SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, Affiliated to Anna University, Chennai, India)

Kaikkurichi, Pudukkottai – 622 303

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REGULATION 2021

COURSE OUTCOMES (CO) & CO-PO MAPPING

I SEMESTER

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REGULATION 2021

COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
HS3152 (C101)	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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
MA3151 (C102)	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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C102.1	3	3	2	2	-	-	-	-	1	-	1	1	-	2	-
C102.2	3	3	2	2	-	-	-	-	1	-	1	1	-	2	-
C102.3	3	3	2	2	-	-	-	-	1	-	1	1	-	2	-
C102.4	3	3	2	2	-	-	-	-	1	-	1	1	-	2	-
C102.5	3	3	2	2	-	-	-	-	1	-	1	1	-	2	-
C102.6	3	3	2	2	-	-	-	-	1	-	1	1	-	2	-
C102	**3**	**3**	**2**	**2**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**1**	**-**	**2**	**-**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
PH3151 (C103)	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 a strong foundational knowledge in fibre optics and laser.
		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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C103.1	3	3	2	1	-	1	1	-	-	1	-	1	-	-	-
C103.2	3	3	2	1	-	1	1	-	-	1	-	-	-	-	-
C103.3	3	3	-	-	-	-	-	-	-	1	-	-	-	-	-
C103.4	3	3	2	-	-	1	1	-	-	1	-	-	-	-	-
C103.5	3	3	2	-	-	1	1	-	-	1	-	-	-	-	-
C103.6	3	3	2	1	-	1	1	-	-	1	-	1	-	-	-
C103	**3**	**3**	**2**	**1**	**-**	**1**	**1**	**-**	**-**	**1**	**-**	**1**	**-**	**-**	**-**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
CY3151 (C104)	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 recommend suitable fuels for engineering processes and applications.
		C104.5: Discuss the 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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
GE3151 (C105)	PROBLEM SOLVING AND PYTHONP ROGRAMMING	**C105.1:** Develop algorithmic solutions to simple computational problems.
		C105.2: Design 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: Discuss 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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C105.1	3	3	2	2	2	-	-	-	2	2	2	-	3	-	1
C105.2	3	3	2	2	2	-	-	-	2	2	2	-	3	-	1
C105.3	3	3	2	2	2	-	-	-	2	2	2	-	3	-	1
C105.4	3	3	2	2	2	-	-	-	2	2	2	-	3	-	1
C105.5	3	3	2	2	2	-	-	-	2	2	2	-	3	-	1
C105.6	3	3	2	2	2	-	-	-	2	2	2	-	3	-	1
C105	**3**	**3**	**2**	**2**	**2**	**-**	**-**	**-**	**2**	**2**	**2**	**-**	**3**	**-**	**1**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
GE3152 (C106)	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 Indian culture.
		C106.6: Define the role of siddha medicine.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
GE3171 (C107)	PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY	**C107.1:** Develop algorithmic solutions to simple computationa l problems
		C107.2: Design 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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C107.1	3	3	2	2	2	-	-	-	2	2	2	2	3	-	2
C107.2	3	3	2	2	2	-	-	-	2	2	2	2	3	-	2
C107.3	3	3	2	2	2	-	-	-	2	2	2	2	3	-	2
C107.4	3	3	2	2	2	-	-	-	2	2	2	2	3	-	2
C107.5	3	3	2	2	2	-	-	-	2	2	2	2	3	-	2
C107.6	3	3	2	2	2	-	-	-	2	2	2	2	3	-	2
C107	**3**	**3**	**2**	**2**	**2**	**-**	**-**	**-**	**2**	**2**	**2**	**2**	**3**	**-**	**2**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
BS3171 (C108)	PHYSICS AND CHEMISTRY LABORATORY	**C108.1:** Explain the functioning of various physics laboratoryequipment
		C108.2: Use graphical models to analyze laboratory data.
		C108.3: Apply mathematical models as a medium for quantitative reasoning and describing physical reality.
		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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C108.1	3	3	3	2	2	-	-	-	2	2	-	-	2	-	-
C108.2	3	3	3	2	2	-	-	-	2	2	-	-	2	-	-
C108.3	3	3	3	2	2	-	-	-	2	2	-	-	2	-	-
C108.4	3	3	3	2	2	-	-	-	2	2	-	-	2	-	-
C108.5	3	3	3	2	2	-	-	-	2	2	-	-	2	-	-
C108.6	3	3	3	2	2	-	-	-	2	2	-	-	2	-	-
C108	**3**	**3**	**3**	**2**	**2**	**-**	**-**	**-**	**2**	**2**	**-**	**-**	**2**	**-**	**-**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
GE3172 (C109)	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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C109.1	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C109.2	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C109.3	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C109.4	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C109.5	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C109.6	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C109	**3**	**3**	**3**	**3**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**-**	**-**	**-**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

