



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 2017

COURSE OUTCOMES (CO) & CO-PO MAPPING

I SEMESTER



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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
HS8151	COMMUNICATIVE ENGLISH	C101.1	Develop vocabulary of a general kind by developing their reading skills.
		C101.2	Explain their opinions in English and Participate effectively in informal conversations; introduce themselves and their friends.
		C101.3	Comprehend conversations and short talks delivered in English.
		C101.4	Write short essays of a general kind and personal letters and emails in English.
		C101.5	Develop their speaking skills and speak fluently in real contexts.
		C101.6	Discuss about the general kind in magazines and Newspapers.

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
C101.1	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C101.2	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C101.3	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C101.4	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C101.5	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C101.6	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C101	-	-	-	-	-	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	
MA8151	ENGINEERING MATHEMATICS - I	C102.1	Apply the limit definition and rules of differentiation to differentiate functions
		C102.2	Apply differentiation to solve maxima and minima problems.
		C102.3	Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus
		C102.4	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables
		C102.5	Evaluate integrals using techniques of integration, such as substitution, partial fractions and integration by parts
		C102.6	Apply various techniques in solving differential equations.

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

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Course Code	Course Name	Course Outcome(CO) Students will be able to	
PH8151	ENGINEERING PHYSICS	C103.1	Explain the basics of properties of matter and its applications.
		C103.2	Describe the characteristics of laser light and their application in semiconductor laser.
		C103.3	Discuss the principle behind the propagation of light through an optical fiber and its application in sensors
		C103.4	Summarize the different modes of heat transfer.
		C103.5	Relate the quantum concepts in electron microscopes.
		C103.6	Describe the unit cell characteristics and the growth of crystals.

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

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Course Code	Course Name	Course Outcome(CO) Students will be able to	
CY8151	ENGINEERING CHEMISTRY	C104.1	Summarize the water related problems in boilers and their treatment techniques
		C104.2	Discuss the applications of adsorption in the field of water and air pollution abatement
		C104.3	Discuss the types of catalysis and the mechanism of enzyme catalysis
		C104.4	Apply phase rule in the alloying and the behavior of one component and two component systems using phase diagram
		C104.5	Explain various types of fuels, their manufacturing processes and calculation of calorific theoretically
		C104.6	Summarize the principles and generation of energy in batteries ,nuclear reactors, solar cells, wind mills and fuelcells

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

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Course Code	Course Name	Course Outcome(CO) Students will be able to	
GE8151	PROBLEM SOLVING AND PYTHON PROGRAMMING	C105.1	Explain the basics of fundamentals of computing.
		C105.2	Describe the basics of algorithmic problem solving
		C105.3	Solve problems using Python conditionals and loops
		C105.4	Define Python functions and use function calls to solve problems
		C105.5	Apply Python data structures - lists, tuples, dictionaries to represent complex data
		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	PSO 1	PSO 2	PSO 3
C105.1	2	2	1	1	1	-	-	-	-	1	-	1	1	-	1
C105.2	3	2	2	1	1	-	-	-	-	1	-	1	1	-	1
C105.3	2	2	2	1	1	-	-	-	-	1	-	1	1	-	1
C105.4	2	2	2	1	1	-	-	-	-	1	-	1	1	-	1
C105.5	3	2	2	1	1	-	-	-	-	1	-	1	1	-	1
C105.6	2	2	1	1	1	-	-	-	-	1	-	1	1	-	1
C105	2	2	2	1	1	-	-	-	-	1	-	1	1	-	1

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Course Code	Course Name	Course Outcome(CO) Students will be able to	
GE8152	ENGINEERING GRAPHICS	C106.1	Familiarize with the fundamentals and standards of Engineering graphics
		C106.2	Perform freehand sketching of basic geometrical constructions and multiple views of objects
		C106.3	Project orthographic projections of lines and plane surfaces
		C106.4	Draw projections and solids and development of surfaces
		C106.5	Visualize and to project isometric sections of simple solids.
		C106.6	Visualize and to project perspective sections of simple solids.

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

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Course Code	Course Name	Course Outcome(CO) Students will be able to	
GE8161	PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY	C107.1	Develop algorithmic solutions to simple computational problems
		C107.2	Design and execute simple Python programs.
		C107.3	Solve programs in Python using conditionals and loops for solving problems.
		C107.4	Apply functions to decompose a Python program.
		C107.5	Analyze 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	PSO 1	PSO 2	PSO 3
C107.1	3	2	2	1	1	-	-	-	1	1	-	1	2	-	2
C107.2	3	2	2	1	1	-	-	-	1	1	-	1	2	-	2
C107.3	3	2	2	1	1	-	-	-	1	1	-	1	2	-	2
C107.4	3	2	2	1	1	-	-	-	1	1	-	1	2	-	2
C107.5	3	2	2	1	1	-	-	-	1	1	-	1	2	-	2
C107.6	3	2	2	1	1	-	-	-	1	1	-	1	2	-	2
C107	3	2	2	1	1	-	-	-	1	1	-	1	2	-	2

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Course Code	Course Name	Course Outcome(CO) Students will be able to	
BS8161	PHYSICS AND CHEMISTRY LABORATORY	C108.1	Determine the Modulus of elasticity of materials and Coefficient of VisCOity of liquids
		C108.2	Determine the Thermal Conductivity of bad conductor using Lee's disc method
		C108.3	Determination of wavelength, and particle size using Laser and Determination of acceptance angle in an optical fiber.
		C108.4	Calculate water quality parameters such as hardness, alkalinity of the given water sample.
		C108.5	Estimate the amount of the given acids using pH titrations.
		C108.6	Determine the amount of iron content in the given substance using potentiometric titration and Determine the amount of chloride content in the given water sample

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

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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	
		C109.1	Apply strategies in reading and comprehending engineering and technology text.
HS8251	TECHNICAL ENGLISH	C109.2	Use convincing job applications.
		C109.3	Apply speaking skill to make technical presentations.
		C109.4	Use the formats for effective report writing.
		C109.5	Apply speaking skill to participate in group discussions.
		C109.6	Apply the active listening skills to comprehend lectures and technical talks.

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
C109.1	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C109.2	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C109.3	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C109.4	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C109.5	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C109.6	-	-	-	-	-	2	2	2	2	2	-	2	-	-	-
C109	-	-	-	-	-	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	
MA8251	ENGINEERING MATHEMATICS- II	C110.1	Explain about the Eigen values and eigenvectors, diagonalization of a matrix, Symmetric matrices, Positive definite matrices and similar matrices.
		C110.2	Apply Gradient, divergence and curl of a vector point function and related identities.
		C110.3	Evaluation of line, surface and volume integrals using Gauss, Stokes and Green's theorems and their verification.
		C110.4	Evaluate the problems based on Analytic functions, conformal mapping and complex integration.
		C110.5	Explain about the Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficients.
		C110.6	Evaluate the linear second order differential equations with constant coefficients.

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
C110.1	3	2	2	2	-	-	-	-	-	2	-	2	1	1	-
C110.2	3	2	2	2	-	-	-	-	-	2	-	2	1	1	-
C110.3	3	2	2	2	-	-	-	-	-	2	-	2	1	1	-
C110.4	3	2	2	2	-	-	-	-	-	2	-	2	1	1	-
C110.5	3	2	2	2	-	-	-	-	-	2	-	2	1	1	-
C110.6	3	2	2	2	-	-	-	-	-	2	-	2	1	1	-
C110	3	2	2	2	-	-	-	-	-	2	-	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	
		C111.1	Gain knowledge on classical and quantum electron theories, and energy band structures.
PH8252	PHYSICS FOR INFORMATION SCIENCE	C111.2	Acquire knowledge on basics of semiconductor physics and its applications in various devices.
		C111.3	Get knowledge on magnetic properties.
		C111.4	Establish knowledge on dielectric properties of materials.
		C111.5	Explain the necessary understanding on the functioning of optical materials for optoelectronics.
		C111.6	Comprehend the basics of quantum structures and their applications in spintronics and carbon electronics.

