	1	1	1	-	-	1	-	1	-	-	-
C112.6	3	2	2	2	1	1	1	-	-	1	-	1	-	-	-
C112	**3**	**2**	**2**	**2**	**1**	**1**	**1**	**-**	**-**	**1**	**-**	**1**	**-**	**-**	**-**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
BE3254	ELECTRICAL AND INSTRUMENTATION ENGINEERING	**C113.1:** Explain the operation of three phase power supply systems and power system
		C113.2: Analyze the working of transformer and to build its mathematical model
		C113.3: Explain the principles of DC electrical machines
		C113.4: Explain the operation of AC electrical machines
		C113.5: Explain the characteristics of the measuring instruments and its errors.
		C113.6: Explain the working of different types of transducers, storage and display devices

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C113.1	2	1	1	-	-	-	-	1	-	-	-	-	-	-	-
C113.2	2	1	1	-	-	-	-	1	-	-	-	-	-	-	-
C113.3	2	1	1	-	-	-	-	1	-	-	-	-	-	-	-
C113.4	2	1	1	-	-	-	-	1	-	-	-	-	-	-	-
C113.5	2	1	1	-	-	-	-	1	-	-	-	-	-	-	-
C113.6	**2**	**1**	**1**	-	-	-	-	**1**	-	-	-	-	-	-	-
C113	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3251	ENGINEERING GRAPHICS	**C114.1:** Use BIS conventions and specifications for engineering drawing.
		C114.2: Construct the conic curves, involutes and cycloid
		C114.3: Solve practical problems involving projection of lines
		C114.4: Draw the orthographic, isometric and perspective projections of simple solids
		C114.5: Draw the development of simple solids
		C114.6: Draw Engineering curves

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C114.1	3	2	2	-	2	-	-	-	-	2	-	2	2	2	-
C114.2	3	2	2	-	2	-	-	-	-	2	-	2	2	2	-
C114.3	3	2	2	-	2	-	-	-	-	2	-	2	2	2	-
C114.4	3	2	2	-	2	-	-	-	-	2	-	2	2	2	-
C114.5	3	2	2	-	2	-	-	-	-	2	-	2	2	2	-
C114.6	3	2	2	-	2	-	-	-	-	2	-	2	2	2	-
C114	**3**	**2**	**2**	**-**	**2**	**-**	**-**	**-**	**-**	**2**	**-**	**2**	**2**	**2**	**-**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3251	CIRCUIT ANALYSIS	**C115.1:** Apply the basic concepts of circuit analysis such as Kirchoff's laws, mesh current and node voltage method for analysis of DC and AC circuits.
		C115.2: Apply suitable network theorems and analyze AC and DC circuits
		C115.3: Analyze steady state response of any R, L and C circuits
		C115.4: Analyze the transient response for any RC, RL and RLC circuits and frequency response of parallel and series resonance circuits.
		C115.5: Analyze frequency response of parallel and series resonance circuits
		C115.6: Analyze the coupled circuits and network topologies

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C115.1	3	3	3	2	-	-	-	1	-	1	-	-	-	-	-
C115.2	3	3	3	2	-	-	-	1	-	1	-	-	-	-	-
C115.3	3	3	3	2	-	-	-	1	-	1	-	-	-	-	-
C115.4	3	3	3	2	-	-	-	1	-	1	-	-	-	-	-
C115.5	3	3	3	2	-	-	-	1	-	1	-	-	-	-	-
C115.6	3	3	3	2	-	-	-	1	-	1	-	-	-	-	-
C115	**3**	**3**	**3**	**2**	**-**	**-**	**-**	**1**	**-**	**1**	**-**	**-**	**-**	**-**	**-**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3252	TAMILS AND TECHNOLOGIES	**C116.1:**Explain about the weaving and pottery technology in Tamilnadu
		C116.2: Describe about the design and construction technologyin Tamilnadu
		C116.3: Discuss about the manufacturing technology in Tamilnadu
		C116.4: Illustrate the agriculture and irrigation technology in Tamilnadu
		C116.5: Define the growth of science in Tamil.
		C116.6: Learn the contribution of the Tamils to Indian culture

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C116.1	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C116.2	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C116.3	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C116.4	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C116.5	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C116.6	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C116	**-**	**-**	**-**	**-**	**-**	**3**	**3**	**2**	**-**	**2**	**-**	**2**	**-**	**-**	**-**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3271	ENGINEERING PRACTICES LABORATORY	**C117.1:** Draw pipe line plan; lay and connect various pipe fittings used in common household plumbingwork
		C117.2: Explain various joints in wood materials used in commonhousehold wood work
		C117.3: Design various wire electrical joints in common householdelectrical wire work
		C117.4: Weld various joints in steel plates using arc welding work; Machine various simple processes like turning, drilling, tapping in parts; Assemble simple mechanical assembly of common household equipments
		C117.5: Solder and test simple electronic circuits; Assemble and test simple electronic components on PCB
		C117.6: Design a tray out of metal sheet using sheet metal work

