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INDEX

CRITERION-2.6.1

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DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

COURSE OUTCOMES (COs)						CO-PO & PSO MAPPING																
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: HS8151 - Communicative English / C101	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	I	I	HS8151	Communicative English	C101.1	Prepare for active informal conversations and introduce themselves in English.	K3						1	1		1	3		2			
2	I	I	HS8151	Communicative English	C101.2	Write paragraphs/descriptions on general topics.	K3						1	1		1	3		2			
3	I	I	HS8151	Communicative English	C101.3	Construct appropriate syntax in English.	K3						1	1		1	3		2			
4	I	I	HS8151	Communicative English	C101.4	Interpret and infer technical text.	K3						1	1		1	3		2			
5	I	I	HS8151	Communicative English	C101.5	Write short essays of a general kind.	K3						1	1		1	3		2			

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA8151 - Engineering Mathematics - I / C102	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	MA8151	Engineering Mathematics - I	C102.1	Use both the limit definition and rules of differentiation to differentiate functions	K2	3	3	1	1					2	1		1	-	-
2	I	I	MA8151	Engineering Mathematics - I	C102.2	Apply differentiation to solve maxima and minima problems	K2	3	3	1	1					2	1		1	-	-
3	I	I	MA8151	Engineering Mathematics - I	C102.3	Estimate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus.	K2	3	3	1	1					2	1		1	-	-
4	I	I	MA8151	Engineering Mathematics - I	C102.4	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables	K2	3	3	1	1					2	1		1	-	-
5	I	I	MA8151	Engineering Mathematics - I	C102.5	Apply various techniques in solving differential equations	K2	3	3	1	1					2	1		1	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: PH8151 - Engineering Physics / C103	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	PH8151	Engineering Physics	C103.1	Learn and apply the basic concepts of properties of matter in day to day life	K2	3	3	1		1					2	-	-	-	-
2	I	I	PH8151	Engineering Physics	C103.2	Apply basics concepts of wave, lasers and optical fibers and their practical application in fiber optic communication.	K2	3	3	1		1					2	-	-	-	-
3	I	I	PH8151	Engineering Physics	C103.3	Adequate knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers	K2	3	3	1		1					2	-	-	-	-
4	I	I	PH8151	Engineering Physics	C103.4	Acquire knowledge on advanced physics concepts of quantum theory and its applications in tunneling microscopes	K2	3	3	1		1					2	-	-	-	-
5	I	I	PH8151	Engineering Physics	C103.5	Describe crystal structures and understand the impacts of defects at the atomic and microstructure scales	K2	3	3	1		1					2	-	-	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CY8151 - Engineering Chemistry / C104	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	CY8151	Engineering Chemistry	C104.1	Define the materials, fuels, energy sources, treatment techniques and understanding of engineering processes and applications	K2	3	1	1			1				1	1	1		
2	I	I	CY8151	Engineering Chemistry	C104.2	Explain the basic concepts of phase rule applications to single and two component systems and alloys	K3	3	1	1			1				1	1	1		
3	I	I	CY8151	Engineering Chemistry	C104.3	Differentiate the knowledge of Preparation, properties and applications of engineering materials	K4	3	1	1			1				1	1	1		
4	I	I	CY8151	Engineering Chemistry	C104.4	Derive the calculation of evaluate fuels, calorific value and its types.	K5	3	1	1			1				1	1	1		
5	I	I	CY8151	Engineering Chemistry	C104.5	Characterize the Principles and energy generation of batteries, solar cells, wind mills, nuclear reactors and fuel cells	K6	3	1	1			1				1	1	1		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE8151 - Problem Solving and Python Programming / C105	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	GE8151	Problem Solving and Python Programming	C105.1	Develop algorithmic solutions to simple computational problems	K2	3	3	3	3	2						2	2	3	1
2	I	I	GE8151	Problem Solving and Python Programming	C105.2	Read, write, execute by hand simple Python programs.	K2	3	3	3	3	2						2	2	3	1
3	I	I	GE8151	Problem Solving and Python Programming	C105.3	Structure simple Python programs for solving problems.	K2	3	3	3	3	2						2		3	1
4	I	I	GE8151	Problem Solving and Python Programming	C105.4	Decompose a Python program into functions.	K2	2	2	2	2	2						1		3	1
5	I	I	GE8151	Problem Solving and Python Programming	C105.5	Represent compound data using Python lists, tuples, dictionaries.	K2	1	2	2	2	1						1		2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE8152 - Engineering Graphics / C106	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	GE8152	Engineering Graphics	C106.1	Develop the basic curvilinear geometric shapes and orthographic projections of various objects	K2	3	1	2		2					3		2	2	1
2	I	I	GE8152	Engineering Graphics	C106.2	Virtualize the projection of points, lines an planes in accordance with first angle projection	K2	3	1	2		2					3		2	2	1
3	I	I	GE8152	Engineering Graphics	C106.3	Create the views projections of prisms and pyramids for different geometries	K2	3	1	2		2					3		2	2	1
4	I	I	GE8152	Engineering Graphics	C106.4	Represent the views of sectional solids and development of surfaces with different geometries	K2	3	1	2		2					3		2	2	1
5	I	I	GE8152	Engineering Graphics	C106.5	Project the isometric and perspective views of various objects in different positions.	K2	3	1	2		2					3		2	2	1

Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
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S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE8161 - Problem Solving and Python Programming Laboratory / C107	Regulation: 2017	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	GE8161	Problem Solving and Python Programming Laboratory	C107.1	Write, test, and debug simple Python programs.	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
2	I	I	GE8161	Problem Solving and Python Programming Laboratory	C107.2	Implement Python programs with conditionals and loops.	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
3	I	I	GE8161	Problem Solving and Python Programming Laboratory	C107.3	Develop Python programs step-wise by defining functions and calling them.	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
4	I	I	GE8161	Problem Solving and Python Programming Laboratory	C107.4	Use Python lists, tuples, dictionaries for representing compound data.	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
5	I	I	GE8161	Problem Solving and Python Programming Laboratory	C107.5	Read and write data from/to files in Python.	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: BS8161 - Physics and Chemistry Laboratory / C108	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	I	BS8161	Physics and Chemistry Laboratory	C108.1	Recognise measurement techniques, the use of modern tools, and real-world applications in engineering courses.	K3	3	1	1			1			2	2	2	1	2	1
2	I	I	BS8161	Physics and Chemistry Laboratory	C108.2	predict fundamental knowledge in Physics practical and its applications relevant to various streams of Engineering and Technology.	K3	3	1	1						2	2	2	1	2	1
3	I	I	BS8161	Physics and Chemistry Laboratory	C108.3	apply experimental skills to determine the physical quantities related to Heat, properties of matter and Optics	K3	3	1	1						2	2	2	1	2	1
4	I	I	BS8161	Physics and Chemistry Laboratory	C108.4	List out the quantitative chemical analysis of water quality parameters with respect to their acidity, alkalinity, hardness and DO.	K3	3	1	1			1			2	2	2	1	2	1
5	I	I	BS8161	Physics and Chemistry Laboratory	C108.5	Interpret the amount of metal ions through spectroscopic techniques and volumetric method and properties and composition of alloys, synthesis of nanoparticles	K3	3	1	1			1			2	2	2	1	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: HS8251 - Technical English / C109	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	II	HS8251	Technical English	C109.1	Interpret technical texts and write area- specific texts effortlessly.	K2						1	1		1	3		2	-	-
2	I	II	HS8251	Technical English	C109.2	Associate verbal with non-verbal communication.	K2						1			1	3		2	-	-
3	I	II	HS8251	Technical English	C109.3	Describe a process in English.	K2						1			1	3		2	-	-
4	I	II	HS8251	Technical English	C109.4	Write reports and winning job applications	K2						1			1	3		2	-	-
5	I	II	HS8251	Technical English	C109.5	Infer lectures and talks in their area of specialization successfully	K2						1	1		1	3		2	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA8252 - Linear Algebra / C110	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	II	MA8252	Linear Algebra	C110.1	Test the consistency and solve system of linear equations	K2	3	3	3	3	2	2	2	1	1	1	1	3	-	-
2	I	II	MA8252	Linear Algebra	C110.2	Find the basis and dimension of vector space	K2	3	3	3	3	3	2	2	1	1	1	1	3	-	-
3	I	II	MA8252	Linear Algebra	C110.3	Obtain the matrix of linear transformation and its eigenvalues and eigenvectors	K2	3	3	3	3	3	2	2	1	1	1	1	3	-	-
4	I	II	MA8252	Linear Algebra	C110.4	Find orthonormal basis of inner product space and find least square approximation	K2	3	3	3	3	3	2	2	1	1	1	1	3	-	-
5	I	II	MA8252	Linear Algebra	C110.5	Find eigenvalues of a matrix using numerical techniques and perform matrix decomposition	K2	3	3	3	3	3	2	2	1	1	1	1	3	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: AD8251 - Data Structures Design / C111	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	II	AD8251	Data Structures Design	C111.1	explain abstract data types	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
2	I	II	AD8251	Data Structures Design	C111.2	design, implement, and analyse linear data structures, such as lists, queues, and stacks, according to the needs of different applications	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
3	I	II	AD8251	Data Structures Design	C111.3	design, implement, and analyse efficient tree structures to meet requirements such as searching, indexing, and sorting	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
4	I	II	AD8251	Data Structures Design	C111.4	model problems as graph problems and implement efficient graph algorithms to solve them	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE8291 - Environmental Science and Engineering / C112	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	II	GE8291	Environmental Science and Engineering	C112.1	Environmental Pollution or problems cannot be solved by mere laws. Public participation is an important aspect which serves the environmental Protection. One will obtain knowledge on the following after completing the course	K2	1	1				3	3	3	3	1		2		
2	I	II	GE8291	Environmental Science and Engineering	C112.2	Public awareness of environmental is at infant stage	K2	1	1				3	3	3	3	1		2		
3	I	II	GE8291	Environmental Science and Engineering	C112.3	Ignorance and incomplete knowledge has lead to misconceptions	K2	1	1				3	3	3	3	1		2		
4	I	II	GE8291	Environmental Science and Engineering	C112.4	Development and improvement in std. of living has lead to serious environmental disasters	K2	1	1				3	3	3	3	1		2		

Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
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S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: BE8255 - Basic Electrical, Electronics, and Measurement Engineering / C113	Regulation: 2017	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
1	I	II	BE8255	Basic Electrical, Electronics, and Measurement Engineering	C113.1	Discuss the essentials of electric circuits and analysis	K3	2	2	3	3								2		
2	I	II	BE8255	Basic Electrical, Electronics, and Measurement Engineering	C113.2	Discuss the basic operation of electric machines and transformers	K3	2	3	2	2								2		
3	I	II	BE8255	Basic Electrical, Electronics, and Measurement Engineering	C113.3	Introduction of renewable sources and common domestic loads	K3	3	3	2	1								2		
4	I	II	BE8255	Basic Electrical, Electronics, and Measurement Engineering	C113.4	Introduction to measurement and metering for electric circuits	K3	3	3	2	3								2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: AD8252 - Digital Principles and Computer Organization / C114	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	II	II	AD8252	Digital Principles and Computer Organization	C114.1	Design digital circuits using simple Boolean functions	K2	3	3	3	3	3	-						-	2	2	
2	II	II	AD8252	Digital Principles and Computer Organization	C114.2	Design digital circuits using simple Boolean functions	K2	3	3	3	2	2	-						-	2	2	
3	II	II	AD8252	Digital Principles and Computer Organization	C114.3	Computer Fundamentals	K2	3	2	3	2	2	-						-	1	2	
4	II	II	AD8252	Digital Principles and Computer Organization	C114.4	To learn about the Processor	K2	2	2	3	3	2							-	1	1	
5	II	II	AD8252	Digital Principles and Computer Organization	C114.5	To understand the Memory and I/O concepts	K2	3	2	3	3	3							-	1	1	

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE8261 - Engineering Practices Laboratory / C116	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	II	GE8261	Engineering Practices Laboratory	C115.1	Model the real geometry of the shapes for industrial applications	K3	3	2	-	-	1	2	2	-	-	-	-	-	2	2	1
2	I	II	GE8261	Engineering Practices Laboratory	C115.2	Demonstrate residential house wiring, fluorescent lamp wiring and stair case wiring and pipe connections for the home application and industrial constructions	K4	3	2	-	-	1	2	2	-	-	-	-	-	2	2	1
3	I	II	GE8261	Engineering Practices Laboratory	C115.3	Analyze electrical quantities like voltage, current, energy and resistance and their measurement using CRO	K4	3	2	-	-	1	2	2	-	-	-	-	-	2	2	1
4	I	II	GE8261	Engineering Practices Laboratory	C115.4	Experiment the concept of connecting the metal by welding	K3	3	2	-	-	1	2	2	-	-	-	-	-	2	2	1
5	I	II	GE8261	Engineering Practices Laboratory	C115.5	Examine different logic gates, clock, rectifier and to solder devices and components	K3	3	2	-	-	1	2	2	-	-	-	-	-	2	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: AD8261 - Data Structures Design Laboratory / C116	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	II	AD8261	Data Structures Design Laboratory	C116.1	Implement ADTs as Python classes	K3	3	3	3	3	2				2			3	2	2
2	I	II	AD8261	Data Structures Design Laboratory	C116.2	Design, implement, and analyse linear data structures, such as lists, queues, and stacks, according to the needs of different applications	K4	3	2	3	2	2				1			3	1	2
3	I	II	AD8261	Data Structures Design Laboratory	C116.3	Design, implement, and analyse efficient tree structures to meet requirements such as searching, indexing, and sorting	K4	3	2	2	2	2				1			3	1	1
4	I	II	AD8261	Data Structures Design Laboratory	C116.4	Model problems as graph problems and implement efficient graph algorithms to solve them	K3	3	2	2	2	2				1			3	1	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA8351 - Discrete Mathematics / C201	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	II	III	MA8351	Discrete Mathematics	C201.1	Have knowledge of the concepts needed to test the logic of a program	K2	3	3	2	-	-	-	-	-	-	-	-	-	2	-	-
2	II	III	MA8351	Discrete Mathematics	C201.2	Have an understanding in identifying structures on many levels	K2	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
3	II	III	MA8351	Discrete Mathematics	C201.3	Be aware of a class of functions which transform a finite set into another finite set which relates to input and output functions in computer science	K2	-	3	2	-	-	2	-	-	-	3	-	-	-	-	-
4	II	III	MA8351	Discrete Mathematics	C201.4	Be aware of the counting principles	K2	-	2	2	2	-	-	-	-	-	-	-	-	-	-	-
5	II	III	MA8351	Discrete Mathematics	C201.5	Be exposed to concepts and properties of algebraic structures such as groups, rings and fields	K2	-	2	2	2	-	-	-	-	-	2	-	-	-	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: AD8301 - Introduction to Operating Systems / C202	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
1	II	III	AD8301	Introduction to Operating Systems	C202.1	Outline the basic services and functionalities of operating systems	K3	2	1	2		1									2	2	
2	II	III	AD8301	Introduction to Operating Systems	C202.2	Analyse various scheduling algorithms, and understand the different deadlock, prevention and avoidance schemes	K4	3	1	2		2										-	1
3	II	III	AD8301	Introduction to Operating Systems	C202.3	Illustrate the different memory management schemes	K4	2		2		2										1	1
4	II	III	AD8301	Introduction to Operating Systems	C202.4	Outline the functionality of file systems	K3	3		2		1										2	-

5	II	III	AD8301	Introduction to Operating Systems	C202.5	Compare and contrast Linux, Windows and mobile operating systems	K3	1		2		2								1	1
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S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: AD8302 - Fundamentals of Data Science / C203	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	AD8302	Fundamentals of Data Science	C203.1	Apply the skills of data inspecting and cleansing	K3	3	2	2	2	2	-	-	-					2	2
2	II	III	AD8302	Fundamentals of Data Science	C203.2	Determine the relationship between data dependencies using statistics	K4	2	3	2	1	2	1	-	-					-	1
3	II	III	AD8302	Fundamentals of Data Science	C203.3	Can handle data using primary tools used for data science in Python	K4	3	3	2	2	2	1	-	-					-	2
4	II	III	AD8302	Fundamentals of Data Science	C203.4	Represent the useful information using mathematical skills	K3	3	2	2	1	2	-	-	-					1	1
5	II	III	AD8302	Fundamentals of Data Science	C203.5	Can apply the knowledge for data describing and visualization using tools	K3	2	2	2	2	3	-	-	-					1	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CS8392 - Object Oriented Programming / C204	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	CS8392	Object Oriented Programming	C204.1	Develop Java programs using OOP principles	K3	1	1	3	3	3				3	2	2	2	3	1
2	II	III	CS8392	Object Oriented Programming	C204.2	Develop Java programs with the concepts inheritance and interfaces	K3	2	1	3	3	3				2	1	1	3	3	3
3	II	III	CS8392	Object Oriented Programming	C204.3	Build Java applications using exceptions and I/O streams	K3	3	3	3	3	3				3	2	1	2	3	1
4	II	III	CS8392	Object Oriented Programming	C204.4	Develop Java applications with threads and generics classes	K3	3	1	2	2	2				1	2	1	3	3	1
5	II	III	CS8392	Object Oriented Programming	C204.5	Develop interactive Java programs using swings	K3	1	1	2	3	2				3	2	1	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: AD8351 - Design and Analysis of Algorithms / C205	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	AD8351	Design and Analysis of Algorithms	C205.1	Design algorithms for various computing problems	K3	3	3	3	1	2	1	1	1	1	2	1	3	3	
2	II	III	AD8351	Design and Analysis of Algorithms	C205.2	Analyze the time and space complexity of algorithms	K2	2	1	1	3	2	2	1	1	2	2	1	2	2	
3	II	III	AD8351	Design and Analysis of Algorithms	C205.3	Critically analyze the different algorithm design techniques for a given problem	K3	3	2	1	2	2	1	1	2	2	1	1	2	2	1
4	II	III	AD8351	Design and Analysis of Algorithms	C205.4	Modify existing algorithms to improve efficiency	K3	3	2	3	2	2	2	1	1	3	3	3	2	3	
5	II	III	AD8351	Design and Analysis of Algorithms	C205.5	Ability to implement techniques in solving real time problems	K3	3	1	2	3	3	1	1	2	2	2	2	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8311 -Data Science Laboratory / C206	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	AD8311	Data Science Laboratory	C206.1	Develop relevant programming abilities	K3	3	3	3	3					2			3	3	2
2	II	III	AD8311	Data Science Laboratory	C206.2	Demonstrate knowledge of statistical data analysis techniques	K4	3	3	3	2					1			2	2	3
3	II	III	AD8311	Data Science Laboratory	C206.3	Exhibit proficiency to build and assess data-based models	K4	3	2	3	2					1			2	1	3
4	II	III	AD8311	Data Science Laboratory	C206.4	Demonstrate skill in Data management & processing tasks using Python		3	3	3	2					1			1	1	1
5	II	III	AD8311	Data Science Laboratory	C206.5	Apply data science concepts and methods to solve problems in real-world contexts and will communicate these solutions effectively	K3	3	3	2	3					1			2	1	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:CS8383 -Object Oriented Programming Laboratory / C207	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	CS8383	Object Oriented Programming Laboratory	C207.1	Develop and implement Java programs for simple applications that make use of classes, packages and interfaces	K3	3	3	3	2								3	3	1
2	II	III	CS8383	Object Oriented Programming Laboratory	C207.2	Develop and implement Java programs with arraylist, exception handling and multithreading	K4	2	3	3	1								2	2	2
3	II	III	CS8383	Object Oriented Programming Laboratory	C207.3	Design applications using file processing, generic programming and event handling	K4	3	3	3	1								2	2	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:HS8381 -Interpersonal Skills/Listening & Speaking / C208	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	HS8381	Interpersonal Skills/Listening & Speaking	C208.1	Listen and respond appropriately	K3						2		3	2	3	2	2	1	2
2	II	III	HS8381	Interpersonal Skills/Listening & Speaking	C208.2	Participate in group discussions	K4						2		3	2	3	2	2	1	2

3	II	III	HS8381	Interpersonal Skills/Listening & Speaking	C208.3	Make effective presentations	K4							2		3	2	3	2	2	1	2
4	II	III	HS8381	Interpersonal Skills/Listening & Speaking	C208.4	Participate confidently and appropriately in conversations both formal and informal										3	2	3	2	2	1	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:MA8391 - Probability and Statistics / C209	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	IV	MA8391	Probability and Statistics	C209.1	Understand the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon	K3	3	3	-	-	-	-	-	-	2	-	-	2			
2	II	IV	MA8391	Probability and Statistics	C209.2	Understand the basic concepts of one and two dimensional random variables and apply in engineering applications	K3	3	3	-	-	-	-	-	-	2	-	-	2			
3	II	IV	MA8391	Probability and Statistics	C209.3	Apply the concept of testing of hypothesis for small and large samples in real life problems	K3	3	3	-	-	-	-	-	-	2	-	-	2			
4	II	IV	MA8391	Probability and Statistics	C209.4	Apply the basic concepts of classifications of design of experiments in the field of agriculture and statistical quality control	K3	3	3	3	2	-	-	-	-	2	-	-	2			
5	II	IV	MA8391	Probability and Statistics	C209.5	Have the notion of sampling distributions and statistical techniques used in engineering and management problems	K3	3	3	2	2	-	-	-	-	2	-	-	2			

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8401 - Database Design and Management / C209	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	AD8401	Database Design and Management	C209.1	Understand the database development life cycle and apply conceptual modeling	K2	2	2	3	3	-	-	-	-	3	1	2	1	2	3
2	II	IV	AD8401	Database Design and Management	C209.2	Apply SQL and programming in SQL to create, manipulate and query the database	K2	2	3	1	3	1	-	-	-	1	2	2	1	3	3
3	II	IV	AD8401	Database Design and Management	C209.3	Apply the conceptual-to-relational mapping and normalization to design relational database	K2	2	2	2	1	1	-	-	-	2	3	1	2	1	1
4	II	IV	AD8401	Database Design and Management	C209.4	Determine the serializability of any non-serial schedule using concurrency techniques	K2	2	2	3	1	-	-	-	-	1	2	1	2	2	2
5	II	IV	AD8401	Database Design and Management	C209.5	Apply the data model and querying in Object-relational and No-SQL databases	K2	3	1	3	2	1	-	-	-	1	3	1	1	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8402 - Artificial Intelligence I / C210	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	AD8402	Artificial Intelligence I	C210.1	Explain autonomous agents that make effective decisions in fully informed, partially observable, and adversarial settings	K3	3	3	3	2	3						2	2	2	1
2	II	IV	AD8402	Artificial Intelligence I	C210.2	Choose appropriate algorithms for solving given AI problems	K4	2	3	2	2	2						1	1	1	2
3	II	IV	AD8402	Artificial Intelligence I	C210.3	Design and implement logical reasoning agents	K4	3	3	3	2	2						1	2	1	1
4	II	IV	AD8402	Artificial Intelligence I	C210.4	Design and implement agents that can reason under uncertainty	K4	3	3	3	2	2						2	1	1	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8403 - Data Analytics / C211	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	AD8403	Data Analytics	C211.1	Understand the concept of sampling	K3	3	3	3	2	2							2	1	1
2	II	IV	AD8403	Data Analytics	C211.2	Apply the knowledge to derive hypotheses for given data	K4	3	2	2	1	2							1	1	1
3	II	IV	AD8403	Data Analytics	C211.3	Demonstrate the skills to perform various tests in the given data	K4	3	3	3	2	2							2	1	2
4	II	IV	AD8403	Data Analytics	C211.4	Ability to derive inference using Predictive Analytics	K3	3	3	3	2	2							1	1	1
5	II	IV	AD8403	Data Analytics	C211.5	Perform statistical analytics on a data set	K3	3	2	3	2	2							2	1	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8001 - Software Development Processes / C212	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	AD8001	Software Development Processes	C212.1	Understand the software process phases in the cycle of software development	K3														
2	II	IV	AD8001	Software Development Processes	C212.2	Gain knowledge of software economics, project organization, project control and process instrumentation	K4														
3	II	IV	AD8001	Software Development Processes	C212.3	Analyze the major and minor milestones, artifacts and metrics from management and technical perspective	K4														
4	II	IV	AD8001	Software Development Processes	C212.4	Design and develop software product using conventional and modern principles of software project management	K4														
5	II	IV	AD8001	Software Development Processes	C212.5	Analyze the real time software development processes	K4														

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8411 - Database Design and Management Laboratory / C212	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	AD8411	Database Design and Management Laboratory	C212.1	Understand the database development life cycle	K2	3	1	3	3	-	-	-	-	1	1	1	3	2	2
2	II	IV	AD8411	Database Design and Management Laboratory	C212.2	Design relational database using conceptual-to-relational mapping, Normalization	K2	2	2	1	3	1	-	-	-	3	2	3	1	1	1
3	II	IV	AD8411	Database Design and Management Laboratory	C212.3	Apply SQL for creation, manipulation and retrieval of data	K2	2	1	3	1	-	-	-	-	3	3	1	1	2	1
4	II	IV	AD8411	Database Design and Management Laboratory	C212.4	Develop a database applications for real-time problems	K2	2	2	3	1	-	-	-	-	2	3	2	1	2	1

5	II	IV	AD8411	Database Design and Management Laboratory	C212.5	Design and query object-relational databases	K2	3	3	1	3	1	-	-	-	1	3	2	3	3	3
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S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8412 - Data Analytics Laboratory / C213	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	IV	AD8412	Data Analytics Laboratory	C213.1	To become skilled to use various packages in Python	K3	3	2	3	2	3								2	2	2
2	II	IV	AD8412	Data Analytics Laboratory	C213.2	Demonstrate the understanding of data distribution with various samples	K4	3	3	3	2	3								2	2	2
3	II	IV	AD8412	Data Analytics Laboratory	C213.3	Ability to Implement T-Test ,Anova and Z-Test on sample data sets	K4	3	3	3	3	2								2	1	2
4	II	IV	AD8412	Data Analytics Laboratory	C213.4	Understanding of Mathematical models in real world problems	K2	3	2	3	2	3								2	2	1
5	II	IV	AD8412	Data Analytics Laboratory	C213.5	Conduct time series analysis and draw conclusion	K3	3	2	2	2	3								2	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8413 - Artificial Intelligence – I Laboratory / C214	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	IV	AD8413	Artificial Intelligence – I Laboratory	C214.1	Implement simple PEAS descriptions for given AI tasks	K3	3	3	3	3	3								3	2	1
2	II	IV	AD8413	Artificial Intelligence – I Laboratory	C214.2	Develop programs to implement simulated annealing and genetic algorithms	K4	3	3	3	3	2								3	1	2
3	II	IV	AD8413	Artificial Intelligence – I Laboratory	C214.3	Demonstrate the ability to solve problems using searching and backtracking	K4	3	3	3	3	3								2	1	2
4	II	IV	AD8413	Artificial Intelligence – I Laboratory	C214.4	Ability to Implement simple reasoning systems using either backward or forward inference mechanisms	K2	3	2	3	3	2								3	1	2
5	II	IV	AD8413	Artificial Intelligence – I Laboratory	C214.5	Will be able to choose and implement a suitable technics for a given AI task	K3	3	3	2	3	3								3	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:HS8461 - Advanced Reading and Writing / C215	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	IV	HS8461	Advanced Reading and Writing	C215.1	Write different types of essays	K3	2					3	3						2	2	2
2	II	IV	HS8461	Advanced Reading and Writing	C215.2	Write winning job applications	K4	2					3	3						1	1	1
3	II	IV	HS8461	Advanced Reading and Writing	C215.3	Read and evaluate texts critically	K4	2					2	2						2	1	1
4	II	IV	HS8461	Advanced Reading and Writing	C215.4	Display critical thinking in various professional contexts	K2	2					3	3						1	1	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8501 - Optimization Techniques / C301	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	AD8501	Optimization Techniques	C301.1	Formulate and solve linear programming problems (LPP)	K3	3	3	2	1	1	-	-	-	2	1	1	2	3	3
2	III	V	AD8501	Optimization Techniques	C301.2	Evaluate Integer Programming Problems, Transportation and Assignment Problems	K4	3	1	2	2	3	-	-	-	3	2	3	1	2	1
3	III	V	AD8501	Optimization Techniques	C301.3	Obtain solution to network problems using CPM and PERT techniques	K4	2	3	3	2	2	-	-	-	3	3	1	3	1	3
4	III	V	AD8501	Optimization Techniques	C301.4	Able to optimize the function subject to the constraints		2	2	1	1	3	-	-	-	2	1	3	1	2	1
5	III	V	AD8501	Optimization Techniques	C301.5	Identify and solve problems under Markovian queuing models		2	1	1	3	2	-	-	-	3	3	1	3	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:CW8691 - Computer Networks / C302	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	CW8691	Computer Networks	C302.1	Comprehend the basic layers and its functions in computer networks	K3	3	1	1	1	3	3	-	-	2	3	3	3		
2	III	V	CW8691	Computer Networks	C302.2	Evaluate the performance of a network	K4	3	3	3	3	3	3	-	-	3	3	3	2		
3	III	V	CW8691	Computer Networks	C302.3	Understand the basics of how data flows from one node to another	K4	3	3	3	1	2	2	-	-	2	3	3	2		
4	III	V	CW8691	Computer Networks	C302.4	Analyze and design routing algorithms		3	2	1	2		2	-	-	2	3	3	3		
5	III	V	CW8691	Computer Networks	C302.5	Design protocols for various functions in the network		3	2	2	3		-	-	2	3	3	2			
6	III	V	CW8691	Computer Networks	C302.5	Understand the working of various application layer protocols		3	2	2	3	3	2	2	2	3	2	3	2	2	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8502 - Data Exploration and Visualization / C303	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	III	V	AD8502	Data Exploration and Visualization	C303.1	Understand the basics of Data Exploration	K3	2	2	1	1	2	2	1	-	-				2	2	2
2	III	V	AD8502	Data Exploration and Visualization	C303.2	Use Univariate and Multivariate Analysis for Data Exploration	K4	3	3	2	2	3	3	2	-	-				3	1	1
3	III	V	AD8502	Data Exploration and Visualization	C303.3	Explain various Data Visualization methods	K4	2	2	3	2	2	2	3	-	-				2	1	1
4	III	V	AD8502	Data Exploration and Visualization	C303.4	Apply the concept of Data Visualization on various datasets		3	3	3	3	2	3	2	-	-				3	1	1
5	III	V	AD8502	Data Exploration and Visualization	C303.5	Apply the data visualization techniques using R language		3	3	3	3	2	2	1	-	-				3	2	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8551 - Business Analytics / C304	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	