CO-PO MAPPING

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



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Course Code	Course Name	Course Outcome(CO) Students will be able to	
BE8255	BASIC ELECTRICAL, ELECTRONICS AND MEASUREMENT ENGINEERING	C112.1	Discuss the essentials of electric circuits and analysis.
		C112.2	Explain the basic operation of electric machines and transformers
		C112.3	Elucidate the basic operation of transformers.
		C112.4	Describe about the introduction of renewable sources and common domestic loads.
		C112.5	Summarize the fundamentals of electronic circuit constructions.
		C112.6	Illustrate the introduction to measurement and metering for electric circuits.

CO-PO MAPPING

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



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Course Code	Course Name	Course Outcome(CO) Students will be able to	
GE8291	ENVIRONMENTAL SCIENCE AND ENGINEERING	C113.1	Summarize the values, threats, conservation of biodiversity and ecosystems.
		C113.2	Describe the sources, effects, control measures of different types of pollution, and solid waste management.
		C113.3	Associate the effects of exploitation of Natural resources on environment.
		C113.4	Summarize the water conservation methods and various environmental acts for environmental sustainability.
		C113.5	Explain the effect of Human population and role of IT in environment and human health.
		C113.6	Discuss scientific, technological, economic and social solutions to environmental problems.

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

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Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8251	PROGRAMMING IN C	C114.1	Describe the constructs of C Language.
		C114.2	Develop C Programs using basic programming constructs
		C114.3	Develop C programs using arrays and strings
		C114.4	Develop modular applications in C using functions
		C114.5	Develop applications in C using pointers and structures
		C114.6	Summarize the input/output and file handling in C

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
C114.1	2	2	1	1	-	1	-	-	1	1	-	-	1	-	-
C114.2	2	2	1	1	-	1	-	-	1	1	-	-	1	-	-
C114.3	3	2	2	1	-	1	-	-	1	1	-	-	1	-	-
C114.4	2	2	1	1	-	1	-	-	1	1	-	-	1	-	-
C114.5	2	2	1	1	-	1	-	-	1	1	-	-	1	-	-
C114.6	3	2	2	1	-	1	-	-	1	1	-	-	1	-	-
C114	3	2	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	
GE8261	ENGINEERING PRACTICES LABORATORY	C115.1	Fabricate carpentry components and pipe connections including plumbing works.
		C115.2	Use welding equipments to join the structures
		C115.3	Carry out the basic machining operations
		C115.4	Make the models using sheet metal works
		C115.5	Illustrate on centrifugal pump, Air conditioner, operations of smithy, foundary and fittings
		C115.6	Carry out basic home electrical works and appliances

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

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8261	C PROGRAMMING LABORATORY	C116.1	Demonstrate knowledge on C programming constructs
		C116.2	Develop programs in C using basic constructs.
		C116.3	Develop programs in C using arrays.
		C116.4	Develop applications in C using strings, pointers, functions.
		C116.5	Develop applications in C using structures.
		C116.6	Develop applications in C using file processing.

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



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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	
MA8351	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
		C201.6	Describe the concepts and significance of lattices and Boolean algebra which are widely used in computer science and engineering.

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
C201.1	2	2	2	1	-	-	-	-	-	-	-	-	1	1	-
C201.2	2	2	2	1	-	-	-	-	-	-	-	-	-	1	-
C201.3	2	2	2	1	-	-	-	-	-	-	-	-	1	1	-
C201.4	2	2	2	1	-	-	-	-	-	-	-	-	1	1	-
C201.5	2	2	2	1	-	-	-	-	-	-	-	-	-	1	-
C201.6	2	2	2	1	-	-	-	-	-	-	-	-	1	1	-
C201	2	2	2	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	
		C202.1	Simplify Boolean functions using KMap.
CS8351	DIGITAL PRINCIPLES AND SYSTEM DESIGN	C202.2	Design and Analyze Combinational and Sequential Circuits Design and Analyze Combinational and Combinational and Sequential Circuits.
		C202.3	Explain the importance of Flip flops and latches.
		C202.4	Apply Programmable Logic Devices.
		C202.5	Write HDL code for combinational and Sequential Circuits
		C202.6	Analyse various error detection and correction logics

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
C202.1	3	2	2	1	-	-	-	-	-	-	-	-	2	1	-
C202.2	3	2	2	1	-	-	-	-	-	-	-	-	2	1	-
C202.3	3	2	2	1	-	-	-	-	-	-	-	-	1	1	-
C202.4	3	2	2	1	-	-	-	-	-	-	-	-	1	1	-
C202.5	2	1	1	1	-	-	-	-	-	-	-	-	2	1	-
C202.6	1	1	1	1	-	-	-	-	-	-	-	-	1	1	-
C202	2.5	1.7	1.7	1	-	-	-	-	-	-	-	-	1.5	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	
CS8391	DATA STRUCTURES	C203.1	Construct the abstract data types for linear data structures.
		C203.2	Apply the stack and queue operations to develop various applications
		C203.3	Define linear and non-linear data structures.
		C203.4	Apply the different linear and non-linear data structures to problem solutions
		C203.5	Describe various searching techniques
		C203.6	Analyze the various sorting algorithms.

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
C203.1	3	2	2	1	-	-	-	-	1	1	1	-	3	2	1
C203.2	3	2	2	1	-	-	-	-	1	1	1	-	2	2	1
C203.3	3	2	2	1	-	-	-	-	1	1	1	-	2	2	1
C203.4	3	2	2	1	-	-	-	-	1	1	1	-	3	2	1
C203.5	2	1	1	1	-	-	-	-	1	1	1	-	3	2	1
C203.6	2	2	2	1	-	-	-	-	1	1	1	-	2	1	1
C203	2.7	1.7	1.7	1	-	-	-	-	1	1	1	-	2.5	1.8	1

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8392	OBJECT ORIENTED PROGRAMMING	C204.1	Design Java programs using OOP principles
		C204.2	Develop Java programs with the concepts inheritance
		C204.3	Construct Java programs using interfaces
		C204.4	Build Java applications using exceptions and I/O streams
		C204.5	Develop Java applications with threads and generics classes.
		C204.6	Develop interactive Java programs using swings

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C204.1	2	2	2	2	1	-	-	-	-	-	-	-	2	2	1
C204.2	2	2	2	2	1	-	-	-	-	-	-	-	2	2	1
C204.3	2	2	2	2	1	-	-	-	-	-	-	-	2	2	2
C204.4	3	2	2	2	2	-	-	-	-	-	-	-	2	2	2
C204.5	3	2	2	2	2	-	-	-	-	-	-	-	2	2	2
C204.6	2	2	2	2	2	-	-	-	-	-	-	-	1	1	1
C204	2.3	2	2	2	2.5	-	-	-	-	-	-	-	1.8	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	
EC8395	COMMUNICATION ENGINEERING	C205.1	Explain the uses of different analog modulation techniques
		C205.2	Classify the Comprehend and appreciate the significance and role of this course in the present contemporary world
		C205.3	Apply analog and digital communication techniques.
		C205.4	Apply various digital communication techniques
		C205.5	Explain data and pulse communication techniques.
		C205.6	Analyze Source and Error control coding

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C205.1	2	2	2	2	2	-	-	-	-	-	-	-	1	2	-
C205.2	3	2	2	2	2	-	-	-	-	-	-	-	1	2	-
C205.3	3	3	2	2	2	-	-	-	-	-	-	-	1	2	-
C205.4	3	3	3	3	3	-	-	-	-	-	-	-	1	2	-
C205.5	3	3	3	2	2	-	-	-	-	-	-	-	1	2	-
C205.6	2	2	2	2	2	-	-	-	-	-	-	-	1	2	-
C205	2.7	2.5	2.3	2.2	2.2	-	-	-	-	-	-	-	1	2	-