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C117.1	3	2	-	-	1	1	1	-	2	2	-	1	2	1	1
C117.2	3	2	-	-	1	1	1	-	2	2	-	1	2	1	1
C117.3	3	2	-	-	1	1	1	-	2	2	-	1	2	1	1
C117.4	3	2	-	-	1	1	1	-	2	2	-	1	2	1	1
C117.5	3	2	-	-	1	1	1	-	2	2	-	1	2	1	1
C117.6	3	2	-	-	1	1	1	-	2	2	-	1	2	1	1
C117	**3**	**2**	**-**	**-**	**1**	**1**	**1**	**-**	**2**	**2**	**-**	**1**	**2**	**1**	**1**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3271	CIRCUITS ANALYSIS LABORATORY	**C118.1:** Identify the basic devices and its configurations
		C118.2: Analyze the resistive circuits with different sources
		C118.3: Design RL and RC circuits
		C118.4: Verify Thevinin & Norton theorem KVL & KCL, and Super Position Theorems
		C118.5: Explain the response of RLC circuit with different inputs
		C118.6:.Obtain the resonance for different configurations of RLC

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C118.1	3	3	3	3	2	-	2	1	-	2	-	1	3	3	3
C118.2	3	3	3	3	2	-	2	1	-	2	-	1	3	3	3
C118.3	3	3	3	3	2	-	2	1	-	2	-	1	3	3	3
C118.4	3	3	3	3	2	-	2	1	-	2	-	1	3	3	3
C118.5	3	3	3	3	2	-	2	1	-	2	-	1	3	3	3
C118.6	3	3	3	3	2	-	2	1	-	2	-	1	3	3	3
C118	**3**	**3**	**3**	**3**	**2**	**-**	**2**	**1**	**-**	**2**	**-**	**1**	**3**	**3**	**3**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3272	COMMUNICATION LABORATORY	**C119.1:** Speak effectively in group discussions held in formal/semi formal contexts.
		C119.2: Discuss, analyse and present concepts and problems from various perspectives to arrive atsuitable solutions
		C119.3: Write emails, letters and effective job applications.
		C119.4: Write critical reports to convey data and information with clarity and precision
		C119.5: Give appropriate instructions and recommendations for safe execution of tasks
		C119.6: Respond intelligently and seek clarification and understand completely

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C119.1	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
C119.2	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
C119.3	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
C120.4	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
C119.5	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
C119.6	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
C119	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**-**	**-**	**-**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

III SEMESTER

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

II YEAR /III SEMESTER -REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
MA3355	RANDOM PROCESSES AND LINEAR ALGEBRA	**C201.1:** Explain the basic concepts of one dimensional random variables
		C201.2: Explain the fundamental concepts of probability with a thorough knowledge of standarddistributions that can describe certain real-life phenomenon.
		C201.3: Apply the basic concepts of two dimensional random variables to model engineering problems
		C201.4: Apply the concept of random processes in engineering disciplines
		C201.5: Explain the fundamental concepts of advanced algebra and their role in modernmathematics and applied contexts
		C201.6: Demonstrate accurate and efficient use of advanced algebraic techniques.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C201.1	3	3	1	-	-	-	-	-	3	-	-	2	-	-	-
C201.2	3	3	1	-	-	-	-	-	3	-	-	2	-	-	-
C201.3	3	3	1	-	-	-	-	-	3	-	-	2	-	-	-
C201.4	3	3	1	-	-	-	-	-	3	-	-	2	-	-	-
C201.5	3	3	1	-	-	-	-	-	3	-	-	2	-	-	-
C201.6	3	3	1	-	-	-	-	-	3	-	-	2	-	-	-
C201	**3**	**3**	**1**	-	-	-	-	-	**3**	-	-	**2**	-	-	-

