

## COs and CO-PO Mapping (2019-20)

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA																
Department of Computer Science and Engineering																
S3 CSE																
<b>MA201</b>	<b>Linear algebra and complex analysis</b>	<b>3</b>	<b>Ms Lickny I</b>													
CO1	Demonstrate mathematical reasoning through the concept of complex analysis .															
CO2	Analyze Conformal mapping to change regions with complicated shapes into simpler ones.															
CO3	Apply systems of linear equations to solve computational tasks including processing, designing and modeling .															
CO4	Apply the properties of eigenvalues to simplify extensive calculations occurring in science and engineering															
<b>CO -PO-PSO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1	3	3		2										CO1	2	3
CO2	3	3		3										CO2	2	3
CO3	3	3		2	2									CO3		
CO4	2	2		2										CO4	2	3
<b>Avg</b>	<b>2.75</b>	<b>2.75</b>		<b>2.25</b>	<b>2</b>									<b>Avg</b>	<b>2</b>	<b>3</b>
SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA																
Department of Computer Science and Engineering																
HS210																
<b>HS210</b>	<b>Life Skills</b>	<b>3</b>	<b>Anusree K, Wilson Joseph</b>													
CO1	Improve the communication, problem solving skills and writing skills of prospective engineers															
CO2	Convey thoughts and ideas thereby equipping them to face interviews and group discussions															
CO3	Instill moral and social values, loyalty and to learn to appreciate the rights of others															
CO4	Analyze a particular problem critically and obtain a solution by working in a group or team															
<b>CO -PO-PSO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1		3	2	1										CO1	3	
CO2						2			3	3				CO2	3	
CO3						3		3	2	2		3		CO3	3	
CO4		2		2		2	2	2	3	3		2		CO4	3	
<b>Avg</b>		<b>2.5</b>	<b>2</b>	<b>1.5</b>		<b>2.33</b>	<b>2</b>	<b>2.5</b>	<b>2.67</b>	<b>2.67</b>		<b>2.5</b>		<b>Avg</b>	<b>3</b>	
SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA																
Department of Computer Science and Engineering																
CS201																
<b>CS201</b>	<b>Discrete Computational Structures</b>	<b>3</b>	<b>Rani Thomas</b>													
CO1	The student will be able to identify and solve homogeneous and non homogeneous ordinary differential equations															
CO2	Solve problems in various domains by using recurrence relations, counting techniques and combinatorics.															
CO3	Distinguish multi type proof techniques to prove Logical and mathematical statements occurring in engineering situations															
CO4	Analyze Logical statements to validate arguments using logic techniques and Inference Theory.															
<b>CO -PO-PSO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1	3	3										2		CO1	3	
CO2	2	3												CO2	3	
CO3	3	3	2									2		CO3	3	
CO4	3	3												CO4	3	
<b>Avg</b>	<b>2.75</b>	<b>3</b>	<b>2</b>									<b>2</b>		<b>Avg</b>	<b>3</b>	

## COs and CO-PO Mapping (2019-20)

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA																
Department of Computer Science and Engineering																
<b>CS203</b>	<b>Switching theory and logic Design</b>	<b>3</b>	<b>Ms Jasmy Davies, Ms Anrija</b>													
CO1	Apply the basic concept of Boolean algebra for the simplification and implementation of logic functions.															
CO2	To design simple Combinational circuits and Sequential circuits															
CO3	Use of hardware description language for simple logic circuits															
CO4	Apply algorithms for addition and subtraction on binary number BCD, Floating point numbers															
<b>CO -PO-PSO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1	3	3	2	3	2							2	CO1	3	2	3
CO2	3	3	2	3	2						2	2	CO2	2	3	2
CO3	3	3	3	3	3						3	3	CO3	3	2	3
CO4	2	2	3	3								2	CO4	2	2	3
<b>Avg</b>	<b>2.75</b>	<b>2.75</b>	<b>2.5</b>	<b>3</b>	<b>2.33</b>						<b>2.5</b>	<b>2.25</b>	<b>Avg</b>	<b>2.5</b>	<b>2.25</b>	<b>2.75</b>
<b>SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA</b>																
<b>Department of Computer Science and Engineering</b>																
<b>CS205</b>	<b>Data Structures</b>	<b>3</b>	<b>Priya K V, Anly Antony</b>													
CO1	Analyse algorithms and data structures in terms of time and memory complexity of basic operations.															
CO2	Develop knowledge about data structures and inculcate ability to design algorithms for the creation, insertion, deletion, searching, and sorting of each data structure															
CO3	Design algorithms for different applications to represent and manipulate data using linear and non-linear data structures.															
CO4	Compare different memory management techniques and their significance to solve real world efficiently															
<b>CO -PO-PSO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1	3	2	3	3	2						2	3	CO1	3		
CO2	2	2	3	3	2	2					2	3	CO2	2	2	
CO3	2	2	3	3	2	2					2	3	CO3	2	2	
CO4	2	2	3								2	2	CO4	2		
<b>Avg</b>	<b>2.25</b>	<b>2</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>					<b>2</b>	<b>2.75</b>	<b>Avg</b>	<b>2.25</b>	<b>2</b>	
<b>SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA</b>																
<b>Department of Computer Science and Engineering</b>																
<b>CS207</b>	<b>Electronics Devices and Circuits</b>	<b>3</b>	<b>Dr. Arun Thomas</b>													
CO1	Examine various types of wave shaping circuits using diodes and transistors															
CO2	Understand the working of voltage regulators and FET															
CO3	Classify different types of amplifiers and oscillators using BJT and MOSFET															
CO4	Articulate the concepts of operational amplifiers															
CO5	Interpret different types of integrated circuits															
<b>CO -PO-PSO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1	3	3	3	2		2							CO1	3		
CO2	3	2	3	2		2							CO2	3		
CO3	3	2	3	2		2							CO3	3		
CO4	3	3	3	2		2							CO4	3		
CO5	3	3	3	2		2							CO5			
<b>Avg</b>	<b>3</b>	<b>2.5</b>	<b>3</b>	<b>2</b>		<b>2</b>							<b>Avg</b>	<b>3</b>		