1	III	V	AD8551	Business Analytics	C304.1	Explain the real world business problems and model with analytical solutions	K3	2	2	3	1	1	-	-	-	-	1	2	1	1	3	2
2	III	V	AD8551	Business Analytics	C304.2	Identify the business processes for extracting Business Intelligence	K4	3	3	3	2	3	-	-	-	-	1	2	2	2	3	1
3	III	V	AD8551	Business Analytics	C304.3	Apply predictive analytics for business fore-casting	K4	2	2	3	3	2	-	-	-	-	3	1	1	3	3	1
4	III	V	AD8551	Business Analytics	C304.4	Apply analytics for supply chain and logistics management		2	1	1	2	2	-	-	-	-	3	3	2	1	1	3
5	III	V	AD8551	Business Analytics	C304.5	Use analytics for marketing and sales		2	3	2	3	2	-	-	-	-	3	3	1	3	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8552 - Machine Learning / C305	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	III	V	AD8552	Machine Learning	C305.1	Understand the basics of ML	K3	3	2	2	3		-	-	-	-	-	-	1	2	1	
2	III	V	AD8552	Machine Learning	C305.2	Explain various Machine Learning methods	K4	3	2	2	2	1						-	2	2	-	
3	III	V	AD8552	Machine Learning	C305.3	Demonstrate various ML techniques using standard packages	K4	3	3	3	2	2						-	-	2	2	1
4	III	V	AD8552	Machine Learning	C305.4	Explore knowledge on Machine learning and Data Analytics		3	2	3	3	2						-	-	2	2	-
5	III	V	AD8552	Machine Learning	C305.5	Apply ML to various real time examples		3	3	2	2	2						-	-	2	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:OCE551 - Air Pollution and Control Engineering / C306	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	OCE551	Air Pollution and Control Engineering	C306.1	an understanding of the nature and characteristics of air pollutants, noise pollution and basic concepts of air quality management	K3	3	3	3	2		3	3	3	1	1		2		
2	III	V	OCE551	Air Pollution and Control Engineering	C306.2	ability to identify, formulate and solve air and noise pollution problems	K4	3	3	3	2		3	3	3	1	1		2		
3	III	V	OCE551	Air Pollution and Control Engineering	C306.3	ability to design stacks and particulate air pollution control devices to meet applicable standards	K4	3	3	3	2		3	3	3	1	1		2		
4	III	V	OCE551	Air Pollution and Control Engineering	C306.4	Ability to select control equipments		3	3	3	2		3	3	3	1	1		2		
5	III	V	OCE551	Air Pollution and Control Engineering	C306.5	Ability to ensure quality, control and preventive measures		3	3	3	2		3	3	3	1	1		2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8511 - Machine Learning Laboratory / C307	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	AD8511	Machine Learning Laboratory	C307.1	Understand the implementation procedures for the machine learning algorithms	K3	3	2	3	2	2	1	2	-	-	-	1	2		
2	III	V	AD8511	Machine Learning Laboratory	C307.2	Design Java/Python programs for various Learning algorithms	K4	2	3	3	3	3	2	2	-	-	-	2	2		
3	III	V	AD8511	Machine Learning Laboratory	C307.3	Apply appropriate Machine Learning algorithms to data sets	K4	3	3	2	2	2	3	3	-	-	-	1	2		
4	III	V	AD8511	Machine Learning Laboratory	C307.4	Identify and apply Machine Learning algorithms to solve real world problems	k3	2	3	2	2	2	2	2			-	-	2	1	

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8512 - Mini Project on Data Sciences Pipeline / C308	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	AD8512	Mini Project on Data Sciences Pipeline	C308.1	Install analytical tools and configure distributed file system	K3	3	3	3	3	-	-	-		2	3	1	2	1	2
2	III	V	AD8512	Mini Project on Data Sciences Pipeline	C308.2	Have skills in developing and executing analytical procedures in various distributed frameworks and databases	K4	3	3	2	3	-	-	1		3	3	2	1	1	1
3	III	V	AD8512	Mini Project on Data Sciences Pipeline	C308.3	Develop, implement and deploy simple applications on very large datasets	K4	3	3	3	3	-	-	1		3	2	3	3	2	2
4	III	V	AD8512	Mini Project on Data Sciences Pipeline	C308.4	Implement simple to complex data modeling in NoSQL databases		3	3	2	3	-	-	-	1	2	3	3	2	1	2
5	III	V	AD8512	Mini Project on Data Sciences Pipeline	C308.5	Implement real world applications by using suitable analytical framework and tools		3	3	3	3	-	-	-	-	1	3	1	1	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8601 - Artificial Intelligence II / C309	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	VI	AD8601	Artificial Intelligence II	C309.1	Explain the probabilistic reasoning using Bayesian inference	K2	2	1	2	2	-	-	-	-	2	1	2	2	1	2
2	III	VI	AD8601	Artificial Intelligence II	C309.2	Apply appropriate Probabilistic reasoning techniques for solving uncertainty problems	K2	3	2	2	1	1	-	-	-	3	2	1	2	2	2
3	III	VI	AD8601	Artificial Intelligence II	C309.3	Explain use of game theory for decision making	K2	2	1	2	1	-	-	-	-	2	1	1	3	1	2
4	III	VI	AD8601	Artificial Intelligence II	C309.4	Explain and apply probabilistic models for various use cases	K2	3	1	3	3	-	-	-	-	2	3	3	1	2	1
5	III	VI	AD8601	Artificial Intelligence II	C309.5	Apply AI techniques for robotics	K2	3	2	3	2	1	-	-	1	2	2	2	2	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8602 - Data and Information Security / C310	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	VI	AD8602	Data and Information Security	C310.1	Understand the fundamentals of security and the significance of number theory in computer security	K3	3	3	3	3					2			2	1	2
2	III	VI	AD8602	Data and Information Security	C310.2	Learn the public key cryptographic standards and authentication scheme	K4	3	3	3	2					3			2	2	2

3	III	VI	AD8602	Data and Information Security	C310.3	Able to apply the security frameworks for real time applications	K4	3	2	2	2							3			1	1	1
4	III	VI	AD8602	Data and Information Security	C310.4	Understand the security threats and attacks in IoT, Cloud	K2	3	3	2	3							2			2	2	2
5	III	VI	AD8602	Data and Information Security	C310.5	Able to develop appropriate security algorithms understanding the possible threats	K2	2	3	3	2							2			2	1	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:IT8501 -Web Technology / C311	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3		
1	III	VI	IT8501	Web Technology	C311.1	Design simple web pages using markup languages like HTML and XHTML	K3	3	2	1	1	1	1			1	2	2	2				
2	III	VI	IT8501	Web Technology	C311.2	Create dynamic web pages using DHTML and java script that is easy to navigate and use	K4	3	2	3	1	1	1			1	3	3	3				
3	III	VI	IT8501	Web Technology	C311.3	Program server side web pages that have to process request from client side web pages	K4	3	1	2	1	1	2			2	3	3	3				
4	III	VI	IT8501	Web Technology	C311.4	Represent web data using XML and develop web pages using JSP		3	1	2	1	2	2			2	3	2	2				
5	III	VI	IT8501	Web Technology	C311.5	Understand various web services and how these web services interact		3	1	1	1	2	2			2	3	2	2				

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:CS8791 -Cloud Computing / C312	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	III	VI	CS8791	Cloud Computing	C312.1	Articulate the main concepts, key technologies, strengths and limitations of cloud computing	K3	2	2	2	2	2	1			1	1		2	1	2	
2	III	VI	CS8791	Cloud Computing	C312.2	Learn the key and enabling technologies that help in the development of cloud	K4	2	2	2	2	3	1	1	1		2		2	1	2	
3	III	VI	CS8791	Cloud Computing	C312.3	Develop the ability to understand and use the architecture of compute and storage cloud, service and delivery models	K4	3	2	2	2	3		1			1		2	2	3	
4	III	VI	CS8791	Cloud Computing	C312.4	Explain the core issues of cloud computing such as resource management and security		2	2	2	2	3	1	2			2		1	1	2	
5	III	VI	CS8791	Cloud Computing	C312.5	Be able to install and use current cloud technologies		3	2	2	2	3	1	2	1		1		1	2	3	
6	III	VI	CS8791	Cloud Computing	C312.6	Evaluate and choose the appropriate technologies, algorithms and approaches for implementation and use of cloud																

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:IT8511 -Web Technology Laboratory / C313	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	III	VI	IT8511	Web Technology Laboratory	C313.1	Design simple web pages using markup languages like HTML and XHTML	K3															
2	III	VI	IT8511	Web Technology Laboratory	C313.2	Create dynamic web pages using DHTML and java script that is easy to navigate and use	K4															
3	III	VI	IT8511	Web Technology Laboratory	C313.3	Program server side web pages that have to process request from client side web pages	K4															
4	III	VI	IT8511	Web Technology Laboratory	C313.4	Represent web data using XML and develop web pages using JSP																
5	III	VI	IT8511	Web Technology Laboratory	C313.5	Understand various web services and how these web services interact																

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8611 -Artificial Intelligence - II Laboratory / C314	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	III	VI	AD8611	Artificial Intelligence - II Laboratory	C314.1	Solve basic AI based problems	K3	3	3	3	2	3		-	-				2	1	2	
2	III	VI	AD8611	Artificial Intelligence - II Laboratory	C314.2	Implement the concept of Bayesian Network	K4	3	2	2	3	3		-	-				1	1	1	
3	III	VI	AD8611	Artificial Intelligence - II Laboratory	C314.3	Apply AI techniques to real-world problems to develop intelligent systems	K4	3	3	2	2	3		-	-				2	1	1	
4	III	VI	AD8611	Artificial Intelligence - II Laboratory	C314.4	Implement HMM for real-world application	K4	3	3	3	3	2		-	-				2	1	1	
5	III	VI	AD8611	Artificial Intelligence - II Laboratory	C314.5	Use Reinforcement Learning to implement various intelligent systems	K3	3	3	2	3	3		-	-				2	1	1	

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:HS8581 -Professional Communication / C315	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	III	VI	HS8581	Professional Communication	C315.1	Make effective presentations	K3					1			1	3	3		2			
2	III	VI	HS8581	Professional Communication	C315.2	Participate confidently in Group Discussions	K2								1	3	3		2			
3	III	VI	HS8581	Professional Communication	C315.3	Attend job interviews and be successful in them	K3								1	3	3		2			
4	III	VI	HS8581	Professional Communication	C315.4	Develop adequate Soft Skills required for the workplace	K3								1	3	3		2			

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD8612 -Socially relevant Project / C316	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	III	VI	AD8612	Socially relevant Project	C316.1	The students are expected to use different platforms and tools like SAS, Python, R, Scala	K3															
2	III	VI	AD8612	Socially relevant Project	C316.2	Big Data: Hadoop Ecosystem (Hive, Pig, Sqoop, Flume), Big Data Lakes.No SQL, Apache 66 Spark, Spark MLLib , HPC, Storm	K4															
3	III	VI	AD8612	Socially relevant Project	C316.3	Business Intelligence : SQL, Microsoft Power BI, SAP BI, Tableau, Oracle Fusion	K4															
4	III	VI	AD8612	Socially relevant Project	C316.4	Machine Learning and Deep Learning : TensorFlow, Keras, Artificial Neural Networks, Deep NeuralNets, Convolution Neural Networks, Auto encoders																

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COURSE OUTCOMES (COs)						CO-PO & PSO MAPPING																
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: HS3152 - Professional English - I / C101	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	HS3152	Professional English - I	C101.1	Identify and use appropriate vocabulary in both formal and informal contexts.	K3							1	1		1	3		2		
2	I	I	HS3152	Professional English - I	C101.2	Associate the basic grammatical structures with the guided writing.	K2						1	1			1	3		2		
3	I	I	HS3152	Professional English - I	C101.3	Use discourse markers for technical descriptions.	K3						1	1			1	3		2		
4	I	I	HS3152	Professional English - I	C101.4	Interpret and infer technical texts and non-verbal communication.	K2						1	1			1	3		2		
5	I	I	HS3152	Professional English - I	C101.5	Write definitions, descriptions, narrations and essays on various topics	K3						1	1			1	3		2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA3151 - Matrices and Calculus / C102	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	MA3151	Matrices and Calculus	C102.1	Identify eigenvalues and eigenvectors and apply orthogonal diagonalisation to convert quadratic form to canonical form.	K1	3	3	1	1						2	1		1	-	-
2	I	I	MA3151	Matrices and Calculus	C102.2	Apply suitable techniques of differentiation to various functions and identify the maxima and minima of functions of one variable	K2	3	3	1	1						2	1		1	-	-
3	I	I	MA3151	Matrices and Calculus	C102.3	Determine the total derivative of a function and identify the maxima and minima of functions of two variable	K1	3	3	1	1						2	1		1	-	-
4	I	I	MA3151	Matrices and Calculus	C102.4	Apply suitable techniques of Integration to various functions	K1	3	3	1	1						2	1		1	-	-
5	I	I	MA3151	Matrices and Calculus	C102.5	Use multiple integral ideas in solving areas, volumes.	K2	3	3	1	1						2	1		1	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: PH3151 - Engineering Physics / C103	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	PH3151	Engineering Physics	C103.1	Apply the principles of mechanics to solve problems	K3	3	3	1		1						2	-	-	-	-
2	I	I	PH3151	Engineering Physics	C103.2	Describe the concepts of electro magnetic waves	K2	3	3	1		1	2					2	-	-	-	-
3	I	I	PH3151	Engineering Physics	C103.3	Explain the fundamental knowledge in oscillations, optics and lasers.	K2	3	3	1		1						2	-	-	-	-
4	I	I	PH3151	Engineering Physics	C103.4	Discuss the basic knowledge of Quantum Mechanics	K2	3	3	1		1						2	-	-	-	-
5	I	I	PH3151	Engineering Physics	C103.5	Apply quantum mechanical principles towards the formation of energy bands	K3	3	3	1		1	1					2	-	-	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CY3151 - Engineering Chemistry / C104	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	CY3151	Engineering Chemistry	C104.1	Identify the terminologies used in water treatment processes, phase rule, energy sources.	K2	3					2					1	1	1	-	-
2	I	I	CY3151	Engineering Chemistry	C104.2	Classify the types of chemical reactions in water, concepts of nano science, different types of fuels and energy resources.	K2	3					2					1	1	1	-	-
3	I	I	CY3151	Engineering Chemistry	C104.3	Compare the BOD and COD, number of phases, calorific value of fuels.	K2	3					2					1	1	1	-	-
4	I	I	CY3151	Engineering Chemistry	C104.4	Distinguish types of the hardness of water, synthesis of nano materials for engineering and technology applications, selection of fuel for engineering processes and	K2	3					2					1	1	1	-	-
5	I	I	CY3151	Engineering Chemistry	C104.5	Diagnose the quality of water, material selection by phase rule, fuels for engineering processes.	K2	3					2					1	1	1	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3151 - Problem Solving and Python Programming / C105	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	I	GE3151	Problem Solving and Python Programming	C105.1	Develop algorithmic solutions to simple computational problems	K2	3	3	3	3	2						2	2	3	1
2	I	I	GE3151	Problem Solving and Python Programming	C105.2	Read, write, execute by hand simple Python programs.	K2	3	3	3	3	2						2	2	3	1
3	I	I	GE3151	Problem Solving and Python Programming	C105.3	Structure simple Python programs for solving problems.	K2	3	3	3	3	2						2		3	1
4	I	I	GE3151	Problem Solving and Python Programming	C105.4	Decompose a Python program into functions.	K2	2	2	2	2	2						1		3	1
5	I	I	GE3151	Problem Solving and Python Programming	C105.5	Represent compound data using Python lists, tuples, dictionaries.	K2	1	2	2	2	1						1		2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3152 - தமிழ்மரபு / Heritage of Tamils / C106	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	I	GE3152	தமிழ்மரபு / Heritage of Tamils	C106.1	Describe the various types of Tamil Literature	K2	1								1	2			-	-
2	I	I	GE3152	தமிழ்மரபு / Heritage of Tamils	C106.2	Discuss about Tamil Arts and Sculpture	K2	1								1	2			-	-
3	I	I	GE3152	தமிழ்மரபு / Heritage of Tamils	C106.3	Explain the Tamil Folks and Martial Arts	K2	1								1	2			-	-
4	I	I	GE3152	தமிழ்மரபு / Heritage of Tamils	C106.4	Summarize the Thinal Concepts of Tamil	K2	1								1	2			-	-
5	I	I	GE3152	தமிழ்மரபு / Heritage of Tamils	C106.5	Review the contribution of Tamil Culture to Indian Culture and National Movements	K2	1								1	2			-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3171 - Problem Solving and Python Programming Laboratory / C107	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3

1	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.1	Develop algorithmic solutions to simple computational problems	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
2	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.2	Develop & execute simple python programs	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
3	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.3	Analyze and apply simple python programs using conditional & loops for solving problems	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
4	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.4	Decompose and execute a python program into functions	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
5	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.5	Represent compound data using python lists,tuples and dictionaries etc	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: BS3171 - Physics and Chemistry Laboratory / C108	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	BS3171	Physics and Chemistry Laboratory	C108.1	Explain the functions of Physics and Chemistry laboratory Equipments	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1
2	I	I	BS3171	Physics and Chemistry Laboratory	C108.2	Apply engineering properties of materials, principles of optics and thermal characteristics of Engineering Applications	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1
3	I	I	BS3171	Physics and Chemistry Laboratory	C108.3	Calculate the Energy band gap for semiconductor materials and Properties of Laser for Engineering Applications.	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1
4	I	I	BS3171	Physics and Chemistry Laboratory	C108.4	Calculate the quality parameters of different types in Water Samples	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
5	I	I	BS3171	Physics and Chemistry Laboratory	C108.5	Apply the appropriate method to find the PH, conductance and potential values of various solutions	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3172 - English Laboratory / C109	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	GE3172	English Laboratory	C109.1	Interpret the audio materials and build opinions about them	K3					3	2		1	3	3		2		
2	I	I	GE3172	English Laboratory	C109.2	Discuss the views about different points of view	K2					2	2		1	3	3		2		
3	I	I	GE3172	English Laboratory	C109.3	Explain fluently and accurately in formal and informal communicative contexts	K2					2	2		1	3	3		2		
4	I	I	GE3172	English Laboratory	C109.4	Describe products and processes and explain their uses and purposes clearly and accurately	K2					2	2		1	2	3		2		
5	I	I	GE3172	English Laboratory	C109.5	Explain their opinions effectively in both formal and informal discussions	K2					2	2		1	3	3		2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: HS3252 - Professional English - II / C110	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	HS3252	Professional English - II	C110.1	Compare and contrast products and ideas in technical texts.	K2						2			2	3		2		
2	I	II	HS3252	Professional English - II	C110.2	Recognize causal relations in speaking and writing.	K2						2			2	3		2		
3	I	II	HS3252	Professional English - II	C110.3	Identify problems and express the solutions as a written document	K2						2			2	3		2		
4	I	II	HS3252	Professional English - II	C110.4	Write effective resumes in the context of job search.	K2						2			2	3		2		
5	I	II	HS3252	Professional English - II	C110.5	Interpret and infer the denotative and connotative meanings of technical texts.	K2						2			2	3		2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA3251 - Statistics and Numerical Methods / C111	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	MA3251	Statistics and Numerical Methods	C111.1	Identify the small sample tests based on chi-square, Student's t and F distributions	K2	3	2	1	1					1	1		1		
2	I	II	MA3251	Statistics and Numerical Methods	C111.2	Distinguish between one way and two way classification	K2	3	2	1	1					1	1		1		
3	I	II	MA3251	Statistics and Numerical Methods	C111.3	Understand the numerical solution of algebraic,transcendental and system of linear equations	K2	3	2	1	1					1	1		1		
4	I	II	MA3251	Statistics and Numerical Methods	C111.4	Apply appropriate numerical methods to solve the interpolation with equal and unequal intervals	K2	3	2	1	1					1	1		1		
5	I	II	MA3251	Statistics and Numerical Methods	C111.5	Solve the solution for ordinary differential equation of first order	K2	3	2	1	1					1	1		1		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: PH3254 - Physics for Electronics Engineering / C112	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	PH3254	Physics for Electronics Engineering	C112.1	Ascertain about the concepts of crystalline state and their behavior of defects in solids.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1
2	I	II	PH3254	Physics for Electronics Engineering	C112.2	Classify electrical and magnetic behaviour of materials	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1

3	I	II	PH3254	Physics for Electronics Engineering	C112.3	Acquire the basic concepts of Semiconductors physics and relate to the devices such as diodes and their technological applications.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1
4	I	II	PH3254	Physics for Electronics Engineering	C112.4	Grasp and apply optical properties of materials to the optoelectronics devices and understand basics of Plasmonics.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1
5	I	II	PH3254	Physics for Electronics Engineering	C112.5	Interpret the basics of quantum structures and their applications in carbon nano tube devices.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: BE3254 - Electrical and Instrumentation Engineering / C113	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	BE3254	Electrical and Instrumentation Engineering	C113.1	Explain the working principle of electrical machines	K2	3	3	2	3	3	2	1	-	2	1	-	2	3	2
2	I	II	BE3254	Electrical and Instrumentation Engineering	C113.2	Analyze the output characterizes of electrical machines	K2	3	3	2	3	3	2	1	-	2	1	-	2	3	2
3	I	II	BE3254	Electrical and Instrumentation Engineering	C113.3	Choose the appropriate electrical machines for various applications	K2	3	3	2	3	3	2	2	-	2	1	-	2	3	2
4	I	II	BE3254	Electrical and Instrumentation Engineering	C113.4	Explain the types and operating principles of measuring instruments	K2	3	3	2	3	3	2	1	-	2	1	-	2	3	2
5	I	II	BE3254	Electrical and Instrumentation Engineering	C113.5	Explain the basic power system structure and protection schemes	K2	3	3	2	3	3	2	2	-	2	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3251 - Engineering Graphics / C114	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
1	I	II	GE3251	Engineering Graphics	C114.1	Use BIS conventions and specifications for engineering drawing.	K2	3	1	2		2					3		2	2	1
2	I	II	GE3251	Engineering Graphics	C114.2	Construct the conic curves, involutes and cycloid.	K2	3	1	2		2					3		2	2	1
3	I	II	GE3251	Engineering Graphics	C114.3	Solve practical problems involving projection of lines.	K2	3	1	2		2					3		2	2	1
4	I	II	GE3251	Engineering Graphics	C114.4	Draw the orthographic, isometric and perspective projections of simple solids.	K2	3	1	2		2					3		2	2	1
5	I	II	GE3251	Engineering Graphics	C114.5	Draw the development of simple solids.	K2	3	1	2		2					3		2	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: AD3251 -Data Structures Design / C115	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	AD3251	Data Structures Design	C115.1	explain abstract data types	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
2	I	II	AD3251	Data Structures Design	C115.2	design, implement, and analyse linear data structures, such as lists, queues, and stacks.	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
3	I	II	AD3251	Data Structures Design	C115.3	design, implement, and analyse efficient tree structures to meet requirements such as searching, indexing, and sorting	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
4	I	II	AD3251	Data Structures Design	C115.4	model problems as graph problems and implement efficient graph algorithms to solve them	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3252 - தமிழகம் தொழில்நுட்பமும்/Tamilis and Technology / C116	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	GE3252	தமிழகம் தொழில்நுட்பமும்/Tamilis and Technology	C116.1	Review the Weaving and Ceramic Technology during Tamil Sangam Age	K2	1							2	1	2				
2	I	II	GE3252	தமிழகம் தொழில்நுட்பமும்/Tamilis and Technology	C116.2	Describe the Construction Technology and various Architecture during Tamil Sangam Age	K2	1							2	1	2				
3	I	II	GE3252	தமிழகம் தொழில்நுட்பமும்/Tamilis and Technology	C116.3	Discuss the Manufacturing Technology with Archeological Evidences	K2	1							2	1	2				
4	I	II	GE3252	தமிழகம் தொழில்நுட்பமும்/Tamilis and Technology	C116.4	Explain the Agriculture and Irrigation Technology during Tamil Sangam Age	K2	1							2	1	2				
5	I	II	GE3252	தமிழகம் தொழில்நுட்பமும்/Tamilis and Technology	C116.5	Describe Tamil Software and Digitalization Tamil Literatures	K2	1							2	1	2				

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3271 - Engineering Practices Laboratory / C117	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	GE3271	Engineering Practices Laboratory	C117.1	Model the real geometry of the shapes for industrial applications	K3	3	2	-	-	1	2	2	-	-	-	-	2	2	1
2	I	II	GE3271	Engineering Practices Laboratory	C117.2	Demonstrate residential house wiring, fluorescent lamp wiring and stair case wiring and pipe connections for the home application and industrial constructions	K4	3	2	-	-	1	2	2	-	-	-	-	2	2	1
3	I	II	GE3271	Engineering Practices Laboratory	C117.3	Analyze electrical quantities like voltage, current, energy and resistance and their measurement using CRO	K4	3	2	-	-	1	2	2	-	-	-	-	2	2	1
4	I	II	GE3271	Engineering Practices Laboratory	C117.4	Experiment the concept of connecting the metal by welding	K3	3	2	-	-	1	2	2	-	-	-	-	2	2	1
5	I	II	GE3271	Engineering Practices Laboratory	C117.5	Examine different logic gates, clock, rectifier and to solder devices and components	K3	3	2	-	-	1	2	2	-	-	-	-	2	2	1

Knowledge	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
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S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3271 - Circuit Analysis laboratory / C118	Regulation: 2021	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	EC3271	Circuit Analysis Laboratory	C118.1	Experiment KVL & KCL.	K3	3	3	3	3	3	1	1	2	3	3	1	2	3	2
2	I	II	EC3271	Circuit Analysis Laboratory	C118.2	Calculate Current and Voltage for a circuit using Thevenin, Norton, Superposition Theorem.	K3	3	3	3	3	3	1	1	2	3	3	1	2	3	2
3	I	II	EC3271	Circuit Analysis Laboratory	C118.3	Analyze Power delivered using maximum power transfer Theorem	K4	3	3	3	3	3	1	1	2	3	3	1	2	3	2
4	I	II	EC3271	Circuit Analysis Laboratory	C118.4	Determine of Resonance Frequency of Series & Parallel RLC Circuits.	K3	3	3	3	3	3	1	1	2	3	3	1	2	3	2
5	I	II	EC3271	Circuit Analysis Laboratory	C118.5	Assess Transient analysis of RL and RC circuits.	K5	3	3	3	3	3	1	1	2	3	3	1	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: Communication Laboratory / Foreign Language / C119	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	II	GE3272	Communication Laboratory / Foreign Language	C119.1	Discuss effectively in GD held in a formal/semi formal contexts.	K2	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
2	I	II	GE3272	Communication Laboratory / Foreign Language	C119.2	Discuss and present concepts and problems from various perspectives for solutions	K2						1		1	3	2		2		
3	I	II	GE3272	Communication Laboratory / Foreign Language	C119.3	Write emails, letters and effective job applications.	K2						1		1	3	2		2		
4	I	II	GE3272	Communication Laboratory / Foreign Language	C119.4	Write critical reports to convey data and information with clarity and precision	K2						1		1	3	2		2		
5	I	II	GE3272	Communication Laboratory / Foreign Language	C119.5	Describe appropriate instructions and recommendations for safe execution of tasks	K2						1		1	3	2		2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA3354 Discrete mathematics/ / C201	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	II	III	MA3354	Discrete Mathematics	C201.1	Have knowledge of the concepts needed to test the logic of a program.	K2	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
2	II	III	MA3354	Discrete Mathematics	C201.2	Have an understanding in identifying structures on many levels	K2	3	3	-	-	-	-	-	-	-	-	-	-	-	-
3	II	III	MA3354	Discrete Mathematics	C201.3	Be aware of a class of functions which transform a finite set into another finite set which relates to input and output functions in computer science	K2	-	3	2	-	-	2	-	-	-	3	-	-	-	-
4	II	III	MA3354	Discrete Mathematics	C201.4	Be aware of the counting principles	K2	-	2	2	2	-	-	-	-	-	-	-	-	-	-
5	II	III	MA3354	Discrete Mathematics	C201.5	Be exposed to concepts and properties of algebraic structures such as groups, rings and fields	K2	-	2	2	2	-	-	-	-	-	2	-	-	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:CS3351 Digital Principles and computer organizations/ / C202	Regulation: 2021	Knowledge level	PO's												PSO's				
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3		
1	II	III	CS3351	Digital Principles and Computer Organization	C202.1	Design various combinational digital circuits using logic gates	K2	3	3	3	3	3	2	1	1	1	1	1	1	2	3	2	3	3
2	II	III	CS3351	Digital Principles and Computer Organization	C202.2	Design sequential circuits and analyze the design procedures	K2	3	3	3	3	2	1	1	1	1	1	1	1	2	3	1	2	2
3	II	III	CS3351	Digital Principles and Computer Organization	C202.3	State the fundamentals of computer systems and analyze the execution of an instruction	K2	3	3	3	3	2	2	1	1	1	1	1	1	2	3	2	3	1
4	II	III	CS3351	Digital Principles and Computer Organization	C202.4	Analyze different types of control design and identify hazards	K2	3	3	3	3	1	1	1	1	1	1	1	1	2	1	3	1	
5	II	III	CS3351	Digital Principles and Computer Organization	C202.5	Identify the characteristics of various memory systems and I/O communication	K2	3	3	3	3	1	2	1	1	1	1	1	1	2	1	2	1	

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD3391 Database Design and Management/ / C203	Regulation: 2021	Knowledge level	PO's												PSO's			
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1	II	III	AD3391	Database Design and Management	C203.1	Understand the database development life cycle and apply conceptual modeling	K2	2	2	3	3	-	-	-	-	3	1	2	1	2	3	3	
2	II	III	AD3391	Database Design and Management	C203.2	Apply SQL and programming in SQL to create, manipulate and query the database	K2	2	3	1	3	1	-	-	-	1	2	2	1	3	3	3	
3	II	III	AD3391	Database Design and Management	C203.3	Apply the conceptual-to-relational mapping and normalization to design relational database	K2	2	2	2	1	1	-	-	-	2	3	1	2	1	1	2	
4	II	III	AD3391	Database Design and Management	C203.4	Determine the serializability of any non-serial schedule using concurrency techniques	K2	2	2	3	1	-	-	-	-	1	2	1	2	2	2	2	
5	II	III	AD3391	Database Design and Management	C203.5	Apply the data model and querying in Object-relational and No-SQL databases.	K2	3	1	3	2	1	-	-	-	1	3	1	1	2	1	1	

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD3351 Design and analysis of algorithms/ / C204	Regulation: 2021	Knowledge level	PO's												PSO's			
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	
1	II	III	AD3351	Design and analysis of algorithms	C204.1	Analyze the efficiency of recursive and non-recursive algorithms mathematically	K2	3	3	3	1	1	-	-	-	1	1	2	2	3	2	1	
2	II	III	AD3351	Design and analysis of algorithms	C204.2	Analyze the efficiency of brute force, divide and conquer, decrease and conquer, Transform and conquer algorithmic techniques	K2	2	1	1	3	2	-	-	-	2	2	1	2	2	2	2	
3	II	III	AD3351	Design and analysis of algorithms	C204.3	Implement and analyze the problems using dynamic programming and greedy algorithmic techniques.	K2	3	2	1	2	2	-	-	-	2	1	1	2	1	3	3	
4	II	III	AD3351	Design and analysis of algorithms	C204.4	Solve the problems using iterative improvement techniques for optimization	K2	3	2	3	2	2	-	-	-	3	3	3	2	2	1	2	