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3353	C PROGRAMMING AND DATA STRUCTURES	**C202.1:**Develop C programs for any real world/technical application
		C202.2: Apply advanced features of C in solving problems.
		C202.3: Write functions to implement linear and non–linear data structure operations.
		C202.4: Suggest and use appropriate linear/non–linear data structure operations for solving a givenproblem
		C202.5: Appropriately use sort and search algorithms for a given application
		C202.6: Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C202.1	2	2	2	2	2	1	1	-	1	1	1	3	2	1	3
C202.2	2	2	2	2	2	-	-	-	1	1	1	2	2	2	2
C202.3	2	2	2	2	2	-	-	-	1	1	1	2	2	1	2
C202.4	2	2	2	2	2	-	-	-	1	1	1	2	2	3	1
C202.5	2	2	2	2	2	-	-	-	1	1	1	3	2	2	3
C202.6	2	2	2	2	2	1	1	-	1	1	1	2	2	2	2
C202	2	2	2	2	2	1	1	-	1	1	1	1	2	2	2

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3354	SIGNALS AND SYSTEMS	**C203.1:** Determine if a given system is linear/causal/stable
		C203.2: Determine the frequency components present in a continuous time signal .
		C203.3: Characterize continuous LTI systems in the time domain and frequency domain
		C203.4: Characterize discrete LTI systems in the time domain and frequency domain
		C203.5: Analyze discrete time signals and system in the Fourier and Z transform domain
		C203.6: Compute the output of an LT I system in the time and frequency domains

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C203.1	3	3	3	3	2	2	-	-	-	-	-	1	2	1	1
C203.2	3	3	3	3	2	2	-	-	-	-	-	1	2	1	1
C203.3	3	3	3	3	2	2	-	-	-	-	-	1	2	1	1
C203.4	3	3	3	3	2	2	-	-	-	-	-	1	2	1	1
C203.5	3	3	3	3	2	2	-	-	-	-	-	1	2	1	1
C203.6	3	3	3	3	2	2	-	-	-	-	-	1	2	1	1
C203	3	3	3	3	2	2	-	-	-	-	-	1	2	1	1

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SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3353	ELECTRONIC DEVICES AND CIRCUITS	**C204.1:**Explain the structure and working operation of basic electronic devices.
		C204.2: Design and analyze amplifiers.
		C204.3: Analyze frequency response of BJT and MOSFET amplifiers
		C204.4: Design and analyze feedback amplifiers and oscillator principles.
		C204.5: Design power amplifiers and supply circuits
		C204.6: Analyze power amplifiers and supply circuits

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C204.1	3	3	3	3	2	2	-	-	-	-	2	3	3	3	3
C204.2	3	3	3	3	2	2	-	-	-	-	2	2	3	3	3
C204.3	3	3	3	3	2	2	-	-	-	-	2	3	3	2	3
C204.4	3	3	3	3	2	2	-	-	-	-	2	2	3	3	3
C204.5	3	3	3	3	2	2	-	-	-	-	2	3	2	2	3
C204.6	**3**	**3**	**3**	**3**	**2**	**2**	-	-	-	-	2	3	2	2	3
C204	**3**	**3**	**3**	**3**	**2**	**2**	-	-	-	-	2	3	2	2	3

***3-High correlation; 2- Medium correlation; 1-Low correlation; '-' No correlation**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3351	CONTROL SYSTEMS	**C205.1:**Compute the transfer function of different physical systems.
		C205.2: Analyse the time domain specification and calculate the steady state error.
		C205.3: Illustrate the frequency response characteristics of open loop and closed loop system response
		C205.4: Analyse the stability using Routh and root locus techniques.
		C205.5: Illustrate the state space model of a physical system
		C205.6: Discuss the concepts of sampleddata control system

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C205.1	3	3	3	2	2	2	-	-	-	2	3	2	3	3	2
C205.2	3	3	3	2	2	2	-	-	-	2	2	2	2	3	2
C205.3	3	3	3	2	2	2	-	-	-	2	2	2	3	3	2
C205.4	3	3	3	2	2	2	-	-	-	2	3	2	2	3	1
C205.5	3	3	3	2	2	2	-	-	-	2	2	2	3	3	2
C205.6	3	3	3	2	2	2	-	-	-	2	2	2	3	3	2
C205	**3**	3	3	2	2	2	-	-	-	2	2	2	3	3	2

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REGULATION 2021
B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3352	DIGITAL SYSTEMS DESIGN	**C206.1:** Explain the Boolean algebra and simplification procedures relevant to digital logic..
		C206.2 Design various combinational digital circuits using logic gates
		C206.3: Analyse and design synchronous sequential circuits
		C206.4: Analyse asynchronous sequential circuits
		C206.5: Design asynchronous sequential circuits
		C206.6: Build logic gates and use programmable devices