## COs and CO-PO Mapping (2019-20)

SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA																
Department of Computer Science and Engineering																
<b>CS233</b>	<b>Electronics Devices and Circuits</b>	<b>3</b>	<b>Dr. ArunThomas , Wilson Joseph</b>													
CO1	Identify functions of digital multimeter, cathode ray oscilloscope and transducers in the measurement of physical variables.															
CO2	Test and learn the characteristics of various active and passive components.															
CO3	Design, Analyze and find the applications of simple analog circuits using active components.															
CO4	Plot the characteristics of electronic devices to understand their behavior.															
<b>CO -PO-PSO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1			3	3	2				2			2		CO1	1	2
CO2		2	3	3	2				2					CO2	3	2
CO3			3	3	2				2			2		CO3	3	2
CO4	3	2	1	3	3				3	1		3		CO4	2	2
<b>Avg</b>	<b>3</b>	<b>2</b>	<b>2.5</b>	<b>3</b>	<b>2.25</b>				<b>2.25</b>	<b>1</b>		<b>2.33</b>		<b>Avg</b>	<b>2.67</b>	<b>3</b>
SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA																
Department of Computer Science and Engineering																
<b>CS231</b>	<b>Data Structures Lab</b>	<b>3</b>	<b>Priya K V, Anly Antony</b>													
CO1	To implement basic linear and non-linear data structures and their major operations															
CO2	To implement applications using linear and non linear data structures															
CO3	To implement algorithms for various sorting techniques.															
CO4	Implement algorithms for various searching techniques															
<b>CO -PO-PSO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1	2	2	2	2		2						2		CO1	2	2
CO2	2	2	2	2		2						3		CO2	2	2
CO3	2	2	2	2		2						3		CO3	2	2
CO4	2	2	2	2		2						3		CO4	2	2
<b>Avg</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>		<b>2</b>						<b>2.75</b>		<b>Avg</b>	<b>2</b>	<b>2</b>
SAHRDAYA COLLEGE OF ENGINEERING AND TECHNOLOGY, KODAKARA																
Department of Computer Science and Engineering																
<b>S4 CSE</b>																
<b>MA202</b>	<b>Probability Distributions, Transforms and Numerical Methods</b>	<b>4</b>	<b>Lickny I,Savitha Paul</b>													
CO1	Apply the concept of discrete and continuous probability distributions in Engineering and real life situations															
CO2	Solve various equations occurring in Engineering by applying different Numerical techniques															
CO3	Analyse the concepts of Fourier and Laplace transforms in interdisciplinary environments															
<b>CO -PO-PSO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1	3	3	2	2								2		CO1	2	
CO2	3	3	3											CO2	2	
CO3	3	3	3	2								2		CO3	2	
<b>Avg</b>	<b>3</b>	<b>3</b>	<b>2.67</b>	<b>2</b>								<b>2</b>		<b>Avg</b>	<b>2</b>	