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8381	DATA STRUCTURES LABORATORY	C206.1	Write functions to implement linear and non-linear data structure operations
		C206.2	Apply appropriate linear data structure operations for solving a given problem
		C206.3	Apply appropriate non-linear data structure operations for solving a given problem.
		C206.4	Design the different types of trees to solve problems
		C206.5	Apply traversal algorithms using graphs
		C206.6	Describe hash functions that result in a collision free scenario for data storage and retrieval

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C206.1	2	2	2	-	-	-	1	-	1	1	-	-	2	2	1
C206.2	3	2	2	-	-	-	1	-	1	1	-	-	2	2	1
C206.3	3	2	2	-	-	-	1	-	1	1	-	-	2	2	1
C206.4	3	2	2	-	-	-	1	-	1	1	-	-	2	2	1
C206.5	3	2	2	-	-	-	1	-	1	1	-	-	2	2	1
C206.6	3	2	1	-	-	-	1	-	1	1	-	-	1	1	1
C206	2.8	2	1.8	-	-	-	1	-	1	1	-	-	1.8	1.8	1

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8383	OBJECT ORIENTED PROGRAMMING LABORATORY	C207.1	Develop and implement Java programs for simple applications that make use of classes and objects
		C207.2	Construct Java programs for simple applications that make use of packages and interfaces.
		C207.3	Develop and implement Java programs using array list
		C207.4	Construct exception handling and multithreading using Java programs.
		C207.5	Design applications using file processing
		C207.6	Analyze generic programming and event handling.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C207.1	3	2	2	1	1	-	1	-	1	1	-	-	2	2	1
C207.2	3	2	2	1	1	-	1	-	1	1	-	-	2	2	1
C207.3	3	2	2	1	1	-	1	-	1	1	-	-	2	2	1
C207.4	3	2	2	1	1	-	1	-	1	1	-	-	2	2	1
C207.5	3	2	2	1	1	-	1	-	1	1	-	-	2	2	1
C207.6	3	2	2	2	1	-	1	-	1	1	-	-	2	2	1
C207	3	2	2	1.2	1	-	1	-	1	1	-	-	2	2	1

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
		CO	Description
CS8382	DIGITAL SYSTEMS LABORATORY	C208.1	Illustrate simplified combinational circuits using basic logic gates
		C208.2	Design circuits using Half/Full Adder and Subtractor.
		C208.3	Apply combinational circuits using MSI devices
		C208.4	Describe the importance of sequential circuits like registers
		C208.5	Design and implementation of synchronous and asynchronous counters
		C208.6	Compare combinational and sequential circuits using HDL.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C208.1	3	2	2	2	-	-	-	-	1	1	-	-	1	-	-
C208.2	3	2	2	2	-	-	-	-	1	1	-	-	1	-	-
C208.3	3	2	2	2	-	-	-	-	1	1	-	-	1	-	-
C208.4	3	2	2	2	-	-	-	-	1	1	-	-	1	-	-
C208.5	3	2	2	2	-	-	-	-	1	1	-	-	1	-	-
C208.6	3	2	2	2	-	-	-	-	1	1	-	-	1	-	-
C208	3	2	2	2	-	-	-	-	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	
HS8381	INTERPERSONAL SKILLS/LISTENING &SPEAKING	C209.1	Prepare for the appropriately skills to Listen and respond.
		C209.2	Participate in group discussions
		C209.3	Develop communication skills.
		C209.4	Participate confidently and appropriately in conversations both formal and informal
		C209.5	Prepare for the general and academic listening skills
		C209.6	Summarize effective presentations

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C209.1	2	2	1	1	1	-	1	1	-	-	-	-	2	1	-
C209.2	3	2	2	2	2	-	1	1	-	-	-	-	3	2	-
C209.3	3	2	2	2	2	-	1	1	-	-	-	-	3	2	-
C209.4	3	2	2	2	2	-	1	1	-	-	-	-	3	2	-
C209.5	3	3	2	2	2	-	1	1	-	-	-	-	2	1	-
C209.6	3	3	3	2	1	-	1	1	-	-	-	-	1	1	-
C209	2.8	2.2	2	1.7	1.5	-	1	1	-	-	-	-	2.3	1.5	-



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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	
MA8402	PROBABILITY AND QUEUEING THEORY	C210.1	Describe fundamental knowledge of the concepts of probability.
		C210.2	Explain the importance of standard distributions which can describe real life phenomenon.
		C210.3	Apply the concepts of one and two dimensional random variables in engineering applications.
		C210.4	Apply the concept of random processes in engineering disciplines.
		C210.5	Analyze queueing models.
		C210.6	Explain the characterize phenomenon which evolve with respect to time in a probabilistic manner

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C210.1	3	2	2	2	-	-	-	-	-	-	-	-	2	2	-
C210.2	2	2	2	2	-	-	-	-	-	-	-	-	2	2	-
C210.3	3	2	2	2	-	-	-	-	-	-	-	-	2	2	-
C210.4	3	2	2	2	-	-	-	-	-	-	-	-	2	2	-
C210.5	2	2	2	2	-	-	-	-	-	-	-	-	2	2	-
C210.6	2	2	2	2	-	-	-	-	-	-	-	-	1	1	-
C210	2.5	2	2	2	-	-	-	-	-	-	-	-	1.8	1.8	-

*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	
CS8491	COMPUTER ARCHITECTURE	C211.1	Explain the basics structure of computers, operations and instructions.
		C211.2	Design arithmetic and logic unit.
		C211.3	Apply pipelined execution and design control unit..
		C211.4	Analyze parallel processing architectures.
		C211.5	Explain how Graphics processing units are implemented.
		C211.6	Describe various memory systems and I/O communication..

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C211.1	2	2	2	1	-	-	-	1	1	-	-	-	2	2	-
C211.2	3	2	2	1	-	-	-	1	1	-	-	-	2	2	-
C211.3	2	2	2	1	-	-	-	1	1	-	-	-	2	2	-
C211.4	2	2	2	1	-	-	-	1	1	-	-	-	2	2	-
C211.5	2	2	2	1	-	-	-	1	1	-	-	-	2	2	-
C211.6	2	1	1	1	-	-	-	1	1	-	-	-	1	1	-
C211	2.2	1.8	1.8	1	-	-	-	1	1	-	-	-	1.8	1.8	-

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



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REGULATION 2017

COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8492	DATABASE MANAGEMENT SYSTEMS	C212.1	Classify the modern and futuristic database applications based on size and complexity
		C212.2	Design ER model to Relational model to perform database design effectively
		C212.3	Write queries using normalization criteria and optimize queries
		C212.4	Compare and contrast various indexing strategies in different database systems
		C212.5	Appraise how advanced databases differ from traditional databases.
		C212.6	Describe various XML concepts

CO-PO MAPPING

CO	PROGRAM OUTCOMES									PSO					
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C212.1	2	2	2	1	-	-	-	2	2	-	-	-	1	2	1
C212.2	3	2	2	1	-	-	-	2	2	-	-	-	1	2	1
C212.3	2	2	2	1	-	-	-	2	2	-	-	-	1	2	1
C212.4	2	2	2	1	-	-	-	2	2	-	-	-	1	2	1
C212.5	2	2	2	1	-	-	-	2	2	-	-	-	1	2	1
C212.6	2	2	2	1	-	-	-	2	2	-	-	-	1	2	1
C212	2.2	2	2	1	-	-	-	2	2	-	-	-	1	2	1

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8451	DESIGN AND ANALYSIS OF ALGORITHMS	C213.1	Design algorithms for various computing problems.
		C213.2	Analyze the time and space complexity of algorithms
		C213.3	Explain various techniques to solve different problems.
		C213.4	Analyze and apply different dynamic programming techniques
		C213.5	Analyze the different algorithm electric and design techniques for a given problem
		C213.6	Compare existing algorithms and to improve efficiency.