5	II	III	AD3351	Design and analysis of algorithms	C204.5	Compute the limitations of algorithmic power and solve the problems using backtracking and branch and bound techniques.	K2	3	1	2	3	3	-	-	-	2	2	2	2	3	1	3
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S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD3301 Data exploration and visualization/ / C205	Regulation: 2021	Knowledge level	PO'S												PSO's				
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3		
1	II	III	AD3301	Data Exploration and Visualization	C205.1	Understand the fundamentals of exploratory data analysis	K2	3	1	3	3	-	-	-	2	3	3	3	2	2	2			
2	II	III	AD3301	Data Exploration and Visualization	C205.2	Implement the data visualization using Matplotlib.	K2	2	2	2	1	1	-	-	-	3	2	3	1	3	1	3		
3	II	III	AD3301	Data Exploration and Visualization	C205.3	Perform univariate data exploration and analysis.	K2	2	1	2	1	1	-	-	-	3	2	1	2	2	2	1		
4	II	III	AD3301	Data Exploration and Visualization	C205.4	Apply bivariate data exploration and analysis.	K2	2	2	2	1	-	-	-	1	2	1	3	1	3	2			
5	II	III	AD3301	Data Exploration and Visualization	C205.5	Use Data exploration and visualization techniques for multivariate and time series data.	K2	3	1	1	2	1	-	-	-	3	2	1	2	2	2	3		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AL3391Artificial Intelligence/ / C206	Regulation: 2021	Knowledge level	PO'S												PSO's				
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3		
1	II	III	AL3391	Artificial Intelligence	C206.1	Explain intelligent agent frameworks	K2	3	1	3	3	-	-	-	2	3	3	1	2	1	1			
2	II	III	AL3391	Artificial Intelligence	C206.2	Apply problem solving techniques	K2	2	2	1	1	1	-	-	-	2	2	3	1	3	2	2		
3	II	III	AL3391	Artificial Intelligence	C206.3	Apply game playing and CSP techniques	K2	2	1	2	1	-	-	-	2	1	1	3	1	2	1			
4	II	III	AL3391	Artificial Intelligence	C206.4	Perform logical reasoning	K2	2	1	2	2	-	-	-	2	1	2	2	1	3	3			
5	II	III	AL3391	Artificial Intelligence	C206.5	Perform probabilistic reasoning under uncertainty	K2	3	2	2	1	1	-	-	-	3	2	1	2	2	2	1		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD3381 Database Design And Management Laboratory/ / C207	Regulation: 2021	Knowledge level	PO'S												PSO's				
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3		
1	II	III	AD3381	Database Design and Management Labora	C207.1	Understand the database development life cycle	K2	3	1	3	3	-	-	-	1	1	1	3	2	2	1			
2	II	III	AD3381	Database Design and Management Labora	C207.2	Design relational database using conceptual-to-relational mapping, Normalization	K2	2	2	1	3	1	-	-	-	3	2	3	1	1	1	2		
3	II	III	AD3381	Database Design and Management Labora	C207.3	Apply SQL for creation, manipulation and retrieval of data	K2	2	1	3	1	-	-	-	3	3	1	1	2	1	1			
4	II	III	AD3381	Database Design and Management Labora	C207.4	Develop a database applications for real-time problems	K2	2	2	3	1	-	-	-	2	3	2	1	2	1	2			
5	II	III	AD3381	Database Design and Management Labora	C207.5	Design and query object-relational databases	K2	3	3	1	3	1	-	-	-	1	3	2	3	3	3	2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD3311 Artificial Intelligence Laboratory/ / C208	Regulation: 2021	Knowledge level	PO'S												PSO's				
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3		
1	II	III	AD3311	Artificial Intelligence Laboratory	C208.1	Design and implement search strategies	K2	2	1	3	3	-	-	-	1	1	2	1	3	2	1			
2	II	III	AD3311	Artificial Intelligence Laboratory	C208.2	Implement game playing and CSP techniques	K2	1	2	3	3	2	-	-	-	3	2	3	3	3	3	2		
3	II	III	AD3311	Artificial Intelligence Laboratory	C208.3	Develop logical reasoning systems	K2	3	1	3	3	1	-	-	-	1	3	1	2	1	1	3		
4	II	III	AD3311	Artificial Intelligence Laboratory	C208.4	Develop probabilistic reasoning systems	K2	2	1	1	1	1	-	-	-	2	3	1	2	2	2	1		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:GE3361 Artificial Intelligence Laboratory/ / C209	Regulation: 2021	Knowledge level	PO'S												PSO's				
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3		
1	II	III	GE3361	Professional Development	C209.1	Use MS Word to create quality documents, by structuring and organizing content for their day to day technical and academic requirements	K2																	
2	II	III	GE3361	Professional Development	C209.2	Use MS EXCEL to perform data operations and analytics, record, retrieve data as per requirements and visualize data for ease of understanding	K2																	
3	II	III	GE3361	Professional Development	C209.3	Use MS PowerPoint to create high quality academic presentations by including common tables, charts, graphs, interlinking other elements, and using media objects.	K2																	

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA3391 Probability and Statistics - /C210	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	MA3391	Probability and Statistics	C210.1	Understand the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon.	K3	3	3	0	0	0	0	0	0	2	0	0	2		
2	II	IV	MA3391	Probability and Statistics	C210.2	Understand the basic concepts of one and two dimensional random variables and apply in engineering applications.	K3	3	3	0	0	0	0	0	0	2	0	0	2		
3	II	IV	MA3391	Probability and Statistics	C210.3	Apply the concept of testing of hypothesis for small and large samples in real life problems	K3	3	3	0	0	0	0	0	0	2	0	0	2		
4	II	IV	MA3391	Probability and Statistics	C210.4	Apply the basic concepts of classifications of design of experiments in the field of agriculture and statistical quality control	K3	3	3	3	2	0	0	0	0	2	0	0	2		
5	II	IV	MA3391	Probability and Statistics	C210.5	Have the notion of sampling distributions and statistical techniques used in engineering and management problems.	K3	3	3	2	2	0	0	0	0	2	0	0	2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AL3452Operating Systems/ / C211	Regulation: 2021	Knowledge level	PO'S												PSO's		
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	II	IV	AL3452	Operating Systems	C211.1	Analyze various scheduling algorithms and process synchronization	K2	3	1	1	1	-	-	-	-	1	1	1	2	2	1	2
2	II	IV	AL3452	Operating Systems	C211.2	Explain deadlock, prevention and avoidance algorithms.	K2	2	3	1	3	1	-	-	-	3	2	2	3	3	3	1
3	II	IV	AL3452	Operating Systems	C211.3	Compare and contrast various memory management schemes.	K2	2	2	3	3	2	-	-	-	3	1	1	2	1	1	1
4	II	IV	AL3452	Operating Systems	C211.4	Explain the functionality of file systems I/O systems, and Virtualization	K2	2	2	1	2	1	-	-	-	1	3	2	1	1	1	2
5	II	IV	AL3452	Operating Systems	C211.5	Compare iOS and Android Operating Systems.	K2	2	3	3	2	1	-	-	-	3	1	2	1	3	1	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AL3451Machine Learning/ / C212	Regulation: 2021	Knowledge level	PO'S												PSO's		
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	II	IV	AL3451	Machine Learning	C212.1	Explain the basic concepts of machine learning.	K2	2	1	2	1	-	-	-	-	3	3	2	2	2	2	1
2	II	IV	AL3451	Machine Learning	C212.2	Construct supervised learning models.	K2	2	1	2	1	-	-	-	-	3	3	2	2	2	2	1
3	II	IV	AL3451	Machine Learning	C212.3	Construct unsupervised learning algorithms	K2	2	1	3	3	2	-	-	-	1	1	1	1	1	2	1
4	II	IV	AL3451	Machine Learning	C212.4	Evaluate and compare different models	K2	2	3	3	2	1	-	-	-	3	2	3	2	1	2	1
5	II	IV	AL3451	Machine Learning	C212.5		K2	1	1	3	3	1	-	-	-	3	1	1	3	3	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD3491 Fundamentals of Data Science and Analysis/ / C213	Regulation: 2021	Knowledge level	PO'S												PSO's		
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	II	IV	AD3491	Fundamentals of Data Science and Analytic	C213.1	Explain the data analytics pipeline	K2	1	1	2	1	-	-	-	-	3	1	3	2	3	3	1
2	II	IV	AD3491	Fundamentals of Data Science and Analytic	C213.2	Describe and visualize data	K2	1	1	2	2	2	-	-	-	2	2	3	2	3	1	1
3	II	IV	AD3491	Fundamentals of Data Science and Analytic	C213.3	Perform statistical inferences from data	K2	1	1	3	1	1	-	-	-	2	3	1	1	2	3	1
4	II	IV	AD3491	Fundamentals of Data Science and Analytic	C213.4	Analyze the variance in the data	K2	1	1	3	1	1	-	-	-	2	3	1	1	2	3	1
5	II	IV	AD3491	Fundamentals of Data Science and Analytic	C213.5	Build models for predictive analytics	K2	2	1	1	1	2	-	-	-	3	3	1	3	2	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:CS3591 Computer Networks/ / C214	Regulation: 2021	Knowledge level	PO'S												PSO's		
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	II	IV	CS3591	Computer Networks	C214.1	Explain the basic layers and its functions in computer networks.	K2	3	1	2	3	-	-	-	-	1	1	3	1	3	2	1
2	II	IV	CS3591	Computer Networks	C214.2	Understand the basics of how data flows from one node to another.	K2	3	2	1	2	2	-	-	-	2	2	2	1	3	2	3
3	II	IV	CS3591	Computer Networks	C214.3	Analyze routing algorithms.	K2	2	2	3	2	1	-	-	-	3	3	1	2	1	1	3
4	II	IV	CS3591	Computer Networks	C214.4	Describe protocols for various functions in the network.	K2	1	3	1	3	1	-	-	-	1	2	1	1	1	3	1
5	II	IV	CS3591	Computer Networks	C214.5	Analyze the working of various application layer protocols.	K2	3	3	1	1	2	-	-	-	2	2	2	2	2	2	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:GE3451 Environmental Science and Sustainability/ / C215	Regulation: 2021	Knowledge level	PO'S												PSO's		
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	II	IV	GE3451	Environmental Sciences and Sustainability	C215.1	To recognize and understand the functions of environment, ecosystems and biodiversity and their conservation	K2	2	1	-	-	-	2	3	-	-	-	-	2	-	-	-
2	II	IV	GE3451	Environmental Sciences and Sustainability	C215.2	To identify the causes, effects of environmental pollution and natural disasters and contribute to the preventive measures in the society.	K2	3	2	-	-	-	3	3	-	-	-	-	2	-	-	-
3	II	IV	GE3451	Environmental Sciences and Sustainability	C215.3	To identify and apply the understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations	K2	3	-	1	-	-	2	2	-	-	-	-	2	-	-	-
4	II	IV	GE3451	Environmental Sciences and Sustainability	C215.4	To recognize the different goals of sustainable development and apply them for suitable technological advancement and societal development.	K2	3	2	1	1	-	2	2	-	-	-	-	2	-	-	-
5	II	IV	GE3451	Environmental Sciences and Sustainability	C215.5	To demonstrate the knowledge of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization.	K2	3	2	1	-	-	2	2	-	-	-	-	1	-	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD3411 Data Science and Analytics Laboratory/ / C216	Regulation: 2021	Knowledge level	PO'S												PSO's		
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3

1	II	IV	AD3411	Data Science and Analytics Laboratory	C216.1	Write python programs to handle data using Numpy and Pandas	K2	2	2	2	3	-	-	-	-	2	2	3	3	3	2	1
2	II	IV	AD3411	Data Science and Analytics Laboratory	C216.2	Perform descriptive analytics	K2	1	2	1	2	2	-	-	-	1	2	3	1	3	2	1
3	II	IV	AD3411	Data Science and Analytics Laboratory	C216.3	Perform data exploration using Matplotlib	K2	2	2	2	2	2	-	-	-	3	1	1	2	2	3	1
4	II	IV	AD3411	Data Science and Analytics Laboratory	C216.4	Perform inferential data analytics	K2	2	3	1	3	2	-	-	-	2	3	1	2	2	1	3
5	II	IV	AD3411	Data Science and Analytics Laboratory	C216.5	Build models of predictive analytics	K2	3	1	1	1	2	-	-	-	1	2	2	3	2	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:AD3461 Machine Learning Laboratory/ / C217	Regulation: 2021	Knowledge level	PO'S												PSO's		
								1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	II	IV	AD3461	Machine Learning Laboratory	C217.1	Apply suitable algorithms for selecting the appropriate features for analysis	K2	2	2	2	1	-	-	-	-	1	2	3	3	3	2	1
2	II	IV	AD3461	Machine Learning Laboratory	C217.2	Implement supervised machine learning algorithms on standard datasets and evaluate the performance	K2	2	1	1	3	2	-	-	-	3	2	3	2	3	1	1
3	II	IV	AD3461	Machine Learning Laboratory	C217.3	Apply unsupervised machine learning algorithms on standard datasets and evaluate the performance	K2	2	2	1	1	2	-	-	-	1	1	1	1	2	3	3
4	II	IV	AD3461	Machine Learning Laboratory	C217.4	Build the graph based learning models for standard data sets.	K2	2	2	3	3	2	-	-	-	1	2	1	1	1	2	2
5	II	IV	AD3461	Machine Learning Laboratory	C217.5	Assess and compare the performance of different ML algorithms and select the suitable one based on the application.	K2	2	2	3	1	2	-	-	-	3	1	1	1	2	1	2

4	IV	VII	CE8701	Estimation, Costing and Valuation Engineering	C401.4	Upon completion of the course, Student will be able to write contracts for various construction	K2	3	1	1	3	1	3	2	2	3	2	2	3	3	3	3	
5	IV	VII	CE8701	Estimation, Costing and Valuation Engineering	C401.5	Upon completion of the course, Student will be able to value a constructed building	K2	3	2	2	3	3	3	2	2	3	2	2	3	2	3	3	3
Course Code/Course No: CE8702/C402							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
1	IV	VII	CE8702	Railways, Airports, Docks and Harbour Engineering	C402.1	Students will have a knowledge about the different elements of a railway tracks.	K2	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3		
2	IV	VII	CE8702	Railways, Airports, Docks and Harbour Engineering	C402.2	Students will understand the Construction techniques and Maintenance of Track laying.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3		
3	IV	VII	CE8702	Railways, Airports, Docks and Harbour Engineering	C402.3	Students will gain knowledge on the planning and site selection of Airport.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3		
4	IV	VII	CE8702	Railways, Airports, Docks and Harbour Engineering	C402.4	Students will be able to understand the different elements for orientation of runways and passenger facility systems.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3		
5	IV	VII	CE8702	Railways, Airports, Docks and Harbour Engineering	C402.5	Students will be able to understand the various elements in Harbours and Ports.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3		
Course Code/Course No: CE8703/C403							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
1	IV	VII	CE8703	Structural Design and Drawing	C403.1	Design and draw reinforced concrete Cantilever and Counterfort Retaining Walls	K3	3	3	3	3	3	3	2	3	2	3	3	3	3	3		
2	IV	VII	CE8703	Structural Design and Drawing	C403.2	Design and draw flat slab as per code provisions	K3	3	2	3	3	3	3	3	2	3	2	3	3	3	3		
3	IV	VII	CE8703	Structural Design and Drawing	C403.3	Design and draw reinforced concrete and steel bridges	K3	3	1	2	3	1	3	2	2	3	2	2	3	3	3		
4	IV	VII	CE8703	Structural Design and Drawing	C403.4	Design and draw reinforced concrete and steel water tanks	K3	3	2	3	3	3	3	3	2	3	2	3	3	3	3		
5	IV	VII	CE8703	Structural Design and Drawing	C403.5	Design and detail the various steel trusses and canopy girders	K3	3	1	2	3	1	3	2	2	3	2	2	3	3	3		
Course Code/Course No: EN8591/C404							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
1	IV	VII	EN8591	Municipal Solid Waste Management	C404.1	Student will be able to understand the characteristics of solid waste management regarding regulatory requirements	K2	-	3	-	3	-	2	2	-	-	-	-	-	-	3	2	
2	IV	VII	EN8591	Municipal Solid Waste Management	C404.2	Student will be able to Discuss the significance of recycling reuse, reclamation of solid wastes.	K2	3	2	-	2	2	-	-	-	2	-	-	-	-	2	2	
3	IV	VII	EN8591	Municipal Solid Waste Management	C404.3	Student will be able to gain knowledge the solid waste collection systems, route optimization techniques and processing of solid wastes.	K2	-	-	3	-	-	-	-	-	2	-	-	-	-	3	2	
4	IV	VII	EN8591	Municipal Solid Waste Management	C404.4	Student will be able to understand the different methods of treatment involved in solid waste	K2	-	2	-	-	-	-	-	-	2	-	-	2	-	3	2	
5	IV	VII	EN8591	Municipal Solid Waste Management	C404.5	Student will be able to know about the disposal operations of sanitary landfill	K2	-	2	-	2	-	-	-	-	-	-	1	-	1	-	2	
Course Code/Course No: CE8711/C405							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
1	IV	VII	CE8711	CREATIVE AND INNOVATIVE PROJECT	C405.1	Carryout the design / fabrication or develop computer code /use of softwares	K4	3	3	1	3		3					1	1	3	3	3	
2	IV	VII	CE8711	CREATIVE AND INNOVATIVE PROJECT	C405.2	Demonstrate the novelty of the project through the results and outputs	K4	2	2	2				2	2	2	2	1	1	3	1	1	
3																							
4																							
5																							
Course Code/Course No: GE8076 /C501							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
1	IV	VII	GE8076	Professional Ethics in Engineering	C501.1	Apply ethics in society, discuss the ethical issues related to engineering and realize the responsibilities and rights in the society	K1	3	3	2	2	3	3		3	2	2	-	2	3	3		
2	IV	VII	GE8076	Professional Ethics in Engineering	C501.2	Illustrate the moral issues and models of professional roles.	K2	3	3	2	2	3	3		3	2	2	-	2	3	3		
3	IV	VII	GE8076	Professional Ethics in Engineering	C501.3	Describe the awareness of human values to appreciate the rights of others and stress management.	K1	3	3	2	2	3	3		3	2	2	-	2	3	3		
4	IV	VII	GE8076	Professional Ethics in Engineering	C501.4	Formulate the responsibilities, rights and assesses of the safety and risk.	K1	3	3	2	2	3	3		3	2	2	-	2	3	3		
5	IV	VII	GE8076	Professional Ethics in Engineering	C501.5	Apply the social responsibility on multinational corporations related to engineering.	K2	3	3	2	2	3	3		3	2	2	-	2	3	3		
Course Code/Course No: CE8020 / C502							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
1	IV	VII	CE8020	Maintenance Repair & Rehabilitation of structures	C502.1	the importance of maintenance and assessment method of distressed structures.	K2	3	2	3					1	1	2			1	-	-	
2	IV	VII	CE8020	Maintenance Repair & Rehabilitation of structures	C502.2	the strength and durability properties ,their effects due to climate and temperature.	K2	3	2	3					1	1	1			1	1	1	
3	IV	VII	CE8020	Maintenance Repair & Rehabilitation of structures	C502.3	recent development in concrete	K2	3	2	3					1	1	1			1	1	-	
4	IV	VII	CE8020	Maintenance Repair & Rehabilitation of structures	C502.4	the techniques for repair and protection methods	K2	2	2	3					1	1	1			1	-	1	
5	IV	VII	CE8020	Maintenance Repair & Rehabilitation of structures	C502.5	repair, rehabilitation and retrofitting of structures and demolition methods	K2	2	2	3					1	1	1			1	-	2	
Course Code/Course No: CE8811/C503							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
1	IV	VII	CE8811	Project Work	C503.1	Identify civil engineering problems reviewing available literature.	K3	3	1	1	3		3	2	2	2	1	1	3	3	3	3	
2	IV	VII	CE8811	Project Work	C503.2	Identify appropriate techniques to analyze complex civil engineering problems.	K4	3	3	1	3		3					1	1	3	3	3	
3	IV	VII	CE8811	Project Work	C503.3	Apply engineering and management principles through efficient handling of Project have a	K4	2	2	2				2	2	2	2	1	1	3	1	1	
4	IV	VII	CE8811	Project Work		clear idea of his/her area of work and they are in a position to carry out the work in a																	
5	IV	VII	CE8811	Project Work		systematic way.																	

DEPARTMENT OF CIVIL ENGINEERING																					
COURSE OUTCOMES (COs)						CO-PO & PSO MAPPING															
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: HS3152 - Professional English - I / C101	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6
	I	I	HS3152	Professional English - I	C101.1	Identify and use appropriate vocabulary in both formal and informal contexts.	K3						1	1		1	3		2		
2	I	I	HS3152	Professional English - I	C101.2	Associate the basic grammatical structures with the guided writing.	K2						1	1		1	3		2		
3	I	I	HS3152	Professional English - I	C101.3	Use discourse markers for technical descriptions.	K3						1	1		1	3		2		
4	I	I	HS3152	Professional English - I	C101.4	Interpret and infer technical texts and non-verbal communication.	K2						1	1		1	3		2		
5	I	I	HS3152	Professional English - I	C101.5	Write definitions, descriptions, narrations and essays on various topics	K3						1	1		1	3		2		
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA3151 - Matrices and Calculus / C102	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6
1	I	I	MA3151	Matrices and Calculus	C102.1	Identify eigenvalues and eigenvectors and apply orthogonal diagonalisation to convert quadratic form to canonical form.	K1	3	3	1	1					2	1		1	-	-
2	I	I	MA3151	Matrices and Calculus	C102.2	Apply suitable techniques of differentiation to various functions and identify the maxima and minima of functions of one variable	K2	3	3	1	1					2	1		1	-	-
3	I	I	MA3151	Matrices and Calculus	C102.3	Determine the total derivative of a function and identify the maxima and minima of functions of two variable	K1	3	3	1	1					2	1		1	-	-
4	I	I	MA3151	Matrices and Calculus	C102.4	Apply suitable techniques of Integration to various functions	K1	3	3	1	1					2	1		1	-	-
5	I	I	MA3151	Matrices and Calculus	C102.5	Use multiple integral ideas in solving areas, volumes.	K2	3	3	1	1					2	1		1	-	-
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: PH3151 - Engineering Physics / C103	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	PH3151	Engineering Physics	C103.1	Apply the principles of mechanics to solve problems	K3	3	3	1		1					2	-	-	-	-
2	I	I	PH3151	Engineering Physics	C103.2	Describe the concepts of electro magnetic waves	K2	3	3	1		1	2				2	-	-	-	-
3	I	I	PH3151	Engineering Physics	C103.3	Explain the fundamental knowledge in oscillations, optics and lasers.	K2	3	3	1		1					2	-	-	-	-
4	I	I	PH3151	Engineering Physics	C103.4	Discuss the basic knowledge of Quantum Mechanics	K2	3	3	1		1					2	-	-	-	-
5	I	I	PH3151	Engineering Physics	C103.5	Apply quantum mechanical principles towards the formation of energy bands	K3	3	3	1		1	1				2	-	-	-	-
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CY3151 - Engineering Chemistry / C104	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	CY3151	Engineering Chemistry	C104.1	Identify the terminologies used in water treatment processes, phase rule, energy sources.	K2	3					2				1	1	1	-	-
2	I	I	CY3151	Engineering Chemistry	C104.2	Classify the types of chemical reactions in water, concepts of nano science, different types of fuels and energy resources.	K2	3					2				1	1	1	-	-
3	I	I	CY3151	Engineering Chemistry	C104.3	Compare the BOD and COD, number of phases, calorific value of fuels.	K2	3					2				1	1	1	-	-

4	I	I	CY3151	Engineering Chemistry	C104.4	Distinguish types of the hardness of water, synthesis of nano materials for engineering and technology applications, selection of fuel for engineering processes and applications, energy resources and applications in	K2	3											1	1	1	-	-	
5	I	I	CY3151	Engineering Chemistry	C104.5	Diagnose the quality of water, material selection by phase rule, fuels for engineering processes,	K2	3												1	1	1	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3151 - Problem Solving and Python Programming / C105	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	I	I	GE3151	Problem Solving and Python Programming	C105.1	Develop algorithmic solutions to simple computational problems	K2	3	3	3	3	2							2	2	3	1
2	I	I	GE3151	Problem Solving and Python Programming	C105.2	Read, write, execute by hand simple Python programs.	K2	3	3	3	3	2							2	2	3	1
3	I	I	GE3151	Problem Solving and Python Programming	C105.3	Structure simple Python programs for solving problems.	K2	3	3	3	3	2							2		3	1
4	I	I	GE3151	Problem Solving and Python Programming	C105.4	Decompose a Python program into functions.	K2	2	2	2	2	2							1		3	1
5	I	I	GE3151	Problem Solving and Python Programming	C105.5	Represent compound data using Python lists, tuples, dictionaries.	K2	1	2	2	2	1							1		2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3152 - தமிழ்மரபு /Heritage of Tamils / C106	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	GE3152	தமிழ்மரபு /Heritage of Tamils	C106.1	Describe the various types of Tamil Literature	K2	1								1	2			-	-
2	I	I	GE3152	தமிழ்மரபு /Heritage of Tamils	C106.2	Discuss about Tamil Arts and Sculpture	K2	1								1	2			-	-
3	I	I	GE3152	தமிழ்மரபு /Heritage of Tamils	C106.3	Explain the Tamil Folks and Martial Arts	K2	1								1	2			-	-
4	I	I	GE3152	தமிழ்மரபு /Heritage of Tamils	C106.4	Summarize the Thinai Concepts of Tamil	K2	1								1	2			-	-
5	I	I	GE3152	தமிழ்மரபு /Heritage of Tamils	C106.5	Review the contribution of Tamil Culture to Indian Culture and National Movements	K2	1								1	2			-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3171 - Problem Solving and Python Programming Laboratory / C107	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.1	Develop algorithmic solutions to simple computational problems	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
2	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.2	Develop & execute simple python programs	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
3	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.3	Analyze and apply simple python programs using conditional & loops for solving problems	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
4	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.4	Decompose and execute a python program into functions	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
5	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.5	Represent compound data using python lists,tuples and dictionaries etc	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: BS3171 - Physics and Chemistry Laboratory / C108	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	BS3171	Physics and Chemistry Laboratory	C108.1	Explain the functions of Physics and Chemistry laboratory Equipments	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1
2	I	I	BS3171	Physics and Chemistry Laboratory	C108.2	Apply engineering properties of materials, principles of optics and thermal characteristics of Engineering Applications	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1
3	I	I	BS3171	Physics and Chemistry Laboratory	C108.3	Calculate the Energy band gap for semiconductor materials and Properties of Laser for Engineering Applications.	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1
4	I	I	BS3171	Physics and Chemistry Laboratory	C108.4	Calculate the quality parameters of different types in Water Samples	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
5	I	I	BS3171	Physics and Chemistry Laboratory	C108.5	Apply the appropriate method to find the PH, conductance and potential values of various solutions	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3172 - English Laboratory / C109	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	

1	I	I	GE3172	English Laboratory	C109.1	Interpret the audio materials and build opinions about them	K3							3	2		1	3	3		2		
2	I	I	GE3172	English Laboratory	C109.2	Discuss the views about different points of view	K2							2	2		1	3	3		2		
3	I	I	GE3172	English Laboratory	C109.3	Explain fluently and accurately in formal and informal communicative contexts	K2							2	2		1	3	3		2		
4	I	I	GE3172	English Laboratory	C109.4	Describe products and processes and explain their uses and purposes clearly and accurately	K2							2	2		1	2	3		2		
5	I	I	GE3172	English Laboratory	C109.5	Explain their opinions effectively in both formal and informal discussions	K2							2	2		1	3	3		2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: HS3252 - Professional English - II / C110	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	I	II	HS3252	Professional English - II	C110.1	Compare and contrast products and ideas in technical texts.	K2						2			2	3		2			
2	I	II	HS3252	Professional English - II	C110.2	Recognize causal relations in speaking and writing.	K2						2			2	3		2			
3	I	II	HS3252	Professional English - II	C110.3	Identify problems and express the solutions as a written document	K2						2			2	3		2			
4	I	II	HS3252	Professional English - II	C110.4	Write effective resumes in the context of job search.	K2						2			2	3		2			
5	I	II	HS3252	Professional English - II	C110.5	Interpret and infer the denotative and connotative meanings of technical texts.	K2						2			2	3		2			

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA3251 - Statistics and Numerical Methods / C111	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	MA3251	Statistics and Numerical Methods	C111.1	Identify the small sample tests based on chi-square, Student's t and F distributions	K2	3	2	1	1					1	1		1		
2	I	II	MA3251	Statistics and Numerical Methods	C111.2	Distinguish between one way and two way classification	K2	3	2	1	1					1	1		1		
3	I	II	MA3251	Statistics and Numerical Methods	C111.3	Understand the numerical solution of algebraic, transcendental and system of linear equations	K2	3	2	1	1					1	1		1		
4	I	II	MA3251	Statistics and Numerical Methods	C111.4	Apply appropriate numerical methods to solve the interpolation with equal and unequal intervals	K2	3	2	1	1					1	1		1		
5	I	II	MA3251	Statistics and Numerical Methods	C111.5	Solve the solution for ordinary differential equation of first order	K2	3	2	1	1					1	1		1		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: PH3254 - Physics for Electronics Engineering / C112	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	PH3254	Physics for Electronics Engineering	C112.1	Ascertain about the concepts of crystalline state and their behavior of defects in solids.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1
2	I	II	PH3254	Physics for Electronics Engineering	C112.2	Classify electrical and magnetic behaviour of materials	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1
3	I	II	PH3254	Physics for Electronics Engineering	C112.3	Acquire the basic concepts of Semiconductors physics and relate to the devices such as diodes and their technological applications.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1

4	I	II	PH3254	Physics for Electronics Engineering	C112.4	Grasp and apply optical properties of materials to the optoelectronics devices and understand basics of Plasmonics.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1
5	I	II	PH3254	Physics for Electronics Engineering	C112.5	Interpret the basics of quantum structures and their applications in carbon nano tube devices.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: BE3254 - Electrical and Instrumentation Engineering / C113	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	BE3254	Electrical and Instrumentation Engineering	C113.1	Explain the working principle of electrical machines	K2	3	3	2	3	3	2	1	-	2	1	-	2	3	2
2	I	II	BE3254	Electrical and Instrumentation Engineering	C113.2	Analyze the output characterizes of electrical machines	K2	3	3	2	3	3	2	1	-	2	1	-	2	3	2
3	I	II	BE3254	Electrical and Instrumentation Engineering	C113.3	Choose the appropriate electrical machines for various applications	K2	3	3	2	3	3	2	2	-	2	1	-	2	3	2
4	I	II	BE3254	Electrical and Instrumentation Engineering	C113.4	Explain the types and operating principles of measuring instruments	K2	3	3	2	3	3	2	1	-	2	1	-	2	3	2
5	I	II	BE3254	Electrical and Instrumentation Engineering	C113.5	Explain the basic power system structure and protection schemes	K2	3	3	2	3	3	2	2	-	2	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3251 - Engineering Graphics / C114	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	GE3251	Engineering Graphics	C114.1	Use BIS conventions and specifications for engineering drawing.	K2	3	1	2		2					3		2	2	1
2	I	II	GE3251	Engineering Graphics	C114.2	Construct the conic curves, involutes and cycloid.	K2	3	1	2		2					3		2	2	1
3	I	II	GE3251	Engineering Graphics	C114.3	Solve practical problems involving projection of lines.	K2	3	1	2		2					3		2	2	1
4	I	II	GE3251	Engineering Graphics	C114.4	Draw the orthographic, isometric and perspective projections of simple solids.	K2	3	1	2		2					3		2	2	1
5	I	II	GE3251	Engineering Graphics	C114.5	Draw the development of simple solids.	K2	3	1	2		2					3		2	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3251 - Circuit Analysis / C115	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	EC3251	Circuit Analysis	C115.1	Apply advanced circuit analysis techniques to solve complex electrical circuits.	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
2	I	II	EC3251	Circuit Analysis	C115.2	Solve electrical circuit's parameters using Network Theorems	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
3	I	II	EC3251	Circuit Analysis	C115.3	Calculate resonance frequency, impedance, bandwidth and Q factor of resonant circuits and inductances for coupled circuits	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
4	I	II	EC3251	Circuit Analysis	C115.4	Determine Transient response of RC, RL and RLC circuits	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
5	I	II	EC3251	Circuit Analysis	C115.5	Explain Coupled Circuits and Network Topology	K2	3	3	2	3	3	1	1	-	2	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3252 - தமிழரும் தொழில்நுட்பமும்/Tamils and Technology / C116	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	GE3252	தமிழரும் தொழில்நுட்பமும்/Tamils and Technology	C116.1	Review the Weaving and Ceramic Technology during Tamil Sangam Age	K2	1							2	1	2				