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C206.1	3	3	3	2	2	-	-	-	2	2	3	3	3	3	2
C206.2	3	3	3	2	2	-	-	-	2	2	2	1	2	3	2
C206.3	3	3	3	2	2	-	-	-	2	2	2	2	3	3	2
C206.4	3	3	3	2	2	-	-	-	2	2	3	2	2	3	1
C206.5	3	3	3	2	2	-	-	-	2	2	2	2	3	3	2
C206.6	3	3	3	2	2	-	-	-	2	2	2	2	3	3	2
C206	**3**	**3**	**3**	**2**	**2**	-	-	-	**2**	**2**	2	2	3	3	2

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3361	ELECTRONIC DEVICES AND CIRCUITS LABORATORY	**C207.1:**Characteristics of PN Junction Diode and Zener diode
		C207.2: Design an Testing of BJT and MOSFET amplifiers.
		C207.3: Verify the operation of power amplifiers.
		C207.3: Design of Zener diode Regulator
		C207.4: Determine Frequency response of CE and CS amplifiers
		C207.5: Design and Testing of BJT and MOSFET amplifiers..
		C207.6: Determine Frequency response of CB and CC amplifiers

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C207.1	2	2	2	2	2	1	-	-	2	2	2	1	2	1	1
C207.2	2	2	2	2	2	1	-	-	2	2	2	1	2	1	1
C207.3	2	2	2	2	2	1	-	-	2	2	2	1	2	1	1
C207.4	2	2	2	2	2	1	-	-	2	2	2	1	2	1	1
C207.5	2	2	2	2	2	1	-	-	2	2	2	1	2	1	1
C207.6	**2**	**2**	2	**2**	**2**	**1**	-	-	**2**	**2**	**2**	**1**	**2**	**1**	**1**
C207	**2**	**2**	**2**	**2**	**2**	**1**	-	-	**2**	**2**	**2**	**1**	**2**	**1**	**1**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3362	C PROGRAMMING AND DATA STRUCTURES LABORATORY	**C208.1:**Use different constructs of C and develop applications.
		C208.2: Write functions to implement linear and non-linear data structure operations.
		C208.3: Suggest and use the appropriate linear / non-linear data structure operations for a givenproblem
		C208.4: Apply appropriate hash functions that result in a collision free scenario for data storage andRetrieval
		C208.5: Implement Sorting and searching algorithms for a given application
		C208.6: Implement searching algorithms for a given application

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C208.1	2	3	2	2	2	1	1	-	1	1	1	1	2	2	2
C208.2	2	2	2	2	2	-	-	-	1	1	1	1	2	2	2
C208.3	2	2	2	2	2	-	-	-	1	1	1	1	2	2	2
C208.4	2	2	2	2	1	-	-	-	1	1	1	1	2	2	2
C208.5	2	2	2	2	2	1	1	-	1	1	1	1	2	2	2
C208.6	2	2	2	2	2	1	1	-	1	1	1	1	2	2	2
C208	**2**	**2**	**2**	**2**	**2**	**1**	**1**	-	**1**	**1**	**1**	**1**	**2**	**2**	**2**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3361	PROFESSIONAL DEVELOPMENT	**C209.1:** Use MS Word to create quality documents, by structuring and organizing content for their day to day technical requirements.
		C209.2: Use MS Word to create quality documents, by structuring and organizing content for their dayto day academic requirements.
		C209.3: Use MS EXCEL to perform and visualize data for ease of understanding..
		C209.4: Use MS EXCEL to perform data operations and analytics, record, retrieve data as perrequirements
		C209.5: Use MS PowerPoint to create high quality academic presentations by including commontables, charts, graphs.
		C209.6: Use MS PowerPoint to create high quality academic presentations by interlinking other elements, and using media objects

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C209.1	2	2	2	2	1	1	1	-	-	-	-	-	-	-	-
C209.2	2	2	2	2	1	-	-	-	-	-	-	-	-	-	-
C209.3	2	2	2	2	1	-	-	-	-	-	-	-	-	-	-
C209.4	2	2	2	2	1	-	-	-	-	-	-	-	-	-	-
C209.5	2	2	2	2	1	1	1	-	-	-	-	-	-	-	-
C209.6	2	2	2	2	1	-	-	-	-	-	-	-	-	-	-
C209	**2**	**2**	**2**	**2**	**1**	**1**	**1**	-	-	-	-	-	-	-	-