## COs and CO-PO Mapping (2019-20)

<b>CS202</b>	<b>Computer Organization and Architecture</b>	<b>4</b>	<b>Ms Jasmy Davies, Mr Krishnadas</b>																	
CO1	Examine the functional units of the computer and basic concept of instruction set and addressing modes.																			
CO2	Demonstrate the instruction cycle, bus organization and arithmetic algorithms.																			
CO3	Differentiate interfacing standards for I/O devices , semiconductor memory and its working.																			
CO4	Design of ALU and Control unit of the Processor																			
<b>CO -PO mapping table</b>																				
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>				
<b>CO1</b>	3	3												<b>CO1</b>	3	2	3			
<b>CO2</b>		3	3											<b>CO2</b>	2		3			
<b>CO3</b>	3				3									<b>CO3</b>	3	3	3			
<b>CO4</b>		3	3	3										<b>CO4</b>	3	3	3			
<b>Avg</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>									<b>Avg</b>	<b>2.75</b>	<b>2.67</b>	<b>3</b>			
<b>CO -PO mapping table</b>																				
<b>CS204</b>	<b>Operating System</b>	<b>4</b>	<b>Dr.M.Rajeswari</b>																	
CO1	Differentiate various operating systems by their functionality and apply process management with interprocess communication.																			
CO2	Assess various process synchronization mechanisms and use different CPU scheduling methods in order to allocate resources effectively.																			
CO3	Determine various deadlock handling techniques to prevent and/or avoid deadlock.																			
CO4	Make use of memory management techniques and storage management methods in real time.																			
<b>CO -PO mapping table</b>																				
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>				
<b>CO1</b>	3	3	3	2		3						3		<b>CO1</b>	3	3				
<b>CO2</b>	3	3	3	3	2	3	3	3				3		<b>CO2</b>	3	3	2			
<b>CO3</b>	3	3	3	3	3	3	3	3				3		<b>CO3</b>	3	3	2			
<b>CO4</b>	3	3	3	3	3	3	3	3				3		<b>CO4</b>	3	3	2			
<b>Avg</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2.75</b>	<b>2.67</b>	<b>3</b>	<b>3</b>	<b>3</b>				<b>3</b>		<b>Avg</b>	<b>3</b>	<b>3</b>	<b>2</b>			
<b>CO -PO-PSO mapping table</b>																				
<b>CS206</b>	<b>Object oriented design and Programming</b>	<b>4</b>	<b>Dr. Satheshkumar, Sreetha E S</b>																	
CO1	Apply object oriented principles in software design process																			
CO2	Develop Java programs for real time applications using constructs and libraries in Java																			
CO3	Understand and apply various object oriented features to solve various computing problems																			
CO4	Use Graphical user Interface and Event Handling in Java, develop and deploy Applet in Java																			
<b>CO -PO-PSO mapping table</b>																				
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>				
<b>CO1</b>	3	2	3	3								3		<b>CO1</b>	3		3			
<b>CO2</b>	3	3	3	2								3		<b>CO2</b>	3	3	2			
<b>CO3</b>	3	3	3	3						2		3		<b>CO3</b>	3	2	2			
<b>CO4</b>	3	3	3	3		3						3		<b>CO4</b>	3	3	3			
<b>Avg</b>	<b>3</b>	<b>2.75</b>	<b>3</b>	<b>2.75</b>		<b>3</b>				<b>2</b>		<b>3</b>		<b>Avg</b>	<b>3</b>	<b>2.67</b>	<b>2.5</b>			

## COs and CO-PO Mapping (2019-20)

CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
<b>CS208</b>	<b>PRINCIPLES OF DATABASE DESIGN</b>		<b>4</b>	<b>DR R SUNDER</b>												
CO1	Define the fundamental concepts of databases and apply Entity-Relationship (E-R) model in real time applications															
CO2	Formulate the relational database principles using sql queries and relational algebra															
CO3	Apply normalization Techniques to make efficient relational database design															
CO4	Summarize the principles of data organization ,and Demonstrate query optimization and concurrent transaction processing															
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1			3	2										CO1		3
CO2			3											CO2		3
CO3			3	3										CO3		3
CO4			3									3		CO4		3
<b>Avg</b>			<b>3</b>	<b>2.5</b>								<b>3</b>	<b>Avg</b>			<b>3</b>
<b>HS200</b>	<b>Business economics</b>		<b>4</b>	<b>Viniminesh valsan</b>												
CO1	To examine economic decision making,efficient allocation and utilisation of scarce resources and the scope of managerial economics.															
CO2	To analyse market demand and supply,production techniques,calculation of costs,fixing the equilibrium price,investments,returns,profitability of firms and to determine the price under various market structures.															
CO3	To evaluate the functioning of an economy,with national income,money supply, trade cycles and credit control methods by RBI.															
CO4	To construct balance sheet,profitability index,it's interpretation,capital budgeting and cost benefit analysis.															
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1				1		3	2							CO1		
CO2		2				2								CO2		
CO3					2	3								CO3		
CO4					2	2			1					CO4		
<b>Avg</b>		<b>2</b>		<b>1</b>	<b>2</b>	<b>2.5</b>	<b>2</b>		<b>1</b>				<b>Avg</b>			
<b>CS232</b>	<b>FOSS LAB</b>		<b>4</b>	<b>Sheethal M S</b>												
CO1	Identify and use various Linux commands															
CO2	Implement shell scripts and GUI for specific needs															
CO3	Use tools like GIT															
CO4	Design and deploy Perform basic level application															
<b>CO -PO-PSO mapping table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1	3	3	3	2						3	2			CO1	2	
CO2	3	3	3	2						3	2			CO2	2	
CO3	3	3	3	2						3	2	2		CO3	2	
CO4						3		2	3		3	2		CO4	2	
<b>Avg</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2</b>		<b>3</b>		<b>2</b>	<b>3</b>	<b>3</b>	<b>2.25</b>	<b>2</b>	<b>Avg</b>	<b>2</b>		