2	I	II	GE3252	தமிழரும் தொழில்நுட்பமும்/Tamils and Technology	C116.2	Describe the Construction Technology and various Architecture during Tamil Sangam Age	K2	1								2	1	2						
3	I	II	GE3252	தமிழரும் தொழில்நுட்பமும்/Tamils and Technology	C116.3	Discuss the Manufacturing Technology with Archeological Evidences	K2	1								2	1	2						
4	I	II	GE3252	தமிழரும் தொழில்நுட்பமும்/Tamils and Technology	C116.4	Explain the Agriculture and Irrigation Technology during Tamil Sangam Age	K2	1								2	1	2						
5	I	II	GE3252	தமிழரும் தொழில்நுட்பமும்/Tamils and Technology	C116.5	Describe Tamil Software and Digitalization Tamil Literatures	K2	1								2	1	2						

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3271 - Engineering Practices Laboratory / C117	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	GE3271	Engineering Practices Laboratory	C117.1	Model the real geometry of the shapes for industrial applications	K3	3	2	-	-	1	2	2	-	-	-	-	2	2	1
2	I	II	GE3271	Engineering Practices Laboratory	C117.2	Demonstrate residential house wiring, fluorescent lamp wiring and stair case wiring and pipe connections for the home application and industrial constructions	K4	3	2	-	-	1	2	2	-	-	-	-	2	2	1
3	I	II	GE3271	Engineering Practices Laboratory	C117.3	Analyze electrical quantities like voltage, current, energy and resistance and their measurement using CRO	K4	3	2	-	-	1	2	2	-	-	-	-	2	2	1
4	I	II	GE3271	Engineering Practices Laboratory	C117.4	Experiment the concept of connecting the metal by welding	K3	3	2	-	-	1	2	2	-	-	-	-	2	2	1
5	I	II	GE3271	Engineering Practices Laboratory	C117.5	Examine different logic gates, clock, rectifier and to solder devices and components	K3	3	2	-	-	1	2	2	-	-	-	-	2	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3271 - Circuit Analysis laboratory / C118	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	EC3271	Circuit Analysis Laboratory	C118.1	Experiment KVL & KCL.	K3	3	3	3	3	3	1	1	2	3	3	1	2	3	2
2	I	II	EC3271	Circuit Analysis Laboratory	C118.2	Calculate Current and Voltage for a circuit using Thevenin, Norton, Superposition Theorem.	K3	3	3	3	3	3	1	1	2	3	3	1	2	3	2
3	I	II	EC3271	Circuit Analysis Laboratory	C118.3	Analyze Power delivered using maximum power transfer Theorem	K4	3	3	3	3	3	1	1	2	3	3	1	2	3	2
4	I	II	EC3271	Circuit Analysis Laboratory	C118.4	Determine of Resonance Frequency of Series & Parallel RLC Circuits.	K3	3	3	3	3	3	1	1	2	3	3	1	2	3	2
5	I	II	EC3271	Circuit Analysis Laboratory	C118.5	Assess Transient analysis of RL and RC circuits.	K5	3	3	3	3	3	1	1	2	3	3	1	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: Communication Laboratory / Foreign Language / C119	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II		Communication Laboratory / Foreign Language	C119.1	Discuss effectively in GD held in a formal/semi formal contexts.	K2														

2	I	II		Communication Laboratory / Foreign Language	C119.2	Discuss and present concepts and problems from various perspectives for solutions	K2																
3	I	II		Communication Laboratory / Foreign Language	C119.3	Write emails, letters and effective job applications.	K2																
4	I	II		Communication Laboratory / Foreign Language	C119.4	Write critical reports to convey data and information with clarity and precision	K2																
5	I	II		Communication Laboratory / Foreign Language	C119.5	Describe appropriate instructions and recommendations for safe execution of tasks	K2																

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA3351 - Transforms and Partial Differential Equations / C201	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	MA3351	Transforms and Partial Differential Equations	C201.1	Understand how to solve the given standard partial differential equations.	K2	3	3	1	1	-	-	-	-	2	-	-	3	-	-
2	II	III	MA3351	Transforms and Partial Differential Equations	C201.2	Solve differential equations using Fourier series analysis which plays a vital role in engineering applications.	K2	3	3	1	1	-	-	-	-	2	-	-	3	-	-
3	II	III	MA3351	Transforms and Partial Differential Equations	C201.3	Appreciate the physical significance of Fourier series techniques in solving one- and two- dimensional heat flow problems and one-dimensional wave equations	K3	3	3	1	1	-	-	-	-	2	-	-	3	-	-
4	II	III	MA3351	Transforms and Partial Differential Equations	C201.4	Understand the mathematical principles on transforms and partial differential equations would provide them the ability to formulate and solve some of the physical problems of engineering	K2	3	3	1	1	-	-	-	-	2	-	-	3	-	-
5	II	III	MA3351	Transforms and Partial Differential Equations	C201.5	Use the effective mathematical tools for the solutions of partial differential equations by using Z transform techniques for discrete time systems	K2	3	3	1	1	-	-	-	-	2	-	-	3	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: ME3351 - Engineering Mechanics / C202	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	ME3351	Engineering Mechanics	C202.1	Understand the behavior of forces acting on body in static state.	K2	3	2	2	1	2	-	-	-	-	-	-	2	3	1
2	II	III	ME3351	Engineering Mechanics	C202.2	Understand the various principles that apply to a rigid body in equilibrium.	K2	3	2	2	1	2	-	-	-	-	-	-	2	3	1
3	II	III	ME3351	Engineering Mechanics	C202.3	Determine the moment of inertia of bodies in different shapes	K2	3	2	3	1	2	-	-	-	-	-	-	2	3	1
4	II	III	ME3351	Engineering Mechanics	C202.4	Understand the concept of Friction created by various surfaces on rigid bodies	K2	3	2	3	1	2	-	-	-	-	-	-	2	3	1
5	II	III	ME3351	Engineering Mechanics	C202.5	Understand the Kinetic and Kinematic force parameters acting on a rigid body in motion.	K2	3	2	3	1	2	-	-	-	-	-	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3301 - Fluid Mechanics / C203	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3
1	II	III	CE3301	Fluid Mechanics	C203.1	Solve fluid statics and fluid properties problems	K2	3	2	1	1	1	2	2	1	1	1	1	1	2	3	2
2	II	III	CE3301	Fluid Mechanics	C203.2	Apply the kinematic functions and dynamic equations in fluid flow problems	K3	3	2	1	1	1	2	2	1	1	1	1	1	2	3	2

3	II	III	CE3301	Fluid Mechanics	C203.3	Apply fluid dimensions and model analysis	K3	3	2	3	2	1	2	2	1	1	1	1	2	3	3
4	II	III	CE3301	Fluid Mechanics	C203.4	Solve the problems on major and minor losses in flow through pipes	K3	3	3	3	2	1	3	2	1	1	1	1	3	3	3
5	II	III	CE3301	Fluid Mechanics	C203.5	Understand the concept of boundary layer and its applications	K3	3	3	2	2	1	3	2	1	1	1	1	3	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3302- Construction Materials and Technology / C204	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	CE3302	Construction Materials and Technology	C204.1	Identify the good quality of stone, lime, bricks and concrete blocks	K2	2	2	-	3	-	2	2	-	-	1	-	-	2	3
2	II	III	CE3302	Construction Materials and Technology	C204.2	Understand about various composite materials used for construction	K2	3	-	-	2	-	-	2	-	-	1	-	-	2	3
3	II	III	CE3302	Construction Materials and Technology	C204.3	Understand the process of construction in practice	K2	3	-	-	2	-	-	3	-	-	1	-	2	-	3
4	II	III	CE3302	Construction Materials and Technology	C204.4	Identify the various construction equipments usage in practice	K2	2	-	-	0	-	-	-	-	-	1	-	2	-	3
5	II	III	CE3302	Construction Materials and Technology	C204.5	Get a knowledge on basics of construction management	K2	2	3	2	3	2	2	0	-	2	2	-	3	2	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3303 - Water Supply and Wastewater Engineering / C205	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	CE3303	Water Supply and Wastewater Engineering	C205.1	Understanding of how drinking water supply systems are distributed.	K2	2	3	-	2	-	-	0	1	1	-	-	-	-	-
2	II	III	CE3303	Water Supply and Wastewater Engineering	C205.2	Understanding of various water treatment unit operations and procedures.	K2	2	3	-	2	-	-	-	1	1	-	-	-	-	-
3	II	III	CE3303	Water Supply and Wastewater Engineering	C205.3	Understand the various functional water treatment systems.	K2	3	3	3	-	-	3	2	2	2	-	2	-	-	2
4	II	III	CE3303	Water Supply and Wastewater Engineering	C205.4	An awareness of the norms and requirements for water quality relate to public health.	K2	3	3	3	-	2	3	3	2	3	-	2	-	-	2
5	II	III	CE3303	Water Supply and Wastewater Engineering	C205.5	Understand and assess potential water supply project alternatives using predetermined criteria.	K2	3	3	3	2	2	3	3	2	3	2	2	3	-	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3351 - Surveying and Levelling / C206	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	CE3351	Surveying and Levelling	C206.1	Identify various conventional surveying instruments	K2	2	2	3	2	2	3	-	2	2	-	2	2	-	3
2	II	III	CE3351	Surveying and Levelling	C206.2	Understand the different types of levelling used in surveying	K2	3	3	2	2	2	3	-	2	2	-	2	2	-	3
3	II	III	CE3351	Surveying and Levelling	C206.3	Apply the concept of Tacheometry for surveying in hilly areas for plotting the topographical map	K3	3	3	3	2	3	3	-	2	2	-	2	2	-	3
4	II	III	CE3351	Surveying and Levelling	C206.4	Understand to control the accumulation of errors using respective methods	K2	3	3	3	3	3	3	2	2	3	-	2	2	2	3
5	II	III	CE3351	Surveying and Levelling	C206.5	Knowledge of limits of accuracy with various modern surveying equipment employed in practice	K1	3	3	3	3	3	3	2	3	2	-	2	2	2	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3361 - Surveying and Levelling Laboratory / C207	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3

1	II	III	CE3361	Surveying and Levelling Laboratory	C207.1	Impart knowledge on the usage of basic surveying instruments like chain/tape, compass and levelling instruments	K3	3	2	3	3	2	3	2	3	3	3	3	1	3	3
2	II	III	CE3361	Surveying and Levelling Laboratory	C207.2	use levelling instrument for surveying operations	K3	3	2	3	-	3	3	3	3	3	3	3	1	3	3
3	II	III	CE3361		C207.3	use theodolite for various surveying operations	K3	3	1	2	-	3	2	-	-	3	-	-	2	3	3
	II	III	CE3361	Surveying and Levelling Laboratory	C207.4	carry out necessary surveys for social infrastructures	K3	3	3	2	3	2	3	3	2	2	3	1	1	3	3
	II	III	CE3361	Surveying and Levelling Laboratory	C207.5	prepare planimetric maps	K3	3	3	3	2	2	3	3	2	3	3	3	1	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3311 - Water and Wastewater Analysis Laboratory / C208	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	CE3311	Water and Wastewater Analysis Laboratory	C208.1	Calibrate and standardize the equipment	K3	2	1	1	1	2	1	2	2	1	1	1	3	1	2
2	II	III	CE3311	Water and Wastewater Analysis Laboratory	C208.2	Collect proper sample for analysis	K3	2	1	1	1	1	2	2	2	1	1	2	3	2	2
3	II	III	CE3311	Water and Wastewater Analysis Laboratory	C208.3	To know the sample preservation methods	K3	1	1	1	1	1	2	2	2	2	2	2	2	2	2
4	II	III	CE3311	Water and Wastewater Analysis Laboratory	C208.4	To perform field oriented testing of water, wastewater	K3	3	3	3	3	3	2	2	3	2	2	2	3	3	3
5	II	III	CE3311	Water and Wastewater Analysis Laboratory	C208.5	To perform coliform analysis	K3	2	3	3	3	3	2	2	3	2	2	2	3	2	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3401 - Applied Hydraulics Engineering / C210	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	CE3401	Applied Hydraulics Engineering	C210.1	Describe the basics of open channel flow, its classification and analysis of uniform flow in steady state conditions with specific energy concept and its application	K2	3	3	2	3	1	2	2	1	2	1	1	3	3	2
2	II	IV	CE3401	Applied Hydraulics Engineering	C210.2	Analyse steady gradually varied flow, water surface profiles and its length calculation using direct and standard step methods with change in water surface profiles due to change in grades.	K4	3	3	2	3	2	2	2	1	2	1	1	3	3	2
3	II	IV	CE3401	Applied Hydraulics Engineering	C210.3	Derive the relationship among the sequent depths of steady rapidly varied flow and estimating energy loss in hydraulic jump with exposure to positive and negative surges.	K3	3	3	2	3	1	2	2	1	2	1	1	3	3	2
4	II	IV	CE3401	Applied Hydraulics Engineering	C210.4	Design turbines and explain the working principle	K3	3	3	3	3	1	2	2	1	2	1	1	3	3	2

5	II	IV	CE3401	Applied Hydraulics Engineering	C210.5	Differentiate pumps and explain the working principle with characteristic curves and design centrifugal and reciprocating pumps.	K2	3	3	3	3	1	2	2	1	2	1	1	3	3	2	
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3402 - Strength of Materials / C211		Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3
1	II	IV	CE3402	Strength of Materials	C211.1	Understand the concepts of stress and strain, principal stresses and principal planes.	K2	3	3	3	3	2	3	1	-	2	3	1	3	3	3	3
2	II	IV	CE3402	Strength of Materials	C211.2	Determine Shear force and bending moment in beams and understand concept of theory of simple bending	K2	3	3	3	3	2	3	1	-	3	2	3	1	3	3	3
3	II	IV	CE3402	Strength of Materials	C211.3	Calculate the deflection of beams by different methods and selection of method for determining slope or deflection	K3	3	3	3	3	2	3	1	-	2	3	1	3	3	3	3
4	II	IV	CE3402	Strength of Materials	C211.4	Analyze propped cantilever, fixed beams and continuous beams for external loadings and support settlements.	K4	3	3	3	3	2	3	1	-	2	3	1	3	3	3	3
5	II	IV	CE3402	Strength of Materials	C211.5	Determine the stresses due to Unsymmetrical bending of beams, locate the shear center, and study the various theories of failure	K2	3	3	3	3	2	3	1	-	2	3	1	3	3	3	3
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3403 - Concrete Technology / C212		Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3
1	II	IV	CE3403	Concrete Technology	C212.1	Understand the requirements of cement, aggregates and water for concrete	K2	3	1	1	2	3	3	2	-	1	1	1	1	2	3	2
2	II	IV	CE3403	Concrete Technology	C212.2	Select suitable admixtures for enhancing the properties of concrete	K2	3	1	1	1	3	3	1	-	1	1	1	1	2	3	2
3	II	IV	CE3403	Concrete Technology	C212.3	Design concrete mixes as per IS method of mix design	K3	3	2	3	3	3	3	1	-	1	1	1	1	2	3	2
4	II	IV	CE3403	Concrete Technology	C212.4	Determine the properties of concrete at fresh and hardened state	K2	3	1	1	1	3	3	2	-	1	1	1	1	2	3	2
5	II	IV	CE3403	Concrete Technology	C212.5	Know the importance of special concretes for specific requirements	K2	3	1	1	1	3	3	2	-	1	1	1	1	2	3	2
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3404 - Soil Mechanics / C213		Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3
1	II	IV	CE3404	Soil Mechanics	C213.1	Demonstrate an ability to identify various types of soils and its properties, formulate and solve engineering Problems	K2	2	3	2	2	3	1	1	-	2	1	2	3	3	3	3

2	II	IV	CE3404	Soil Mechanics	C213.2	Show the basic understanding of flow through soil medium and its impact of engineering solution	K2	3	2	3	2	3	1	1	-	2	1	2	3	2	2
3	II	IV	CE3404	Soil Mechanics	C213.3	Understand the basic concept of stress distribution in loaded soil medium and soil settlement due to consolidation	K2	3	3	2	2	2	2	1	-	1	1	2	3	2	2
4	II	IV	CE3404	Soil Mechanics	C213.4	Show the understanding of shear strength of soils and its impact of engineering solutions to the loaded soil medium and also will be aware of contemporary issues on shear strength of soils.	K2	2	3	3	2	2	1	1	-	1	1	2	3	2	2
5	II	IV	CE3404	Soil Mechanics	C213.5	Demonstrate an ability to design both finite and infinite slopes, component and process as per needs and specifications	K2	3	3	2	2	2	1	1	-	1	1	2	3	2	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3405 - Highway and Railway Engineering / C214	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	CE3405	Highway and Railway Engineering	C214.1	Plan a highway according to the principles and standards adopted in various institutions in India.	K2	3	-	-	2	-	3	1	3	0	-	-	-	3	2
2	II	IV	CE3405	Highway and Railway Engineering	C214.2	Design the geometric features of road network and components of pavement.	K2	2	3	3	2	2	-	2	3	2	-	2	3	3	3
3	II	IV	CE3405	Highway and Railway Engineering	C214.3	Test the highway materials and construction practice methods and know its properties and able to perform pavement evaluation and management	K2	2	3	2	2	2	3	3	3	-	-	3	3	3	3
4	II	IV	CE3405	Highway and Railway Engineering	C214.4	Understand the methods of route alignment and design elements in railway planning and constructions.	K2	3	-	-	2	0	3	-	3	0	1	-	-	3	2
5	II	IV	CE3405	Highway and Railway Engineering	C214.5	Understand the construction techniques and maintenance of track laying and railway stations	K2	-	0	3	-	2	-	-	-	2	0	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3451 - Environmental Sciences and Sustainability / C215	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	GE3451	Environmental Sciences and Sustainability	C215.1	Recognize the functions of environment, ecosystems and biodiversity and their conservation.	K2	2	1	-	-	-	2	3	-	-	-	-	2	-	-
2	II	III	GE3451	Environmental Sciences and Sustainability	C215.2	Detail the knowledge about causes, effects of pollution, natural disasters and preventive measures to the society.	K2	3	2	-	-	-	3	3	-	-	-	-	2	-	-
3	II	III	GE3451	Environmental Sciences and Sustainability	C215.3	Apply the awareness of renewable and non-renewable resources and apply for future generations on the sustainable measures to preserve environment.	K2	3	0	1	-	-	2	2	-	-	-	-	2	-	-
4	II	III	GE3451	Environmental Sciences and Sustainability	C215.4	Classify the various measures of sustainable development and apply the development for suitable technological advancement.	K2	3	2	1	1	-	2	2	-	-	-	-	2	-	-
5	II	III	GE3451	Environmental Sciences and Sustainability	C215.5	Examine the collective ideas of sustainability practices and apply to green materials, energy cycles and the role of sustainable urbanization	K2	3	2	1	-	0	2	2	-	-	-	-	1	-	-

								PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
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S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3411 - Hydraulic Engineering Laboratory / C216	Regulation: 2021	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	CE3411	Hydraulic Engineering Laboratory	C216.1	Apply Bernoulli equation for calibration of flow measuring devices.	K3	2	2	1	3	1	2	2	1	2	1	1	2	2	1
2	II	IV	CE3411	Hydraulic Engineering Laboratory	C216.2	Measure friction factor in pipes and compare with Moody diagram	K3	3	2	1	3	1	2	2	1	2	1	1	2	3	1
3	II	IV	CE3411	Hydraulic Engineering Laboratory	C216.3	Determine the performance characteristics of rotodynamic pumps	K2	3	3	2	3	1	2	2	1	3	1	1	2	3	2
4	II	IV	CE3411	Hydraulic Engineering Laboratory	C216.4	Determine the performance characteristics of positive displacement pumps.	K2	3	3	2	3	1	2	2	2	1	3	1	1	2	3
5	II	IV	CE3411	Hydraulic Engineering Laboratory	C216.5	Determine the performance characteristics of turbines.	K2	3	3	2	3	1	2	2	1	3	1	1	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No:CE3412 -Materials Testing Laboratory / C217	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6
1	II	IV	CE3412	Materials Testing Laboratory	C217.1	Determine the mechanical properties of steel.	K3	2	2	1	3	1	2	2	1	3	1	1	2	2	2
2	II	IV	CE3412	Materials Testing Laboratory	C217.2	Determine the physical properties of cement	K3	3	2	1	3	1	2	2	1	3	3	1	2	3	2
3	II	IV	CE3412	Materials Testing Laboratory	C217.3	Determine the physical properties of fine and coarse aggregate.	K3	3	3	2	3	1	2	2	1	3	1	3	2	3	2
4	II	IV	CE3412	Materials Testing Laboratory	C217.4	Determine the workability and compressive strength of concrete	K3	3	3	2	3	1	2	2	1	3	1	1	2	3	2
5	II	IV	CE3412	Materials Testing Laboratory	C217.5	Determine the strength of brick and wood	K3	3	3	2	3	2	2	2	1	3	1	1	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3413-Soil Mechanics Laboratory / C218	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	CE3413	Soil Mechanics Laboratory	C218.1	Conduct tests to determine the index properties of soils	K2	2	2	3	3	1	1	1	1	3	1	1	1	3	3
2	II	IV	CE3413	Soil Mechanics Laboratory	C218.2	Determine the insitu density and compaction characteristics	K2	1	2	3	3	1	1	1	1	3	2	1	3	2	3
3	II	IV	CE3413	Soil Mechanics Laboratory	C218.3	Conduct tests to determine the compressibility, permeability and shear strength of soils.	K2	3	3	3	3	1	1	1	1	1	3	1	1	3	2
4	II	IV	CE3413	Soil Mechanics Laboratory	C218.4	Understand the various tests on Geosynthetics	K2	1	2	2	3	2	1	1	1	3	1	1	3	2	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3501 - Design of Reinforced Concrete Structural Elements / C301	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	CE3501	Design of Reinforced Concrete Structural Elements	C301.1	Know the various design concepts and design RC rectangular beams by working stress and limit state methods	K2	3	3	3	3	1	3	1	1	3	2	1	2	3	3
2	III	V	CE3501	Design of Reinforced Concrete Structural Elements	C301.2	Understand the design of flanged beams, design for shear and torsion, and anchorage and development length	K3	3	3	3	3	1	3	1	1	3	2	1	2	3	3
3	III	V	CE3501	Design of Reinforced Concrete Structural Elements	C301.3	Design a RC slabs and staircase and draw the reinforcement detailing	K3	3	3	3	3	1	3	1	1	3	2	1	2	3	3

4	III	V	CE3501	Design of Reinforced Concrete Structural Elements	C301.4	Design short columns for axial, uni-axial and bi-axial eccentric loadings	K2	3	3	3	3	1	3	1	1	3	2	1	2	3	3
5	III	V	CE3501	Design of Reinforced Concrete Structural Elements	C301.5	Design wall footings, isolated footings and combined rectangular footing	K2	3	3	3	3	1	3	1	1	3	2	1	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3502 - Structural Analysis II / C302	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	CE3502	Structural Analysis I	C302.1	Analyse the determinate and Indeterminate truss	K3	3	3	3	3	1	3	1	1	3	2	1	2	3	3
2	III	V	CE3502	Structural Analysis I	C302.2	Analyse the continuous beam and Frames by Slope Deflection method	K3	3	3	3	3	1	3	1	1	3	2	1	1	3	3
3	III	V	CE3502	Structural Analysis I	C302.3	Apply the concept of Moment Distribution method for continuous beams, plane rigid frames with and without sway	K3	3	3	3	3	1	3	1	1	3	2	1	1	3	3
4	III	V	CE3502	Structural Analysis I	C302.4	Understand the concept of Flexibility method for pin jointed plane frame s,continuous beams and rigid jointed plane frames	K2	3	3	3	3	1	3	1	1	3	2	1	1	3	3
5	III	V	CE3502	Structural Analysis I	C302.5	Analyse the continuous beams,pin jointed plane frames and rigid frames by Stiffness method	K3	3	3	3	3	1	3	1	1	3	2	1	1	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3503- Foundation Engineering / C303	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	CE3503	Foundation Engineering	C303.1	an ability to gainknowledge about Site InvestigationA	K2	2	3	3	3	1	2	1	1	1	1	1	3	3	2
2	III	V	CE3503	Foundation Engineering	C303.2	understand the different tests Concepts of Shallow foundation	K2	2	3	3	3	1	2	2	1	1	1	1	3	2	3
3	III	V	CE3503	Foundation Engineering	C303.3	understand the different types of footings and rafts	K2	2	3	3	3	1	2	1	1	1	1	2	3	2	3
4	III	V	CE3503	Foundation Engineering	C303.4	knowledge on different components and types of Pile Foundation	K2	3	3	3	3	1	1	1	1	1	1	2	3	2	3
5	III	V	CE3503	Foundation Engineering	C303.5	gain knowledge on different applications of retaining walls	K2	3	3	3	3	1	1	1	1	1	1	2	3	2	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3013- Advanced Construction Techniques / C304	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	CE3013	Advanced Construction Techniques	C304.1	knowledge on advanced construction methodologies in under ground construction	K2	2	2	1	3	3	2	2	-	1	1	2	1	3	2
2	III	V	CE3013	Advanced Construction Techniques	C304.2	understand the modern techniques involved in super structure construction	K2	1	-	-	2	2	2	3	-	1	1	2	1	2	3
3	III	V	CE3013	Advanced Construction Techniques	C304.3	get an knowledge on construction sequences of structures like skyrappers, silos, chimneys,domes etc	K3	2	3	3	2	3	3	2	1	2	2	3	2	3	3
4	III	V	CE3013	Advanced Construction Techniques	C304.4	understand the modern techniques of repairing and protection methods of construction elements	K2	2	3	3	3	2	1	2	1	1	1	3	1	3	3

5	III	V	CE3013	Advanced Construction Techniques	C304.5	acquire knowledge on advanced techniques of safety measures while demolishing or dismantling the structure	K2	1	3	3	3	2	2	1	1	2	2	2	3		
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3025 Airports and Harbours / C305	Regulation: 2021	Knowledge level	PO1 K3	PO2 K4	PO3 K6	PO4 K4	PO5 K3	PO6 K3	PO7 K2	PO8 K3	PO9 K3	PO10 K3	PO11 K3	PO12 K2	PSO1 K6	PSO2 K3
1	III	V	CE3025	Airports and Harbours	C305.1	Learn about airport planning and design, including site selection.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
2	III	V	CE3025	Airports and Harbours	C305.2	Understanding of the various airport component designs.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
3	III	V	CE3025	Airports and Harbours	C305.3	Analyze and create the mechanisms for runway and passenger facility orientation.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
4	III	V	CE3025	Airports and Harbours	C305.4	Learn about the different elements that make up ports and harbours, as well as how to build a coast.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
5	III	V	CE3025	Airports and Harbours	C305.5	Understanding of numerous environmental laws and regulations.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3033- Solid and Hazardous Waste Management/ C306	Regulation: 2021	Knowledge level	PO1 K3	PO2 K4	PO3 K6	PO4 K4	PO5 K3	PO6 K3	PO7 K2	PO8 K3	PO9 K3	PO10 K3	PO11 K3	PO12 K2	PSO1 K6	PSO2 K3
1	III	V	CE3033	Solid and Hazardous Waste Management	C306.1	Explain the various functional elements of solid and hazardous waste management including the associated legal, health, safety, and cultural issues as well as responsibilities of different	K3	-	3	-	3	-	2	2	-	-	-	-	-	3	2
2	III	V	CE3033	Solid and Hazardous Waste Management	C306.2	Apply the knowledge of science and engineering fundamentals to characterize different types of solid and hazardous wastes, assess the factors affecting variation and assess performance	K3	3	2	-	2	2	-	-	-	2	-	-	-	2	2
3	III	V	CE3033	Solid and Hazardous Waste Management	C306.3	Design of systems and processes to meet specified needs of waste minimization, storage, collection, transport, recycling, processing and disposal.	K4	-	-	3	-	-	-	-	-	2	-	-	-	3	2
4	III	V	CE3033	Solid and Hazardous Waste Management	C306.4	Select appropriate methods for processing and disposal of solid and hazardous wastes, taking into account the impact of the solutions in a sustainability context.	K4	-	2	-	-	-	-	-	2	-	-	2	-	3	2
5	III	V	CE3033	Solid and Hazardous Waste Management	C306.5	Conduct research pertinent to solid and hazardous waste management and communicate effectively to different stakeholders as well as engage in independent lifelong learning.	K5	-	2	-	2	-	-	-	-	-	1	-	1	-	2
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3511-Highway Engineering Laboratory / C307	Regulation: 2021	Knowledge level	PO1 K3	PO2 K4	PO3 K6	PO4 K4	PO5 K3	PO6 K3	PO7 K2	PO8 K3	PO9 K3	PO10 K3	PO11 K3	PO12 K2	PSO1 K6	PSO2 K3
1	III	V	CE3511	Highway Engineering Laboratory	C307.1	Characterize Pavement Aggregate through relevant test.	K2	3	1	3	2	1	1	1	1	3	3	1	3	3	3
2	III	V	CE3511	Highway Engineering Laboratory	C307.2	Ascertain the Quality of Bitumen	K2	3	1	3	2	1	1	1	1	3	3	1	3	3	3
3	III	V	CE3511	Highway Engineering Laboratory	C307.3	Determine the Optimum Binder Content Using Marshall Method.	K2	3	1	3	2	1	1	1	1	3	3	1	3	3	3
4	III	V	CE3511	Highway Engineering Laboratory	C307.4	Evaluate the Consistency and Properties of Bitumen.	K3	3	1	3	2	1	1	1	1	3	3	1	3	3	3
5	III	V	CE3511	Highway Engineering Laboratory	C307.5	Determine the Bitumen Content in the Bituminous Mixes	K2	3	1	3	2	1	1	1	1	3	3	1	3	3	3
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CE3512-SURVEY CAMP/ C308	Regulation: 2021	Knowledge level	PO1 K3	PO2 K4	PO3 K6	PO4 K4	PO5 K3	PO6 K3	PO7 K2	PO8 K3	PO9 K3	PO10 K3	PO11 K3	PO12 K2	PSO1 K6	PSO2 K3