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IV SEMESTER

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION

II YEAR/IV SEMESTER -REGULATION 2021
B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3452	ELECTROMAGNETIC FIELDS	**C210.1:** Relate the fundamentals of vector, coordinate system to electromagnetic concepts.
		C210.2: Analyze the characteristics of Electrostatic field
		C210.3: Interpret the concepts of Electric field in material space and solve the boundary conditions
		C210.4: Explain the concepts and characteristics of Magneto Static field in material space and solve boundary conditions
		C210.5: Determine the significance of time varying fields
		C210.6: Determine the characteristics impedance ,wavelength, intrinsic impedance, group velocity and phase velocity of plane waves.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C210.1	2	2	2	2	-	2	1	-	-	1	-	2	1	1	1
C210.2	3	3	2	2	2	2	1	-	-	1	1	2	1	1	1
C210.3	2	2	2	2	2	2	1	-	-	1	1	2	1	1	1
C210.4	2	2	2	2	2	2	1	-	-	1	1	2	1	1	1
C210.5	2	2	2	2	2	2	1	-	-	1	1	2	1	1	1
C210.6	2	2	2	2	2	2	1	-	-	1	1	2	1	1	1
C210	**2**	**2**	**2**	**2**	**2**	**2**	**1**	**-**	-	1	**1**	**2**	**1**	1	1

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3401	NETWORKS AND SECURITY	**C211.1:** Explain the Network Models, layers and functions
		C211.2: Categorize and classify the routing protocols.
		C211.3: List the functions of the transport and application layer
		C211.4: Evaluate and choose the network security mechanisms.
		C211.5: Discuss the hardware security attacks and countermeasures
		C211.6: Discuss the Protocols and email Security

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C211.1	3	3	2	2	-	-	1	-	2	2	-	2	2	3	2
C211.2	3	3	2	2	2	-	1	-	2	2	-	2	2	3	1
C211.3	3	3	2	2	1	-	1	-	2	2	-	2	2	3	1
C211.4	3	3	2	2	1	-	1	-	2	2	-	2	2	3	1
C211.5	3	3	2	2	1	-	1	-	2	2	-	2	2	3	1
C211.6	3	3	2	2	2	-	1	-	2	2	-	2	2	3	1
C211	3	3	2	2	2	-	1	-	2	2	-	2	**2**	3	**1**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3451	LINEAR INTEGRATED CIRCUITS	**C212.1:**Describe the characteristics of operational amplifiers.
		C212.2: Design linear and nonlinear applications of OP – AMPS
		C212.3: Design applications using analog multiplier and PLL
		C212.4: Design ADC and DAC using OP – AMPS
		C212.5: Generate waveforms using OP – AMP Circuits.
		C212.6: Infer the applications of special function ICs

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C212.1	3	3	2	2	2	-	-	-	1	1	1	-	2	1	1
C212.2	3	3	2	2	2	-	-	-	1	1	-	-	2	1	1
C212.3	3	3	2	2	2		-	-	1	1	-	-	2	1	1
C212.4	3	3	2	2	2	-	-	-	1	1	-	-	2	1	1
C212.5	3	3	2	2	2	-	-	-	1	1	-	-	2	1	1
C212.6	3	3	2	2	2	-	-	-	1	1	-	1	2	1	1
C212	**3**	**3**	**2**	**2**	**2**	-	-	-	**1**	**1**	**1**	**1**	**2**	**1**	**1**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3492	DIGITAL SIGNAL PROCESSING	**C213.1:**Apply DFT for the analysis of digital signals and systems
		C213.2: Design IIR filters
		C213.3: Design FIR filters
		C213.4: Characterize the effects of finite precision representation on digital filters
		C213.5: Explain the architecture of DSP Processors
		C213.6: Design multirate filters and apply adaptive filters appropriately in communication systems

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C213.1	3	3	2	2	2	-	-	-	2	2	1	1	3	3	2
C213.2	3	3	2	2	2	-	-	-	2	2	1	1	2	2	2
C213.3	3	3	2	2	2	-	-	-	2	2	1	1	1	2	2
C213.4	3	3	2	2	2	-	-	-	2	2	1	1	2	2	3
C213.5	3	3	2	2	2	-	-	-	2	2	1	1	2	2	2
C213.6	3	3	2	2	2	-	-	-	2	2	1	1	2	2	2
C213	**3**	**3**	**2**	**2**	**2**	**-**	**-**	**-**	**2**	**2**	**1**	**1**	2	2	**2**

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REGULATION 2021
B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3491	COMMUNICATION SYSTEMS	**C214.1:** Gain knowledge in amplitude modulation techniques.
		C214.2: Explain the concepts of Random Process to the design of communication systems
		C214.3: Gain knowledge in digital techniques
		C214.4: Gain knowledge in sampling and quantization
		C214.5: Explain the importance of demodulation techniques
		C214.6: Implement the control coding schemes in communication systems