## COs and CO-PO Mapping (2019-20)

<b>CS234</b>	<b>Digital Systems Lab</b>	<b>4</b>	<b>Divya R</b>																
CO1	To design and demonstrate functioning of various combinational circuit																		
CO2	To design and demonstrate functioning of sequential circuits																		
CO3	To implement practical problems using digital IC																		
CO4	To function effectively as an individual and in a team to accomplish a given task																		
<b>CO -PO-PSO mapping table</b>																			
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>			
<b>CO1</b>			3	2	3		3							<b>CO1</b>					
<b>CO2</b>			2	3	3									<b>CO2</b>	2				
<b>CO3</b>			3	2	2		3					2		<b>CO3</b>	3	3	2		
<b>CO4</b>			3	3	2		3					2		<b>CO4</b>	3	3	2		
<b>Avg</b>			<b>2.75</b>	<b>2.5</b>	<b>2.5</b>		<b>3</b>					<b>2</b>		<b>Avg</b>	<b>2.67</b>	<b>3</b>	<b>2</b>		
<b>S5 CSE</b>																			
<b>CS301</b>	<b>Theory of Computation</b>	<b>5</b>	<b>Divya R</b>																
CO1	Students will be able to define the mathematical principles behind theory of computation.																		
CO2	Students will be able to distinguish different types of automata like Finite Automata, Push down Automata, Linear Bounded Automata and Turing Machine.																		
CO3	Students will be able to correlate different types of automata to solve real world applications.																		
CO4	Students will be able to identify the different computational problems and their associated complexity.																		
<b>CO -PO mapping table</b>																			
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>			<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>			
<b>CO1</b>	2	3	3	3				2			2	2		<b>CO1</b>	2	2			
<b>CO2</b>	2	3	3	3				2			2	2		<b>CO2</b>	3	2			
<b>CO3</b>	2	2	2	3			2	2			2	2		<b>CO3</b>	2				
<b>CO4</b>	2	2	2	3				2			2	2		<b>CO4</b>	3				
<b>Avg</b>	<b>2</b>	<b>2.5</b>	<b>2.5</b>	<b>3</b>			<b>2</b>	<b>2</b>			<b>2</b>			<b>Avg</b>	<b>2.67</b>	<b>2</b>			
<b>CS303</b>																			
<b>CS303</b>	<b>System Software</b>	<b>5</b>	<b>Ms.Linnet Tomy,Ms.Uma</b>																
CO1	Classify various system software features																		
CO2	Illustrate the working of one pass,two pass and multi pass assembler																		
CO3	Illustrate the working of existing system software's (Linker,loader and macro processor)																		
CO4	Compare the features of modern editing and debugging tools																		
<b>CO -PO mapping table</b>																			
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>			
<b>CO1</b>	3	2	2	2										<b>CO1</b>	3			3	
<b>CO2</b>	3	3	2	2										<b>CO2</b>	3	3	2		
<b>CO3</b>	3	3	2	2		2						2		<b>CO3</b>	3	2	2		
<b>CO4</b>	3	2	2	2	2									<b>CO4</b>	3	3	3		
<b>Avg</b>	<b>3</b>	<b>2.5</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>						<b>2</b>		<b>Avg</b>	<b>3</b>	<b>2.6</b>	<b>3.3</b>		



## COs and CO-PO Mapping (2019-20)

<b>CS331</b>	<b>System Software Lab</b>	<b>5</b>	<b>Linnet Tomy, Uma E. S.</b>													
CO1	Compare and analyze CPU Scheduling Algorithms like FCFS, Round Robin, SJF, and Priority.															
CO2	Implement synchronization techniques using semaphores and banker's algorithm for deadlock avoidance.															
CO3	Implement disk scheduling, file allocation and organization techniques.															
CO4	Implement system software such as loaders, assemblers and macro processor.															
<b>CO -PO mapping table</b>																
<b>CO-PSO Mapping Table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1			1	2									CO1			
CO2			2	2									CO2	2		
CO3			2	2									CO3	3	3	2
CO4			3	2									CO4	3	3	2
<b>Avg</b>			<b>2</b>	<b>2</b>									<b>Avg</b>	<b>2.67</b>	<b>3</b>	<b>2</b>
<b>CS333</b>	<b>Application Development Lab</b>	<b>5</b>	<b>Ms. Livya George, Ms. Jasmy Davis</b>													
CO1	Design and implement a database for a given problem using database design principles.															
CO2	Apply stored programming concepts (PL-SQL) using Cursors and Triggers.															
CO3	Use graphical user interface, Event Handling and Database connectivity to develop and deploy applications and applets.															
CO4	Develop medium-sized project in a team.															
CO5	Develop an aptitude towards database programming															
CO6	Understand and apply the project creation techniques															
<b>CO -PO mapping table</b>																
<b>CO-PSO Mapping Table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1		3	3	1									CO1	2		
CO2	2		3		1								CO2			
CO3	2	1	3		1								CO3			
CO4		3	3	2	3	1	1	1	3	3	3	3	CO4			
CO5						2	1	3				3	CO5			
CO6	2					2		1	3		3	3	CO6			
<b>Avg</b>	<b>2</b>	<b>2.33</b>	<b>3</b>	<b>1.5</b>	<b>1.67</b>	<b>1.67</b>	<b>1</b>	<b>1.67</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>Avg</b>	<b>2</b>		
<b>S6 CSE</b>																
<b>CS302</b>	<b>DESIGN AND ANALYSIS OF ALGORITHMS</b>	<b>6</b>	<b>Shyam Krishna, Priya K V</b>													
CO1	Analyze a given algorithm and express its time and space complexities in asymptotic notations and to Solve recurrence equations using Iteration Method, Recurrence Tree Method and Master's Theorem.															
CO2	Apply the concepts of advanced data structures like tree and graph															
CO3	Design efficient algorithms using different strategies such as Divide and Conquer, dynamic programming, greedy method, backtracking, branch and bound etc. for solving problems.															
CO4	Classify computational problems into P, NP, NP-Hard and NP-Complete.															
<b>CO -PO-PSO mapping table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1	2	2	1	2	1								CO1	2	2	1
CO2	2	1		2									CO2	3	2	3
CO3	2	1		2									CO3	1	2	2
CO4	1	1		1									CO4	2	2	2
<b>Avg</b>	<b>1.75</b>	<b>1.25</b>	<b>1</b>	<b>1.75</b>	<b>1</b>								<b>Avg</b>	<b>2</b>	<b>2</b>	<b>2</b>