1	III	VI	CE3512	SURVEY CAMP	C308.1	Handle the modern surveying instruments like Total station and GPS	K2	3	3	-	3	3	2	2	3	2	2	2	3	3	3	
2	III	VI	CE3512	SURVEY CAMP	C308.2	Apply modern surveying techniques in field to establish horizontal control	K3	3	3	-	3	3	2	2	3	2	2	2	2	3	3	3
3	III	VI	CE3512	SURVEY CAMP	C308.3	Understand the surveying techniques in field to establish vertical control	K2	3	3	2	3	3	3	2	2	2	2	2	2	3	3	3
4	III	VI	CE3512	SURVEY CAMP	C308.4	Apply different survey adjustment techniques.	K3	3	3	2	-	3	2	2	2	2	2	2	2	3	3	3
5	III	VI	CE3512	SURVEY CAMP	C308.5	Carry out different setting out works in the field	K2	3	3	2	-	3	2	2	2	-	2	2	3	3	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: Mixed Signal IC Design Testing / C310	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6
1	III	VI					K2	3	3	2	2	3	2	1	2	3	2	-	2	3	2
2	III	VI					K2	3	2	2	2	3	2	1	2	3	2	-	2	3	2
3	III	VI					K2	3	3	2	2	3	2	1	2	3	2	-	2	3	2
4	III	VI					K2	3	3	2	2	3	2	1	2	3	2	-	2	3	2
5	III	VI					K2	3	2	2	2	3	2	1	2	3	2	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: RFID System Design and Testing / C311	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	VI					K2	3	3	3	3	3	3	2	2	2	2	2	2	3	3
2	III	VI					K2	3	3	3	3	3	3	2	2	2	2	2	2	3	3
3	III	VI					K2	3	3	3	3	3	3	2	2	2	2	2	2	3	3
4	III	VI					K2	3	3	3	3	3	3	2	2	2	2	2	2	3	3
5	III	VI					K2	3	3	3	3	3	3	2	2	2	2	2	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: Wireless Sensor Network Design / C312	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	VI					K2	3	3	3	3	3	2	2	2	2	2	-	2	3	3
2	III	VI					K2	3	3	3	3	3	2	2	2	2	2	-	2	3	3
3	III	VI					K2	3	3	3	3	3	2	2	2	2	2	-	2	3	3
4	III	VI					K2	3	3	3	3	3	2	2	2	2	2	-	2	3	3
5	III	VI					K2	3	3	3	3	3	2	2	2	2	2	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3791 - Human Values and Ethics / C401	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	IV	VII					K2	3	3	2	2	3	3	-	-	1	1	-	2	3	3
2	IV	VII					K2	3	3	2	2	3	3	-	-	1	1	-	2	3	3
3	IV	VII					K2	3	3	2	2	3	3	-	-	1	1	-	2	3	3
4	IV	VII					K2	3	3	2	2	3	3	-	-	1	1	-	2	3	3
5	IV	VII					K2	3	3	2	2	3	3	-	-	1	1	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3751- Principles of Management / C402	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	IV	VII					K2	3	2	1	1	2	3	-	3	3	3	3	3	-	3
2	IV	VII					K2	3	2	1	1	2	2	-	3	3	3	3	3	-	3
3	IV	VII					K2	3	2	1	1	2	3	-	3	3	3	3	3	-	3
4	IV	VII					K2	3	2	1	1	2	3	-	3	3	3	3	3	-	3
5	IV	VII					K2	3	2	1	1	2	2	-	3	3	3	3	3	-	3

Knowledge	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
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S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: OHS351-English for Competitive Examinations / C403	Regulation: 2021	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	IV	VII					K2						1	1		2	3	2	2		
2	IV	VII					K2						1	1		2	3	2	2		
3	IV	VII					K2						1	1		2	3	2	2		
4	IV	VII					K2						1	1		2	3	2	2		
5	IV	VII					K2						1	1		2	3	2	2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: OHS352-Project Report Writing / C404	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	IV	VII					K2						1	1	2	1	3	2	2		
2	IV	VII					K2						1	1	2	1	3	2	2		
3	IV	VII					K2						1	1	2	1	3	2	2		
4	IV	VII					K2						1	1	2	1	3	2	2		
5	IV	VII					K2						1	1	2	1	3	2	2		

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

COURSE OUTCOMES (COs)

CO-PO & PSO MAPPING

Regulation 2017

S. No.	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
Course Name: Communicative English					Course Code/Course No:HS8151/C101																		
1	I	I	HS8151	Communicative English	CO1	Prepare for active informal conversations and introduce themselves in English.	K3					1	1		1	3		2					
2	I	I	HS8151	Communicative English	CO2	Write paragraphs/descriptions on general topics.	K4					1	1		1	3		2					
3	I	I	HS8151	Communicative English	CO3	Construct appropriate syntax in English.	K5					1	1		1	3		2					
4	I	I	HS8151	Communicative English	CO4	Interpret and infer technical text.	K6					1	1		1	3		2					
5	I	I	HS8151	Communicative English	CO5	Write short essays of a general kind.	K7					1	1		1	3		2					
Course Name:Engineering Mathematics -1					Course Code/Course No:MA8151/C102					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
6	I	I	MA8151	Engineering Mathematics -1	CO1	Describe both the limit definition and rules of differentiation to differentiate functions	K3	3	2	1	1					1	1		1				
7	I	I	MA8151	Engineering Mathematics -1	CO2	Apply differentiation to solve maxima and minima problems	K4	3	2	1	1					1	1		1				
8	I	I	MA8151	Engineering Mathematics -1	CO3	Calculate integrals by using Riemann sums and the Fundamental Theorem of Calculus.	K5	3	2	1	1					1	1		1				
9	I	I	MA8151	Engineering Mathematics -1	CO4	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to change of order and change of variables	K6	3	2	1	1					1	1		1				
10	I	I	MA8151	Engineering Mathematics -1	CO5	Apply various techniques in solving differential equations	K7	3	2	1	1					1	1		1				
Course Name:Engineering Physics					Course Code/Course No:PH8151/C103																		
11	I	I	PH8151	Engineering Physics	CO1	Explain the basic properties of matter and its applications	K2	3	3	1		1						2					
12	I	I	PH8151	Engineering Physics	CO2	Describe the concepts of wave, lasers, optical fibers and their practical applications.	K3	3	3	1		1						2					
13	I	I	PH8151	Engineering Physics	CO3	Discuss the concepts of thermal properties of materials and their applications.	K4	3	3	1		1						2					
14	I	I	PH8151	Engineering Physics	CO4	Explain the advanced concepts of quantum theory and its applications.	K5	3	3	1		1						2					
15	I	I	PH8151	Engineering Physics	CO5	Describe crystal structures, the impacts of defects at the atomic and microstructure scales	K6	3	3	1		1						2					
Course Name:Engineering Chemistry					Course Code/Course No:CY8151/C104					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2

16	I	I	CY8151	Engineering Chemistry	CO1	Explain the materials, fuels, energy sources, treatment techniques of engineering processes and applications	K2	3	1	1									1	1	1				
17	I	I	CY8151	Engineering Chemistry	CO2	Explain the basic concepts of phase rule applications to single and two component systems and alloys	K3	3	1	1									1		1				
18	I	I	CY8151	Engineering Chemistry	CO3	Compare the knowledge of Preparation, properties and applications of engineering materials	K4	3	1	1									1	1	1				
19	I	I	CY8151	Engineering Chemistry	CO4	Calculate the fuels's calorific value and its types	K5	3	1	1									1		1				
20	I	I	CY8151	Engineering Chemistry	CO5	Explain the Principles and energy generation of batteries, solar cells, wind mills, nuclear reactors and fuel cells	K6	3	1	1									1	1	1				
Course Name: Problem Solving and Python Programming						Course Code/Course No:GE8151/C105						PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
21	I	I	GE8151	Problem Solving and Python Programming	CO1	Develop algorithmic solutions to simple computational problems	K3	3	2	1	1	2	1	1	2	2	1					3	2	1	
22	I	I	GE8151	Problem Solving and Python Programming	CO2	Write a executable simple pyhton programs	K4	3	2	1	1	2	1	1	2	1	1					3	2	1	
23	I	I	GE8151	Problem Solving and Python Programming	CO3	Apply conditional & loops statements to solve the simple python programs	K5	3	2	1	1	2	1	1	2	1	1					3	2	1	
24	I	I	GE8151	Problem Solving and Python Programming	CO4	Write a python program using Lists, Tuples and Dictioneries	K6	3	2	1	1	2	1	1	2	1	1					3	2	1	
25	I	I	GE8151	Problem Solving and Python Programming	CO5	Construct the python program using File, Module and Package concepts	K7	3	2	1	1	2	1	1	2	1	1					3	2	1	
Course Name: Engineering Graphics						Course Code/Course No:GE8152/C106						PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
26	I	I	GE8152	Engineering Graphics	CO1	Develop the Plane Curves and Orthographic Projections	K3	2	1	1									1	2		1			
27	I	I	GE8152	Engineering Graphics	CO2	Sketch the projection of lines an planes.	K4	2	1	1									1	2		1			
28	I	I	GE8152	Engineering Graphics	CO3	Draw the Projections of Solids	K5	2	1	1									1	2		1			
29	I	I	GE8152	Engineering Graphics	CO4	Draw the views of sectional solids and development of surfaces	K6	2	1	1									1	2		1			
30	I	I	GE8152	Engineering Graphics	CO5	Draw the Isometric and Perspective Projections of solids	K7	2	1	1									1	2		1			
Course Name:Problem Solving and Python Programming Lab						Course Code/Course No:GE8161/C107						PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
31	I	I	GE8161	Problem Solving and Python Programming Lab	CO1	Develop algorithmic solutions to simple computational problems	K3	3	2	1	1	2	1	1	2	2	1					3	2	1	
32	I	I	GE8161	Problem Solving and Python Programming Lab	CO2	Write a executable simple pyhton programs	K4	3	2	1	1	2	1	1	2	1	1					3	2	1	
33	I	I	GE8161	Problem Solving and Python Programming Lab	CO3	Apply conditional & loops statements to solve the simple python programs	K5	3	2	1	1	2	1	1	2	1	1					3	2	1	

34	I	I	GE8161	Problem Solving and Python Programming Lab	CO4	Write a python program using Lists, Tuples and Dictionaries	K6	3	2	1	1	2	1	1	2	1	1		3	2	1		
35	I	I	GE8161	Problem Solving and Python Programming Lab	CO5	Construct the python program using File, Module and Package concepts	K7	3	2	1	1	2	1	1	2	1	1		3	2	1		
Course Name:Physics and Chemistry Lab					Course Code/Course No:BS8161/C108					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
36	I	I	BS8161	Physics and Chemistry Lab	C108.1	Explain the functions of Physics and Chemistry laboratory Equipments	K2	3	1	1			1					2	2	2	1		
37	I	I	BS8161	Physics and Chemistry Lab	C108.2	Apply engineering properties of materials, principles of optics and thermal characteristics of Engineering Applications	K3	3	1	1								2	2	2	1		
38	I	I	BS8161	Physics and Chemistry Lab	C108.3	Calculate the Energy band gap for semiconductor materials and Properties of Laser for Engineering Applications.	K3	3	1	1								2	2	2	1		
39	I	I	BS8162	Physics and Chemistry Lab	C108.4	Calculate the quality parameters of different types in Water Samples	K3	3	1	1			1					2	2	2	1		
40	I	I	BS8163	Physics and Chemistry Lab	C108.5	Apply the appropriate method to find the PH, conductance and potential values of various solutions	K3	3	1	1			1					2	2	2	1		
Course Name:Technical English					Course Code/Course No:HS8251/C109					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
41	I	II	HS8251	Technical English	C109.1	Interpret technical texts and write area- specific texts effortlessly.	K3						1	1				1	3		2		
42	I	II	HS8251	Technical English	C109.2	Associate verbal with non-verbal communication.	K2						1					1	3		2		
43	I	II	HS8251	Technical English	C109.3	Describe a process in English.	K2						1					1	3		2		
44	I	II	HS8251	Technical English	C109.4	Write reports and winning job applications	K2						1					1	3		2		
45	I	II	HS8251	Technical English	C109.5	Paraphrase lectures and talks in their area of specialization successfully	K2						1	1				1	3		2		
Course Name:Engineering Mathematics II					Course Code/Course No:MA8251/C110					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
46	I	II	MA8251	Engineering Mathematics II	C110.1	Calculate eigenvalues & eigenvectors and apply orthogonal diagonalisation to convert quadratic form to canonical form.	K3	3	2	1								1	1		1		
47	I	II	MA8251	Engineering Mathematics II	C110.2	Solve the problems using Gradient, divergence & curl of a vector point function and related identities.	K3	3	2	1								1	1		1		
48	I	II	MA8251	Engineering Mathematics II	C110.3	Calculate line, surface and volume integrals using Gauss, Stokes and Green's theorems.	K3	3	2	1								1	1		1		
49	I	II	MA8251	Engineering Mathematics II	C110.4	Solve the problems using Analytic functions, conformal mapping and complex integration.	K3	3	2	1								1	1		1		
50	I	II	MA8251	Engineering Mathematics II	C110.5	Solve the problems using Laplace transform and inverse transform of simple functions, properties, various related theorems along with differential equations with constant coefficients.	K3	3	2	1								1	1		1		
Course Name:Physics for Information Science					Course Code/Course No:PH8252/C111					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
51	I	II	PH8252	Physics for Information Science	C111.1	Describe the Classical and Quantum theory of electrical and thermal properties in materials.	K2	3	3	2			2	1	1				2				
52	I	II	PH8252	Physics for Information Science	C111.2	Discuss about semiconducting material properties and application in engineering field.	K2	3	3	2			2	1	1				2				
53	I	II	PH8252	Physics for Information Science	C111.3	Apply the knowledge on magnetic properties of materials in data storage devices.	K3	3	3	2			2	1	1				2				
54	I	II	PH8252	Physics for Information Science	C111.4	Explain the properties and working principle of optoelectronics devices and used in optical data storage	K2	3	3	2			2	1	1				2				
55	I	II	PH8252	Physics for Information Science	C111.5	Illustrate the basics of nanostructures and different types of nanostructures and apply in advanced quantum technology	K3	3	3	2			2	1	1				2				
Course Name:Basic Electrical,Electronics and Measurement Engineering					Course Code/Course No:BE8255/C112					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
56	I	II	BE8255	Basic Electrical,Electronics and Measurement Engineering	C112.1	Apply the basic circuit components and theorem in DC electric circuits	K3	3	3	3	3										1		
57	I	II	BE8255	Basic Electrical,Electronics and Measurement Engineering	C112.2	Describe the AC electric circuits wiring	K2	3	3	2	2										1		
58	I	II	BE8255	Basic Electrical,Electronics and Measurement Engineering	C112.3	Explain the working principles of electrical machines	K2	3	3	3	1										1		
59	I	II	BE8255	Basic Electrical,Electronics and Measurement Engineering	C112.4	Discuss the concepts of various electronic devices	K2	3	1	2	3										1		
60	I	II	BE8255	Basic Electrical,Electronics and Measurement Engineering	C112.5	Apply appropriate instruments for electrical measurement for a specific application	K3	3	2	1	1												
Course Name:Environmental Science and Engineering					Course Code/Course No:GE8291/C113					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
61	I	II	GE8291	Environmental Science and Engineering	C113.1	Describe the functions of environment, ecosystems and biodiversity and their conservation.	K2	1						2		3	3	1	1		2		

62	I	II	GE8291	Environmental Science and Engineering	C113.2	Discuss the causes & effects of environmental pollution, natural disasters for the preventive measures in the society	K2	1							3	3	3	3	1			2		
63	I	II	GE8291	Environmental Science and Engineering	C113.3	Explain the renewable and non-renewable resources for the sustainable measures for future generations	K2	1							3	3	3	3	1			2		
64	I	II	GE8291	Environmental Science and Engineering	C113.4	Discuss the different goals of sustainable development and apply them for suitable technological advancement for the society	K2	1							3	3	3	3	1			2		
65	I	II	GE8291	Environmental Science and Engineering	C113.5	Explain the Developments in standard of living has lead to serious environmental disasters	K2	1							3	3	3	3	1			2		
Course Name:Programming in C				Course Code/Course No:CS8251/C114				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
66	I	II	CS8251	Programming in C	C114.1	Develop simple applications in C using basic constructs	K3	3	2	2	2	1				1					2	2	1	
67	I	II	CS8251	Programming in C	C114.2	Design and implement applications using arrays and strings	K3	3	3	2	2	1				1					2	2	1	
68	I	II	CS8251	Programming in C	C114.3	Develop and implement applications in C using functions and pointers.	K3	3	3	2	2	1				1					2	2	1	
69	I	II	CS8251	Programming in C	C114.4	Develop applications in C using structures.	K3	3	3	2	2	1				1					2	2	1	
70	I	II	CS8251	Programming in C	C114.5	Design applications using sequential and random access file processing.	K3	3	3	2	2	1				1					2	2	1	
Course Name:Engineering Practices Lab				Course Code/Course No:GE8261/C115				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
71	I	II	GE8261	Engineering Practices Lab	C115.1	Describe the Various Equipments in Engineering Practice Laboratories	K2	1				1				2	2	2			1			
71	I	II	GE8261	Engineering Practices Lab	C115.2	Draw pipe line plan, lay and connect various pipe fittings for plumbing work and make joints in wood materials used in common household work	K3	1				1				2	2	2			1			
73	I	II	GE8261	Engineering Practices Lab	C115.3	Practice the making of Simple objects using welding, Sheet Metal and Machining for Household Work	K3	1				2				2	2	2			1			
	I	II	GE8262	Engineering Practices Lab	C115.4	Construct various electrical joints in common household electrical work	K3	1				2				2	2	2			1			
	I	II	GE8263	Engineering Practices Lab	C115.5	Design and test simple electronic circuits by mounting components on PCB	K3	1				2				2	2	2			1			
Course Name:C Programming Lab				Course Code/Course No:CS8261/C116				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
76	I	II	CS8261	C Programming Lab	C116.1	Develop C programs for simple applications making use of basic constructs, arrays and strings.	K3	2	3	3	2	1	1			2	1	2	2	3	1			
77	I	II	CS8261	C Programming Lab	C116.2	Develop C programs for simple applications making use of arrays and strings.	K3	2	2	2	1	1	2			2		2	2	2	1			
78	I	II	CS8261	C Programming Lab	C116.3	Develop C programs involving functions and recursion	K3	2	2	2	2	1	2			3		3	3	2	1			
	I	II	CS8261	C Programming Lab	C116.4	Develop C programs involving functions, pointers, and structures.	K3	2	2	3	2	2	2			3		3	3	3				
	I	II	CS8261	C Programming Lab	C116.5	Design applications using sequential and random access file processing.	K3	2	2	3	2	2	2			2	1	2	2	2	1			
Course Name:Discrete Mathematics				Course Code/Course No:MA8351/C201				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
81	II	III	MA8351	Discrete Mathematics	C201.1	Apply the concepts needed to test the logic of a program.	K3	3	3	1	2					1	1			1				
82	II	III	MA8351	Discrete Mathematics	C201.2	Describe the ways of identifying structures on many levels.	K2	3	3	1	2					1	1			1				
83	II	III	MA8351	Discrete Mathematics	C201.3	Apply the class of functions which transform a finite set into another finite set which relates to input and output functions in computer science.	K3	3	3	1	2					1	1			1				
84	II	III	MA8351	Discrete Mathematics	C201.4	Apply the counting principles.	K3	3	3	1	2					1	1			1				
85	II	III	MA8351	Discrete Mathematics	C201.5	Apply the concepts and properties of algebraic structures such as groups, rings and fields.	K3	3	3	1	2					1	1			1				
Course Name:Digital Principles and System Design				Course Code/Course No:CS8351/C202				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
86	II	III	CS8351	Digital Principles and System Design	C202.1	Design digital circuits using simple Boolean functions	K3	3	3	2	2		2		2									
87	II	III	CS8351	Digital Principles and System Design	C202.2	Design and Analyze Combinational and Sequential circuits	K3	3	2	3	2		2		2									
88	II	III	CS8351	Digital Principles and System Design	C202.3	Design the programmable logic devices	K3	3	1	2	2		2		2									
89	II	III	CS8351	Digital Principles and System Design	C202.4	Write HDL Code for combinational circuits	K3	3	1	2	2		2		2									
90	II	III	CS8351	Digital Principles and System Design	C202.5	Write HDL Code for sequential circuits	K3	3	1	2	2		2		2									
Course Name:Data Structures				Course Code/Course No:CS8391/C203				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
91	II	III	CS8391	Data Structures	C203.1	Apply the Linear data structure- List	K3	3	3	3	3		2	1			1			2	1	2		

92	II	III	CS8391	Data Structures	C203.2	Apply Linear data structures Stack and Queue for solving problems	K3	3	3	3	3		2	1			1		2	1	2				
93	II	III	CS8391	Data Structures	C203.3	Solve problems using non-linear data structure-Tree	K3	3	3	3	3		2	1			1		2	1	2				
94	II	III	CS8391	Data Structures	C203.4	Apply the non-linear data structures for Graph applications	K3	3	3	3	3		2	1			1		2	1	2				
95	II	III	CS8391	Data Structures	C203.5	Compare the various sorting algorithms	K2	2	2	3	3		2	1			1		2	1	3				
Course Name: Object Oriented Programming					Course Code/Course No: CS8392/C204							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
96	II	III	CS8392	Object Oriented Programming	C204.1	Construct Java programs using OOP principles	K3	1	1	3	3	3					3	2	2	2	3	1			
97	II	III	CS8392	Object Oriented Programming	C204.2	Write Java programs with the concepts Inheritance and Interfaces	K3	2	1	3	3	3					2	1	1	3	3	3			
98	II	III	CS8392	Object Oriented Programming	C204.3	Write Java Applications using Exceptions and I/O streams	K3	3	3	3	3	3					3	2	1	2	3	1			
99	II	III	CS8392	Object Oriented Programming	C204.4	Develop Java Applications with Threads and Generic Classes	K3	3	1	2	2	2					1	2	1	3	3	1			
100	II	III	CS8392	Object Oriented Programming	C204.5	Construct interactive Java programs using swings and event handling	K3	1	1	2	3	2					3	2	1	2	3	3			
Course Name: Communication Engineering					Course Code/Course No: EC8395/C205							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
101	II	III	EC8395	Communication Engineering	C205.1	Describe the significance and role of analog modulation	K2	2	1	-			2	2	1	2									
102	II	III	EC8395	Communication Engineering	C205.2	Apply Analog and Digital communication technique	K3	3	2	1			2	2	1	2									
103	II	III	EC8395	Communication Engineering	C205.3	Apply data and pulse communication techniques	K3	3	2	1			2	2	1	2									
104	II	III	EC8395	Communication Engineering	C205.4	Compare Source and Error control coding	K2	3	3	2			2	2	1	2									
105	II	III	EC8395	Communication Engineering	C205.5	Apply Spread Spectrum and Multiple access techniques	K3	3	2	1			2	2	1	2									
Course Name: Data Structures Laboratory					Course Code/Course No: CS8381/C206							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
106	II	III	CS8381	Data Structures Laboratory	C206.1	Apply the linear and non-linear data structures for various operations	K3	3	3	3	2			1	2	2			1		2	1	2		
107	II	III	CS8381	Data Structures Laboratory	C206.2	Analyse various linear / non-linear data structure operations for solving a given problem	K4	3	3	3	2			1	2	2			1		2	1	2		
108	II	III	CS8381	Data Structures Laboratory	C206.3	Apply linear / non-linear data structure operations for solving a given problem	K3	3	3	3	2			1	2	2			1		2	1	2		
109	II	III	CS8381	Data Structures Laboratory	C206.4	Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval	K3	3	3	3	2			1	2	2			1		2	1	2		
110	II	III	CS8381	Data Structures Laboratory	C206.5	Develop the applications using various searching and sorting algorithms	K3	2	2	3	2			1	2	2			1		2	1	3		
Course Name: Object Oriented Programming Laboratory					Course Code/Course No: CS8383/C207							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
111	II	III	CS8383	Object Oriented Programming Laboratory	C207.1	Develop Java Programs for simple Applications	K3	2	1	2	1							1	2	2	2	3	2		
112	II	III	CS8383	Object Oriented Programming Laboratory	C207.2	Construct java program using arraylist, exception Handling and Multithreading	K3	2	1	3	2	1						2	3	3	2	3	3		
113	II	III	CS8383	Object Oriented Programming Laboratory	C207.3	Design application using file processing	K3	2	2	2	2	2						1	2	1	3	3	3		
114	II	III	CS8383	Object Oriented Programming Laboratory	C207.4	Design application using Generic Programming	K3	2	2	2	3	1						3	1	1	1	3	1		
115	II	III	CS8383	Object Oriented Programming Laboratory	C207.5	Design application using Event Handling	K3	1	3	3	2	3						1	1	1	1	3	1		
Course Name: Digital Systems Laboratory					Course Code/Course No: CS8382/C208							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
116	II	III	CS8382	Digital Systems Laboratory	C208.1	Design simplified combinational circuits using basic logic gates	K3	3	3	3	3			2	1	2	3				3	3	3		
117	II	III	CS8382	Digital Systems Laboratory	C208.2	Design combinational circuits using MSI devices	K3	3	3	3	3			2	1	2	3				3	3	3		
118	II	III	CS8382	Digital Systems Laboratory	C208.3	Apply sequential circuits like registers and counters	K3	3	3	3	3			2	1	2	3				3	3	3		

119	II	III	CS8382	Digital Systems Laboratory	C208.4	Simulate combinational circuits using HDL	K5	3	3	3	3		2	1	2	3			3	3	3	
120	II	III	CS8382	Digital Systems Laboratory	C208.5	Simulate sequential circuits using HDL	K5	3	3	3	3		2	1	2	3			3	3	3	
Course Name: Interpersonal Skills/Listening&Speaking				Course Code/Course No:HS8381/C209				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
121	II	III	HS8381	Interpersonal Skills/Listening&Speaking	C209.1	Restate effectively after listening to information and lectures.	K2					1		1	3	3			2			
122	II	III	HS8381	Interpersonal Skills/Listening&Speaking	C209.2	Use effective presentations	K3					1		1	3	3			2			
123	II	III	HS8381	Interpersonal Skills/Listening&Speaking	C209.3	Discuss ideas in Groups confidently	K2					1		1	3	3			2			
124	II	III	HS8382	Interpersonal Skills/Listening&Speaking	C209.4	Construct confidently and appropriately in conversations both formal and informal	K3					1		1	3	3			2			
125	II	III	HS8383	Interpersonal Skills/Listening&Speaking	C209.5	Describe appropriate instructions and recommendations for safe execution of tasks	K2					1		1	3	3			2			
Course Name:Probability and QueueingTheory				Course Code/Course No:MA8402/C210				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
126	II	IV	MA8402	Probability and QueueingTheory	C210.1	Explain the concepts of probability and standard distributions using in real life.	K2	3	2	1	1				1	1			1			
127	II	IV	MA8402	Probability and QueueingTheory	C210.2	Apply the basic concepts of one and two dimensional random variables in engineering applications	K3	3	2	1	1				1	1			1			
128	II	IV	MA8402	Probability and QueueingTheory	C210.3	Apply the concept of random processes in engineering applications	K3	3	2	1	1				1	1			1			
129	II	IV	MA8402	Probability and QueueingTheory	C210.4	Apply skills in analyzing queueing models.	K3	3	2	1	1				1	1			1			
130	II	IV	MA8402	Probability and QueueingTheory	C210.5	Explain the phenomenon which evolve with respect to time in a probabilistic manner	K2	3	2	1	1				1	1			1			
Course Name:Computer Architecture				Course Code/Course No:CS8491/C211				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
131	II	IV	CS8491	Computer Architecture	C211.1	Explain the basics structure of computers, operations and instructions.	K2	2	2	2	3	2	2	1	1	1	1		3	2	1	
132	II	IV	CS8491	Computer Architecture	C211.2	Apply the concepts to design arithmetic and logic unit.	K3	3	2	2	3	2	2	1	1	1	1		3	2	1	
133	II	IV	CS8491	Computer Architecture	C211.3	Discuss the various hazards in pipeline execution and design control unit	K2	2	1	2	3	2	2	1	1	1	1		3	2	1	
134	II	IV	CS8491	Computer Architecture	C211.4	Explain the parallel processing architectures.	K2	2	1	2	3	2	2	1	1	1	1		3	2	1	
135	II	IV	CS8491	Computer Architecture	C211.5	Explain the characteristics of various memory systems and IO Communication	K2	2	1	2	2	2	2	1	1	1	1		3	2	1	
Course Name: Database Management Systems				Course Code/Course No:CS8492/C212				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
136	II	IV	CS8492	Database Management Systems	C212.1	Write a Query for the given application using suitable model	K3	2	2	3	3	2				2	1	3	3	3	3	
137	II	IV	CS8492	Database Management Systems	C212.2	Design a normalized database and write optimized queries for an application	K3	2	2	3	2	2				2	2	2	2	3	3	
138	II	IV	CS8492	Database Management Systems	C212.3	Describe the concepts of transactions, dead locks and recovery	K2	2	1	2	2	2				1	2	1	1	3	3	
139	II	IV	CS8492	Database Management Systems	C212.4	Compare various indexing strategies in different database systems and analyze optimization	K2	3	2	2	3	2				3	3	2	1	3	3	
140	II	IV	CS8492	Database Management Systems	C212.5	Compare advanced databases and traditional databases.	K2	2	2	2	2	3				3	3	3	2	3	3	
Course Name: Design and Analysis of algorithms				Course Code/Course No:CS8451/C213				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
141	II	IV	CS8451	Design and Analysis of algorithms	C213.1	Design algorithms for various computing problems	K3	3	3	3	1	2	1	1	1	2	1	3	3			
142	II	IV	CS8451	Design and Analysis of algorithms	C213.2	Explain the efficiency of brute force, divide and conquer algorithmic techniques.	K2	2	1	1	3	2	2	1	1	2	2	1	2	2		
143	II	IV	CS8451	Design and Analysis of algorithms	C213.3	Solve the problems using dynamic programming and greedy algorithmic techniques.	K3	3	2	1	2	2	1	1	2	2	1	1	2	2	1	