CO-PO MAPPING

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

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8493	OPERATING SYSTEMS	C214.1	Analyze various scheduling algorithms.
		C214.2	Explain deadlock, prevention and avoidance algorithms
		C214.3	Compare and contrast various memory management schemes.
		C214.4	Describe the functionality of file systems
		C214.5	Illustrate administrative tasks on Linux Servers.
		C214.6	Compare iOS and Android Operating Systems.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C214.1	2	2	1	1	1	-	-	-	-	-	-	-	1	2	1
C214.2	3	2	2	2	1	-	-	-	-	-	-	-	1	2	1
C214.3	2	2	1	1	1	-	-	-	-	-	-	-	1	2	1
C214.4	2	2	2	1	1	-	-	-	-	-	-	-	1	2	1
C214.5	3	3	2	2	1	-	-	-	-	-	-	-	1	2	1
C214.6	2	2	1	1	1	-	-	-	-	-	-	-	1	1	1
C214	2.3	2.2	1.5	1.3	1	-	-	-	-	-	-	-	1	1.8	1

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8494	SOFTWARE ENGINEERING	C215.1	Identify the key activities in managing a software project.
		C215.2	Compare different process models
		C215.3	Explain the Concepts of requirements engineering and Analysis Modeling.
		C215.4	Apply systematic procedure for software design and deployment.
		C215.5	Compare and contrast the various testing and maintenance.
		C215.6	Explain the importance of project schedule, estimate project CO and effort required.

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C215.1	2	2	1	1	-	-	-	-	-	-	-	-	2	2	1
C215.2	2	2	1	1	-	-	-	-	-	-	-	-	2	2	1
C215.3	3	2	1	1	-	-	-	-	-	-	-	-	2	2	1
C215.4	3	2	2	1	-	-	-	-	-	-	-	-	2	2	2
C215.5	3	2	1	1	-	-	-	-	-	-	-	-	2	2	1
C215.6	2	1	1	1	-	-	-	-	-	-	-	-	1	1	1
C215	2.5	1.8	1.2	1	-	-	-	-	-	-	-	-	1.8	1.8	1.2

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO)	
		Students will be able to	
CS8481	DATABASE MANAGEMENT SYSTEMS LABORATORY	C216.1	Make Use of typical data definitions and manipulation commands.
		C216.2	Design applications to test Nested and Join Queries
		C216.3	Design simple applications that use Views
		C216.4	Develop applications using procedures and functions
		C216.5	Construct applications that require a Front-end Tool
		C216.6	Analyze the use of Tables, Views, Functions and Procedures

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C216.1	3	2	2	1	-	-	1	-	1	1	-	-	1	2	1
C216.2	3	2	2	1	-	-	1	-	1	1	-	-	1	2	1
C216.3	3	2	1	1	-	-	1	-	1	1	-	-	2	1	1
C216.4	2	2	1	1	-	-	1	-	1	1	-	-	1	1	1
C216.5	3	2	2	1	-	-	1	-	1	1	-	-	2	2	2
C216.6	3	2	2	1	-	-	1	-	1	1	-	-	1	1	1
C216	2.8	2	1.7	1.0	-	-	1.0	-	1.0	1.0	-	-	1.3	1.5	1.2

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Course Code	Course Name	Course Outcome(CO)	
		Students will be able to	
CS8461	OPERATING SYSTEMS LABORATORY	C217.1	Compare the performance of various CPU Scheduling Algorithms.
		C217.2	Demonstrate Deadlock avoidance and Detection Algorithms.
		C217.3	Apply Semaphores in various problems
		C217.4	Create processes and implement IPC
		C217.5	Analyze the performance of the various Page Replacement Algorithms
		C217.6	Apply File Organization and File Allocation Strategies

CO-PO MAPPING

CO	PROGRAM OUTCOMES												PSO		
	PO1	PO 2	PO 3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C217.1	3	2	2	1	-	-	1	-	1	1	-	-	2	2	1
C217.2	3	2	2	1	-	-	1	-	1	1	-	-	3	2	1
C217.3	3	2	2	1	-	-	1	-	1	1	-	-	3	2	1
C217.4	3	2	2	1	-	-	1	-	1	1	-	-	3	2	1
C217.5	3	2	2	1	-	-	1	-	1	1	-	-	3	2	1
C217.6	3	2	2	1	-	-	1	-	1	1	-	-	2	2	1
C217	3	2	2	1	-	-	1.0	-	1.0	1.0	-	-	2.7	2	1

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
HS8461	ADVANCED READING AND WRITING	C218.1	Discuss the concept of PCM systems
		C218.2	Describe the various waveform coding schemes and their performance
		C218.3	Match and implement base band transmission schemes
		C218.4	Select and implement band pass signaling schemes
		C218.5	Demonstrate the spectral characteristics of band pass signaling schemes and their noise performance
		C218.6	Design error control coding schemes

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
C218.1	-	-	-	-	-	-	3	-	3	3	-	2	1	1	-
C218.2	-	-	-	-	-	-	3	-	2	2	-	2	1	1	-
C218.3	-	-	-	-	-	-	3	-	3	3	-	2	1	1	-
C218.4	-	-	-	-	-	-	3	-	2	2	-	3	1	1	-
C218.5	-	-	-	-	-	-	3	-	3	3	-	2	2	2	-
C218.6	-	-	-	-	-	-	3	-	2	2	-	2	1	1	-
C218	-	-	-	-	-	-	3	-	2.5	2.5	-	2.2	1.2	1.2	-

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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	
MA8551	ALGEBRA AND NUMBER THEORY	C301.1	Apply the basic notions of groups, rings, fields which will then be used to solve related problems.
		C301.2	Explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied contexts.
		C301.3	Demonstrate accurate and efficient use of advanced algebraic techniques
		C301.4	Demonstrate their mastery by solving non - trivial problems related to the concepts, and by proving simple theorems about the, statements proven by the text
		C301.5	Apply integrated approach to number theory and abstract algebra,
		C301.6	Explain a firm basis for further reading and study in the subject

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	-	-	-	-	-	-	-	-	1	1	-
C301.2	2	2	1	1	-	-	-	-	-	-	-	-	1	1	-
C301.3	2	2	1	1	-	-	-	-	-	-	-	-	1	1	-
C301.4	2	2	1	1	-	-	-	-	-	-	-	-	1	1	-
C301.5	2	2	1	1	-	-	-	-	-	-	-	-	1	1	-
C301.6	1	1	1	1	-	-	-	-	-	-	-	-	1	1	-
C301	1.8	1.8	1.0	1.0	-	-	-	-	-	-	-	-	1	1	-

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8591	COMPUTER NETWORKS	C302.1	Explain the basic layers and its functions in computer networks.
		C302.2	Evaluate the performance of a network.
		C302.3	Describe the basics of how data flows from one node to another.
		C302.4	Analyze and design routing algorithms.
		C302.5	Design protocols for various functions in the network
		C302.6	Illustrate 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
C302.1	2	2	1	1	-	-	-	-	-	-	-	-	1	2	2
C302.2	2	2	1	1	-	-	-	-	-	-	-	-	1	2	2
C302.3	2	2	1	1	-	-	-	-	-	-	-	-	1	2	2
C302.4	3	2	2	1	-	-	-	-	-	-	-	-	1	2	2
C302.5	2	2	1	1	-	-	-	-	-	-	-	-	1	2	2
C302.6	2	1	1	1	-	-	-	-	-	-	-	-	1	1	1
C302	2.2	1.8	1.2	1.0	-	-	-	-	-	-	-	-	1.0	1.8	1.8

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
		C303.1	Explain the Architecture of 8086 microprocessor.
EC8691	MICROPROCESSORS AND MICROCONTROLLERS	C303.2	Design aspects of I/O and Memory Interfacing circuits.
		C303.3	Illustrate microprocessors with supporting chips
		C303.4	Describe the Architecture of 8051 microcontroller.
		C303.5	Design a microcontroller based system
		C303.6	Design and implement 8051 microcontroller based systems