## COs and CO-PO Mapping (2019-20)

<b>CS304</b>	<b>COMPILER DESIGN</b>	<b>6</b>	<b>DIVYA R, SREETHA E S</b>													
CO1	Understand the concepts and different phases of compilation with compile time error handling and represent language tokens using regular expressions, context free grammar and finite automata															
CO2	Compare top down with bottom up parsers, and develop appropriate parser to produce parse tree representation of the input.															
CO3	Implement intermediate code for statements and Design syntax directed translation schemes for a given context free grammar															
CO4	Apply optimization techniques to intermediate code and generate machine code for high level language program															
<b>CO -PO-PSO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1	3		2										CO1	3		
CO2		3	3		3								CO2	3		
CO3			2										CO3	2		
CO4			2										CO4	3	2	
<b>Avg</b>	<b>3</b>	<b>3</b>	<b>2.25</b>		<b>3</b>								<b>Avg</b>	<b>2.75</b>	<b>2</b>	
<b>CS306</b>																
	<b>Computer Networks</b>	<b>6</b>	<b>Deepa Devassy, Anly Antony M</b>													
CO1	Understand the different aspects of networks, protocols and network design models.															
CO2	Examine various Data Link layer design issues, Data Link protocols and recent updates.															
CO3	Select appropriate routing algorithms for a network functioning with different network layer protocols.															
CO4	Summarize the important aspects and functions of transport layer and application layer in internetworking.															
<b>CO -PO-PSO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1			3	2									CO1	2	2	
CO2			2	2									CO2		2	
CO3			3	3									CO3		3	
CO4			3	2									CO4		2	
<b>Avg</b>			<b>2.75</b>	<b>2.25</b>									<b>Avg</b>	<b>2</b>	<b>2.25</b>	
<b>CS308</b>																
	<b>Software Engineering &amp; Project Management</b>	<b>6</b>	<b>Mr. Willson Joseph C , Dr. Satheesh Kumar</b>													
CO1	Identify suitable life cycle models to be used.															
CO2	Analyze a problem, identify and define the computing requirements to the problem.															
CO3	Translate a requirement specification to Design using an appropriate software engineering methodology.															
CO4	Develop software projects based on current technology, by managing resources economically and keeping ethical values.															
<b>CO -PO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1	3	3	3										CO1	3	3	
CO2	3	3	3	3		2			2	2	2	2	CO2	3	3	
CO3	3	3	3	3					2	2			CO3	3	3	
CO4	3	3	3	3		3		3	2	3	3	3	CO4	3	3	3
<b>Avg</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>		<b>2.5</b>		<b>3</b>	<b>2</b>	<b>2.33</b>	<b>2.5</b>	<b>2.5</b>	<b>Avg</b>	<b>3</b>	<b>3</b>	<b>3</b>