II SEMESTER

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
HS3252 (C110)	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 the written 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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C110.1	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C110.2	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C110.3	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C110.4	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C110.5	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C110.6	3	3	3	3	2	2	2	2	2	2	2	2	-	-	-
C110	**3**	**3**	**3**	**3**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**-**	**-**	**-**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
MA3251 (C111)	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 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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C111.1	3	3	3	2	-	-	-	-	-	1	-	1	-	2	-
C111.2	3	3	3	2	-	-	-	-	-	1	-	1	-	2	-
C111.3	3	3	3	2	-	-	-	-	-	1	-	1	-	2	-
C111.4	3	3	3	2	-	-	-	-	-	1	-	1	-	2	-
C111.5	3	3	3	2	-	-	-	-	-	1	-	1	-	2	-
C111.6	3	3	3	2	-	-	-	-	-	1	-	1	-	2	-
C111	**3**	**3**	**3**	**2**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**1**	**-**	**2**	**-**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
PH3256 (C112)	PHYSICS FOR INFORMATION SCIENCE	**C112.1:** Illustrate the basics of dielectric materials and insulation.
		C112.2: Gain knowledge on the electrical and magnetic properties of materials and their applications
		C112.3: Explain clearly of semiconductor physics and functioning of semiconductor devices
		C112.4: Describe the optical properties of materials.
		C112.5: Discuss the working principles of various optical devices.
		C112.6: Appreciate the importance of nanotechnology and nanodevices.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C112.1	3	2	1	1	-	1	-	-	-	1	-	1	2	-	-
C112.2	3	2	1	1	-	1	-	-	-	1	-	1	2	-	-
C112.3	3	2	1	1	-	1	-	-	-	1	-	1	2	-	-
C112.4	3	2	1	1	-	1	-	-	-	1	-	1	2	-	-
C112.5	3	2	1	1	-	1	-	-	-	1	-	1	2	-	-
C112.6	3	2	1	1	-	1	-	-	-	1	-	1	2	-	-
C112	**3**	**2**	**1**	**1**	**-**	**1**	**-**	**-**	**-**	**1**	**-**	**1**	**2**	**-**	**-**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
BE3251 (C113)	BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	**C113.1:** Observe the profession of Civil and Mechanical engineering.
		C113.2: Summarize the planning of building, infrastructure and working of Machineries.
		C113.3: Apply the knowledge gained in respective discipline
		C113.4: Illustrate the ideas of Civil Engineering applications.
		C113.5: Describe the ideas of Mechanical Engineering applications.
		C113.6: Appraise the material, Structures, machines and energy.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C113.1	2	2	1	1	-	-	1	-	1	1	-	1	-	-	-
C113.2	2	2	1	1	-	-	1	-	1	1	-	1	-	-	-
C113.3	2	2	1	1	-	-	1	-	1	1	-	1	-	-	-
C113.4	2	2	1	1	-	-	1	-	1	1	-	1	-	-	-
C113.5	2	2	1	1	-	-	1	-	1	1	-	1	-	-	-
C113.6	2	2	1	1	-	-	1	-	1	1	-	1	-	-	-
C113	**2**	**2**	**1**	**1**	**-**	**-**	**1**	**-**	**1**	**1**	**-**	**1**	**-**	**-**	**-**

***3-High Correlation; 2-Medium Correlation; 1-Low Correlation; '-' – No Correlation**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
GE3251 (C114)	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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C114.1	3	2	2	-	2	-	2	-	-	2	-	2	2	2	-
C114.2	3	2	2	-	2	-	2	-	-	2	-	2	2	2	-
C114.3	3	2	2	-	2	-	2	-	-	2	-	2	2	2	-
C114.4	3	2	2	-	2	-	2	-	-	2	-	2	2	2	-
C114.5	3	2	2	-	2	-	2	-	-	2	-	2	2	2	-
C114.6	3	2	2	-	2	-	2	-	-	2	-	2	2	2	-
C114	**3**	**2**	**2**	**-**	**2**	**-**	**2**	**-**	**-**	**2**	**-**	**2**	**2**	**2**	**-**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3251 (C115)	PROGRAMMING IN C	**C115.1:** Illustrate the constructs of C Language.
		C115.2: Develop C Programs using basic programming constructs
		C115.3: Analyse C programs using arrays and strings
		C115.4: Illustrate modular applications in C using functions
		C115.5: Create applications in C using pointers and structures
		C115.6: Construct the importance of input/output and file handling in C

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C115.1	3	2	2	1	2	1	1	1	2	-	3	2	1	2	-
C115.2	3	3	3	1	2	1	1	1	2	-	3	3	2	2	-
C115.3	3	3	2	1	2	1	1	1	2	-	3	2	2	2	-
C115.4	3	2	2	1	3	1	1	1	2	-	3	3	2	2	-
C115.5	3	3	3	1	2	1	2	1	2	-	3	2	2	3	-
C115.6	3	3	3	2	1	2	-	-	2	1	2	2	2	2	-
C115	**3**	**2.6**	**2.5**	**1.2**	**2**	1.2	1	1	**2**	1	**2.8**	**2.3**	**1.8**	**2.1**	-

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
GE3252 (C116)	TAMILS AND TECHNOLOGIES	**C116.1:** Explain about the weaving and pottery technology in Tamilnadu.
		C116.2: Describe about the design and construction technology in 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