144	II	IV	CS8451	Design and Analysis of algorithms	C213.4	Solve the problems using iterative improvement techniques for optimization.	K3	3	2	3	2	2	2	1	1	3	3	3	2	3		
145	II	IV	CS8451	Design and Analysis of algorithms	C213.5	Modify the existing algorithms to improve efficiency	K3	3	1	2	3	3	1	1	2	2	2	2	2	3	2	
Course Name: Operating Systems				Course Code/Course No: CS8493/C214					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
146	II	IV	CS8493	Operating Systems	C214.1	Explain the Basic Concepts and Functions of Operating System	K2	3	1	2	3	2	1	1		3	3	2	1	1	1	
147	II	IV	CS8493	Operating Systems	C214.2	Compare various scheduling Algorithms, Process Synchronization and Deadlock.	K2	3	1	2	3	2	1	1		3	2	3	1			2
148	II	IV	CS8493	Operating Systems	C214.3	Describe the various memory Management Schemes	K2	1	3	2	3	2	1	1		2	2	1	1	2	2	
149	II	IV	CS8493	Operating Systems	C214.4	Discuss the Functionality of File System	K2	1	3	3	3		1	1		1	2	1	2	2	2	
150	II	IV	CS8493	Operating Systems	C214.5	Illustrate the Linux Server, iOS and Android OS	K2	3	1	2	3	2	2	2	1	2	2	2	2	2	2	3
Course Name: Software Engineering				Course Code/Course No: CS8494/C215					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
151	II	IV	CS8494	Software Engineering	C215.1	Compare various Software Development Lifecycle Models	K2	2	2	1	2	2					1	1	2		2	
152	II	IV	CS8494	Software Engineering	C215.2	Describe the requirements for the software design	K2	2	3	2	3	2				2	2	3	2	2	1	
153	II	IV	CS8494	Software Engineering	C215.3	Apply Systematic procedures for Software Design and Deployment	K3	2	3	2	1	1				2	2	3	2	3	3	
154	II	IV	CS8494	Software Engineering	C215.4	Compare and Contrast the Various Testing and Maintenance	K2	2	3	2	2	3	2		1	2	2	3	2	3	2	
155	II	IV	CS8494	Software Engineering	C215.5	Prepare the project schedule and estimate the Cost.	K3	2	3	1	2	2	2		1	1	2	2	1	3	3	
Course Name: DataBase Management System Lab				Course Code/Course No: CS8481/C216					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
156	II	IV	CS8481	Database Management Systems Lab	C216.1	Apply typical data definitions and manipulation commands for creating the DB	K3	3	2	2	3	2				3	2		3	3	2	
157	II	IV	CS8481	Database Management Systems Lab	C216.2	Design applications to test the Nested and Join Queries	K3	2	2	3	3	2				1	2	3	2	3	3	
158	II	IV	CS8481	Database Management Systems Lab	C216.3	Write the simple applications using Views Concepts	K3	3	3	2	3	1				1	1	3	3	3	3	
159	II	IV	CS8481	Database Management Systems Lab	C216.4	Construct GUI applications using Front-end Tool	K3	1	3	3	3	1				1	1	3	3	3	3	
160	II	IV	CS8481	Database Management Systems Lab	C216.5	Design a DB using the Tables, Views, Functions and Procedures	K3	3	2	3	3	1				2	2	3	1	3	3	
Course Name: Operating System Lab				Course Code/Course No: CS8461/C217					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
161	II	IV	CS8461	Operating System Lab	C217.1	Analyze the performance of various CPU Scheduling Algorithms	K4	3	3	3	3	3	2	1	1	2	1	2	1	2	3	
162	II	IV	CS8461	Operating System Lab	C217.2	Write the Program for Deadlock avoidance, Detection Algorithms and Semaphores	K3	3	3	3	3	2	2	1	1	1	1	1	1	2	3	
163	II	IV	CS8461	Operating System Lab	C217.3	Construct the program for Processes and Implement the Inter Process Communications	K3	3	3	3	3	3	2	1	1	2	1	2	1	2	3	
164	II	IV	CS8461	Operating System Lab	C217.4	Analyze the Performance of the various Page Replacement Algorithms	K4	3	3	3	3	3	2	1	1	2	1	2	1	2	3	
165	II	IV	CS8461	Operating System Lab	C217.5	Develop an application using File Organization and File Allocation Strategies	K3	3	3	3	3	2	2	1	1	1	1	1	1	3	3	
Course Name: Advanced Reading and Writing				Course Code/Course No: HS8461/C218					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
166	II	IV	HS8461	Advanced Reading and Writing	C218.1	Write different types of simple paragraphs	K1								1	3	3		2			
167	II	IV	HS8461	Advanced Reading and Writing	C218.2	Prepare different types of job applications	K3								1	3	3		2			
168	II	IV	HS8461	Advanced Reading and Writing	C218.3	Write different types of essays with critical Analysis	K1								1	3	3		2			
169	II	IV	HS8462	Advanced Reading and Writing	C218.4	Interpret and evaluate texts critically.	K1								1	3	3		2			
170	II	IV	HS8463	Advanced Reading and Writing	C218.5	Apply critical thinking in various professional contexts.	K3						1		1	3	3		2			
Course Name: Algebra and Number Theory				Course Code/Course No: MA8551/C301					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
171	III	V	MA8551	Algebra and Number Theory	C301.1	Apply the basic concepts of groups used to solve group theory problem	K3	3	2	1	2					1	1		1			
172	III	V	MA8551	Algebra and Number Theory	C301.2	Explain the theoretical and practical applications using the concepts of advanced algebra	K2	3	2	1	2					1	1		1			
173	III	V	MA8551	Algebra and Number Theory	C301.3	Apply advanced algebraic methods with accuracy and effectiveness.	K3	3	2	1	2					1	1		1			

174	III	V	MA8551	Algebra and Number Theory	C301.4	Solve the non - trivial problems related to the Advanced Algebra concepts	K3	3	2	1	2						1	1		1					
175	III	V	MA8551	Algebra and Number Theory	C301.5	Apply integrated approach to number theory and abstract algebra	K3	3	2	1	2						1	1		1					
Course Name: Computer Networks					Course Code/Course No:CS8591/C302							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
176	III	V	CS8591	Computer Networks	C302.1	Explain the working principles of application layer protocols	K2	3	3	3	2	2	2	1	1	1			1	3	3	2			
177	III	V	CS8591	Computer Networks	C302.2	Compare the different Transport layer protocols	K4	3	3	3	3	3	1	1	1	1	1	1	1	3	3	2			
178	III	V	CS8591	Computer Networks	C302.3	Describe the functions of IP addressing, services provided in the network layer	K2	3	3	2	3	1	1	1		1			3	3	2				
179	III	V	CS8591	Computer Networks	C302.4	Compare the various routing algorithms	K4	3	3	3	3	3	2	1		1	2		3	3	2				
180	III	V	CS8591	Computer Networks	C302.5	Discuss the Physical and Data Link layer protocols	K2	3	3	3	3	3	2	1		1	1	1	3	3	3				
Course Name: Microprocessors and Microcontrollers					Course Code/Course No:EC8691/C303							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
181	III	V	EC8691	Microprocessors and Microcontrollers	C303.1	Write the programs based on 8086 microprocessor	K3	3	3	3	2		2	2	1						-	2			
182	III	V	EC8691	Microprocessors and Microcontrollers	C303.2	Design Memory Interfacing circuits.	K3	3	3	3	2		2	2	1						3	3			
183	III	V	EC8691	Microprocessors and Microcontrollers	C303.3	Design and interface I/O circuits.	K3	3	3	3	2		2	2	1						3	3			
184	III	V	EC8691	Microprocessors and Microcontrollers	C303.4	Design and implement 8051 microcontroller based systems.	K3	3	3	3	2		2	2	1						3	3			
185	III	V	EC8691	Microprocessors and Microcontrollers	C303.5	Design and implement interface for microcontroller.	K3	3	3	3	2		2	2	1						3	3			
Course Name: Theory of Computation					Course Code/Course No:CS8501/C304							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
186	III	V	CS8501	Theory of Computation	C304.1	Construct automata, regular expression for any pattern.	K3	1	3	2	3	1	2		2	1	1	2	1	1	2	2			
187	III	V	CS8501	Theory of Computation	C304.2	Write Context free grammar for any construct.	K3	2	2	3	3	1	2		2	3	3	2	1	1	2	2			
188	III	V	CS8501	Theory of Computation	C304.3	Construct pushdown automata for a grammar	K3	2	2	3	3	1	2		2	1	3	1	1	1	2	2			
189	III	V	CS8501	Theory of Computation	C304.4	Design Turing machines for any language.	K3	2	2	2	3	1	2		2	1	3	2	1	1	2	2			
190	III	V	CS8501	Theory of Computation	C304.5	Examine whether a problem is decidable or not.	K3	2	2	2	3	1	1		2	1	1	2	1	1	1	1			
Course Name: Object Oriented Analysis and Design					Course Code/Course No:CS8592/C305							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
191	III	V	CS8592	Object Oriented Analysis and Design	C305.1	Express software design with UML diagrams	K2	2	1	2	3	2	3	1	1			1			3	2			
192	III	V	CS8592	Object Oriented Analysis and Design	C305.2	Design software applications using OO concepts.	K3	3	3	3	2	2	3	1	2						3	3			
193	III	V	CS8592	Object Oriented Analysis and Design	C305.3	Explain various scenarios based on software requirements	K2	3	2	2	2	2	3	2	3			1			3	3			
194	III	V	CS8592	Object Oriented Analysis and Design	C305.4	Transform UML based software design into pattern based design using design patterns	K2	3	3	3	2	2	3	2	1		1				3	3			
195	III	V	CS8592	Object Oriented Analysis and Design	C305.5	Describe the various testing methodologies for OO software	K2	2	1	2	2	2	3	3			1				2	2			
Course Name: Air Pollution and Control Engineering					Course Code/Course No:OCE551/C306							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
196	III	V	OCE551	Air Pollution and Control Engineering	C306.1	Describe the nature and characteristics of air pollutants, noise pollution and Air quality management	K2	3	3	3	2		3	3	3	1	1			2					
197	III	V	OCE551	Air Pollution and Control Engineering	C306.2	Explain the solutions for Air and Noise pollution problems	K2	3	3	3	2		3	3	3	1	1			2					
198	III	V	OCE551	Air Pollution and Control Engineering	C306.3	Illustrate stacks and particulate air pollution control devices to meet applicable standards	K2	3	3	3	2		3	3	3	1	1			2					
199	III	V	OCE551	Air Pollution and Control Engineering	C306.4	Predict appropriate pollution control equipments	K3	3	3	3	2		3	3	3	1	1			2					
200	III	V	OCE551	Air Pollution and Control Engineering	C306.5	Discuss quality, control and preventive measures of Air and Noise Pollution	K2	3	3	3	2		3	3	3	1	1			2					
Course Name:Microprocessors & Microcontrollers Lab					Course Code/Course No:EC8681/C307							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
201	III	V	EC8681	Microprocessors & Microcontrollers Lab	C307.1	Write ALP Programmes for fixed and Floating Point and Arithmetic operations	K3	1					2	2	1	2	1			2		1			
202	III	V	EC8681	Microprocessors & Microcontrollers Lab	C307.2	Interface different I/Os with processor	K3	3	2	1			2	2	3	3	3			3		3			

203	III	V	EC8681	Microprocessors & Microcontrollers Lab	C307.3	Construct waveforms using Microprocessors	K3	3	3	3			2	2	3	3	3		3	3	3	
204	III	V	EC8681	Microprocessors & Microcontrollers Lab	C307.4	Write Programs in 8051	K3	3	2	1			2	2	3	3	3		3		3	
205	III	V	EC8681	Microprocessors & Microcontrollers Lab	C307.5	Compare the difference between simulator and Emulator	K2	2	1				2	2	2	3	2		3		2	
Course Name :Object Oriented Analysis and Design Lab				Course Code/Course No:CS8582/C308					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
206	III	V	CS8582	Object Oriented Analysis and Design Lab	C308.1	Develop the solutions for problem specification using OO Methods	K3	3	3	2	2	3	3		3	3	3	3	3	3	3	
207	III	V	CS8582	Object Oriented Analysis and Design Lab	C308.2	Develop the basic software requirements in UML mapping.	K3	3	2	1	2	3	3		3	3	3	3	3	3	3	
208	III	V	CS8582	Object Oriented Analysis and Design Lab	C308.3	Change the software quality using design patterns	K3	3	3	3	2	3	3		3	3	3	3	3	3	3	
209	III	V	CS8582	Object Oriented Analysis and Design Lab	C308.4	Explain the rationale behind applying specific design patterns	K2	2	1	-	2	3	3		2	3	2	3	3	3	3	
210	III	V	CS8582	Object Oriented Analysis and Design Lab	C308.5	Apply the compliance of the software with the SRS.	K3	3	3	2	2	3	3		3	3	3	3	3	3	3	
Course Name :Networks Lab				Course Code/Course No:CS8581/C309					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
211	III	V	CS8581	Networks Lab	C309.1	Describe how networks are organized in the layered approach with its performance	K2	3	2	2	3	3	2	1	1	3	3	1	3		3	
212	III	V	CS8581	Networks Lab	C309.2	Apply the functions of access control mechanisms	K3	3	3	2	3	3	2	1	2	3	3	1	3	2	3	
213	III	V	CS8581	Networks Lab	C309.3	Estimate the functions of IP addressing, services provided in the network layer	K3	3	3	3	2	3	2	1	1	3	3	1	3	2	3	
214	III	V	CS8581	Networks Lab	C309.4	Examine the various routing algorithms	K3	3	3	2	2	3	1	1	2	3	3	1	3	2	3	
215	III	V	CS8581	Networks Lab	C309.5	Describe the working principles of application layer protocols	K2	3	2	2	2	3	2	1	1	3	3	1	3		3	
Course Name : Internet Programming				Course Code/Course No:CS8651/C310					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
216	III	VI	CS8651	Internet Programming	C310.1	Explain the Web Essentials and Design the web page using HTML5 and CSS3	K2	3	3	3	3	3	2	2	1	2	1	2	3	3	3	
217	III	VI	CS8651	Internet Programming	C310.2	Construct Client side web page with validation using Java Script and JSON by applying different event handling mechanisms	K3	3	3	3	3	3	2	2	1	2	1	2	3	3	3	
218	III	VI	CS8651	Internet Programming	C310.3	Apply servlets and JSP concept to design Server side Programs and understand JDBC Connectivity	K3	3	3	3	3	3	2	2	1	2	1	2	3	3	3	
219	III	VI	CS8651	Internet Programming	C310.4	Develop simple web pages in PHP and to represent data in XML format and RSS	K3	3	3	3	3	3	2	2	1	2	1	2	3	3	3	
220	III	VI	CS8651	Internet Programming	C310.5	Apply AJAX and web services to develop interactive web applications	K3	3	3	3	3	3	2	2	1	2	1	2	3	3	3	
Course Name : Artificial Intelligence				Course Code/Course No:CS8691/C311					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
221	III	VI	CS8691	Artificial Intelligence	C311.1	Apply the appropriate search algorithms for any AI problem	K3	3	1	3	3		1	1	1	2	3	3	1	2		
222	III	VI	CS8691	Artificial Intelligence	C311.2	Apply problem solving techniques to solve the Real Time Problems	K3	2	2	2	2	2	1	1	1	2	2	3	1	2		
223	III	VI	CS8691	Artificial Intelligence	C311.3	Solve the given problem using the appropriate agent strategy	K3	3	3	2	3	3	2	1	1	2	2	2	2	2	1	
224	III	VI	CS8691	Artificial Intelligence	C311.4	Solve the problem using the software agents	K3	3	2	2	2	3	2	1	1	2	2	2	2	2	1	
225	III	VI	CS8691	Artificial Intelligence	C311.5	Develop the applications for NLP using Artificial Intelligence	K3	3	3	2	2	3	2	2	1	2	3	2	3	2	1	
								2.8	2.2	2.2	2.4	2.8	1.6	1.2	1.0	2.0	2.4	2.4	1.8	2.0	1.0	
Course Name : Mobile Computing				Course Code/Course No:CS8601/C312					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
226	III	VI	CS8601	Mobile Computing	C312.1	Explain the basics of mobile telecommunication systems	K2	2	2	2	3	3	3	1	1	1	2	1	3	1	2	
227	III	VI	CS8601	Mobile Computing	C312.2	Illustrate the generations of telecommunication systems in wireless networks	K3	2	2	2	2	3	3	1	1	1	2		3	1	2	

228	III	VI	CS8601	Mobile Computing	C312.3	Discuss the functionality of MAC, network layer and Identify a routing protocol for a given Ad hoc network	K2	3	3	3	3	3	3	1	1	1	1	1	3	3	3				
229	III	VI	CS8601	Mobile Computing	C312.4	Explain the functionality of Transport and Application layers	K2	2	2	1	2	3	3	1	1	1	1	1	3	1	2				
230	III	VI	CS8601	Mobile Computing	C312.5	Develop a mobile application using android/blackberry/ios/Windows SDK	K3	3	3	3	3	3	3	1	1	1	1	1	3	3	3				
Course Name : Compiler Design							Course Code/Course No:CS8602/C313					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
231	III	VI	CS8602	Compiler Design	C313.1	Describe the different phases of compiler and Design a lexical analyzer for a simple language.	K2	3	3	3	3	3	3	2	1	3	3	1	3	1	2				
232	III	VI	CS8602	Compiler Design	C313.2	Apply different parsing algorithms to develop the parsers for a given grammar.	K3	3	3	3	3	3	3	2	1	3	2	3	2	1	2				
233	III	VI	CS8602	Compiler Design	C313.3	Explain the syntax-directed translation and run-time environment.	K2	3	3	2	2	3	3	2	1	3	1	1	1	1	2				
234	III	VI	CS8602	Compiler Design	C313.4	Apply the code optimization techniques in a simple code generator.	K3	3	2	2	1	1	3	2	1	2	3	2	3	1	2				
235	III	VI	CS8602	Compiler Design	C313.5	Prepare the effective and optimized machine codes	K3	3	3	3	2	1	3	2	1	2	1	1	3	1	2				
Course Name :Distributed System							Course Code/Course No:CS8603/C314					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
236	III	VI	CS8603	Distributed System	C314.1	Describe the foundations and issues of distributed systems	K2	2	2	3	3	2	2	1	1	2	1	3	3	1	3				
237	III	VI	CS8603	Distributed System	C314.2	Discuss the various synchronization issues and global state for distributed systems.	K2	1	3	2	3	2	1	1	1	2	2	2	2	1	3				
238	III	VI	CS8603	Distributed System	C314.3	Explain the Mutual Exclusion and Deadlock detection algorithms in distributed systems	K2	2	2	2	3	3	1	1	1	3	2	1	1	1	3				
239	III	VI	CS8603	Distributed System	C314.4	Discuss the agreement protocols and fault tolerance mechanisms in distributed systems.	K2	1	2	2	3	1	1	1	1	3	3	1	1	1	3				
240	III	VI	CS8603	Distributed System	C314.5	Describe the features of peer-to-peer and distributed shared memory systems	K2	3	3	2	2	3	2	1	1	3	3	1	1	1	3				
Course Name : Software Testing							Course Code/Course No:IT8076/C315					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
241	III	VI	IT8076	Software Testing	C315.1	Explain the testing process and the role of a tester	K2	3	2	2	2	2	2	2	2	1	1	2	2	2	2				
242	III	VI	IT8076	Software Testing	C315.2	Prepare the test case strategies	K2	3	3	3	3	2	2	2	2	2	1	2	2	2	2				
243	III	VI	IT8076	Software Testing	C315.3	Describe the Various Levels of Testing	K2	3	2	2	2	2	2	2	2	1	2	2	2	3					
244	III	VI	IT8076	Software Testing	C315.4	Discuss the concept of Test Management	K2	3	2	2	2	1	2	2	2	1	2	2	2	3					
245	III	VI	IT8076	Software Testing	C315.5	Develop the Test Automation	K3	3	3	3	3	3	2	2	1	2	2	1	2	3	3				
Course Name : Internet Programming Laboratory							Course Code/Course No:CS8661/C316					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
246	III	VI	CS8661	Internet Programming Laboratory	C316.1	Construct Web pages using HTML and style sheets.	K3	3	3	3	2	3	2	1	1	2	1	2	3	2	3				
247	III	VI	CS8661	Internet Programming Laboratory	C316.2	Prepare dynamic web pages with validation using Java Script objects and by applying	K2	3	3	3	3	3	2	1	1	2	1	2	3	2	3				
248	III	VI	CS8661	Internet Programming Laboratory	C316.3	Explain the different event handling mechanisms.	K2	3	3	3	2	3	2	1	1	2	1	2	3	2	3				
249	III	VI	CS8661	Internet Programming Laboratory	C316.4	Develop dynamic web pages using Servlets and JSP	K3	3	3	3	2	3	2	1	1	2	1	2	3	2	3				
250	III	VI	CS8661	Internet Programming Laboratory	C316.5	Apply the PHP and XML programming techniques to develop web applications.	K3	3	3	3	2	3	2	1	1	2	1	2	3	2	3				
Course Name :Mobile Application Development Laboratory							Course Code/Course No:CS8662/C317					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
251	III	VI	CS8662	Mobile Application Development Laboratory	C317.1	Develop mobile applications using GUI and Layouts.	K3	3	2	3	3	3	2	2	2	3	3	3	3	3	2				
252	III	VI	CS8662	Mobile Application Development Laboratory	C317.2	Construct mobile applications using Event Listener	K3	3	2	3	3	3	2	2	2	3	2	3	3	3	2				
253	III	VI	CS8662	Mobile Application Development Laboratory	C317.3	Develop mobile applications using Databases.	K3	3	2	3	3	3	2	2	2	3	3	3	3	3	2				
254	III	VI	CS8662	Mobile Application Development Laboratory	C317.4	Prepare the mobile applications using RSS Feed, Internal/External Storage, SMS, Multithreading and GPS	K3	3	2	3	3	3	3	2	2	3	2	3	3	3	2				

255	III	VI	CS8662	Mobile Application Development Laboratory	C317.5	Design an own mobile app for simple needs.	K3	3	2	3	3	3	2	2	2	3	3	3	3	3	2		
Course Name : Mini Project					Course Code/Course No:CS8611/C318					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
256	III	VI	CS8611	Mini Project	C318.1	Formulate the real time problem by applying the knowledge	K4	3	3	1	1	3	1	1	2	3	2	3	3	3	3		
257	III	VI	CS8611	Mini Project	C318.2	Identify the appropriate methods and tools to solve the problems	K3	2	3	2	3	3	1	1	1	3	3	3	3	3	3		
258	III	VI	CS8611	Mini Project	C318.3	Develop an effective solutions through proper designing	K3	3	3	3	3	3	2	2	2	3	3	3	3	3	3		
259	III	VI	CS8611	Mini Project	C318.4	Evaluate the complete Design, Task, Methods and Solutions	K4	3	3	3	3	3	2	2	2	3	3	3	3	3	3		
260	III	VI	CS8611	Mini Project	C318.5	Prepare the quality document for the design and implementation of the solutions to the real-time problem	K3	2	2	2	2	3	1	2	2	3	3	3	3	3	3		
Course Name :Professional Communication					Course Code/Course No:HS8581/C319					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
261	III	VI	HS8581	Professional Communication	C319.1	Prepare the material and make effective presentations	K3					1			1	3	3		2				
262	III	VI	HS8581	Professional Communication	C319.2	Discuss effectively in GD held in a formal/semi formal contexts	K2								1	3	3		2				
263	III	VI	HS8581	Professional Communication	C319.3	Prepare for the job interviews	K3								1	3	3		2				
264	III	VI	HS8581	Professional Communication	C319.4	Develop adequate Soft Skills required for the workplace	K3								1	3	3		2				
265	III	VI	HS8581	Professional Communication	C319.5	Develop the various skills in grooming for any profession	K3								1	3	3		2				
Course Name :Principles of Management					Course Code/Course No:MG8591/C401					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
266	IV	VII	MG8591	Principles of Management	C401.1	Describe the managerial functions on international aspect of management	K2	2	2	1	1	1	3		2	3	3	3	2	1	1		
267	IV	VII	MG8591	Principles of Management	C401.2	Discuss the planning process in the organization	K2	3	3	3	1	1	3		3	3	3	3	2	1	1		
268	IV	VII	MG8591	Principles of Management	C401.3	Explain the organizational Chart and Humarn Resource Management	K2	2	2	1	1	1	3		2	3	3	3	2	1	1		
269	IV	VII	MG8591	Principles of Management	C401.4	Describe the directing, leadership and communicate effectively	K2	3	2	1	1	1	3		3	3	3	3	2	1	1		
270	IV	VII	MG8591	Principles of Management	C401.5	Explain the issues and formulate best control methods.	K2	3	2	2	1	1	3		3	3	3	3	2	1	1		
Course Name: Cryptography and Network Security					Course Code/Course No:CS8792/C402					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
271	IV	VII	CS8792	Cryptography and Network Security	C402.1	Explain the fundamentals of network security, Security architecture, threats and vulnerabilities	K2	3	2	1	2	2				1	1		1		2		
272	IV	VII	CS8792	Cryptography and Network Security	C402.2	Apply the different cryptographic operations of symmetric cryptographic algorithms	K3	3	3	3	3	3	1	1	1	2	1		1		3		
273	IV	VII	CS8792	Cryptography and Network Security	C402.3	Apply the different cryptographic operations of public key cryptography	K3	3	3	3	3	3	1	1	1	2	1		1		3		
274	IV	VII	CS8792	Cryptography and Network Security	C402.4	Apply the various Authentication schemes to simulate different applications	K3	3	3	3	3	3	1	1	1	2	1	1	1		3		
275	IV	VII	CS8792	Cryptography and Network Security	C402.5	understand various security practices and system security standards	K2	3	3	3	3	3	2	2	2	2	1	2	2		3		
Course Name: Cloud Computing					Course Code/Course No:CS8791/C403					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
276	IV	VII	CS8791	Cloud Computing	C403.1	Explain the evolution of cloud from existing technologies	K2	2	2	2	2	2	1			1	1		2	1	2		
277	IV	VII	CS8791	Cloud Computing	C403.2	Describe the concepts of virtualization, structure and types	K2	2	2	2	2	3	1	1	1		2		2	1	2		
278	IV	VII	CS8791	Cloud Computing	C403.3	Summarize the concept of cloud computing architecture	K2	3	2	2	2	3		1	1		1		2	2	3		
279	IV	VII	CS8791	Cloud Computing	C403.4	Discuss the resource provisioning and security mechanism in cloud	K2	2	2	2	2	3	1	2	1		2		1	1	2		
280	IV	VII	CS8791	Cloud Computing	C403.5	Apjply the appropriate cloud computing technologies	K3	3	2	2	2	3	1	2	1		1		1	2	3		
Course Name: Waste Water Treatment					Course Code/Course No:OCY751/C404					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
281	IV	VII	OCY751	Waste Water Treatment	C404.1	Discuss the needs for Water Quality and Preliminary Treatment	K2	3	3	3	2		1	3	3	3	1		3				
282	IV	VII	OCY751	Waste Water Treatment	C404.2	Explain the needs of Industrial Water Treatment	K2	3	3	3	3		1	3	3	3	1		3				

283	IV	VII	OCY751	Waste Water Treatment	C404.3	Describe the adsorption, oxidation and various conventional methods for waste water treatment	K2	3	3	3	2		1	3	3	3	1		3				
284	IV	VII	OCY751	Waste Water Treatment	C404.4	Discuss the various biological methods for waste water treatment	K2	3	3	3	2		1	3	3	3	1		3				
285	IV	VII	OCY751	Waste Water Treatment	C404.5	Describe the various advanced methods for waste water treatment	K2	3	3	3	2		1	3	3	3	1		3				
Course Name:Software Project Management					Course Code/Course No:IT8075/C405					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
286	IV	VII	IT8074	Software Project Management	C405.1	Describe the Project Management principles while developing software	K2	2	1	1	1		3		2	3	2	3	3	2	2		
287	IV	VII	IT8074	Software Project Management	C405.2	Discuss the basic project management concepts, framework and the process model	K2	2	1	1	2		3		2	3	2	3	3	3	2		
288	IV	VII	IT8074	Software Project Management	C405.3	Explain the software process models and software effort estimation techniques	K2	2	1	2	2		3		2	3	2	3	3	3	2		
289	IV	VII	IT8074	Software Project Management	C405.4	Examine the risks involved in various project activities.	K2	3	3	2	2		3		3	3	3	3	3	3	3		
290	IV	VII	IT8074	Software Project Management	C405.5	Apply the project management principles to develop the software applications	K3	1		1	1		2		1	2	1	3	2	2	1		
Course Name: Multi-core Architectures and Programming					Course Code/Course No:CS8083/C406					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
291	IV	VII	CS8083	Multi-core Architectures and Programming	C406.1	Describe multicore architectures and identify their characteristics and challenges	K2	1	1	2	2								1	2	1		
292	IV	VII	CS8083	Multi-core Architectures and Programming	C406.2	Identify the issues in programming Parallel Processors.	K3	2	2	2	2	2							2	2			
293	IV	VII	CS8083	Multi-core Architectures and Programming	C406.3	Write programs using OpenMP and MPI	K2	2	2	2	3	2							2	2	1		
294	IV	VII	CS8083	Multi-core Architectures and Programming	C406.4	Design parallel programming solutions to common problems.	K3	2	2	2	3	2							2	2			
295	IV	VII	CS8083	Multi-core Architectures and Programming	C406.5	Compare and contrast programming for serial processors and programming for parallel processors.	K2	1	2	2	3	2							2	2	1		
Course Name: Cloud Computing Laboratory					Course Code/Course No:CS8711/C407					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
296	IV	VII	CS8711	Cloud Computing Lab	C407.1	Design the hypervisor in various virtualization tools	K3			2	2	3	2	1	1	3			3	1	3		
297	IV	VII	CS8711	Cloud Computing Lab	C407.2	Develop the web application in GAE	K3		2	2	3	3				3			3	1	3		
298	IV	VII	CS8711	Cloud Computing Lab	C407.3	Prepare the cloud services in open source framework	K3			2	3	3	2	1	1	3			3	1	3		
299	IV	VII	CS8711	Cloud Computing Lab	C407.4	Apply and run virtual machine using sandbox	K3		2	3	3	3	1	1		3			3		3		
300	IV	VII	CS8711	Cloud Computing Lab	C407.5	Design the cloud application using large datasets in open source framework	K3			3	3	3	1	1	1	3			3	2	3		
Course Name: Security Laboratory					Course Code/Course No:IT8761/C408					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
301	IV	VII	IT8761	Security Laboratory	C408.1	Develop the code for classical Encryption Techniques to solve the problems.	K3	3	3	3	3	3	2	2	1	1	1	1	1	1	3	3	
302	IV	VII	IT8761	Security Laboratory	C408.2	Design Cryptosystems by applying symmetric and public key encryption algorithms.	K3	3	3	3	3	3	2	2	1	2	1	1	1	1	2	3	
303	IV	VII	IT8761	Security Laboratory	C408.3	Construct code for authentication Algorithms	K3	3	3	3	3	3	2	3	2	2	1	1	1	1	3	3	
304	IV	VII	IT8761	Security Laboratory	C408.4	Develop a signature scheme using Digital Signature Standard.	K3	3	3	3	3	3	2	3	2	1	1	1	1	2	3	3	
305	IV	VII	IT8761	Security Laboratory	C408.5	Prepare the network security system using open source tools	K3	3	3	3	3	3	2	3	2	2	1	1	2	3	3		
Course Name: Professional Ethics in Engineering					Course Code/Course No:GE8076/C409					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
306	IV	VIII	GE8076	Professional Ethics in Engineering	C409.1	Describe the human values with regard to the individual life style for the society	K2	1					2	2	3	3	2	2	3	2			
307	IV	VIII	GE8076	Professional Ethics in Engineering	C409.2	Explain the role of ethics to the engineering field	K2	1					2	1	3	3	2	2	3	2			
308	IV	VIII	GE8076	Professional Ethics in Engineering	C409.3	Describe the application of ethics on engineering experimentation	K2	1					2	2	3	3	2	2	3	2			
309	IV	VIII	GE8076	Professional Ethics in Engineering	C409.4	Explain the engineering ethics based on safety, responsibilities and rights	K2	1					2	1	3	3	2	2	3	2			
310	IV	VIII	GE8076	Professional Ethics in Engineering	C409.5	Discuss the global issues of professional ethics in engineering	K2	1					2	2	3	3	2	2	3	2			
Course Name: Information Retrieval Techniques					Course Code/Course No:CS8080/C410					PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2

311	IV	VIII	CS8080	Information Retrieval Techniques	C410.1	Prepare an open source search engine framework and explore its capabilities	K3	2	2	2	2	2	1	1	2		1		3	1	2	
312	IV	VIII	CS8080	Information Retrieval Techniques	C410.2	Explain the appropriate method of classification or clustering.	K2	3	2	2	2	2		1	3		1		3		3	
313	IV	VIII	CS8080	Information Retrieval Techniques	C410.3	Discuss and implement the innovative features in a search engine.	K2	3	3	3	2	3		3	3				3		3	
314	IV	VIII	CS8080	Information Retrieval Techniques	C410.4	Develop and implement a recommender system.	K3	3	3	3		3		2	3		2		3	1	3	
315	IV	VIII	CS8080	Information Retrieval Techniques	C410.5	Describe the entire process flow of a search engine	K2	3	3	3	2	2	2	1	3		2		3		3	
Course Name: Project Work					Course Code/Course No:CS8811/C411				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
316	IV	VIII	CS8811	Project Work	C411.1	Formulate the real time problem by applying the knowledge	K4	3	3	3	1	3	1	1	2	3	3	3	3	3	3	3
317	IV	VIII	CS8811	Project Work	C411.2	Identify the appropriate methods and tools to solve the problems	K3	2	3	3	3	3	1	1	1	3	3	3	3	3	3	3
318	IV	VIII	CS8811	Project Work	C411.3	Develop an effective solutions through proper designing	K3	3	3	3	3	3	2	2	2	3	3	3	3	3	3	3
319	IV	VIII	CS8811	Project Work	C411.4	Evaluate the complete Design, Task, Methods and Solutions	K4	3	3	3	3	3	2	2	2	3	3	3	3	3	3	3
320	IV	VIII	CS8811	Project Work	C411.5	Prepare the quality document for the design and implementation of the solutions to the real-time problem	K3	2	2	3	2	3	1	2	2	3	3	3	3	3	3	3
Different elective for other batches																						
Course Name:Service Oriented Architecture					Course Code/Course No:IT8074/C405				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
286	IV	VII	IT8074	Service Oriented Architecture	C405.1	Understand XML technologies	K2	2	1	1	1	2							3	-	2	
287	IV	VII	IT8074	Service Oriented Architecture	C405.2	Understand service orientation, benefits of SOA	K3	3	2	1	2	2							3	-	3	
288	IV	VII	IT8074	Service Oriented Architecture	C405.3	Understand web services and WS standards	K2	2	1	1	2	2							3	-	2	
289	IV	VII	IT8074	Service Oriented Architecture	C405.4	Use web services extensions to develop solutions	K3	3	2	1	1	1							3	-	3	
290	IV	VII	IT8074	Service Oriented Architecture	C405.5	Understand and apply service modeling, service oriented analysis and design for application development	K2	2	1	1	2								3	-	2	