## COs and CO-PO Mapping (2019-20)

<b>HS300</b>	<b>Principle of Management</b>	<b>6</b>	<b>Mr. Willson Joseph C,Anly Antony M</b>													
CO1	Recall and identify the relevance of management concepts															
CO2	Describe and relate management techniques adopted within an organization															
CO3	Apply management techniques for meeting current and future management challenges faced by the organization															
CO4	Compare the management theories and models critically and to inspect and question its validity in the real world															
<b>CO -PO mapping table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1						3					3		CO1			
CO2						2		3	3		3	3	CO2		2	
CO3									2		3	3	CO3		2	
CO4						3		3	2		3	2	CO4			
<b>Avg</b>						<b>2.67</b>		<b>3</b>	<b>2.33</b>		<b>3</b>	<b>2.67</b>	<b>Avg</b>		<b>2</b>	
<b>CS364</b>	<b>Mobile Computing</b>	<b>6</b>	<b>Bhagyasree P V, Sheethal M. S.</b>													
CO 1	Explain various Mobile Computing application, services and architecture.															
CO 2	understand various Medium Access Control mechanisms															
CO 3	understand various technology trends for next generation cellular wireless networks.															
CO 4	Describe protocol architecture of WLAN technology.															
CO 5	summarize various technology trends for mobile-internet layer.															
CO 6	understand Security Issues in mobile computing															
<b>CO -PO-PSO mapping table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1	3	3	2	2		2						2		3	2	3
CO2	3	3	2	2		2		2	1		1	2		2	2	3
CO3	3	3	2			2								3	3	2
CO4	3	2		2		2								2	2	2
CO5	3	2	2	2		2						2		3	2	2
CO6	1	2	2	2		3						2		3	2	2
<b>Avg</b>	<b>2.67</b>	<b>2.5</b>	<b>2</b>	<b>2</b>		<b>2.17</b>		<b>2</b>	<b>1</b>		<b>1</b>	<b>2</b>	<b>Avg</b>	<b>2.67</b>	<b>2.17</b>	<b>2.33</b>
<b>CS368</b>	<b>Web Technology</b>	<b>6</b>	<b>Scaria ALEX</b>													
CO1	Understand the components in Web Technology															
CO2	Develop web pages using HTML, CSS, Javascript, JQuery															
CO3	Know the different information interchange formats like XML and JSON															
CO4	Design web sites using php															
<b>CO -PO mapping table</b>																
<b>CO-PSO Mapping Table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>	<b>CO/PSO</b>	<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1	3	3	2		3							3	CO1	3	3	2
CO2	3	3	3		3			3				3	CO2	3	3	3
CO3	3	3	3	3	3			3				3	CO3	3	3	3
CO4	3	3	3		3			3				3	CO4	3	3	3
<b>Avg</b>	<b>3</b>	<b>3</b>	<b>2.75</b>	<b>3</b>	<b>3</b>			<b>3</b>				<b>3</b>	<b>Avg</b>	<b>3</b>	<b>3</b>	<b>2.75</b>
<b>CS332</b>	<b>Microprocessor Lab</b>	<b>6</b>	<b>Krishnadas J, Uma E S</b>													
CO1	To Practice assemble language programming on 8086															
CO2	Implement interfacing of various I/O devices to the microprocessor/microcontroller through assembly language programming															
<b>CO -PO-PSO mapping table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1	2	2	3						3	2	2		CO1	2	2	3
CO2	2	2	2	2	1				3	2	1		CO2	3	3	3
<b>Avg</b>	<b>2</b>	<b>2</b>	<b>2.5</b>	<b>2</b>	<b>1</b>				<b>3</b>	<b>2</b>	<b>1.5</b>		<b>Avg</b>	<b>2.5</b>	<b>2.5</b>	<b>3</b>

## COs and CO-PO Mapping (2019-20)

<b>CS334</b>	<b>Network Programming Lab</b>	<b>6</b>	<b>Livya George, Scaria Alex</b>														
CO1	Use Network related commands and configuration files in Linux Operating System.																
CO2	Use tools for Network Traffic Analysis and Network Monitoring.																
CO3	Develop Network Programming using Linux System Calls.																
CO4	Design and deploy Computer Networks.																
<b>CO -PO mapping table</b>																	
<b>CO-PSO Mapping Table</b>																	
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	
CO1			3	3	3	3			3					CO1			3
CO2					3	3								CO2			
CO3			3	3	3	3								CO3			
CO4														CO4			
<b>Avg</b>			<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>			<b>3</b>					<b>Avg</b>			<b>3</b>
<b>CS352</b>	<b>Comprehensive Viva</b>	<b>6</b>															
CO1	Assess the knowledge gained in basic core courses																
CO2	Discuss the fundamental aspects of engineering problems/situations and give answers in dealing with them.																
CO3	Facilitate students with deep knowledge which will help them to be good professionals.																
CO4	Develop interpersonal skills through discussions.																
<b>CO -PO-PSO mapping table</b>																	
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	
CO1	3	3	2	2										CO1			
CO2			3	3										CO2	2		
CO3						2	3	3			3	3		CO3	3	3	2
CO4									3	3				CO4	3	3	2
<b>Avg</b>	<b>3</b>	<b>3</b>	<b>2.5</b>	<b>2.5</b>		<b>2</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>		<b>Avg</b>	<b>2.67</b>	<b>3</b>	<b>2</b>
<b>S7 CSE</b>																	
<b>CS401</b>	<b>Computer Graphics</b>	<b>7</b>	<b>Ms Linnet Tomy, Ms Jasmy Davies</b>														
CO1	Compare various graphics devices and visible surface detection methods																
CO2	Apply the algorithms for line drawing, circle drawing, polygon filling and clipping																
CO3	Apply various geometrical transformation and projection techniques																
CO4	Interpret various concepts and basic operations of image processing																
<b>CO -PO mapping table</b>																	
<b>CO-PSO Mapping Table</b>																	
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	
CO1	3	2	3	2		2								CO1	3	3	2
CO2	3	2	3	3		2						2		CO2	3	3	3
CO3	3	2	3	3		2						2		CO3	3		1
CO4	3		2	2	2	2						2		CO4	3	3	3
<b>Avg</b>	<b>3</b>	<b>2</b>	<b>2.75</b>	<b>2.5</b>	<b>2</b>	<b>2</b>						<b>2</b>		<b>Avg</b>	<b>2.67</b>	<b>3</b>	<b>3</b>
<b>CS403</b>	<b>Programming Paradigms</b>	<b>7</b>	<b>Shyam Krishna, Dr. Satheesh Kumar</b>														
CO1	Compare the core programming constructs like scope, binding of names and outline various control flow structures in different programming languages																
CO2	Analyse different data types in various programming languages																
CO3	Analyse subroutines & control abstraction mechanisms of various programming languages																
CO4	Compare and contrast object oriented constructs, concurrency constructs and run-time program management in different programming languages																
<b>CO -PO mapping table</b>																	
<b>CO-PSO Mapping Table</b>																	
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>	
CO1	3	3	2	2	2							2		CO1	2	3	3
CO2	3	3	2	2	2		1	2		2	2	3		CO2	2	3	3
CO3	3	3	2	2	2				2	2	3	3		CO3	3	3	3
CO4	3	3	2	2	2			3	2	2	2	2		CO4	3	3	3
<b>Avg</b>	<b>3</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>2</b>		<b>1</b>	<b>2.5</b>	<b>2</b>	<b>2</b>	<b>2.33</b>	<b>2.5</b>		<b>Avg</b>	<b>2.5</b>	<b>3</b>	<b>3</b>