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
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	-	-	-
C1116.6	-	-	-	-	-	3	3	2	-	2	-	2	-	-	-
C116	**-**	**-**	**-**	**-**	**-**	**3**	**3**	**2**	**-**	**2**	**-**	**2**	**-**	**-**	**-**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
GE3271 (C118)	ENGINEERING PRACTICES LABORATORY	**C118.1:** Draw pipe line plan; lay and connect various pipe fittings used in common household plumbing work; Saw; plan;
		C118.2: Explain various joints in wood materials used in common household wood work.
		C118.3: Design various wire electrical joints in common household electrical wire work.
		C118.4: Weld various joints in steel plates using arc welding work; Machine various simple processeslike turning, drilling, tapping in parts; Assemble simple mechanical assembly of common household equipments.
		C118.5: Solder and test simple electronic circuits; Assemble and test simple electronic components on PCB.
		C118.6: Design a tray out of metal sheet using sheet metal work.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C118.1	3	2	2	2	-	2	2	-	2	2	-	1	2	1	1
C118.2	3	2	2	2	-	2	2	-	2	2	-	1	2	1	1
C118.3	3	2	2	2	-	2	2	-	2	2	-	1	2	1	1
C118.4	3	2	2	2	-	2	2	-	2	2	-	1	2	1	1
C118.5	3	2	2	2	-	2	2	-	2	2	-	1	2	1	1
C118.6	3	2	2	2	-	2	2	-	2	2	-	1	2	1	1
C118	**3**	**2**	**2**	**2**	**-**	**2**	**2**	**-**	**2**	**2**	**-**	**1**	**2**	**1**	**1**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
CS3271 (C119)	PROGRAMMING IN C LABORATORY	**C119.1:** Demonstrate knowledge on C programming constructs.
		C119.2: Evaluate programs in C using basic constructs
		C119.3: Create programs in C using arrays.
		C119.4: Design applications in C using strings, pointers, functions.
		C119.5: Develop applications in C using structures.
		C119.6: Construct the importance of C using file processing.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C119.1	3	3	3	2	1	1	-	-	2	1	2	2	2	2	-
C119.2	3	3	3	3	1	1	-	-	2	1	2	2	2	3	-
C119.3	3	3	3	2	1	2	-	-	2	-	2	2	2	2	-
C119.4	3	3	3	2	1	2	-	-	3	-	3	3	3	2	-
C119.5	3	3	3	2	3	2	-	-	3	-	3	3	3	3	-
C119.6	3	3	3	2	1	2	-	-	2	1	2	2	2	2	-
C119	**3**	**3**	**3**	**2.1**	**1.3**	**1.6**	-	-	**2.3**	**1**	**2.3**	**2.3**	**2.3**	**2.3**	-

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to
GE3272 (C120)	COMMUNICATION LABORATORY	**C120.1:** Speak effectively in group discussions held in formal/semi formal contexts.
		C120.2: Discuss, analyse and present concepts and problems from various perspectives to arrive at suitable solutions.
		C120.3: Write emails, letters and effective job applications.
		C120.4: Write critical reports to convey data and information with clarity and precision.
		C120.5: Give appropriate instructions and recommendations for safe execution of tasks.
		C120.6: Discuss the safety issues about electrical devices.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C120.1	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
C120.2	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
C120.3	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	-	-	-
C120.5	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
C120.6	3	3	3	3	3	3	3	3	3	3	3	3	-	-	-
C120	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**-**	**-**	**-**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

III SEMESTER

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
MA3354 (C201)	DISCRETE MATHEMATICS	**C201.1:** Explain the concepts needed to test the logic of a program.
		C201.2: Describe the identifying structures on many levels.
		C201.3: Explain the importance of class functions which transform a finite set into another finite set which relates to input and output functions in computer science.
		C201.4: Apply counting principles.
		C201.5: Explain concepts and properties of algebraic structures such as groups, rings and fields.
		C201.6: Compute the concepts and significance of lattices and boolean algebra which are widely used in computer science and engineering.

CO-PO MAPPING

COURSE OUTCOMES	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C201.1	3	3	2	2	-	-	-	-	-	-	-	2	-	-	-
C201.2	3	3	2	2	-	-	-	-	-	-	-	-	-	-	-
C201.3	3	3	2	2	-	2	-	-	-	3	-	-	-	-	-
C201.4	3	2	2	2	-	-	-	-	-	-	-	-	-	-	-
C201.5	3	2	2	2	-	-	-	-	-	2	-	-	-	-	-
C201.6	3	2	2	1	-	-	-	-	-		-	-	-	-	-
C201	**3**	**2.5**	**2**	**1.8**	-	**2**	-	-	-	**2.5**	-	2	-	-	-

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3351 (C202)	DIGITAL PRINCIPLES AND COMPUTER ORGANIZATION	**C202.1:** Design various combinational digital circuits using logic gates
		C202.2: Analyze sequential circuits and the design procedures
		C202.3: Examine the characteristics of I/O communication
		C202.4: Analyze different types of control design and identify hazards
		C202.5: Explain the characteristics of various memory systems
		C202.6: Evaluate the fundamentals of computer systems and analyze the execution of an instruction