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

COURSE OUTCOMES (COs)							CO-PO & PSO MAPPING																
Regulation 2021 BATCH:2021-2025							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
S.No.	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL																	
Course Name:Professional English - I							Course Code/Course No:HS3152/C101																
1	1	1	HS3152	Professional English - I	C101.1	Employ appropriate vocabulary in both	K3					1			2	3				2			
2	1	1	HS3152	Professional English - I	C101.2	Associate the basic grammatical structures	K2					1			2	3				2			
3	1	1	HS3152	Professional English - I	C101.3	Apply discourse markers for technical	K3					1			2	3				2			
4	1	1	HS3152	Professional English - I	C101.4	Interpret and infer technical texts and non-	K2					1			2	3				2			
5	1	1	HS3152	Professional English - I	C101.5	Write definitions, descriptions, narrations	K3					1	1		2	3				2			
Course Name:Matrices and Calculus							Course Code/Course No:MA3151/C102																
6	1	1	MA3151	Matrices and Calculus	C102.1	Calculate eigenvalues & eigenvectors and apply orthogonal diagonalisation to convert quadratic form to canonical form.	K3	3	2	1					1	1				1			
7	1	1	MA3151	Matrices and Calculus	C102.2	Apply suitable techniques of differentiation to various functions to identify the maxima and minima of functions of one variable	K3	3	2	1					1	1				1			
8	1	1	MA3151	Matrices and Calculus	C102.3	Determine the total derivative of a function to identify the maxima and minima of functions of two variable	K3	3	2	1					1	1				1			
9	1	1	MA3151	Matrices and Calculus	C102.4	Apply suitable techniques of Integration to various functions	K3	3	2	1					1	1				1			
10	1	1	MA3151	Matrices and Calculus	C102.5	Calculate areas and volumes using multiple integral ideas	K3	3	2	1					1	1				1			
Course Name:Engineering Physics							Course Code/Course No:PH3151 /C103																
11	1	1	PH3151	Engineering Physics	C103.1	Apply the principles of mechanics to solve problems	K3	3	3	2	1	2	1			1							
12	1	1	PH3151	Engineering Physics	C103.2	Describe the concepts of electro magnetic waves	K2	3	3	2	1	2	1			1							
13	1	1	PH3151	Engineering Physics	C103.3	Explain the fundamental knowledge in oscillations, optics and lasers	K2	3	3	2	1	2	1			1							
14	1	1	PH3151	Engineering Physics	C103.4	Discuss the basic knowledge of Quantum Mechanics	K2	3	3	2	1	2	1			1							
15	1	1	PH3151	Engineering Physics	C103.5	Apply quantum mechanical principles towards the formation of energy bands	K3	3	3	2	1	2	1			1							
Course Name:Engineering Chemistry							Course Code/Course No:CY3151 /C104																
16	1	1	CY3151	Engineering Chemistry	C104.1	Describe the water treatment processes	K2	3				1				1	1	1					
17	1	1	CY3151	Engineering Chemistry	C104.2	Apply the concepts of nano science in Engineering Applications	K3	3				1				1	2	1					
18	1	1	CY3151	Engineering Chemistry	C104.3	Apply the knowledge of phase rule and composites for material selection requirements	K3	3				1				1	1	1					
19	1	1	CY3151	Engineering Chemistry	C104.4	Select suitable fuels for engineering processes and applications	K2	3				1				1	1	1					
20	1	1	CY3151	Engineering Chemistry	C104.5	Apply suitable energy resources for Engineering sectors.	K3	3				1				1	2	1					
Course Name: Problem Solving and Python Programming							Course Code/Course No:GE3151/C105																
21	1	1	GE3151	Problem Solving and Python Programming	C105.1	Develop algorithmic solutions to simple computational problems	K3	3	3	3	2	1	1	1	1	-	2	2	3	1			
22	1	1	GE3151	Problem Solving and Python Programming	C105.2	Write a executable simple python programs	K3	3	3	3	2	1	1	1	1	-	2	2	1	1			
23	1	1	GE3151	Problem Solving and Python Programming	C105.3	Apply conditional & loops statements to solve the simple python programs	K3	3	3	3	2	1	2	1	1	-	2	1	1	1			
24	1	1	GE3151	Problem Solving and Python Programming	C105.4	Write a python program using Lists, Tuples and Dictionaries	K3	1	2	-	-	1	2	1	1	-	1	1	1	1			
25	1	1	GE3151	Problem Solving and Python Programming	C105.5	Construct the python program using File, Module and Package concepts	K3	2	2	-	3	2	1	1	1	-	1	1	3	1			
Course Name:Heritage of Tamils							Course Code/Course No:GE3152 /C106																
26	1	1	GE3152	Heritage of Tamils	C106.1	Describe the various types of Tamil Literature	K2	1							1	2							
27	1	1	GE3152	Heritage of Tamils	C106.2	Discuss about Tamil Arts and Sculpture	K2	1							1	2							
28	1	1	GE3152	Heritage of Tamils	C106.3	Explain the Tamil Folks and Marial Arts	K2	1							1	2							
29	1	1	GE3152	Heritage of Tamils	C106.4	Summarize the Thirai Concepts of Tamil	K2	1							1	2							
30	1	1	GE3152	Heritage of Tamils	C106.5	Review the contribution of Tamil Culture to Indian Culture and National Movements	K2	1							1	2							
Course Name:Problem Solving and Python Programming Lab							Course Code/Course No:GE3171/C107																
31	1	1	GE3171	Problem Solving and Python Programming Lab	C107.1	Develop algorithmic solutions to simple computational problems	K3	3	3	3	2	1	1	1	1	-	2	2	3	1			
32	1	1	GE3171	Problem Solving and Python Programming Lab	C107.2	Write a executable simple python programs	K3	3	3	3	2	1	1	1	1	-	2	2	1	1			
33	1	1	GE3171	Problem Solving and Python Programming Lab	C107.3	Apply conditional & loops statements to solve the simple python programs	K3	3	3	3	2	1	2	1	1	-	2	1	1	1			
34	1	1	GE3171	Problem Solving and Python Programming Lab	C107.4	Write a python program using Lists, Tuples and Dictionaries	K3	1	2	-	-	1	2	1	1	-	1	1	1	1			
35	1	1	GE3171	Problem Solving and Python Programming Lab	C107.5	Construct the python program using File, Module and Package concepts	K3	2	2	-	3	2	1	1	1	-	1	1	3	1			
Course Name:Physics and Chemistry Lab							Course Code/Course No:BS3171 /C108																
36	1	1	BS3171	Physics and Chemistry Lab	C108.1	Explain the functions of Physics and Chemistry laboratory Equipments	K2	3	1	1					2	2	2	1					
37	1	1	BS3171	Physics and Chemistry Lab	C108.2	Apply engineering properties of materials, principles of optics and thermal characteristics of Engineering Applications	K3	3	1	1					2	2	2	1					

38	I	I	BS3171	Physics and Chemistry Lab	C108.3	Calculate the Energy band gap for semiconductor materials and Properties of Laser for Engineering Applications.	K3	3	1	1								2	2	2	1																					
39	I	I	BS3171	Physics and Chemistry Lab	C108.4	Calculate the quality parameters of different types in Water Samples	K3	3	1	1								1								2	2	2	1													
40	I	I	BS3171	Physics and Chemistry Lab	C108.5	Apply the appropriate method to find the PH, conductivity and potential values of various solutions	K3	3	1	1								1									2	2	2	1												
<p align="center">Course Name:English Laboratory Course Code/Course No:GE3172/C109</p>																																										
41	I	I	GE3172	English Laboratory	C109.1	Interpret the audio materials and build opinions about them	K3												3	1																						
42	I	I	GE3172	English Laboratory	C109.2	Discuss the views about different points of view	K2												2	1																						
43	I	I	GE3173	English Laboratory	C109.3	Explain fluently and accurately in formal and informal communicative contexts	K2												2	1																						
44	I	I	GE3174	English Laboratory	C109.4	Describe products and processes and explain their uses and purposes clearly and accurately	K2												2	1																						
45	I	I	GE3175	English Laboratory	C109.5	Explain their opinions effectively in both formal and informal discussions	K2												2	1																						
<p align="center">Course Name:Professional English - II Course Code/Course No:HS3252/C110</p>																																										
46	I	II	HS3252	Professional English - II	C110.1	Compare and contrast products and ideas in technical texts.	K2																																			
47	I	II	HS3252	Professional English - II	C110.2	Associate causal relations in speaking and writing	K2																																			
48	I	II	HS3252	Professional English - II	C110.3	Explain the problems with the solutions as a written document	K2																																			
49	I	II	HS3252	Professional English - II	C110.4	Write effective resumes in the context of job search	K2																																			
50	I	II	HS3252	Professional English - II	C110.5	Interpret and infer the denotative and connotative meanings of technical texts.	K2																																			
<p align="center">Course Name:Statistics and Numerical Methods Course Code/Course No:MA3251 /C111</p>																																										
51	I	II	MA3251	Statistics and Numerical Methods	C111.1	Apply the concept of testing of hypothesis for small and large samples in real life problems	K3	3	2	1																																
52	I	II	MA3251	Statistics and Numerical Methods	C111.2	Apply the basic concepts of classifications of design of experiments	K3	3	2	1																																
53	I	II	MA3251	Statistics and Numerical Methods	C111.3	Apply the numerical techniques of differentiation and integration for engineering problems	K3	3	2	1																																
54	I	II	MA3251	Statistics and Numerical Methods	C111.4	Apply appropriate numerical methods to solve the interpolation with equal and unequal intervals	K3	3	2	1																																
55	I	II	MA3251	Statistics and Numerical Methods	C111.5	Solve the ordinary differential equation of first order	K3	3	2	1																																
<p align="center">Course Name:Physics for Information Science Course Code/Course No:PH3256 /C112</p>																																										
56	I	II	PH3256	Physics for Information Science	C112.1	Describe the Electrical and Thermal properties of materials	K2	3	3	2																																
57	I	II	PH3256	Physics for Information Science	C112.2	Describe the basic knowledge of semiconductor physics and its applications	K2	3	3	2																																
58	I	II	PH3256	Physics for Information Science	C112.3	Discuss the knowledge of Magnetic Properties of Materials	K2	3	3	2																																
59	I	II	PH3256	Physics for Information Science	C112.4	Illustrate the Optical properties of materials	K2	3	3	2																																
60	I	II	PH3256	Physics for Information Science	C112.5	Review the basics of Quantum Structures and Quantum Computing	K2	3	3	2																																
<p align="center">Course Name:Basic Electrical and Electronics Engineering Course Code/Course No:BE3251 /C113</p>																																										
61	I	II	BE3251	Basic Electrical and Electronics Engineering	C113.1	Compute the electric circuit parameters for simple problems	K3	2	3	1																																
62	I	II	BE3251	Basic Electrical and Electronics Engineering	C113.2	Explain the working principle and applications of electrical machines	K2	1	2	2																																
63	I	II	BE3251	Basic Electrical and Electronics Engineering	C113.3	Illustrate the characteristics of analog electronic devices	K2	1	3	2																																
64	I	II	BE3251	Basic Electrical and Electronics Engineering	C113.4	Explain the basic concepts of digital electronics	K2	1	2	3																																
65	I	II	BE3251	Basic Electrical and Electronics Engineering	C113.5	Explain the operating principles of measuring instruments	K2	3	2	2																																
<p align="center">Course Name:Engineering Graphics Course Code/Course No:GE3251/C114</p>																																										
66	I	II	GE3251	Engineering Graphics	C114.1	Develop the Plane Curves and Orthographic Projections	K3	2	2	2																																
67	I	II	GE3251	Engineering Graphics	C114.2	Sketch the projection of lines an planes.	K3	2	2	2																																
68	I	II	GE3251	Engineering Graphics	C114.3	Draw the Projections of Solids	K3	2	2	2																																
69	I	II	GE3251	Engineering Graphics	C114.4	Draw the views of sectional solids and development of surfaces	K3	2	2	2																																
70	I	II	GE3251	Engineering Graphics	C114.5	Draw the Isometric and Perspective Projections of solids	K3	2	2	2																																
<p align="center">Course Name:Programming in C Course Code/Course No:CS3251 /C115</p>																																										
71	I	II	CS3251	Programming in C	C115.1	Write a C program using basic constructs	K3	2	2	2																																
71	I	II	CS3251	Programming in C	C115.2	Design and implement applications using arrays and strings	K3	2	3	2																																
73	I	II	CS3251	Programming in C	C115.3	Develop and implement modular applications in C using functions and pointers	K3	3	2	2																																
74	I	II	CS3251	Programming in C	C115.4	Develop applications in C programming using structures, unions and pointers	K3	2	3	3																																
75	I	II	CS3251	Programming in C	C115.5	Design applications using sequential and random access file processing	K3	2	2	3																																
<p align="center">Course Name:தமிழ்ச் சமூக அறிவு / Tamil and Tech Course Code/Course No:GE3252 /C116</p>																																										
76	I	II	GE3252	Tamil and Technology	C116.1	Review the Weaving and Ceramic Technology during Tamil Sangam Age	K2	1																																		
77	I	II	GE3252	Tamil and Technology	C116.2	Describe the Construction Technology and various Architecture during Tamil Sangam Age	K2	1																																		
78	I	II	GE3252	Tamil and Technology	C116.3	Discuss the Manufacturing Technology with Archeological Evidences	K2	1																																		
79	I	II	GE3252	Tamil and Technology	C116.4	Explain the Agriculture and Irrigation Technology during Tamil Sangam Age	K2	1																																		

80	I	II	GE3282	Tamil and Technology	C116.5	Describe Tamil Software and Digitalization Tamil Literatures	K2	1	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
Course Name:Engineering Practices Laboratory																						
81	I	II	GE3271	Engineering Practices Laboratory	C117.1	Describe the Various Equipments in Engineering Practice Laboratories	K2	1					1				2	2		1		
82	I	II	GE3271	Engineering Practices Laboratory	C117.2	Draw pipe line plan, lay and connect various pipe fittings for plumbing work and make joints in wood materials used in common household work	K3	1					1					2	2		1	
83	I	II	GE3271	Engineering Practices Laboratory	C117.3	Construct various electrical joints in common household electrical work	K3	1					2					2	2		1	
84	I	II	GE3271	Engineering Practices Laboratory	C117.4	Practice the making of simple objects using welding, Sheet Metal and Machining for Household Work	K3	1					2					2	2		1	
85	I	II	GE3271	Engineering Practices Laboratory	C117.5	Design and test simple electronic circuits by mounting components on PCB	K3	1					2					2	2		1	
Course Name:Programming in C Laboratory																						
86	I	II	CS3271	Programming in C Laboratory	C118.1	Write and execute the C program using basic constructs	K3	2	3	3	2	1	1	1	-	-	2	1	2	2	3	1
87	I	II	CS3271	Programming in C Laboratory	C118.2	Design and implement applications using arrays and strings	K3	2	2	2	1	1	2	2	-	-	2	-	2	2	2	1
88	I	II	CS3271	Programming in C Laboratory	C118.3	Develop and implement modular applications in C using functions and Pointers	K3	2	2	2	2	1	2	2	-	-	3	-	3	3	2	1
89	I	II	CS3271	Programming in C Laboratory	C118.4	Develop applications in C programming using structures, unions and pointers	K3	2	2	3	2	2	2	2	-	-	3	-	3	3	3	
90	I	II	CS3271	Programming in C Laboratory	C118.5	Design applications using sequential and random access file processing	K3	2	2	3	2	2	2	2	-	-	2	1	2	2	2	1
Course Name:Communication Laboratory / Foreign Language																						
91	I	II	GE3272	Communication Laboratory / Foreign Language	C119.1	Discuss effectively in GD held in a formal/semi formal contexts	K2							1		1	3		2		2	
92	I	II	GE3272	Communication Laboratory / Foreign Language	C119.2	Discuss and present concepts and problems from various perspectives for solutions	K2								1		1	3		2		2
93	I	II	GE3272	Communication Laboratory / Foreign Language	C119.3	Write emails, letters and effective job applications.	K2										1	3		2		2
94	I	II	GE3272	Communication Laboratory / Foreign Language	C119.4	Write critical reports to convey data and information with clarity and precision	K2							1			1	3		2		2
95	I	II	GE3272	Communication Laboratory / Foreign Language	C119.5	Describe appropriate instructions and recommendations for safe execution of tasks	K2								1		1	3		2		2
Course Name:Discrete Mathematics																						
96	II	III	MA3354	Discrete Mathematics	C201.1	Apply mathematical reasoning in order to read, comprehend, and construct mathematical arguments	K3	3	2	-	1			1				2				
97	II	III	MA3354	Discrete Mathematics	C201.2	Apply the concept of generating functions to solve recurrence relations.	K3	2	1	1	1			1				3				
98	II	III	MA3354	Discrete Mathematics	C201.3	Distinguish between Euler and Hamiltonian graphs for solving mathematical problems	K3	2	1	1	1			1				3				
99	II	III	MA3354	Discrete Mathematics	C201.4	Solve Problems using the concepts and properties of algebraic structures	K3	2	1	1	1			1				3				
100	II	III	MA3354	Discrete Mathematics	C201.5	Apply lattices and boolean algebra concept in computer science and engineering	K3	3	2	2	1			1				3				
Course Name:Digital Principles and Computer Organization																						
101	II	III	CS3351	Digital Principles and Computer Organization	C202.1	Design various combinational digital circuits using logic gates	K3	3	3	2	1			2			2					
102	II	III	CS3351	Digital Principles and Computer Organization	C202.2	Design sequential circuits and analyze the design procedures	K3	3	2	3	1			2			2					
103	II	III	CS3351	Digital Principles and Computer Organization	C202.3	Explain the fundamentals of computer systems and analyze the execution of an instruction	K2	3	1	1	1			2			2					
104	II	III	CS3351	Digital Principles and Computer Organization	C202.4	Compare and Contrast different types of control design and identify hazards	K2	3	1	1	1			2			2					
105	II	III	CS3351	Digital Principles and Computer Organization	C202.5	Explain the characteristics of various memory systems and I/O communication	K2	3	1	1	1			2			2					
Course Name:Foundations of Data Science																						
106	II	III	CS3352	Foundations of Data Science	C203.1	Explain the data science process and data warehousing	K2	2	2	1	2	2	2	2	1	1	2	1	1	2	2	2
107	II	III	CS3352	Foundations of Data Science	C203.2	Describe various types of data description for data science process	K2	2	1	1	1	1	1	1	1	1	1	1	1	2	2	1
108	II	III	CS3352	Foundations of Data Science	C203.3	Discuss the knowledge on relationships between data	K2	2	2	1	2	2	1	1	1	1	1	2	1	3	2	3
109	II	III	CS3352	Foundations of Data Science	C203.4	Apply the Python Libraries for Data Wrangling	K3	3	2	2	1	2	2	2	1	1	1	1	2	3	3	2
110	II	III	CS3352	Foundations of Data Science	C203.5	Apply visualization Libraries in Python to interpret and explore data	K3	2	2	1	2	2	2	2	2	1	1	1	1	3	2	2
Course Name: Data Structures																						
111	II	III	CS3301	Data Structures	C204.1	Apply the Linear data structure- List	K3	3	3	3	2			1	2	2	2	1	2	2	1	2
112	II	III	CS3301	Data Structures	C204.2	Apply Linear data structures Stack and Queue for solving problems	K3	3	3	3	2			1	2	2	2	1	2	2	1	2
113	II	III	CS3301	Data Structures	C204.3	Solve problems using non-linear data structure-Tree	K3	3	3	3	2			1	2	2	2	1	2	2	1	2
114	II	III	CS3301	Data Structures	C204.4	Apply the non-linear data structures for Graph applications	K3	3	3	3	2			1	2	2	2	1	2	2	1	2
115	II	III	CS3301	Data Structures	C204.5	Compare the various sorting algorithms	K2	2	2	3	2			1	2	2	2	1	2	2	1	3
Course Name: Object Oriented Programming																						
								PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	

116	II	III	CS3391	Object Oriented Programming	C205.1	Apply the concepts of classes and objects to solve simple problems	K3	1	1	3	1	3	-	-	-	3	2	2	2	3	1	
117	II	III	CS3391	Object Oriented Programming	C205.2	Develop Java programs with the concepts Inheritance and Interfaces	K3	2	1	3	2	1	-	-	-	2	1	1	3	3	3	
118	II	III	CS3391	Object Oriented Programming	C205.3	Construct Java Applications using Exceptions and I/O streams	K3	3	3	1	2	2	-	-	-	3	2	1	2	3	1	
119	II	III	CS3391	Object Oriented Programming	C205.4	Prepare Java Applications with Threads and Generic Classes	K3	3	1	2	2	2	-	-	-	1	2	1	3	3	1	
120	II	III	CS3391	Object Oriented Programming	C205.5	Write interactive Java programs using JAVAFX components and event handling	K3	1	1	2	3	2	-	-	-	3	2	1	2	3	3	
Course Name:Data Structures Laboratory				Course Code/Course No:CS3311/C206				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
121	II	III	CS3311	Data Structures Laboratory	C206.1	Apply the linear and non-linear data structures for various operations	K3	3	3	3	2				1	2		1		2	1	2
122	II	III	CS3311	Data Structures Laboratory	C206.2	Analyse various linear / non-linear data structure operations for solving a given problem	K4	3	3	3	2				1	2		1		2	1	2
123	II	III	CS3311	Data Structures Laboratory	C206.3	Apply linear / non-linear data structure operations for solving a given problem	K3	3	3	3	2				1	2		1		2	1	2
124	II	III	CS3311	Data Structures Laboratory	C206.4	Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval	K3	3	3	3	2				1	2		1		2	1	2
125	II	III	CS3311	Data Structures Laboratory	C206.5	Develop the applications using various searching and sorting algorithms	K3	2	2	3	2				1	2		1		2	1	3
Course Name:Object Oriented Programming Laboratory				Course Code/Course No:CS3381/C207				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
126	II	III	CS3381	Object Oriented Programming Laboratory	C207.1	Design and develop java programming using object oriented concepts	K3	2	1	2	1	-	-	-	-	1	2	2	2	3	2	
127	II	III	CS3381	Object Oriented Programming Laboratory	C207.2	Design and develop Java Programs for simple Applications using classes,packages,interfaces	K3	2	1	3	1	-	-	-	-	2	3	3	2	3	3	
128	II	III	CS3381	Object Oriented Programming Laboratory	C207.3	Apply multi threading and Generic concepts for writing a Java Program	K3	2	2	1	2	1	-	-	-	1	2	1	3	3	3	
129	II	III	CS3381	Object Oriented Programming Laboratory	C207.4	Construct GUI and event driven programming application for real world problems	K3	2	2	1	3	-	-	-	-	3	1	1	1	3	1	
130	II	III	CS3381	Object Oriented Programming Laboratory	C207.5	Develop the web applications using java Program	K3	1	3	3	1	3	-	-	-	1	1	1	1	3	1	
Course Name:Data Science Laboratory				Course Code/Course No:CS3361 /C208				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
131	II	III	CS3361	Data Science Laboratory	C208.1	Apply python libraries for data science	K3	3	3	1	2	1	2	2	1	2	3	3	3	3	2	
132	II	III	CS3361	Data Science Laboratory	C208.2	Apply the basic Statistical and Probability measures for data science.	K3	3	3	2	3	1	2	1	1	3	1	3	1	2	2	
133	II	III	CS3361	Data Science Laboratory	C208.3	Develop descriptive analytics on the benchmark data sets.	K3	3	3	1	3	1	2	1	1	2	1	2	1	3	2	
134	II	III	CS3361	Data Science Laboratory	C208.4	Apply correlation and regression analytics on standard data sets	K3	2	2	1	3	1	2	1	1	2	3	2	3	3	2	
135	II	III	CS3361	Data Science Laboratory	C208.5	Interpret data using visualization packages in Python.	K3	1	3	2	1	1	2	1	1	2	1	1	1	3	3	
Course Name: Professional Development				Course Code/Course No:GE3361 /C209				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
136	II	III	GE3361	Professional Development	C209.1	Prepare quality documents, by structuring and organizing content for their day to day technical and academic requirements using MS Word	K3					2			2	2		2				
137	II	III	GE3361	Professional Development	C209.2	Apply MS EXCEL to perform data operations and analytics, record, retrieve data as per requirements and visualize data for ease of understanding	K3					2			2	2		2				
138	II	III	GE3361	Professional Development	C209.3	Apply macros and secure the workbook	K3					2			2	2		2				
139	II	III	GE3361	Professional Development	C209.4	Prepare high quality academic presentations by including common tables, charts, graphs, interlinking other elements using MS PowerPoint	K3					2			2	2		2				
140	II	III	GE3361	Professional Development	C209.5	Develop high quality academic presentations by using media objects such as audio, video and animations using MS PowerPoint	K3					2			2	2		2				
Course Name: Theory of Computation				Course Code/Course No:CS3452/C210				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
141	II	IV	CS3452	Theory of Computation	C210.1	Construct automata, regular expression for any pattern.	K3	1	3	2	3			2		1	1	2	1		2	
142	II	IV	CS3452	Theory of Computation	C210.2	Write Context free grammar for any construct	K3	2	2	3	2	1	2		2	3	3	2	1		2	
143	II	IV	CS3452	Theory of Computation	C210.3	Construct pushdown automata for a grammar	K3	2	2	3	2	1	2		2	1	3	1	1		2	
144	II	IV	CS3452	Theory of Computation	C210.4	Design Turing machines for any language.	K3	2	2	2	1		2		2	1	3	2	1		2	
145	II	IV	CS3452	Theory of Computation	C210.5	Examine whether a problem is decidable or not.	K3	2	2	2	1	1	1		2	1	1	2	1		1	
Course Name:Artificial Intelligence and Machine Learning				Course Code/Course No:CS3491 /C211				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
146	II	IV	CS3491	Artificial Intelligence and Machine Learning	C211.1	Apply an appropriate search Algorithm for Problem Solving	K3	3	2	2	3			2	1	1	2	2	3	2	1	
147	II	IV	CS3491	Artificial Intelligence and Machine Learning	C211.2	Apply Reasoning under Uncertainty	K3	3	1	1	3	1	1	1	1	2	1	3	3	2	2	
148	II	IV	CS3491	Artificial Intelligence and Machine Learning	C211.3	Compare the various Supervised Models	K2	2	1	1	2	1	2	1	2	1	1	3	1	1	1	

149	II	IV	CS3491	Artificial Intelligence and Machine Learning	C211.4	Apply the Ensemble Techniques for Unsupervised Models	K3	3	1	2	3	2	1	2	2	1	2	2	2	1
150	II	IV	CS3491	Artificial Intelligence and Machine Learning	C211.5	Illustrate the deep learning and Neural network Model.	K2	3	1	1	2	2	1	2	1	1	2	3	1	1
Course Name: Database Management Systems																				
Course Code/Course No:CS3492 /C212																				
151	II	IV	CS3492	Database Management Systems	C212.1	Write a Query for the given application using suitable model	K3	2	2	3	2	1	-	-	-	2	1	1	1	3
152	II	IV	CS3492	Database Management Systems	C212.2	Design a normalized database and write optimized queries for an application	K3	3	1	1	1	1	-	-	-	2	3	3	3	3
153	II	IV	CS3492	Database Management Systems	C212.3	Describe the concepts of transactions, dead locks and recovery	K2	3	2	3	2	1	-	-	-	2	1	1	2	2
154	II	IV	CS3492	Database Management Systems	C212.4	Compare various indexing strategies in different database systems and analyze optimization	K2	1	2	3	2	-	-	-	-	3	2	3	3	3
155	II	IV	CS3492	Database Management Systems	C212.5	Compare advanced databases and traditional databases.	K2	1	1	3	3	2	-	-	-	1	3	3	1	3
Course Name: Algorithms																				
Course Code/Course No:CS3401/C213																				
156	II	IV	CS3401	Algorithms	C213.1	Explain the efficiency of algorithms using various frameworks	K2	3	2						1	2	1	3	3	1
157	II	IV	CS3401	Algorithms	C213.2	Apply graph algorithms to solve problems and analyze their efficiency.	K3	2	3						1	2	2	1	2	2
158	II	IV	CS3401	Algorithms	C213.3	Solve the problems using divide and conquer, greedy algorithmic techniques and dynamic algorithmic techniques	K3	1	2	3	1				2	2	1	1	2	2
159	II	IV	CS3401	Algorithms	C213.4	Solve problems using the state space tree method	K3	1	1							3	3	3	2	3
160	II	IV	CS3401	Algorithms	C213.5	Solve problems using approximation algorithms and randomized algorithms	K3	1	1							2	2	2	2	3
Course Name: Introduction to Operating Systems																				
Course Code/Course No:CS3451 /C214																				
161	II	IV	CS3451	Introduction to Operating Systems	C214.1	Explain the Basic Concepts and Functions of Operating System	K2	3	1	2	2		1	1		3	3	2	1	1
162	II	IV	CS3451	Introduction to Operating Systems	C214.2	Compare various scheduling Algorithms, Process Synchronization and Deadlock	K2	3	1	2	2		1	1		3	2	3	1	2
163	II	IV	CS3451	Introduction to Operating Systems	C214.3	Describe the various memory Management Schemes	K2	1	3	2	2	1	1	1		2	2	1	1	2
164	II	IV	CS3451	Introduction to Operating Systems	C214.4	Discuss the Functionality of File System	K2	1	3	3	3		1	1		1	2	1	2	2
165	II	IV	CS3451	Introduction to Operating Systems	C214.5	Illustrate the Linux Server, iOS and Android OS	K2	3	1	2	1	1	2	2	1	2	2	2	2	2
Course Name: Environmental Sciences and Sustainability																				
Course Code/Course No:GE3451/C215																				
166	II	IV	GE3451	Environmental Sciences and Sustainability	C215.1	Describe the functions of environment, ecosystems and biodiversity and their conservation.	K2	1						2	3	3	1	1		2
167	II	IV	GE3451	Environmental Sciences and Sustainability	C215.2	Discuss the causes & effects of environmental pollution, natural disasters for the preventive measures in the society	K2	1						3	3	3	3	1		2
168	II	IV	GE3451	Environmental Sciences and Sustainability	C215.3	Explain the renewable and non-renewable resources for the sustainable measures for future generations	K2	1						3	3	3	3	1		2
169	II	IV	GE3451	Environmental Sciences and Sustainability	C215.4	Discuss the different goals of sustainable development and apply them for suitable technological advancement for the society	K2	1						3	3	3	3	1		2
170	II	IV	GE3451	Environmental Sciences and Sustainability	C215.5	Explain the knowledge of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization.	K2	1						3	3	3	3	1		2
Course Name: Operating Systems Laboratory																				
Course Code/Course No:CS3461/C216																				
171	II	IV	CS3461	Operating Systems Laboratory	C216.1	Analyze the performance of various CPU Scheduling Algorithms	K4	3	3	3	3	3	2	1	1	2	1	2	1	2
172	II	IV	CS3461	Operating Systems Laboratory	C216.2	Write the Program for Deadlock avoidance, Detection Algorithms and Semaphores	K3	3	3	3	3	2	2	1	1	1	1	1	1	2
173	II	IV	CS3461	Operating Systems Laboratory	C216.3	Construct the program for Processes and Implement the Inter Process Communications	K3	3	3	3	3	3	2	1	1	2	1	2	1	2
174	II	IV	CS3461	Operating Systems Laboratory	C216.4	Analyze the Performance of the various Page Replacement Algorithms	K4	3	3	3	3	3	2	1	1	2	1	2	1	2
175	II	IV	CS3461	Operating Systems Laboratory	C216.5	Develop an application using File Organization and File Allocation Strategies	K3	3	3	3	3	2	2	1	1	1	1	1	1	3
Course Name: Database Management Systems Laboratory																				
Course Code/Course No:CS3481/C217																				
176	II	IV	CS3481	Database Management Systems Laboratory	C217.1	Apply typical data definitions and manipulation commands for creating the DB	K3	3	3	3	3	-	-	-	-	3	1	3	2	3
177	II	IV	CS3481	Database Management Systems Laboratory	C217.2	Design applications to test the Nested and Join Queries	K3	2	2	3	2	2	-	-	-	1	2	3	3	3
178	II	IV	CS3481	Database Management Systems Laboratory	C217.3	Write the simple applications using Views Concepts	K3	3	3	2	1	1	-	-	-	1	1	1	3	3