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C214.1	3	3	3	3	2	1	1	-	-	1	1	1	2	1	1
C214.2	3	3	3	3	2	1	1	-	-	1	1	1	2	1	1
C214.3	3	3	3	3	2	1	1	-	-	1	1	1	2	1	1
C214.4	3	3	3	3	2	1	1	-	-	1	1	1	2	1	1
C214.5	3	3	3	3	2	1	1	-	-	1	1	1	2	1	1
C214.6	3	3	3	3	2	1	1	-	-	1	1	1	2	1	1
C214	3	3	3	3	**2**	1	1	-	-	**1**	**1**	**1**	**2**	**1**	**1**

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REGULATION 2021
B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3451	ENVIRONMENTAL SCIENCES AND SUSTAINABILITY	**C215.1:**Explain the functions of environment, ecosystems and biodiversity and theirconservation
		C215.2: Identify the causes, effects of environmental pollution and natural disasters and contribute to the preventive measures in the society
		C215.3: Identify and apply the understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations
		C215.4: Explain the different goals of sustainable development and apply them for suitable technological advancement and societal development.
		C215.5: Demonstrate the knowledge of sustainability practices and identify green materials and energy cycles.
		C215.6: Demonstrate the knowledge of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C215.1	3	2	-	-	-	2	2	-	-	-	-	2	-	-	-
C215.2	3	2	-	-	-	2	2	-	-	-	-	2	-	-	-
C215.3	3	2	2	-	-	2	2	-	-	-	-	2	-	-	-
C215.4	3	2	2	2	-	2	2	-	-	-	-	2	-	-	-
C215.5	3	2	2	-	-	2	2	-	-	-	-	2	-	-	-
C215.6	3	2	2	-	-	2	2	-	-	-	-	2	-	-	-
C215	**3**	**2**	**2**	**2**	**-**	**2**	**2**		**-**	**-**	**-**	**2**	**-**	**-**	**-**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3461	COMMUNICATION SYSTEMS LABORATORY	**C216.1:**Design AM, FM & Digital Modulators for specific applications.
		C216.2: Compute the sampling frequency for digital modulation
		C216.3: Simulate & validate the various functional modules of Communication system.
		C216.4: Demonstrate their knowledge in base band signaling schemes through implementation of digital modulation schemes..
		C216.5: Apply various channel coding schemes in Communication system.
		C216.6: Demonstrate their capabilities towards the improvement of the noise performance of Communication system

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C216.1	3	3	3	3	3	3	-	-	1	1	1	1	2	1	1
C216.2	3	3	3	3	3	3	-	-	1	1	1	1	2	1	1
C216.3	3	3	3	3	3	3	-	-	1	1	1	1	2	1	1
C216.4	3	3	3	3	3	3	-	-	1	1	1	1	2	1	1
C216.5	3	3	3	3	3	3	-	-	1	1	1	1	2	1	1
C216.6	3	3	3	3	3	3	-	-	1	1	1	1	2	1	1
C216	**3**	**3**	**3**	**3**	**3**	**3**	-	-	**1**	**1**	**1**	**1**	**2**	**1**	**1**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3462	LINEAR INTEGRATED CIRCUITS LABORATORY	**C217.1:**Analyze various types of feedback amplifiers.
		C217.2: Design oscillators, tuned amplifiers, wave-shaping circuits and multivibrators
		C217.3: Design and simulate feedback amplifiers,oscillators, tuned amplifiers, wave- shaping circuits and multivibrators, filters using SPICE Tool
		C217.4: Design amplifiers, oscillators, D-A converters using operational amplifiers
		C217.5: Design filters using operational amplifiers
		C217.6: To perform an experiment on frequency response of amplifiers

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C217.1	3	3	3	3	2	-	-	-	2	2	1	1	2	1	1
C217.2	3	3	3	3	2	-	-	-	2	2	1	1	2	1	1
C217.3	3	3	3	3	2	-	-	-	2	2	1	1	2	1	
C217.4	3	3	3	3	2	-	-	-	2	2	1	1	2	1	1
C217.5	3	3	3	3	2	-	-	-	2	2	-	-	-	-	-
C217.6	3	3	3	3	2	-	-	-	2	2	1	1	2	1	1
C217	**3**	**3**	**3**	**3**	**2**	-	-	-	**2**	**2**	**1**	**1**	**2**	**1**	**1**