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	2	2	1	-	1	-	-	-	-	-	-	-	1	2	-
C303.2	2	2	1	-	1	-	-	-	-	-	-	-	1	2	-
C303.3	2	2	1	-	1	-	-	-	-	-	-	-	1	2	-
C303.4	3	3	2	-	1	-	-	-	-	-	-	-	1	2	-
C303.5	2	2	1	-	1	-	-	-	-	-	-	-	1	2	-
C303.6	2	1	1	-	1	-	-	-	-	-	-	-	1	1	-
C303	2.2	2.0	1.2	-	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	
CS8501	THEORY OF COMPUTATION	C304.1	Construct automata, regular expression for any pattern
		C304.2	Write Context free grammar for any construct.
		C304.3	Design Turing machines for any language.
		C304.4	Illustrate computation solutions using Turing machines
		C304.5	Discuss whether a problem is decidable or not
		C304.6	Analyze un decidable problems and NP class problems

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	2	2	1	-	-	-	-	-	-	-	-	1	2	-
C304.2	3	2	2	1	-	-	-	-	-	-	-	-	1	2	-
C304.3	3	2	2	1	-	-	-	-	-	-	-	-	1	2	-
C304.4	3	2	2	1	-	-	-	-	-	-	-	-	1	2	-
C304.5	2	1	1	1	-	-	-	-	-	-	-	-	1	2	-
C304.6	2	1	1	1	-	-	-	-	-	-	-	-	1	1	-
C304	2.7	1.7	1.7	1.0	-	-	-	-	-	-	-	-	1.0	1.8	-

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8592	OBJECT ORIENTED ANALYSIS AND DESIGN	C305.1	Explain software design with UML diagrams.
		C305.2	Design software applications using OO concepts
		C305.3	Identify various scenarios based on software requirements
		C305.4	Compare UML based software design to pattern based design using design patterns
		C305.5	Describe various testing methodologies for OO software
		C305.6	Design and Test the software against its requirements specification

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	1	1	1	-	-	-	-	-	-	-	-	1	2	-
C305.2	3	2	2	1	-	-	-	-	-	-	-	-	2	1	-
C305.3	3	2	2	1	-	-	-	-	-	-	-	-	1	1	-
C305.4	2	1	1	1	-	-	-	-	-	-	-	-	1	1	-
C305.5	2	1	1	1	-	-	-	-	-	-	-	-	1	1	-
C305.6	1	1	1	1	-	-	-	-	-	-	-	-	1	1	-
C305	2.3	1.3	1.3	1.0	-	-	-	-	-	-	-	-	1.2	1.2	-

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
OMD551	BASIC OF BIO MEDICAL INSTRUMENTATION	C306.1	Explain the different bio potential and its propagation.
		C306.2	Describe the different electrode placement for various physiological recording
		C306.3	Design bio amplifier for various physiological recording
		C306.4	Apply various technique for electrical physiological measurements
		C306.5	Apply various technique for non electrical physiological measurements
		C306.6	Compare different biochemical measurements

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	2	2	1	1	-	-	-	-	-	-	-	-	1	2	-
C306.2	2	2	1	1	-	-	-	-	-	-	-	-	1	1	-
C306.3	3	2	1	1	-	-	-	-	-	-	-	-	1	1	-
C306.4	3	2	1	1	-	-	-	-	-	-	-	-	2	1	-
C306.5	3	2	1	1	-	-	-	-	-	-	-	-	2	1	-
C306.6	2	1	1	1	-	-	-	-	-	-	-	-	1	2	-
C306	2.5	1.8	1	1	-	-	-	-	-	-	-	-	1.3	1.3	-

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
EC8681	MICROPROCESSORS AND MICROCONTROLLERS LABORATORY	C307.1	Write ALP Programmes for fixed and Floating Point and Arithmetic operations · Interface different I/Os with processor
		C307.2	Construct waveforms using Microprocessors
		C307.3	Apply Programs in 8051
		C307.4	Explain the difference between simulator and Emulator
		C307.5	Compare different I/Os with Microprocessors
		C307.6	Explain the importance of MASM

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	2	1	1	1	1	-	-	-	1	2	-	-	1	-	1
C307.2	3	2	2	2	1	-	-	-	1	2	-	-	1	-	1
C307.3	3	2	2	2	1	-	-	-	1	2	-	-	1	-	1
C307.4	2	1	1	1	1	-	-	-	1	2	-	-	1	-	1
C307.5	3	2	2	2	1	-	-	-	1	2	-	-	1	-	1
C307.6	3	2	2	2	1	-	-	-	1	2	-	-	1	-	1
C307	2.7	1.7	1.7	1.7	1.0	-	-	-	1.0	2.0	-	-	1	-	1

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8582	OBJECT ORIENTED ANALYSIS AND DESIGN LABORATORY	C308.1	Practice OO analysis and design for a given problem specification
		C308.2	Identify and map basic software requirements in UML mapping.
		C308.3	Improve the software quality using design patterns
		C308.4	Explain the rationale behind applying specific design patterns
		C308.5	Explore Convert the compliance of the software with the SRS..
		C308.6	Design by applying appropriate design patterns

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
C308.1	2	2	1	1	-	-	-	-	1	1	-	-	2	1	1
C308.2	2	2	1	1	-	-	-	-	1	1	-	-	2	1	1
C308.3	2	2	1	1	-	-	-	-	1	1	-	-	2	1	1
C308.4	2	2	1	1	-	-	-	-	1	1	-	-	1	1	2
C308.5	3	2	1	1	-	-	-	-	1	1	-	-	1	1	2
C308.6	2	1	1	1	-	-	-	-	1	1	-	-	1	1	1
C308	2.2	1.8	1.0	1.0	-	-	-	-	1.0	1.0	-	-	1.5	1.0	1.3

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*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	
		C309.1	Implement various protocols using TCP and UDP
CS8581	NETWORKS LABORATORY	C309.2	Compare the performance of different transport layer protocols
		C309.3	Use simulation tools to analyze the performance of various network protocols
		C309.4	Analyze various routing algorithms.
		C309.5	Implement error correction codes.
		C309.6	Illustrate simulation tools to analyze the performance of various network 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
C309.1	3	2	2	-	2	-	-	-	1	1	-	-	2	1	1
C309.2	3	1	1	-	1	-	-	-	1	1	-	-	2	1	1
C309.3	3	2	2	-	1	-	-	-	1	1	-	-	2	1	1
C309.4	3	2	2	-	2	-	-	-	1	1	-	-	2	1	1
C309.5	3	2	2	-	1	-	-	-	1	1	-	-	2	1	1
C309.6	3	2	2	-	2	-	-	-	1	1	-	-	2	1	1
C309	3.0	1.8	1.8	-	1.5	-	-	-	1.0	1.0	-	-	2.0	1.0	1.0

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COURSE OUTCOMES (CO) & CO-PO MAPPING

VI SEMESTER



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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8651	INTERNET PROGRAMMING	C310.1	Construct a basic website using HTML and Cascading Style Sheets.
		C310.2	Build dynamic web page with ith validation using Java Script objects and by applying different event handling mechanisms execute
		C310.3	Develop server side programs using Servlets and JSP.
		C310.4	Construct simple web pages in PHP and to represent data in XML format. .
		C310.5	Use AJAX and web services to develop interactive web applications
		C310.6	Explain about java