## COs and CO-PO Mapping (2019-20)

<b>CS451</b>	<b>Seminar and Project Preliminary</b>	<b>7</b>	<b>Deepa Devassy, Shyam Krishna K, Dr. M.Rajeswari, Priya K V, Divya R</b>													
CO1	Survey the literature on new research areas and propose findings on a particular topic															
CO2	Organize and illustrate technical documentation with scientific rigor and adequate literal standards on the chosen topic strictly abiding by professional ethics while reporting results and stating claims.															
CO3	Demonstrate communication skills															
<b>CO -PO-PSO mapping table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
<b>CO1</b>	3	3			3	3				3				<b>CO1</b>	3	3
<b>CO2</b>		3		3				3				3		<b>CO2</b>		3
<b>CO3</b>										3		3		<b>CO3</b>		2
<b>Avg</b>	<b>3</b>	<b>3</b>		<b>3</b>	<b>3</b>	<b>3</b>		<b>3</b>		<b>3</b>		<b>3</b>		<b>3</b>	<b>2.67</b>	
<b>CS451</b>	<b>Seminar and Project Preliminary</b>	<b>7</b>	<b>Deepa Devassy, Shyam Krishna K, Dr. M.Rajeswari, Priya K V, Divya R</b>													
CO1	Envisage applications for societal needs															
CO2	Develop skills for analysis and synthesis of practical systems															
CO3	Learn to use new tools effectively and creatively															
CO4	Learns to carry out analysis and cost-effective, environmental															
CO5	Develops ability to write Technical / Project reports and oral															
<b>CO -PO-PSO mapping table</b>																
	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
<b>CO1</b>	3					3	3	3	3		3	3		<b>CO1</b>		3
<b>CO2</b>		3	3	3					3			3		<b>CO2</b>	3	3
<b>CO3</b>					3							3		<b>CO3</b>	3	3
<b>CO4</b>		3	3	3	3	3	3		3		3	3		<b>CO4</b>	2	3
<b>CO5</b>									3	3	3	3		<b>CO5</b>		2
<b>Avg</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>		<b>Avg</b>	<b>2.67</b>	<b>2.75</b>
<b>CS463</b>	<b>Digital Image Processing</b>	<b>7</b>	<b>Sheethal M S</b>													
CO1	compare different methods for image acquisition, storage and representation in digital devices and computers															
CO2	Demonstrate role of image transforms in representing, highlighting, and modifying image features															
CO3	Examine the mathematical principles in digital image enhancement and apply them in spatial domain and frequency domain															
CO4	Examine the mathematical principles in image segmentation,Representation and description of images															
<b>CO -PO mapping table</b>						<b>CO-PSO Mapping Table</b>										
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
<b>CO1</b>	3		2	3										<b>CO1</b>	3	2
<b>CO2</b>	3	2	3	2										<b>CO2</b>	2	3
<b>CO3</b>	3	2	2	2										<b>CO3</b>	3	3
<b>CO4</b>	3	2	2	1										<b>CO4</b>	3	3
<b>Avg</b>	<b>3</b>	<b>2</b>	<b>2.25</b>	<b>2</b>										<b>Avg</b>	<b>2.75</b>	<b>2.75</b>

## COs and CO-PO Mapping (2019-20)

CS467	Machine Learning	7	Annrija paul													
CO1	Identify the basic Principles and Applications of Machine Learning in various real time problems such as dimensionality reduction															
CO2	Illustrate the working of classifier models such as SVM, Neural networks and Identify classifier model for typical machine learning application															
CO3	Apply different classification and clustering algorithms and identify its applicability in real life problems															
CO4	Identify the state sequence and evaluate a sequence emission probability from given HMM															
<b>CO -PO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1			2	1									CO1			
CO2			3	3									CO2	2		
CO3			3	3									CO3	3	3	2
CO4			3	3									CO4	3	3	2
Avg			2.75	2.5									Avg	2.67	3	2
<b>CS465</b>																
<b>Bioinformatics</b>																
<b>7</b>																
<b>Dr.M.Rajeswari</b>																
CO1	Demonstrate the need and applications of bioinformatics															
CO2	Analyze and apply various biological databases such as nucleic acid and protein sequence databases to perform sequence analysis.															
CO3	Determine the aligned sequence using Global and Local alignment technique to construct phylogenetic tree															
CO4	Investigate the principles of genomics, protein secondary structure prediction and various gene prediction techniques															
<b>CO -PO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1	3	3	2			2		3					CO1	3		
CO2	3	3	3	3	3	3		3					CO2	3	3	3
CO3	3	3	3	3	3	3		3					CO3	3	3	3
CO4	3	3	3	3	3	3		3					CO4	3	2	2
Avg	3	3	2.75	3	3	2.75		3					Avg	3	2.67	2.67
<b>S8 CSE</b>																
<b>CS402</b>																
<b>Data Mining and Warehousing</b>																
<b>8</b>																
<b>Annrija Paul,Uma E S</b>																
CO1	Identify the key process of Data mining and Warehousing and apply appropriate techniques to convert raw data into suitable format for practical data mining tasks															
CO2	Evaluate various classification algorithms using performance matrices															
CO3	Analyze the different categories of clustering algorithms and its applications															
CO4	Apply association rule mining in real world scenario to extend data mining methods to the new domains like web mining.															
<b>CO -PO mapping table</b>																
CO/ PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		PSO1	PSO2	PSO3
CO1			2	3	2								CO1	2	2	2
CO2			3	2									CO2	3	2	
CO3			3	2									CO3	3	2	1
CO4			2	2									CO4			
Avg			2.5	2.25	2								Avg	2.67	2	1.5