CO-PO MAPPING

COURSE OUTCOMES	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO12	PSO 1	PSO 2	PSO 3
C202.1	3	3	3	3	3	2	1	1	1	1	2	3	2	3	3
C202.2	3	3	3	3	2	1	1	1	1	1	2	3	1	2	2
C202.3	3	3	3	3	2	2	1	1	1	1	2	3	2	3	1
C202.4	3	3	3	3	1	1	1	1	1	1	2	1	1	3	1
C202.5	3	3	3	3	1	2	1	1	1	1	1	1	1	2	1
C202.6	3	3	3	3	2	2	1	1	1	1	1	1	2	3	1
C202	**3.0**	**3.0**	**3.0**	**3.0**	**1.8**	**1.6**	**1.0**	**1.0**	**1.0**	**1.0**	**1.6**	**2**	**1.5**	**2.6**	**1.5**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3352 (C203)	FOUNDATIONS OF DATA SCIENCE	**C203.1:** Examine the data science process
		C203.2: Classify different types of data description for data science process
		C203.3: Explain the importance of relationships between data
		C203.4: Illustrate Python Libraries for Data Wrangling
		C203.5: Classify visualization Libraries in Python to interpret and explore data
		C203.6: Recommend Pandas for data manipulation.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C203.1	3	2	2	2	2	-	-	-	1	1	1	2	2	2	2
C203.2	3	3	2	2	1	-	-	-	2	1	1	2	2	3	1
C203.3	3	3	2	2	2	1	1	-	1	2	1	3	2	2	3
C203.4	3	2	2	2	2	-	-	-	1	1	2	2	3	3	2
C203.5	3	3	2	2	2	-	-	-	1	1	1	2	2	2	2
C203.6	3	3	3	3	2	-	-	-	1	1	1	2	2	2	2
C203	**3**	**2.6**	**2.1**	**2.1**	**1.8**	**1**	**1**	**-**	**1.1**	**1.1**	**1.1**	**2.1**	**2.1**	**2.3**	**2**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3301 (C204)	DATA STRUCTURES	**C204.1:** Determine linear and non-linear data structures.
		C204.2: Explain linear data structure operations.
		C204.3: Examine non–linear data structure operations on various applications.
		C204.4: Illustrate appropriate linear/non–linear data structure operations for solving a given problem.
		C204.5: Apply appropriate graph algorithms for graph applications.
		C204.6: Analyze the various searching and sorting algorithms.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO1 2	PSO 1	PSO 2	PSO 3
C204.1	3	3	3	3	2	1	1	-	1	2	1	3	2	1	1
C204.2	3	3	2	2	2	-	-	-	1	1	1	2	2	2	1
C204.3	3	2	2	2	2	-	-	-	1	1	1	2	2	1	1
C204.4	3	2	2	2	1	-	-	-	2	1	1	2	2	3	1
C204.5	3	2	2	2	2	-	-	-	1	2	1	3	2	2	1
C204.6	3	3	2	2	2	1	1	-	1	1	1	1	2	1	1
C204	**3.0**	**2.5**	**2.2**	**2.2**	**1.8**	**1.0**	**1.0**	**-**	**1.2**	**1.3**	**1.0**	**2.2**	**2.0**	**1.2**	**1.3**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

ourse Code	Course Name	Course Outcome (CO) Students will be able to
CS3391 (C205)	OBJECT ORIENTED PROGRAMMING	**C205.1:** Apply the concepts of classes and objects to solve simple problems
		C205.2: Design programs using inheritance, packages and interfaces
		C205.3: Explain the use of exception handling mechanisms to solve real world problems
		C205.4: Apply the concept of multithreaded model to solve real world problems
		C205.5: Design Java applications with I/O packages, string classes, Collections and generics concepts
		C205.6: Determine the concepts of event handling and JavaFX components and controls for developing GUI based applications

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO12	PSO 1	PSO 2	PSO 3
C205.1	3	2	2	2	2	-	-	-	3	2	2	2	3	1	2
C205.2	3	3	3	2	1	-	-	-	2	1	1	3	3	3	2
C205.3	3	3	2	2	2	-	-	-	3	2	1	2	3	1	3
C205.4	3	2	2	2	2	-	-	-	1	2	1	2	3	1	1
C205.5	3	3	3	2	2	-	-	-	3	2	1	2	3	3	3
C205.6	3	3	3	3	2	-	-	-	2	2	1	2	3	2	2
C205	**3.0**	**2.7**	**2.5**	**2.2**	**1.8**	**-**	**-**	**-**	**2.3**	**1.8**	**1.2**	**2.2**	**3.0**	**2.3**	**1.8**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3311 (C206)	DATA STRUCTURES LABORATORY	**C206.1:** Evaluate Linear data structure algorithms on various applications.
		C206.2: Design applications using Stacks and Linked lists
		C206.3: Determine Binary Search tree and AVL tree operations.
		C206.4: Explain the importance of graph algorithms.
		C206.5: Analyze the various sorting algorithms.
		C206.6: Analyze the various searching algorithms.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C206.1	3	3	3	3	-	-	-	-	2	1	2	2	2	2	3
C206.2	3	3	3	2	-	-	-	-	1	1	1	3	1	2	2
C206.3	3	3	3	3	-	-	-	-	1	1	2	3	3	3	3
C206.4	3	3	2	2	-	-	-	-	1	2	3	3	2	1	2
C206.5	3	3	2	2	2	-	-	-	3	3	3	1	3	1	3
C206.6	3	3	2	2	2	-	-	-	1	2	3	3	3	1	3
C206	**3.0**	**3.0**	**2.5**	**2.3**	**2.0**	**-**	**-**	**-**	**1.5**	**1.7**	**2.3**	**2.5**	**2.3**	**1.5**	**1.7**

***3-High Correlation; 2-Medium Correlation; 1-Low Correlation; '-' – No Correlation**

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Kaikkurichi, Pudukkottai – 622 303