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
C310.1	2	2	2	1	1	-	-	-	-	-	-	-	2	2	2
C310.2	3	2	2	1	1	-	-	-	-	-	-	-	3	3	2
C310.3	2	2	2	2	2	-	-	-	-	-	-	-	2	2	2
C310.4	3	2	2	2	2	-	-	-	-	-	-	-	3	3	2
C310.5	3	2	2	2	2	-	-	-	-	-	-	-	3	3	2
C310.6	2	2	2	1	1	-	-	-	-	-	-	-	2	2	2
C310	2.5	2	2	1.5	1.5	-	-	-	-	-	-	-	2.5	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	
CS8691	ARTIFICIAL INTELLIGENCE	C311.1	Illustrate appropriate search algorithms for any AI problem
		C311.2	Apply first order and predicate logic for various applications
		C311.3	Provide the apt agent strategy to solve a given problem
		C311.4	Develop software agents to solve a problem.
		C311.5	Design applications for NLP that use Artificial Intelligence.
		C311.6	Analyze the various applications of AI

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
C311.1	2	2	1	1	-	-	-	-	-	-	-	-	1	1	1
C311.2	3	2	2	1	-	-	-	-	-	-	-	-	2	2	1
C311.3	2	2	1	1	-	-	-	-	-	-	-	-	1	1	1
C311.4	2	2	1	1	-	-	-	-	-	-	-	-	1	1	2
C311.5	2	2	1	1	-	-	-	-	-	-	-	-	1	1	2
C311.6	2	1	1	1	-	-	-	-	-	-	-	-	1	1	1
C311	2.2	1.8	1.2	1.0	-	-	-	-	-	-	-	-	1.2	1.2	1.3

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8601	MOBILE COMPUTING	C312.1	Recall the basics of mobile telecommunication systems
		C312.2	Illustrate the generations of telecommunication systems in wireless networks
		C312.3	Determine the functionality of MAC, network layer and Identify a routing protocol for a given Ad hoc network
		C312.4	Describe the functionality of Transport and Application layers
		C312.5	Develop a mobile application using android/blackberry/ ios/ Windows SDK
		C312.6	Explain about different mobile platforms and application development

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
C312.1	2	2	2	2	-	-	-	-	-	-	-	-	2	3	1
C312.2	2	2	1	1	-	-	-	-	-	-	-	-	2	2	1
C312.3	2	2	1	1	-	-	-	-	-	-	-	-	2	2	2
C312.4	3	2	2	1	-	-	-	-	-	-	-	-	2	3	1
C312.5	3	2	2	1	-	-	-	-	-	-	-	-	2	3	2
C312.6	2	2	1	1	-	-	-	-	-	-	-	-	1	2	1
C312	2.3	2.0	1.5	1.2	-	-	-	-	-	-	-	-	1.8	2.5	1.3



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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8602	COMPILER DESIGN	C313.1	Explain different phases of compiler.
		C313.2	Design a lexical analyzer for a sample language.
		C313.3	Apply different parsing algorithms to develop the parsers for a given grammar.
		C313.4	Analyze syntax-directed translation and run-time environment
		C313.5	Construct code optimization techniques and a simple code generator.
		C313.6	Design and implement a scanner and a parser using LEX and YACC 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
C313.1	2	1	1	-	-	-	-	-	-	1	-	1	2	1	1
C313.2	3	2	2	-	-	-	-	-	-	1	-	1	3	2	2
C313.3	3	2	2	-	-	-	-	-	-	1	-	1	3	2	2
C313.4	2	2	1	-	-	-	-	-	-	1	-	1	2	1	1
C313.5	3	2	2	-	-	-	-	-	-	2	-	1	3	2	2
C313.6	3	2	2	-	-	-	-	-	-	1	-	1	3	2	2
C313	2.7	1.8	1.7	-	-	-	-	-	-	1.2	-	1.0	2.7	1.7	1.7

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8603	DISTRIBUTED SYSTEMS	C314.1	Explain the foundations and issues of distributed systems
		C314.2	Analyze the various synchronization issues and global state for distributed systems
		C314.3	Compare Mutual Exclusion and Deadlock detection algorithms in distributed systems
		C314.4	Illustrate the agreement protocols and fault tolerance mechanisms in distributed systems.
		C314.5	Discuss the features of peer-to-peer and distributed shared memory systems
		C314.6	Describe the characteristics of peer-to-peer and distributed shared memory systems

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
C314.1	2	1	1	1	-	-	-	-	-	-	-	-	1	1	1
C314.2	2	1	1	1	-	-	-	-	-	-	-	-	1	1	1
C314.3	2	1	1	1	-	-	-	-	-	-	-	-	2	1	2
C314.4	2	1	1	1	-	-	-	-	-	-	-	-	1	1	1
C314.5	2	1	1	1	-	-	-	-	-	-	-	-	1	1	1
C314.6	1	1	1	1	-	-	-	-	-	-	-	-	1	1	1
C314	1.8	1.0	1.0	1.0	-	-	-	-	-	-	-	-	1.2	1.0	1.2



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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
		C315.1	Explain the importance of Intellectual Property Rights, Which plays a vital role in advanced Technical and scientific disciplines.
C315.2	Discuss the imparting IPR protections and regulations for further advancement and latest developments.		
C315.3	Evaluate the disseminate knowledge on patents, patent regime in India and abroad and registration aspects.		
C315.4	Describe the protect innovation in the form of intellectual property rights.		
C315.5	Calculate the research scholarship, and a spirit of inquiry, thereby generating new knowledge.		
C315.6	Provide and recognize an overview of the statutory, procedural and case law underlining these processes and their interplay with litigation.		

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
C315.1	-	-	-	-	-	-	-	2	-	2	-	1	-	-	-
C315.2	-	-	-	-	-	-	-	2	-	2	-	1	-	-	-
C315.3	-	-	-	-	-	-	-	2	-	2	-	1	-	-	-
C315.4	-	-	-	-	-	-	-	2	-	2	-	1	-	-	-
C315.5	-	-	-	-	-	-	-	2	-	2	-	1	-	-	-
C315.6	-	-	-	-	-	-	-	2	-	2	-	1	-	-	-
C315	-	-	-	-	-	-	-	2	-	2	-	1	-	-	-

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8661	INTERNET PROGRAMMING LABORATORY	C316.1	Construct Web pages using HTML/XML and stylesheets.
		C316.2	Build dynamic webpages with validation using Java Script objects and by applying different event handling mechanisms.
		C316.3	Develop dynamic web pages using server side scripting
		C316.4	Use PHP programming to develop web applications.
		C316.5	Construct web applications using AJAX and web services.
		C316.6	Design Client Server applications.

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
C316.1	3	2	2	-	2	-	2	-	1	1	-	-	1	2	2
C316.2	3	2	2	-	2	-	2	-	1	1	-	-	2	2	2
C316.3	3	2	2	-	2	-	2	-	1	1	-	-	2	1	1
C316.4	3	2	2	-	2	-	2	-	1	1	-	-	2	2	2
C316.5	3	2	2	-	2	-	2	-	1	1	-	-	2	1	1
C316.6	2	2	2	-	2	-	2	-	1	1	-	-	1	1	1
C316	2.8	2.0	2.0	-	2.0	-	2.0	-	1.0	1.0	-	-	1.7	1.5	1.5



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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8662	MOBILE APPLICATION DEVELOPMENT LABORATORY	C317.1	Construct mobile applications using GUI and Layouts.
		C317.2	Develop mobile applications using Event Listener.
		C317.3	Design mobile applications using Databases.
		C317.4	Develop mobile applications using RSS Feed, Internal / External Storage, SMS, Multi threading and GPS.
		C317.5	Analyze and discover own mobile app for simple needs.
		C317.6	Explain the capabilities and limitations of mobile devices.