## COs and CO-PO Mapping (2019-20)

<b>CS 472</b>	<b>Principles of Information Security</b>	<b>8</b>	<b>Roshni R Menon, Jasmy</b>													
CO1	Appreciate the common threats faced today															
CO2	Interpret the foundational theory behind information security															
CO3	Design a secure system															
CO4	Identify the potential vulnerabilities in software															
CO5	Appreciate the relevance of security in various domains															
CO6	Develop secure web services and perform secure e-transactions															
<b>CO -PO mapping table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1	3	2	2	2		3		3				2	CO1	3	3	1
CO2	3	2	2	2		3		3				2	CO2	3	2	2
CO3	3	2	3			2		3				2	CO3	3		1
CO4	3	2	3			2		3				2	CO4	2	3	
CO5	3	2	2					3				2	CO5	3	2	2
CO6	3	2	3	3				3				2	CO6	3	2	2
<b>Avg</b>	<b>3</b>	<b>2</b>	<b>2.5</b>	<b>2.33</b>		<b>2.5</b>		<b>3</b>				<b>2</b>	<b>Avg</b>	<b>2.83</b>	<b>2.4</b>	<b>1.6</b>
<b>CS466</b>																
	<b>Data Science</b>	<b>8</b>	<b>Sheethal M S</b>													
CO1	Identify the significance of data science and its key functionalities															
CO2	Interpret and illustrate various Machine learning models suitable for data science															
CO3	Apply preliminary statistical analysis using R language and python-based predication and filtering on simple data sets															
CO4	Apply various data analysis and data visualization techniques at a basic level															
<b>CO -PO-PSO mapping table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1			3	2									CO1		3	
CO2			3	3		2						3	CO2		3	
CO3			2	3	3								CO3		3	3
CO4				3		3							CO4		3	3
<b>Avg</b>			<b>2.67</b>	<b>2.75</b>	<b>3</b>	<b>2.5</b>						<b>3</b>	<b>Avg</b>		<b>3</b>	<b>3</b>
<b>CS492</b>																
	<b>Project</b>	<b>8</b>	<b>Deepa Devassy, Shyam Krishna</b>													
CO1	Demonstrate sound technical knowledge in the domain of the selected project topic															
CO2	Develop the skills of independent and collaborative learning and acquire the knowledge and awareness to carry out cost-effective and environmental friendly designs															
CO3	Gain the expertise to use new tools for the design and development															
CO4	Develop the ability to write good technical report and to make oral presentation of the work carried out															
CO5	Develops ability to demonstrate a product developed															
<b>CO -PO-PSO mapping table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1	3	3	3	3									CO1	3	3	3
CO2	3		3			3	3		3		3	3	CO2	3	3	3
CO3			3		3								CO3	3	3	3
CO4								3	3	3		3	CO4		2	
CO5						3	3	3	3	3	3	3	CO5		3	3
<b>Avg</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>Avg</b>	<b>3</b>	<b>2.8</b>	<b>3</b>
<b>CS404</b>																
	<b>Embedded Systems</b>	<b>8</b>	<b>Arun Thomas</b>													
CO1	Understand the process and concepts of embedded system and discuss various software components involved in embedded system design and development.															
CO2	Model the operation of a given embedded system and to design simple tasks to run on an RTOS															
CO3	Design embedded products and firmware using firmware languages															
CO4	Demonstrate various embedded hardware and firmware using SDE's and to understand various embedded system networks and its latest trends.															
<b>CO -PO-PSO mapping table</b>																
<b>CO/ PO</b>	<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>		<b>PSO1</b>	<b>PSO2</b>	<b>PSO3</b>
CO1							3					2	CO1			
CO2	3	3	3	3	3	3		3				2	CO2	3		
CO3	3	3	3	3	2	3						2	CO3	3		
CO4	3	2	3	3	3	3						2	CO4	3	3	3

# COs and CO-PO Mapping (2019-20)

Avg		3	2.67	3	3	2.67	3	3	3				Avg	3	3	3	
-----	--	---	------	---	---	------	---	---	---	--	--	--	-----	---	---	---	--