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V SEMESTER

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III YEAR /V SEMESTER -REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3501	WIRELESS COMMUNICATION	**C301.1:** Explain the Concept And Design Of A Cellular System.
		C301.2: Describe the Mobile Radio Propagation.
		C301.3: Discuss the Various Digital Modulation Techniques.
		C301.4: Explain the Concepts Of Multiple Access Techniques And Wireless Networks
		C301.5: Characterize a wireless channel and evolve the system design specifications
		C301.6: Design a cellular system based on resource availability and traffic demands.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C301.1	3	3	2	2	2	2	-	-	2	2	-	1	3	1	1
C301.2	3	3	2	2	2	2	-	-	2	2	-	-	3	1	2
C301.3	3	3	2	2	2	2	-	-	2	2	-	1	3	1	2
C301.4	3	3	2	2	2	2	-	-	2	2	-	1	2	1	1
C301.5	3	3	2	2	2	2	-	-	2	2	-	1	2	2	2
C301.6	3	3	2	2	2	2	-	-	2	2	-	1	2	2	2
C301	**3**	**3**	**2**	**2**	2	2	-	-	2	2	-	**1**	2	2	2

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EGULATION 2021
B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3552	VLSI and Chip Design	**C302.1:** Discuss in depth knowledge of MOS technology
		C302.2: Design Combinational Logic Circuits and and Design Principles
		C302.3: Design Sequential Logic Circuits and Clocking Strategies
		C302.4: Explain Memory architecture and building blocks
		C302.5: To Implement the Function FPGA
		C302.6: Discuss the ASIC Design Process and Testing.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C302.1	2	2	**2**	-	-	-	-	-	-	-	-	-	3	3	3
C302.2	2	2	2	2	-	-	-	-	-	-	-	1	3	3	3
C302.3	2	2	2	2	2	2	-	-	-	-	-	1	3	2	3
C302.4	**2**	**2**	2	2	-	-	-	-	-	-	-	1	3	3	2
C302.5	-	-	-	-	-	2	-	-	-	-	1	-	3	2	2
C302.6	-	-	-	-	-	2	-	-	-	-	1	-	3	2	2
C302	**2**	**2**	**2**	**2**	**2**	**2**	-	-	-	-	**1**	**1**	**3**	**3**	**3**

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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION 2021

B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3551	TRANSMISSION LINES AND RF SYSTEMS	**C303.1:**Explain the characteristics of transmission lines and its losses
		C303.2: Calculate the standing wave ratio and input impedance in high frequency transmission lines.
		C303.3: Analyze high frequency line, power and impedance measurements
		C303.4: Analyze impedance matching by stubs using Smith Charts
		C303.5: Analyze the characteristics of TE and TM waves
		C303.6: Design a RF transceiver system for wireless communication

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C303.1	3	3	3	3	2	1	-	-	-	1	-	1	2	1	1
C303.2	3	3	3	3	2	1	-	-	-	1	-	1	2	1	1
C303.3	3	3	3	3	2	1	-	-	-	1	-	1	2	1	1
C303.4	3	3	3	3	2	1	-	-	-	1	-	1	2	1	1
C303.5	3	3	3	3	2	1	-	-	-	1	-	1	2	1	1
C303.6	3	3	3	3	2	1	-	-	-	1	-	1	2	1	1
C303	**3**	**3**	**3**	**3**	**2**	**1**	-	-	-	**1**	-	**1**	**2**	**1**	**1**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
CEC352	SATELLITE COMMUNICATION	**C304.1:** Analyze the different types of satellites
		C304.2: Find the orbital determination and launching methods..
		C304.3:. Analyze the satellite subsystems
		C304.4: Evaluate the satellite link power budget calculation
		C304.5: Identify access technology for satellite
		C304.6: Design various satellite applications

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO 11	PO1 2	PSO 1	PSO 2	PSO 3
C304.1	3	3	3	3	2	2	1	1	-	2	-	1	3	3	3
C304.2	3	3	3	3	2	2	-	-	-	2	-	1	3	3	3
C304.3	3	3	2	2	2	2	-	-	-	2	-	1	3	2	2
C304.4	3	3	3	3	2	2	-	-	-	2	-	1	3	3	3
C304.5	3	3	3	3	2	2	-	-	-	2	-	1	3	3	3
C304.6	3	3	3	3	2	2	-	-	-	2	-	1	3	3	3
C304	3	3	3	3	2	2	1	1	-	2	-	1	3	3	3