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
C317.1	3	2	1	-	-	-	1	-	1	1	-	-	3	2	1
C317.2	2	1	2	-	-	-	1	-	1	1	-	-	2	2	1
C317.3	3	2	2	-	-	-	1	-	1	1	-	-	3	2	1
C317.4	3	2	2	-	-	-	1	-	1	1	-	-	3	2	2
C317.5	3	2	2	-	-	-	1	-	1	1	-	-	3	2	2
C317.6	3	2	2	-	-	-	1	-	1	1	-	-	3	2	2
C317	2.8	1.8	1.8	-	-	-	1.0	-	1.0	1.0	-	-	2.8	2.0	1.5



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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8611	MINI PROJECT	C318.1	Develop their own innovative prototype of ideas.
		C318.2	Practice acquired knowledge within the chosen area of technology for project development.
		C318.3	Identify, discuss and justify the technical aspects of the chosen project with a comprehensive and systematic approach.
		C318.4	Reproduce, improve and refine technical aspects for engineering projects.
		C318.5	Practice work as an individual or in a team in development of technical projects.
		C318.6	Construct report effectively project related activities and findings.

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
C318.1	2	2	2	2	2	2	2	1	1	1	1	1	1	2	2
C318.2	3	3	3	3	3	3	3	3	3	2	2	2	1	2	1
C318.3	3	2	2	2	2	2	2	2	2	1	1	1	1	2	1
C318.4	3	3	3	3	2	2	2	2	2	2	1	1	1	1	1
C318.5	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1
C318.6	3	2	2	2	2	2	2	2	1	1	1	1	1	2	1
C318	2.8	2.3	2.3	2.3	2.2	2.2	2.2	2.0	1.8	1.3	1.2	1.2	1.0	1.7	1.2

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
HS8581	PROFESSIONAL COMMUNICATION	C319.1	Develop vocabulary and language skills relevant to engineering as a profession
		C319.2	Analyze, interpret and effectively summarize a variety of textual content
		C319.3	Discuss a given technical/non-technical topic in a group setting and arrive at Generalizations/consensus.
		C319.4	Relate telephone/Skype and panel interviews.
		C319.5	Create effective technical presentations
		C319.6	Develop adequate Soft Skills required for the workplace

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
C319.1	-	-	-	-	-	-	3	2	2	-	2	-	1	2	-
C319.2	-	-	-	-	-	-	3	2	2	-	2	-	2	2	-
C319.3	-	-	-	-	-	-	3	2	2	-	2	-	2	2	-
C319.4	-	-	-	-	-	-	3	2	2	-	2	-	2	2	-
C319.5	-	-	-	-	-	-	3	2	2	-	2	-	2	2	-
C318.6	-	-	-	-	-	-	3	1	1	-	1	-	1	2	-
C319	-	-	-	-	-	-	3	2.2	2	-	2.7	-	1.7	2	-



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COURSE OUTCOMES (CO) & CO-PO MAPPING

VII SEMESTER



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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
MG8591	PRINCIPLES OF MANAGEMENT	C401.1	Recall managerial functions like organization culture and environment
		C401.2	Analyze Evolution of Management and the types of Business organization
		C401.3	Apply Managerial functions of planning and decision making steps.
		C401.4	Analyze the organization structure and departmentalization, staffing
		C401.5	Explain the concept of motivational techniques job satisfaction and leadership
		C401.6	Describe about the use of computers and IT in Management control

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
C401.1	2	1	1	1	-	-	-	-	-	-	-	-	1	-	-
C401.2	2	1	1	1	-	-	-	-	-	-	-	-	1	-	-
C401.3	2	1	1	1	-	-	-	-	-	-	-	-	1	-	-
C401.4	3	2	2	1	-	-	-	-	-	-	-	-	1	-	-
C401.5	3	2	2	1	-	-	-	-	-	-	-	-	1	-	-
C401.6	2	2	2	1	-	-	-	-	-	-	-	-	1	-	-
C401	2.3	1.5	1.5	1.0	-	-	-	-	-	-	-	-	1	-	-



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

REGULATION 2017

COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8792	CRYPTOGRAPHY AND NETWORK SECURITY	C402.1	Recall the fundamentals of networks security, security architecture, threats and vulnerabilities
		C402.2	Elaborate the different cryptographic operations of symmetric cryptographic algorithms
		C402.3	Apply the different cryptographic operations of public key cryptography
		C402.4	Explain about The Asymmetric Key Ciphers
		C402.5	Apply the various Authentication schemes to simulate different applications.
		C402.6	Describe various Security practices and System security standards

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
C402.1	2	1	1	1	-	-	-	-	-	-	-	-	3	2	-
C402.2	2	1	1	1	-	-	-	-	-	-	-	-	3	2	-
C402.3	3	2	2	1	-	-	-	-	-	-	-	-	2	2	-
C402.4	3	2	2	1	-	-	-	-	-	-	-	-	2	2	-
C402.5	3	2	2	1	-	-	-	-	-	-	-	-	2	2	-
C402.6	2	2	1	1	-	-	-	-	-	-	-	-	2	2	-
C402	2.3	1.7	1.5	1.0	-	-	-	-	-	-	-	-	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	
CS8791	CLOUD COMPUTING	C403.1	Articulate the main concepts, key technologies, strengths and limitations of cloud computing.
		C403.2	Describe about the key and enabling technologies that help in the development of cloud
		C403.3	Develop the ability to use the architecture of cloud to compute and storage cloud service and delivery models.
		C403.4	Explain the core issues of cloud computing such as resource management and security.
		C403.5	Illustrate the installation process and use current cloud technologies.
		C403.6	Evaluate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud.

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
C403.1	2	1	1	1	-	-	-	-	1	1	-	-	2	1	1
C403.2	2	1	1	1	-	-	-	-	1	1	-	-	2	1	1
C403.3	2	1	1	1	-	-	-	-	1	1	-	-	2	1	1
C403.4	3	2	2	1	-	-	-	-	1	1	-	-	3	2	2
C403.5	2	1	1	1	-	-	-	-	1	1	-	-	2	1	1
C403.6	1	1	1	1	-	-	-	-	1	1	-	-	2	1	1
C403	2	1.2	1.2	1	-	-	-	-	1.0	1.0	-	-	2.2	1.2	1.2



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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
OEC374	MEDICAL ELECTRONICS	C404.1	Explain the human body electro- physiological parameters and recording of bio-potentials
		C404.2	Comprehend the non-electrical physiological parameters and their measurement – body temperature, blood pressure, pulse, blood cell count, blood flow meter etc
		C404.3	Explain the importance of the various assist devices used in the hospitals viz. pacemakers, defibrillators, dialyzers and ventilators
		C404.4	Comprehend physical medicine methods eg. ultrasonic, shortwave, microwave surgical diathermies , and bio-telemetry principles and methods
		C404.5	Discuss recent trends in medical instrumentation
		C404.6	Describe about equipment used for physical medicine and the various recently developed diagnostic and therapeutic 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
C404.1	2	2	2	1	1	-	-	-	-	-	-	-	2	1	2
C404.2	1	1	1	1	1	-	-	-	-	-	-	-	2	1	1
C404.3	1	1	1	1	1	-	-	-	-	-	-	-	2	1	2
C404.4	1	1	1	1	1	-	-	-	-	-	-	-	2	1	2
C404.5	1	1	1	1	1	-	-	-	-	-	-	-	2	1	2
C404.6	1	1	1	1	1	-	-	-	-	-	-	-	2	1	1
C404	1.2	1.2	1.2	1.0	1.0	-	-	-	-	-	-	-	2.0	1.0	1.7

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8081	INTERNET OF THINGS	C405.1	Explain the concept of IoT.
		C405.2	Analyze various protocols for IoT.
		C405.3	Design a PoC of an IoT system using Raspberry Pi/Arduino
		C405.4	Apply data analytics and use cloud offerings related to IoT.
		C405.5	Describe about python web application development.
		C405.6	Analyze applications of IoT in real time scenario