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REGULATION 2021

COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3381 (C207)	OBJECT ORIENTED PROGRAMMING LABORATORY	**C207.1:** Develop java programs using object oriented programming concepts
		C207.2: Construct simple applications using object oriented concepts such as package, exceptions
		C207.3: Explain multithreading concepts
		C207.4: Create GUIs and event driven programming applications for real world problems
		C207.5: Design and deploy web applications using Java
		C207.6: Describe about generics concepts

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C207.1	3	3	3	2	-	-	-	-	1	2	2	2	1	2	3
C207.2	3	3	3	2	-	-	-	-	2	3	3	2	1	3	1
C207.3	3	3	2	2	1	-	-	-	1	2	1	3	2	3	2
C207.4	3	3	3	2	-	-	-	-	3	1	1	1	2	1	2
C207.5	3	3	3	3	3	-	-	-	1	1	1	1	2	1	2
C207.6	3	3	3	3	1	-	-	-	1	2	1	3	2	3	2
C207	**3.0**	**3.0**	**2.8**	**2.3**	**1.7**	-	-	-	**1.5**	**1.8**	**1.5**	**2.0**	**1.7**	**1.5**	**1.8**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3361 (C208)	DATA SCIENCE LABORATORY	**C208.1:** Apply python libraries for data science
		C208.2: Explain the basic Statistical measures for data science.
		C208.3: Describe Probability measures for data science.
		C208.4: Illustrate descriptive analytics on the benchmark data sets.
		C208.5: Apply correlation and regression analytics on standard data sets
		C208.6: Explain and interpret data using visualization packages in Python.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C208.1	3	3	3	3	2	-	-	-	1	3	3	3	1	3	2
C208.2	3	3	3	3	2	-	-	-	3	1	3	2	1	3	3
C208.3	3	3	3	3	2	-	-	-	3	1	3	2	1	3	3
C208.4	3	3	3	3	2	-	-	-	2	1	1	1	3	2	3
C208.5	3	3	3	3	2	-	-	-	2	3	2	3	3	3	1
C208.6	3	3	3	3	2	-	-	-	2	1	3	1	1	3	3
C208	**3.0**	**3.0**	**3.0**	**3.0**	**2.0**	**-**	**-**	**-**	**2.2**	**1.7**	**2.5**	**2.0**	**1.7**	**2.2**	**1.7**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3361 (C209)	PROFESSIONAL DEVELOPMENT	**C209.1:** Use of MS Word to create quality documents, by structuring and organizing content for their day to day technical and academic requirements
		C209.2: ApplyMSEXCELtoperformdataoperationsand analytics, record, retrieve data as per requirementsand visualize data for ease of understanding
		C209.3: Prepare MS EXCEL to visualize data for ease of understanding
		C209.4: LoadMSEXCELtovisualizedataforeaseof understanding
		C209.5: ExplainMSPowerPointtocreatehighquality academicpresentationsby including common tables,charts,graphs
		C209.6: OperateMSPowerPointto interlinkingother elements,andusingmediaobjects.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C209.1	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-
C209.2	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-
C209.3	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-
C209.4	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-
C209.5	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-
C209.6	3	2	2	1	1	-	-	-	-	-	-	-	-	-	-
C209	**3**	**2**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

IV SEMESTER

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3452 (C210)	THEORY OF COMPUTATION	**C210.1:** Construct automata theory using Finite Automata
		C210.2: Write regular expressions for any pattern
		C210.3: Design context free grammar
		C210.4: Design Turing machine for computational functions
		C210.5: Differentiate between decidable and undecidable problems
		C210.6: Design Pushdown Automata

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C210.1	**3**	3	2	2	1	-	-	-	1	1	1	1	2	2	2
C210.2	**2**	2	2	2	1	-	-	-	1	1	1	1	2	2	2
C210.3	**2**	2	2	2	1	-	-	-	1	1	1	1	2	2	2
C210.4	**2**	2	2	1	1	-	-	-	1	1	1	1	2	2	2
C210.5	**2**	2	2	1	1	-	-	-	1	1	1	1	3	3	3
C210.6	**3**	2	2	2	1	-	-	-	1	1	1	1	2	2	2
C210	**2.3**	**2.2**	**2.0**	**1.7**	**1.0**	-	-	-	**1.0**	**1.0**	**1.0**	**1.0**	**2.2**	**1.0**	**1.0**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3491 (C211)	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	**C211.1:** Apply appropriate search algorithms for problem solving
		C211.2: illustrate reasoning under uncertainty
		C211.3: Design supervised learning models
		C211.4: Develop unsupervised learning models
		C211.5: Describe deep learning neural network models
		C211.6: Design ensampling models

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C211.1	**3**	2	2	3	-	-	-	-	1	3	3	3	1	2	2
C211.2	**1**	1	1	1	1	-	-	-	1	2	1	3	2	3	2
C211.3	**2**	2	2	1	1	-	-	-	2	1	1	3	1	1	1
C211.4	**3**	3	3	1	-	-	-	-	2	1	2	1	2	2	2
C211.5	**3**	2	1	1	2	-	-	-	3	1	2	3	2	1	2
C211.6	**2**	1	1	1	1	-	-	-	2	1	2	1	2	2	2
C211	**2.3**	**1.8**	**1.7**	**1.3**	**1.3**	**-**	**-**	**-**	**1.8**	**1.5**	**1.8**	**2.3**	**1.7**	**1.8**	**1.5**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3492 (C212)	DATABASE MANAGEMENT SYSTEMS	**C212.1:** Construct SQL Queries using relational algebra
		C212.2: Define database using ER model and normalize the database
		C212.3: Construct queries to handle transaction processing and maintain consistency of the database
		C212.4: Compare and contrast various indexing strategies
		C212.5: Explain how advanced databases differ from Relational Databases and find a suitable database for the given requirement.
		C212.6: Apply the knowledge to tune the performance of the database