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REGULATION 2021
B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
CEC345	OPTICAL COMMUNICATION & NETWORKS	**C305.1:** Discuss Basic Elements In Optical Fibers, Different Modes And Configurations.
		C305.2: Analyze The Transmission Characteristics Associated With Dispersion And PolarizationTechniques
		C305.3: Design Optical Sources And Detectors With Their Use In Optical Communication System.
		C305.4: Construct Fiber Optic Receiver Systems, Measurements And Techniques.
		C305.5: Examine the losses and propagation characteristics of an optical signal.
		C305.6: Design Optical Communication Systems And Its Networks.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO 6	PO 7	PO8	PO9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
C305.1	3	3	2	3	2	1	-	-	-	-	-	1	2	1	2
C305.2	3	3	2	3	2	2	-	-	-	-	-	2	2	2	2
C305.3	3	3	3	3	2	1	-	-	-	-	-	1	2	2	2
C305.4	3	3	2	3	2	1	-	-	-	-	-	1	2	1	2
C305.5	3	3	3	3	2	1	-	-	-	-	-	1	2	2	2
C305.6	3	3	2	3	2	1	-	-	-	-	-	1	2	1	2
C305	3	3	2	3	2	1	-	-	-	-	-	1	2	1	2

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
CEC364	WIRELESS BROAD BAND NETWORKS	**C306.1:** Design and implement the various protocols in wireless networks
		C306.2: Analyze the architecture of 3G network standards
		C306.2 : Analyze the difference of LTE-A network design from 4G standard.
		C306.4: Design the interconnecting network functionalities by layer level functions
		C306.5: Explore the current generation (5G) network architecture.
		C306.6: Explain emerging techniques in 5G network.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C306.1	3	3	2	2	2	1	-	-	-	-	2	2	3	1	1
C306.2	3	3	2	2	2	1	-	-	-	-	-	2	3	2	2
C306.3	3	3	2	2	2	1	-	-	-	-	-	3	3	2	2
C306.4	3	3	2	2	2	2	-	-	-	-	-	2	2	1	2
C306.5	2	3	2	2	3	2	-	-	-	-	-	2	2	2	1
C306.6	3	3	2	3	2	2	-	-	-	-	-	2	3	2	2
C306	3	3	2	2	2	2	-	-	-	-	2	2	3	2	2

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
MX3081	INTRODUCTION TO WOMEN AND GENDER STUDIES	**C307.1:** Explain the concept of Women's Studies.
		C307.2: Demonstrate to imbibe feminist thoughts, Ideals, Movements and Theories.
		C307.3: Discuss the women's studies and institutionalization
		C307.4: Analyze the life style and challenges of women.
		C307.5: To create awareness on modernization and impact of technology on women.
		C307.6: Discuss Sensitize Women towards the current social issues confronting them.

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO 4	PO5	PO6	PO7	PO8	PO9	PO1 0	PO1 1	PO1 2	PSO 1	PSO 2	PSO 3
C307.1	3	3	3	3	2	2	2	-	-	-	-	-	3	3	3
C307.2	3	2	3	3	2	2	2	-	-	-	-	-	3	2	3
C307.3	3	3	3	3	2	2	2	-	-	-	-	-	3	3	3
C307.4	3	2	3	3	2	2	2	-	-	-	-	-	3	3	2
C307.5	3	3	2	3	2	2	2	-	-	-	-	-	3	3	3
C307.6	3	2	3	3	2	2	2	-	-	-	-	-	3	3	3
C307	**3**	**2**	**3**	**3**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**3**	**3**	**3**

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B.E. ECE - COURSE OUTCOMES (CO)

Course Code	Course Name	Course Outcome (CO) Students will be able to
EC3561	VLSI LABORATORY	**C308.1:** Assemble HDL code for basic as well as advanced digital integrated circuit
		C308.2: Execute the logic modules into FPGA Boards
		C308.3: Synthesize Place and Route the digital ICs
		C308.4: Design, Simulate and Extract the layouts of Digital & Analog IC Blocks using EDA tools.
		C308.5: Design ,Simulate basic Common Source, Common Gate and Common Drain Amplifiers
		C308.6: Test and Verification of IC design

CO-PO MAPPING

	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C308.1	2	2	1	1	1	-	-	-	2	2	-	-	2	3	2
C308.2	2	2	1	1	1	-	-	-	2	2	-	-	2	1	2
C308.3	2	2	2	2	1	-	-	-	2	2	1	1	2	2	2
C308.4	**2**	2	2	2	1	-	-	-	2	2	1	1	2	2	2
C308.5	2	2	2	2	1	-	-	-	2	2	1	1	2	2	2
C308.6	2	2	2	2	1	-	-	-	2	2	1	1	2	2	2
C308	**2**	**2**	**2**	**2**	**1**	**-**	**-**	**-**	**2**	**2**	**1**	**1**	**2**	**2**	**2**

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