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
C405.1	2	2	2	1	-	-	-	-	1	1	-	-	1	-	-
C405.2	2	2	2	1	-	-	-	-	1	1	-	-	1	-	-
C405.3	2	2	2	1	-	-	-	-	1	1	-	-	1	-	-
C405.4	3	2	1	1	-	-	-	-	1	1	-	-	1	-	-
C405.5	3	2	2	1	-	-	-	-	1	1	-	-	1	-	-
C405.6	1	2	2	1	-	-	-	-	1	1	-	-	1	-	-
C405	2.2	2	1.8	1	-	-	-	-	1.0	1.0	-	-	1	-	-



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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
GE8074	HUMAN RIGHTS	C406.1	Explain the basic knowledge of human rights.
		C406.2	Describe about natural, moral and legal rights
		C406.3	Analyse the concept of Human Rights Magana carta
		C406.4	Explain the perspectives of UN Laws
		C406.5	Analyse the concept of Human Rights of Disadvantaged People
		C406.6	Apply the implementation of Human Rights

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
C406.1	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-
C406.2	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-
C406.3	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-
C406.4	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-
C406.5	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-
C406.6	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-
C406	2	2	1	-	-	-	-	-	-	-	-	-	-	-	-

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8711	CLOUD COMPUTING LABORATORY	C407.1	Illustrate the configuration of various virtualization tools such as Virtual Box, VMware workstation.
		C407.2	Design and deploy a web application in a PaaS environment.
		C407.3	Demonstrate simulation of a cloud environment to implement new schedulers.
		C407.4	Explain the importance of a generic cloud environment that can be used as a private cloud.
		C407.5	Describe about large data sets Manipulation in a parallel environment.
		C407.6	Explain the procedure of Installation of Hadoop single node cluster and run simple applications like word count

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
C407.1	3	2	2	-	-	-	2	-	1	1	-	-	1	1	1
C407.2	3	2	2	-	-	-	2	-	1	1	-	-	1	1	1
C407.3	3	2	2	-	-	-	2	-	1	1	-	-	2	2	1
C407.4	3	2	2	-	-	-	2	-	1	1	-	-	2	2	1
C407.5	2	2	2	-	-	-	2	-	1	1	-	-	2	1	2
C407.6	3	2	2	-	-	-	2	-	1	1	-	-	1	1	1
C407	2.8	2.0	2.0	-	-	-	2	-	1.0	1.0	-	-	1.5	1.3	1.2

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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
IT8761	SECURITY LABORATORY	C408.1	Develop code for classical Encryption Techniques to solve the problems
		C408.2	Build cryptosystems by applying symmetric and public key encryption algorithms.
		C408.3	Construct code for authentication algorithms.
		C408.4	Develop a signature scheme using Digital signature standard
		C408.5	Demonstrate the network security system using open source tools
		C408.6	Explain Automated Attack and Penetration Tools Exploring N-Stalker

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
C4081	3	2	2	1	-	-	-	-	1	1	-	-	2	2	1
C408.2	3	2	2	1	-	-	-	-	1	1	-	-	2	2	1
C408.3	3	2	2	1	-	-	-	-	1	1	-	-	2	2	1
C408.4	3	2	2	1	-	-	-	-	1	1	-	-	2	2	1
C408.5	2	1	1	1	-	-	-	-	1	1	-	-	2	2	1
C408.6	1	1	1	1	-	-	-	-	1	1	-	-	1	1	1
C408	2.5	1.7	1.7	1.0	-	-	-	-	1.0	1.0	-	-	1.8	1.8	1.0

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COURSE OUTCOMES (CO) & CO-PO MAPPING

VIII SEMESTER



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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8080	INFORMATION RETRIEVAL TECHNIQUES	C409.1	Make use of an open source search engine framework and explore its capabilities
		C409.2	Apply appropriate method of classification or clustering.
		C409.3	Design and implement innovative features in a search engine.
		C409.4	Design and implement a recommender system.
		C409.5	Explain about the concepts of Collaborative Filtering
		C409.6	Apply the algorithm for Neural Network Model

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
C409.1	2	1	1	1	-	-	-	-	-	-	-	-	1	-	-
C409.2	2	1	1	1	-	-	-	-	-	-	-	-	1	-	-
C409.3	2	1	1	1	-	-	-	-	-	-	-	-	1	-	-
C409.4	2	1	1	1	-	-	-	-	-	-	-	-	1	-	-
C409.5	2	1	1	1	-	-	-	-	-	-	-	-	1	-	-
C409.6	1	1	1	1	-	-	-	-	-	-	-	-	1	-	-
C409	1.8	1.0	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	
		C410.1	Explain about Introduction to Yoga and meditation
GE8076	PROFESSIONAL ETHICS IN ENGINEERING	C410.2	Apply ethics in society,
		C410.3	Discuss the ethical issues related to engineering and realize the responsibilities and rights in the society.
		C410.4	Elaborate the Weapons Development – Engineers as Managers
		C410.5	Examine the concept of Risk Benefit Analysis and Reducing Risk.
		C410.6	Describe about Senses of ‘Engineering Ethics’

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
C410.1	2	1	1	1	1	-	-	-	-	-	-	-	1	1	1
C410.2	2	1	1	1	1	-	-	-	-	-	-	-	2	1	1
C410.3	3	2	1	1	1	-	-	-	-	-	-	-	2	2	1
C410.4	3	3	2	2	2	-	-	-	-	-	-	-	2	2	1
C410.5	2	2	1	1	1	-	-	-	-	-	-	-	2	1	1
C410.6	1	1	1	1	1	-	-	-	-	-	-	-	1	1	1
C410	2.2	1.7	1.2	1.2	1.2	-	-	-	-	-	-	-	1.5	1.5	1.0



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COURSE OUTCOMES (CO) & CO-PO MAPPING

Course Code	Course Name	Course Outcome(CO) Students will be able to	
CS8811	PROJECT WORK	C411.1	Identify technically and economically feasible problems of social relevance
		C411.2	Construct the project team with assigned responsibilities
		C411.3	Identify and survey the relevant literature for getting exposed to related solutions
		C411.4	Analyse, design and develop adaptable and reusable solutions of minimal complexity by using modern tools
		C411.5	Describe the solutions to trace against the user requirements
		C411.6	Deploy and support the solutions for better manageability of the solutions and provide scope for improvability

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
C411.1	3	2	2	2	2	2	1	1	1	1	1	1	1	1	1
C411.2	3	3	3	3	3	3	2	2	2	2	2	1	1	1	1
C411.3	3	2	2	2	2	2	2	2	1	1	1	1	1	1	1
C411.4	3	3	3	3	2	2	2	2	2	2	2	1	1	1	1
C411.5	3	2	2	2	2	2	2	2	1	1	1	1	1	1	1
C411.6	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1
C411	2.8	2.3	2.3	2.3	2.2	2.2	1.7	1.7	1.3	1.3	1.3	1.0	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	
IT8075	SOFTWARE PROJECT MANAGEMENT	C412.1	Examine the Software Project Planning and Evaluation techniques
		C412.2	Classify projects at each stage of the software development life cycle (SDLC)
		C412.3	Explain about the activity planning and risk management principles
		C412.4	Investigate to manage software projects and control software deliverables
		C412.5	Illustrate skills to manage the various phases involved in project management and people management
		C412.6	Demonstrate successful software projects that support organization's strategic goals

CO PO MAPPING

COs	PROGRAM OUTCOMES												PSOs		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO 1	PSO 2	PSO 3
C412.1	3	2	1	1	1	1	-	1	1	3	2	2	1	1	1
C412.2	3	3	2	1	1	1	-	1	2	3	2	2	2	1	2
C412.3	3	3	2	1	1	1	-	1	2	3	2	2	2	1	2
C412.4	3	3	3	3	1	1	-	1	2	3	2	2	1	1	1
C412.5	3	2	1	1	1	1	-	1	2	3	2	2	1	1	1
C412.6	3	3	3	3	1	1	-	1	2	3	2	2	1	1	1
C412	3.0	2.7	2.0	1.7	1.0	1.0	-	1.0	1.8	3.0	2.0	2.0	1.3	1.0	1.3