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO1 1	PO 12	PS O 1	PSO 2	PSO 3
C212.1	3	3	3	2	1	-	-	-	2	1	1	1	2	1	3
C212.2	3	3	2	1	1	-	-	-	2	3	3	3	3	1	2
C212.3	3	2	2	2	1	-	-	-	2	1	1	2	2	3	3
C212.4	3	3	3	3	-	-	-	-	3	2	3	3	1	2	3
C212.5	3	3	2	2	2	-	-	-	1	3	3	1	2	2	2
C212.6	3	2	2	2	1	-	-	-	2	1	1	2	2	3	3
C212	**3.0**	**2.7**	**2.3**	**2.0**	**1.2**	**-**	**-**	**-**	**2.0**	**1.8**	**2.0**	**2.0**	**2.0**	**2.0**	**1.8**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3401 (C213)	ALGORITHMS	**C213.1:** Illustrate the efficiency of algorithms using various frameworks.
		C213.2: Apply graph algorithms to solve problems and analyze their efficiency.
		C213.3: Make use of algorithm design techniques like divide and conquer, dynamic programming and greedy techniques to solve problems.
		C213.4: Describe state space tree method for solving problems.
		C213.5: Solve problems using approximation algorithms.
		C213.6: Classify the importance of randomized algorithms for problem solving.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO1 2	PS O 1	PSO 2	PSO 3
C213.1	3	2	1	1	-	-	1	-	1	3	-	1	-	1	-
C213.2	2	2	1	1	-	-	1	-	3	2	-	1	-	1	-
C213.3	3	3	3	1	-	-	2	-	3	3	-	-	-	1	1
C213.4	1	1	1	1	-	-	-	-	3	1	-	-	-	-	-
C213.5	1	1	1	1	-	-	-	-	1	2	-	-	-	-	-
C213.6	2	2	1	1	-	-	1	-	3	3	-	1	-	1	-
C213	**2.0**	**1.8**	**1.3**	**1.0**	**-**	**-**	**1.3**	**-**	**2.3**	**2.3**	**-**	**1.0**	**-**	**1.0**	**1.0**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3451 (C214)	INTRODUCTION TO OPERATING SYSTEMS	**C214.1:** Discuss basic functions of operating systems, processes and threads
		C214.2: Analyze various scheduling algorithms and process synchronization.
		C214.3: Explain deadlock prevention and avoidance algorithms.
		C214.4: Compare and contrast various memory management schemes.
		C214.5: Explain the functionality of file systems, I/O systems, and Virtualization
		C214.6: Compare iOS and Android Operating Systems

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO1 1	PO 12	PS O 1	PSO 2	PSO 3
C214.1	**3**	2	2	2	-	-	-	-	3	2	3	1	1	2	2
C214.2	**2**	2	2	1	1	-	-	-	2	1	1	2	2	1	2
C214.3	**3**	3	2	2	1	-	-	-	2	2	1	1	1	2	2
C214.4	**3**	3	3	3	-	-	-	-	1	2	1	2	1	3	2
C214.5	**3**	1	1	1	1	-	-	-	3	2	3	2	2	2	1
C214.6	**2**	1	1	1	-	-	-	-	3	2	3	1	1	2	2
C214	**2.7**	**2.0**	**1.8**	**1.7**	**1.0**	**-**	**-**	**-**	**2.3**	**1.8**	**2.0**	**1.5**	**1.3**	**2.3**	**1.8**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
GE3451 (C215)	ENVIRONMENTAL SCIENCES AND SUSTAINABILITY	**C215.1:** Explain the importance of environment,need for public awareness and types of biodiversity
		C215.2: Describe about environmental pollution, environmental protection and environmental protection acts.
		C215.3: Summarize renewable sources of energy
		C215.4: Discover sustainability concept, needs and challenges
		C215.5: Discuss about material life cycle assessment, energy cycles and carbon cycle
		C215.6: Explain about Zero waste and R concept

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C215.1	**2**	1	-	-	-	2	3	-	-	-	-	2	-	-	-
C215.2	**3**	2	-	-	-	3	3	-	-	-	-	2	-	-	-
C215.3	**3**	2	1	-	-	2	2	-	-	-	-	2	-	-	-
C215.4	**3**	2	1	1	-	2	2	-	-	-	-	2	-	-	-
C215.5	**3**	2	1	-	-	2	2	-	-	-	-	1	-	-	-
C215.6	**3**	2	1	1	-	2	2	-	-	-	-	2	-	-	-
C215	**2.8**	**1.8**	**1.0**	**1.0**	-	**2.2**	**2.3**	-	-	-	-	**1.8**	-	-	-

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3461 (C217)	OPERATING SYSTEMS LABORATORY	**C217.1:** Discuss and implement UNIX Commands.
		C217.2: Analyse the performance of various CPU Scheduling Algorithms.
		C217.3: Compare and contrast various Memory Allocation Methods.
		C217.4: Explain File Organization and File Allocation Strategies.
		C217.5: Illustrate various Disk Scheduling Algorithms.
		C217.6: Explain Deadlock Avoidance and Deadlock Detection Algorithms

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO1 1	PO 12	PSO 1	PSO 2	PSO 3
C217.1	2	1	1	1	1	-	-	-	1	3	3	3	2	1	3
C217.2	3	3	2	2	2	-	-	-	3	2	1	1	3	1	2
C217.3	3	3	2	1	2	-	-	-	3	3	1	2	2	2	2
C217.4	2	2	2	1	2	-	-	-	3	1	3	1	1	2	1
C217.5	2	2	1	1	3	-	-	-	1	2	2	3	1	3	3
C217.6	3	3	2	1	2	-	-	-	3	3	1	2	2	2	2
C217	**2.5**	**2.3**	**1.7**	**1.2**	**2.0**	**-**	**-**	**-**	**2.3**	**2.3**	**1.8**	**2.0**	**1.8**	**2.3**	**2.3**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3481 (C218)	DATABASE MANAGEMENT SYSTEMS LABORATORY	**C218.1:** Investigate databases with different types of key constraints.
		C218.2: Illustrate simple and complex SQL queries using DML and DCL commands.
		C218.3: Classify advanced features such as stored procedures and triggers and incorporate in GUI based application development
		C218.4: Examine an XML database and validate with meta-data (XML schema).
		C218.5: Create and manipulate data using NOSQL database.
		C218.6: Create nested and joint queries.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO 10	PO1 1	PO 12	PSO 1	PSO 2	PSO 3
C218.1	**3**	3	3	3	-	-	-	-	3	1	3	2	2	3	2
C218.2	**2**	2	2	2	2	-	-	-	1	2	3	3	2	1	2
C218.3	**3**	3	2	1	1	-	-	-	1	1	1	3	2	3	3
C218.4	**2**	2	2	1	1	-	-	-	1	1	3	2	3	1	3
C218.5	**3**	2	1	1	1	-	-	-	2	2	3	1	3	1	2
C218.6	**3**	3	2	1	1	-	-	-	1	1	1	3	2	3	3
C218	**2.7**	**2.5**	**2.0**	**1.5**	**1.2**	**-**	**-**	**-**	**1.5**	**1.3**	**2.3**	**2.3**	**2.3**	**1.5**	**1.3**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

V SEMESTER

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3591 (C301)	COMPUTER NETWORKS	**C301.1:** Discuss the basic layers and its functions in computer networks
		C301.2: Determine the basics of how data flows from one node to another
		C301.3: Explain the protocol for congestion avoidance and QOS
		C301.4: Analyze routing algorithms
		C301.5: Classify protocols for various functions in the Network for routing the packets.
		C301.6: Analyze the working of various application layer protocols.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C301.1	2	2	1	1	-	-	-	-	-	-	-	-	3	-	-
C301.2	2	1	1	1	2	-	-	-	-	-	-	2	-	2	-
C301.3	2	1	1	1	2	-	-	-	-	-	-	2	-	2	-
C301.4	2	2	1	1	3	-	-	-	-	-	-	-	-	3	-
C301.5	3	3	2	1	2	-	-	-	-	3	-	-	-	-	-
C301.6	3	3	2	1	-	-	-	-	-	-	-	-	-	-	3
C301	**2.3**	**2**	**1.3**	**1**	**2.3**	**-**	**-**	**-**	**-**	**3**	**-**	**2**	**3**	**2.3**	**3**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3501 (C302)	COMPILER DESIGN	**C302.1:** Investigate the techniques in different phases of a compiler.
		C302.2: Determine a lexical analyser for a sample language and learn to use the LEX tool.
		C302.3: Classify different parsing algorithms to develop a Parser and learn to use YACC tool
		C302.4: Discuss semantics rules (SDT), intermediate code generation and run
		C302.5: Develop code generation
		C302.6: Design code optimization techniques.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C302.1	3	3	3	3	-	-	-	-	3	3	1	3	2	3	2
C302.2	3	3	3	3	3	-	-	-	3	2	3	2	2	1	2
C302.3	3	3	2	2	3	-	-	-	3	1	1	1	2	2	3
C302.4	3	2	2	1	1	-	-	-	2	3	2	3	1	2	1
C302.5	3	3	3	1	1	-	-	-	2	1	1	3	2	1	2
C302.6	3	3	3	1	1	-	-	-	2	1	1	3	2	1	2
C302	**3**	**2.8**	**2.7**	**1.8**	**1.8**	**-**	**-**	**-**	**2.5**	**1.8**	**1.5**	**2.5**	**1.8**	**1.7**	**2**

***3-High Correlation; 2-Medium Correlation; 1-Low Correlation; '-' – No Correlation**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3491 (C303)	CRYPTOGRAPHY AND CYBER SECURITY	**C303.1:** Illustrate the fundamentals of networks security, security architecture, threats and vulnerabilities
		C303.2: Compare the different cryptographic operations of symmetric cryptographic algorithms
		C303.3: Investigate the different cryptographic operations of public key cryptography
		C303.4: Apply the various Authentication schemes to simulate different applications.
		C303.5: Examine various cyber crimes and cyber security..
		C303.6: Classify various cyber security.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C303.1	3	2	2	2	2		-	-	1	-	-	1	2	3	3
C303.2	3	3	3	3	3		-	-	2	-	-	1	3	3	3
C303.3	3	3	3	3	3		-	-	2	-	-	1	3	3	3
C303.4	3	3	3	3	3		-	-	2	-	-	1	3	3	3
C303.5	3	2	2	2	3		-	-	3	-	-	2	3	2	3
C303.6	3	2	2	2	3		-	-	3	-	-	2	3	2	-
C303	**3**	**2.5**	**2.5**	**2.5**	**2.8**		**-**	**-**	**2.2**	**-**	**-**	**1.3**	**2.8**	**2.7**	**3**

***3-High Correlation; 2-Medium Correlation; 1-Low Correlation; '-' – No Correlation**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CS3551 (C304)	DISTRIBUTED COMPUTING	**C304.1:** Determine the foundations of distributed systems
		C304.2: Classifysynchronization problems
		C304.3: Analyse consistency problems
		C304.4: Investigate resource sharing techniques in distributed systems
		C304.5: Compare working model of consensus and reliability of distributed systems
		C304.6: Explain the fundamentals of cloud computing

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C304.1	3	3	3	3	1	-	-	-	2	1	3	3	2	1	1
C304.2	3	3	2	1	2	-	-	-	2	2	2	2	1	3	2
C304.3	3	3	2	1	2	-	-	-	2	2	2	2	1	3	2
C304.4	3	3	3	3	3	-	-	-	3	2	1	1	1	2	1
C304.5	3	3	3	3	1	-	-	-	3	3	2	1	3	1	1
C304.6	3	3	2	1	3	-	-	-	3	3	3	1	3	2	3
C304	**3**	**3**	**2.5**	**2**	**2**	**-**	**-**	**-**	**2.5**	**2.2**	**2.2**	**1.7**	**1.8**	**2**	**1.7**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CCS375 (C305)	WEB TECHNOLOGIES	**C305.1:** Determine a basic website using HTML and Cascading Style Sheets
		C305.2: Discuss dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.
		C305.3: Develop server side programs using Servlets and JSP.
		C305.4: Construct simple web pages in PHP and to represent data in XML format.
		C305.5: Develop interactive web applications using Angular JS
		C305.6: Design web application using different framework and tools.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C305.1	3	3	3	3	3	-	-	-	1	3	3	1	3	2	3
C305.2	2	2	2	1	2	-	-	-	2	2	1	3	2	2	2
C305.3	3	3	3	2	3	-	-	-	1	2	1	1	1	2	1
C305.4	3	3	3	1	2	-	-	-	3	1	2	2	2	2	2
C305.5	3	3	3	2	2	-	-	-	2	1	3	1	1	2	2
C305.6	3	3	3	2	2	-	-	-	2	1	2	1	1	1	2
C305	**2.8**	**2.8**	**2.8**	**1.8**	**2.3**	**-**	**-**	**-**	**1.8**	**1.7**	**2.0**	**1.5**	**1.7**	**1.8**	**2.0**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
CCS367 (C306)	STORAGE TECHNOLOGIES	**C306.1:** Demonstrate the fundamentals of information storage management
		C306.2: Explain various models of Cloud infrastructure services and deployment
		C306.3: Illustrate the usage of advanced intelligent storage systems and RAID
		C306.4: Interpret various storage networking architectures - SAN, including storage subsystems and virtualization
		C306.5: Examine the different role in providing disaster recovery and remote replication technologies
		C306.6: Infer the security needs and security measures to be employed in information storage management

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C306.1	1	2	1	3	3	-	-	-	1	1	1	3	1	2	1
C306.2	1	2	1	3	3	-	-	-	1	1	1	3	1	2	1
C306.3	3	1	2	3	3	-	-	-	3	2	3	2	2	3	1
C306.4	1	1	3	2	2	-	-	-	3	1	1	2	2	3	3
C306.5	3	2	1	2	2	-	-	-	1	1	3	1	2	2	1
C306.6	1	3	2	1	2	-	-	-	1	2	3	1	3	2	1
C306	**1.7**	**1.8**	**1.7**	**2.3**	**2.5**	**-**	**-**	**-**	**1.7**	**1.3**	**2.0**	**2.0**	**1.8**	**2.3**	**1.3**

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome (CO) Students will be able to
MX3081 (C307)	Introduction to Women and Gender Studies	**C307.1:** Exhibit the fundamental concepts of gender studies.
		C307.2: Illustrate about the types of feminist theory.
		C307.3: Analyze the history of women's movements.
		C307.4: Distinguish between the gender based on linguistic forms.
		C307.5: Explain the role of media in gender equality.
		C307.6: Discuss the representation of women in media.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C307.1		-	-	-	-	1	1	1	3	2	-	2	-	-	-
C307.2	-	-	-	-	-	1	1	1	3	2	-	2	-	-	-
C307.3	-	-	-	-	-	1	1	1	3	2	-	2	-	-	-
C307.4	-	-	-	-	-	1	1	1	3	2	-	2	-	-	-
C307.5	-	-	-	-	-	1	1	1	3	2	-	2	-	-	-
C307.6	-	-	-	-	-	1	1	1	3	2	-	2	-	-	-
C307	-	-	-	-	-	**1**	**1**	**1**	**3**	**2**	-	**2**	-	-	-

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