179	II	IV	CS3481	Database Management Systems Laboratory	C217.4	Construct GUI applications using Front-end Tool	K3	1	3	3	3	1	-	-	-	1	1	3	2	3	3
180	II	IV	CS3481	Database Management Systems Laboratory	C217.5	Design a DB using the Tables, Views, Functions and Procedures	K3	3	2	1	1	-	-	-	2	2	3	1	3	3	3
Course Name: Computer Networks Course Code/Course No:CS3591/C301																					
181	III	V	CS3591	Computer Networks	C301.1	Explain the working principles of application layer protocols	K2	3	3	3	2	2	2	-	-	1	-	1	3	3	2
182	III	V	CS3591	Computer Networks	C301.2	Compare the different Transport layer protocols	K4	3	3	3	3	3	1	-	-	1	1	1	3	3	2
183	III	V	CS3591	Computer Networks	C301.3	Describe the functions of IP addressing, services provided in the network layer	K2	3	3	2	3	1	1	-	-	-	-	-	3	3	2
184	III	V	CS3591	Computer Networks	C301.4	Compare the various routing algorithms	K4	3	3	3	3	3	2	-	-	-	2	-	3	3	2
185	III	V	CS3591	Computer Networks	C301.5	Discuss the Physical and Data Link layer protocols	K2	3	3	3	3	3	2	-	-	-	1	1	3	3	3
Course Name: Compiler Design Course Code/Course No:CS3501/C302																					
186	III	V	CS3501	Compiler Design	C302.1	Explain the different phases of compiler and Design a lexical analyzer for a simple language	K2	3	3	3	3	3	2	1	3	3	1	3	1	3	2
187	III	V	CS3501	Compiler Design	C302.2	Apply different parsing algorithms to develop the parsers for a given grammar.	K3	3	3	3	3	3	2	1	3	2	3	2	1	2	2
188	III	V	CS3501	Compiler Design	C302.3	Describe syntax-directed translation and run-time environment.	K2	3	3	2	2	3	3	2	1	3	1	1	1	1	2
189	III	V	CS3501	Compiler Design	C302.4	Apply the code optimization techniques and a simple code generator.	K3	3	2	2	1	1	3	2	1	2	3	2	3	1	2
190	III	V	CS3501	Compiler Design	C302.5	Compare the effectiveness of generate machine codes	K2	3	3	3	2	1	3	2	1	2	1	1	3	1	2
Course Name:Cryptography and Cyber Security Course Code/Course No:CB3491/C303																					
191	III	V	CB3491	Cryptography and Cyber Security	C303.1	Explain the fundamentals of network security, Security architecture, threats and vulnerabilities	K2	3	2	1	2	2				1	1		1		2
192	III	V	CB3491	Cryptography and Cyber Security	C303.2	Apply the different cryptographic operations of symmetric cryptographic algorithms	K3	3	3	3	3	3	1	1	1	2	1		1		3
193	III	V	CB3491	Cryptography and Cyber Security	C303.3	Apply the different cryptographic operations of public key cryptography.	K3	3	3	3	3	3	1	1	1	2	1		1		3
194	III	V	CB3491	Cryptography and Cyber Security	C303.4	Apply the various Authentication schemes to simulate different applications	K3	3	3	3	3	3	1	1	1	2	1	1	1		3
195	III	V	CB3491	Cryptography and Cyber Security	C303.5	Discuss the various cyber crimes and cyber security	K2	3	3	3	3	3	2	2	2	2	1	2	2	2	3
Course Name: Distributed Computing Course Code/Course No:CS3551/C304																					
196	III	V	CS3551	Distributed Computing	C304.1	Interpret the foundations of distributed systems	K3	2	2	3	3	1	-	-	-	2	1	3	3	-	3
197	III	V	CS3551	Distributed Computing	C304.2	Solve synchronization and state consistency problems	K3	1	3	2	1	2	-	-	-	2	2	2	2	-	3
198	III	V	CS3551	Distributed Computing	C304.3	Apply resource sharing techniques in distributed systems	K3	2	2	1	3	3	-	-	-	3	2	1	1	-	3
199	III	V	CS3551	Distributed Computing	C304.4	Apply working model of consensus and reliability of distributed systems	K3	1	2	2	3	1	-	-	-	3	3	1	1	-	3
200	III	V	CS3551	Distributed Computing	C304.5	Explain the fundamentals of cloud computing	K2	3	3	1	2	3	-	-	-	3	3	1	1	-	3
Course Name: Web Technologies Course Code/Course No:CCS375/C305																					
201	III	V	CCS375	Web Technologies	C305.1	Construct a basic website using HTML and Cascading Style Sheets	K3	3	2	3	3	3				1	3	3	1	3	2
202	III	V	CCS375	Web Technologies	C305.2	Construct dynamic web page with validation using Java Script objects and by applying different event handling mechanisms.	K3	2	2	2	1	2				2	2	1	3	2	2
203	III	V	CCS375	Web Technologies	C305.3	Develop server side programs using Servlets and JSP.	K3	1	1	3	2	3				1	2	1	1	1	2
204	III	V	CCS375	Web Technologies	C305.4	Construct simple web pages in PHP and to represent data in XML format.	K3	2	3	3	1	2				3	1	2	2	2	2
205	III	V	CCS375	Web Technologies	C305.5	Develop interactive web applications	K3	1	2	3	2	2				2	1	3	1	1	1
Course Name:Data Warehousing Course Code/Course No:CCS341/C306																					
206	III	V	CCS341	Data Warehousing	C306.1	Design data warehouse architecture for various problems	K3	3	2	2	2	2	-	-	-	2	2	2	2	2	2
207	III	V	CCS341	Data Warehousing	C306.2	Apply the OLAP Technology for Data Warehousing.	K3	3	2	1	2	3	-	-	-	2	2	2	2	2	2
208	III	V	CCS341	Data Warehousing	C306.3	Explain the partitioning strategy	K2	3	1	1	2	1	-	-	-	2	2	2	2	2	2
209	III	V	CCS341	Data Warehousing	C306.4	Compare the various schemas for given problem	K2	3	2	3	3	2	-	-	-	2	2	2	2	2	2
210	III	V	CCS341	Data Warehousing	C306.5	Develop the roles of process and system manager	K3	3	2	1	2	1	-	-	-	1	2	2	2	2	2
Course Name:Disaster Risk Reduction and Management Course Code/Course No:MX3084/C307																					
211	III	V	MX3084	Disaster Risk Reduction and Management	C307.1	To impart knowledge on the concepts of Disaster, Vulnerability and Disaster Risk reduction															
212	III	V	MX3084	Disaster Risk Reduction and Management	C307.2	To enhance understanding on Hazards, Vulnerability and Disaster Risk Assessment prevention and risk reduction															

213	III	V	MX3084	Disaster Risk Reduction and Management	C307.3	To develop disaster response skills by adopting relevant tools and technology															
214	III	V	MX3084	Disaster Risk Reduction and Management	C307.4	To Enhance awareness of institutional processes for Disaster response in the country and															
215	III	V	MX3084	Disaster Risk Reduction and Management	C307.5	To Develop rudimentary ability to respond to their surroundings with potential Disaster response in areas where they live, with due sensitivity															
Course Name: Object Oriented Software Engineering				Course Code/Course No: CCS356/C308				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
216	III	VI	CCS356	Object Oriented Software Engineering	C308.1	Compare various Software Development Lifecycle Models															
217	III	VI	CCS356	Object Oriented Software Engineering	C308.2	Evaluate project management approaches as well as cost and schedule estimation strategies.															
218	III	VI	CCS356	Object Oriented Software Engineering	C308.3	Perform formal analysis on specifications.															
219	III	VI	CCS356	Object Oriented Software Engineering	C308.4	Use UML diagrams for analysis and design.															
220	III	VI	CCS356	Object Oriented Software Engineering	C308.5	Architect and design using architectural styles and design patterns, and test the system															
Course Name: Embedded System and IoT				Course Code/Course No: CS3691/C309				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
221	III	VI	CS3691	Embedded System and IoT	C309.1	Explain the architecture of embedded processors.															
222	III	VI	CS3691	Embedded System and IoT	C309.2	Write embedded C programs.															
223	III	VI	CS3691	Embedded System and IoT	C309.3	Design simple embedded applications.															
224	III	VI	CS3691	Embedded System and IoT	C309.4	Compare the communication models in IOT															
225	III	VI	CS3691	Embedded System and IoT	C309.5	Design IoT applications using Arduino/Raspberry Pi/open platform.															
Course Name: Renewable Energy System				Course Code/Course No: OEE351/C310				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
226	III	VI	OEE351	Renewable Energy System	C310.1	Attained knowledge about various renewable energy technologies															
227	III	VI	OEE351	Renewable Energy System	C310.2	Ability to understand and design a PV system.															
228	III	VI	OEE351	Renewable Energy System	C310.3	Understand the concept of various wind energy system.															
229	III	VI	OEE351	Renewable Energy System	C310.4	Gained knowledge about various possible hybrid energy systems															
230	III	VI	OEE351	Renewable Energy System	C310.5	Attained knowledge about various application of renewable energy technologies															
Course Name: Cloud Computing				Course Code/Course No: CCS335/C311				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
231	III	VI	CCS335	Cloud Computing	C311.1	Understand the design challenges in the cloud.															
232	III	VI	CCS335	Cloud Computing	C311.2	Apply the concept of virtualization and its types.															
233	III	VI	CCS335	Cloud Computing	C311.3	Experiment with virtualization of hardware resources and Docker.															
234	III	VI	CCS335	Cloud Computing	C311.4	Develop and deploy services on the cloud and set up a cloud environment.															
235	III	VI	CCS335	Cloud Computing	C311.5	Explain security challenges in the cloud environment.															
Course Name: Software Testing and Automation				Course Code/Course No: CCS366/C312				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
236	III	VI	CCS366	Software Testing and Automation	C312.1	Understand the basic concepts of software testing and the need for software testing															
237	III	VI	CCS366	Software Testing and Automation	C312.2	Design Test planning and different activities involved in test planning															
238	III	VI	CCS366	Software Testing and Automation	C312.3	Design effective test cases that can uncover critical defects in the application															
239	III	VI	CCS366	Software Testing and Automation	C312.4	Carry out advanced types of testing															
Course Name: Web Application Security				Course Code/Course No: CCS374/C313				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
241	III	VI	CCS374	Web Application Security	C313.1	Understanding the basic concepts of web application security and the need for it															
242	III	VI	CCS374	Web Application Security	C313.2	Be acquainted with the process for secure development and deployment of web applications															
243	III	VI	CCS374	Web Application Security	C313.3	Acquire the skill to design and develop Secure Web Applications that use Secure APIs															
244	III	VI	CCS374	Web Application Security	C313.4	Be able to get the importance of carrying out vulnerability assessment and penetration testing															
245	III	VI	CCS374	Web Application Security	C313.5	Acquire the skill to think like a hacker and to use hackers tool sets															
Course Name: Cloud Services Management				Course Code/Course No: CCS336/C314				PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
246	III	VI	CCS336	Cloud Services Management	C314.1	Understand the Cloud Service Management Fundamentals															

247	III	VI	CCS336	Cloud Services Management	C314.2	Exhibit cloud service Strategies to design cloud technologies.																					
248	III	VI	CCS336	Cloud Services Management	C314.3	Possess Strong theoretical foundation leading to Cloud Service Management																					
249	III	VI	CCS336	Cloud Services Management	C314.4	Analyze excellence and excitement towards adoption of cloud-based Economics																					
250	III	VI	CCS336	Cloud Services Management	C314.5	Solve the real world problems using Cloud services and technologies																					
Course Name:Industrial Safety							Course Code/Course No:MX3089/C315							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
251	III	VI	MX3089	Industrial Safety	C315.1	Understand the basic concept of safety.																					
252	III	VI	MX3089	Industrial Safety	C315.2	Obtain knowledge of Statutory Regulations and standards.																					
253	III	VI	MX3089	Industrial Safety	C315.3	Know about the safety Activities of the Working Place.																					
254	III	VI	MX3089	Industrial Safety	C315.4	Analyze on the impact of Occupational Exposures and their Remedies																					
255	III	VI	MX3089	Industrial Safety	C315.5	Obtain knowledge of Risk Assessment Techniques.																					
Course Name:Human Values and Ethics							Course Code/Course No:GE3791/C401							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
256	IV	VII	GE3791	Human Values and Ethics	C401.1	Identify the importance of democratic, secular and scientific values in harmonious functioning of social life																					
257	IV	VII	GE3791	Human Values and Ethics	C401.2	Practice democratic and scientific values in both their personal and professional life.																					
258	IV	VII	GE3791	Human Values and Ethics	C401.3	Find rational solutions to social problems.																					
259	IV	VII	GE3791	Human Values and Ethics	C401.4	Behave in an ethical manner in society																					
260	IV	VII	GE3791	Human Values and Ethics	C401.5	Practice critical thinking and the pursuit of truth.																					
Course Name:Principles of Management							Course Code/Course No:GE3751/C402							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
261	IV	VII	GE3751	Principles of Management	C402.1	Upon completion of the course, students will be able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling.																					
262	IV	VII	GE3751	Principles of Management	C402.2	Have same basic knowledge on international aspect of management.																					
263	IV	VII	GE3751	Principles of Management	C402.3	Ability to understand management concept of organizing.																					
264	IV	VII	GE3751	Principles of Management	C402.4	Ability to understand management concept of directing.																					
265	IV	VII	GE3751	Principles of Management	C402.5	Ability to understand management concept of controlling.																					
Course Name:IT in Agricultural System							Course Code/Course No:AIC021/C403							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
266	IV	VII	AIC021	IT in Agricultural System	C403.1	The students shall be able to understand the applications of IT in remote sensing applications such as Drones etc.																					
267	IV	VII	AIC021	IT in Agricultural System	C403.2	The students will be able to get a clear understanding of how a greenhouse can be automated and its advantages.																					
268	IV	VII	AIC021	IT in Agricultural System	C403.3	The students will be able to apply IT principles and concepts for management of field operations																					
269	IV	VII	AIC021	IT in Agricultural System	C403.4	The students will get an understanding about weather models, their inputs and applications.																					
270	IV	VII	AIC021	IT in Agricultural System	C403.5	The students will get an understanding of how IT can be used for e-governance in agriculture																					
Course Name:Industrial Management							Course Code/Course No:GE3792/C404							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
271	IV	VII	GE3792	Industrial Management	C404.1	Explain basic concepts of management; approaches to management; contributors to management studies; various forms of business organization and trade unions function in professional organizations.																					
272	IV	VII	GE3792	Industrial Management	C404.2	Discuss the planning; organizing and staffing functions of management in professional organization																					
273	IV	VII	GE3792	Industrial Management	C404.3	Apply the leading; controlling and decision making functions of management in professional organization																					
274	IV	VII	GE3792	Industrial Management	C404.4	Discuss the organizational theory in professional organization																					

275	IV	VII	GE3792	Industrial Management	C404.5	Apply principles of productivity and modern concepts in management in professional organization.															
Course Name:Cost Management of Engineering Projects							Course Code/Course No:OMF354/C405	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
276	IV	VII	OMF354	Cost Management of Engineering Projects	C405.1	Understand the costing concepts and their role in decision making.															
277	IV	VII	OMF354	Cost Management of Engineering Projects	C405.2	Understand the project management concepts and their various aspects in selection.															
278	IV	VII	OMF354	Cost Management of Engineering Projects	C405.3	Interpret costing concepts with project execution.															
279	IV	VII	OMF354	Cost Management of Engineering Projects	C405.4	Gain knowledge of costing techniques in service sector and various budgetary control techniques.															
280	IV	VII	OMF354	Cost Management of Engineering Projects	C405.5	Become familiar with quantitative techniques in cost management.															
Course Name:Summer Internship							Course Code/Course No:CS3711/C406	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
281	IV	VII	CS3711	Summer Internship	C406.1	Understand Industry Practices, Processes and Techniques of Software Industry.															
282	IV	VII	CS3711	Summer Internship	C406.2	Understand the technology, automation and other core aspects of software industry															
283	IV	VII	CS3711	Summer Internship	C406.3	Analyze, Design solutions to complex business problems															
284	IV	VII	CS3711	Summer Internship	C406.4	Build and deploy solutions for target platform															
285	IV	VII	CS3711	Summer Internship	C406.5	Preparation of Technical reports and presentation.															
Course Name:Project Work							Course Code/Course No:CS3811/C407	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
286	IV	V	CS3811	Project Work	C407.1	Analyze the Requirements and Understand the Problem.															
287	IV	V	CS3811	Project Work	C407.2	Gain Domain knowledge and technical skill set required for solving industry/research problems															
288	IV	V	CS3811	Project Work	C407.3	Provide solution architecture, module level designs, algorithms															
289	IV	V	CS3811	Project Work	C407.4	Implement, test and deploy the solution for the target platform															
290	IV	V	CS3811	Project Work	C407.5	Prepare detailed technical report, demonstrate and present the work															

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

COURSE OUTCOMES (COs)						CO-PO & PSO MAPPING																
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: HS8151 - Communicative English / C101	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	HS8151	Communicative	C101	Prepare for active informal conversations and introduce themselves in English.	K3	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3
2	I	I	HS8151	Communicative	C101	Write paragraphs/descriptions on general topics.	K3						1	1			1	3		2		
3	I	I	HS8151	Communicative	C101	Construct appropriate syntax in English.	K3						1	1			1	3		2		
4	I	I	HS8151	Communicative	C101	Interpret and infer technical text.	K3						1	1			1	3		2		
5	I	I	HS8151	Communicative	C101	Write short essays of a general kind.	K3						1	1			1	3		2		
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA8151 - Engineering Mathematics - I / C102	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	MA8151	Engineering	C102	Use both the limit definition and rules of differentiation to differentiate functions	K2	3	3	1	1					2	1		1	-	-	
2	I	I	MA8151	Engineering	C102	Apply differentiation to solve maxima and minima problems	K2	3	3	1	1					2	1		1	-	-	
3	I	I	MA8151	Engineering	C102	Estimate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus.	K2	3	3	1	1					2	1		1	-	-	
4	I	I	MA8151	Engineering	C102	Apply integration to compute multiple integrals, area, volume, integrals in polar coordinates, in addition to	K2	3	3	1	1					2	1		1	-	-	
5	I	I	MA8151	Engineering	C102	Apply various techniques in solving differential equations	K2	3	3	1	1					2	1		1	-	-	
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: PH8151 - Engineering Physics / C103	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	PH8151	Engineering Physics	C103	Learn and apply the basic concepts of properties of matter in day to day life	K2	3	3	1		1					2	-	-	-	-	
2	I	I	PH8151	Engineering Physics	C103	Apply basics concepts of wave, lasers and optical fibers and their practical application in fiber optic	K2	3	3	1	1						2	-	-	-	-	
3	I	I	PH8151	Engineering Physics	C103	Adequate knowledge on the concepts of thermal properties of materials and their applications in	K2	3	3	1	1						2	-	-	-	-	
4	I	I	PH8151	Engineering Physics	C103	Acquire knowledge on advanced physics concepts of quantum theory and its applications in tunneling	K2	3	3	1	1						2	-	-	-	-	
5	I	I	PH8151	Engineering Physics	C103	Describe crystal structures and understand the impacts of defects at the atomic and microstructure	K2	3	3	1	1						2	-	-	-	-	
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CY8151 - Engineering Chemistry / C104	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	CY8151	Engineering Chemistry	C104	Define the materials, fuels, energy sources, treatment techniques and understanding of engineering	K2	3					1				1	1	1	-	-	
2	I	I	CY8151	Engineering Chemistry	C104	Explain the basic concepts of phase rule applications to single and two component systems and alloys	K2	3					1				1	1	1	-	-	
3	I	I	CY8151	Engineering Chemistry	C104	Differentiate the knowledge of Preparation, properties and applications of engineering materials	K2	3					1				1	1	1	-	-	
4	I	I	CY8151	Engineering Chemistry	C104	Derive the calculation of evaluate fuels, calorific value and its types.	K2	3					1				1	1	1	-	-	
5	I	I	CY8151	Engineering Chemistry	C104	Characterize the Principles and energy generation of batteries, solar cells, wind mills, nuclear reactors	K2	3					1				1	1	1	-	-	
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE8151 - Problem Solving and Python Programming / C105	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	GE8151	Problem Solving and	C105	Develop algorithmic solutions to simple computational problems	K2	3	3	3	3	2						2	2	3	1	
2	I	I	GE8151	Problem Solving and	C105	Read, write, execute by hand simple Python programs.	K2	3	3	3	3	2						2	2	3	1	
3	I	I	GE8151	Problem Solving and	C105	Structure simple Python programs for solving problems.	K2	3	3	3	3	2						2	3	1		
4	I	I	GE8151	Problem Solving and	C105	Decompose a Python program into functions.	K2	2	2	2	2	2						1	3	1		
5	I	I	GE8151	Problem Solving and	C105	Represent compound data using Python lists, tuples, dictionaries.	K2	1	2	2	2	1						1	2	1		
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE8152 - Engineering Graphics / C106	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	GE8152	Engineering Graphics	C106	Develop the basic curvilinear geometric shapes and orthographic projections of various objects	K2	3	1	2		2					3		2	2	1	
2	I	I	GE8152	Engineering Graphics	C106	Virtualize the projection of points, lines an planes in accordance with first angle projection	K2	3	1	2		2					3		2	2	1	
3	I	I	GE8152	Engineering Graphics	C106	Create the views projections of prisms and pyramids for different geometries	K2	3	1	2		2					3		2	2	1	
4	I	I	GE8152	Engineering Graphics	C106	Represent the views of sectional solids and development of surfaces with different geometries	K2	3	1	2		2					3		2	2	1	
5	I	I	GE8152	Engineering Graphics	C106	Project the isometric and perspective views of various objects in different positions.	K2	3	1	2		2					3		2	2	1	
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE8161 - Problem Solving and Python Programming Laboratory / C107	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	GE8161	Problem Solving and	C107	Write, test, and debug simple Python programs.	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1	
2	I	I	GE8161	Problem Solving and	C107	Implement Python programs with conditionals and loops.	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1	
3	I	I	GE8161	Problem Solving and	C107	Develop Python programs step-wise by defining functions and calling them.	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1	
4	I	I	GE8161	Problem Solving and	C107	Use Python lists, tuples, dictionaries for representing compound data.	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1	
5	I	I	GE8161	Problem Solving and	C107	Read and write data from/to files in Python.	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1	
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: BS8161 - Physics and Chemistry Laboratory / C108	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	BS8161	Physics and Chemistry	C108	Recognise measurement techniques, the use of modern tools, and real-world applications in engineering	K3	3	1	1			1			2	2	2	1	2	1	
2	I	I	BS8161	Physics and Chemistry	C108	predict fundamental knowledge in Physics practical and its applications relevant to various streams of	K3	3	1	1						2	2	2	1	2	1	
3	I	I	BS8161	Physics and Chemistry	C108	apply experimental skills to determine the physical quantities related to Heat, properties of matter and	K3	3	1	1						2	2	2	1	2	1	
4	I	I	BS8161	Physics and Chemistry	C108	List out the quantitative chemical analysis of water quality parameters with respect to their acidity.	K3	3	1	1			1			2	2	2	1	2	1	
5	I	I	BS8161	Physics and Chemistry	C108	Interpret the amount of metal ions through spectroscopic techniques and volumetric method and	K3	3	1	1			1			2	2	2	1	2	1	
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: HS8251 - Technical English / C109	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	II	HS8251	Technical English	C109	Interpret technical texts and write area- specific texts effortlessly.	K2						1	1			1	3		2	-	-
2	I	II	HS8251	Technical English	C109	Associate verbal with non-verbal communication.	K2						1				1	3		2	-	-
3	I	II	HS8251	Technical English	C109	Describe a process in English.	K2										1	3		2	-	-
4	I	II	HS8251	Technical English	C109	Write reports and winning job applications	K2						1				1	3		2	-	-
5	I	II	HS8251	Technical English	C109	Infer lectures and talks in their area of specialization successfully	K2						1	1			1	3		2	-	-

2	I	VI	EC8651	Transmission lines and	C314	Calculate standing wave ratio and input impedance in high frequency transmission lines	K3	3	3	3	3	3	1	-	-	1	1	-	2	3	3
3	I	VI	EC8651	Transmission lines and	C314	Solve impedance matching by stubs using smith charts for High Frequency	K3	3	3	3	3	3	1	-	-	1	1	-	2	3	3
4	I	VI	EC8651	Transmission lines and	C314	Contrast the characteristics of TE and TM waves in Waveguides	K2	3	3	3	3	3	2	-	-	1	1	-	2	3	3
5	I	VI	EC8651	Transmission lines and	C314	Discuss RF transceiver system for wireless communication	K2	3	3	3	3	3	2	-	-	1	1	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC8002 - Multimedia Compression and Communication / C315	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	VI	EC8002	Multimedia	C315	Contrast audio compression techniques	K2	3	3	2	2	3	2	-	-	1	1	-	2	3	3
2	I	VI	EC8002	Multimedia	C315	Discuss various Image and Video Compression techniques	K2	3	3	2	2	3	2	-	-	1	1	-	2	3	3
3	I	VI	EC8002	Multimedia	C315	Summarize Text Compression methods	K2	3	3	2	2	3	2	-	-	1	1	-	2	3	3
4	I	VI	EC8002	Multimedia	C315	Select suitable guaranteed service model for specific application	K2	3	3	2	2	3	2	-	-	1	1	-	2	3	3
5	I	VI	EC8002	Multimedia	C315	Explain multimedia communication models and protocols	K2	3	3	2	2	3	2	-	-	1	1	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC8681 - Microprocessors and Microcontrollers Laboratory / C316	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	VI	EC8681	Microprocessors and	C316	Experiment fixed and Floating Point and Arithmetic operations using 8086 and MASM	K3	3	3	3	3	3	2	2	2	3	3	2	2	3	3
2	I	VI	EC8681	Microprocessors and	C316	Examine Password Checking and Counters using 8086 and MASM	K3	3	3	3	3	3	2	2	2	3	3	2	2	3	3
3	I	VI	EC8681	Microprocessors and	C316	Demonstrate Traffic light controller, Stepper motor control and Digital clock using Interfacing with 8086	K3	3	3	3	3	3	2	2	2	3	3	2	2	3	3
4	I	VI	EC8681	Microprocessors and	C316	Analyze Serial & Parallel Interfaces, A/D and D/A interface and Waveform Generation	K4	3	3	3	3	3	2	2	2	3	3	2	2	3	3
5	I	VI	EC8681	Microprocessors and	C316	Show arithmetic and Logical operations and BCD to ASCII conversion using 8051 and MASM	K3	3	3	3	3	3	2	2	2	3	3	2	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC8661 - VLSI Design Laboratory / C317	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	VI	EC8661	VLSI Design Laboratory	C317	Experiment Combinational Circuits using HDL programming and Implement in FPGA	K3	3	3	3	3	3	2	2	2	3	3	2	2	3	3
2	I	VI	EC8661	VLSI Design Laboratory	C317	Experiment Sequential Circuits and Memories using HDL programming and Implement in FPGA	K3	3	3	3	3	3	2	2	2	3	3	2	2	3	3
3	I	VI	EC8661	VLSI Design Laboratory	C317	Analyze Power, Area and Timing of CMOS Inverter, CMOS Basic Gates & Flip-Flops in Layout Level	K4	3	3	3	3	3	2	2	2	3	3	2	2	3	3
4	I	VI	EC8661	VLSI Design Laboratory	C317	Analyze Power, Area and Timing of Counter circuit in Layout Level	K4	3	3	3	3	3	2	2	2	3	3	2	2	3	3
5	I	VI	EC8661	VLSI Design Laboratory	C317	Compare input impedance, output impedance, gain and bandwidth of various analog amplifiers	K5	3	3	3	3	3	2	2	2	3	3	2	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC8701 - Antennas and Microwave Engineering / C401	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	VII	EC8701	Antennas and	C401	Apply the basic principles and evaluate antenna parameters and link power budgets	K3	3	3	3	3	3	2	2	1	1	1	-	2	3	3
2	I	VII	EC8701	Antennas and	C401	Design and assess the performance of various antennas	K2	3	3	3	3	3	2	2	1	1	1	-	2	3	3
3	I	VII	EC8701	Antennas and	C401	Construct the microwave system given the application specifications	K3	3	3	3	3	3	2	2	1	1	1	-	2	3	3
4	I	VII	EC8701	Antennas and	C401	Describe the design and radiation mechanism of various types of antennas and arrays	K2	3	3	3	3	3	2	2	1	1	1	-	2	3	3
5	I	VII	EC8701	Antennas and	C401	Explain the concept of Microwave devices and its application	K2	3	3	3	3	3	2	2	1	1	1	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC8751 - Optical Communication / C402	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	VII	EC8751	Optical Communication	C402	Classify the basic elements in optical fibers, different modes, and configurations	K2	3	3	3	3	3	2	1	1	1	1	-	2	3	3
2	I	VII	EC8751	Optical Communication	C402	Determine the transmission characteristics associated with dispersion and polarization techniques.	K3	3	3	3	3	3	2	1	1	1	1	-	2	3	3
3	I	VII	EC8751	Optical Communication	C402	Explain optical sources and detectors	K2	3	3	3	3	3	2	1	1	1	1	-	2	3	3
4	I	VII	EC8751	Optical Communication	C402	Discuss fiber optic receiver systems and various measurements and coupling techniques.	K2	3	3	3	3	3	2	1	1	1	1	-	2	3	3
5	I	VII	EC8751	Optical Communication	C402	Describe Optical Communication Systems And Its Networks	K2	3	3	3	3	3	2	1	1	1	1	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC8791 - Embedded and Real Time Systems / C403	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	VII	EC8791	Embedded and Real	C403	Explain Embedded System Design and Methodologies	K2	3	3	3	3	3	2	2	1	1	1	-	2	3	3
2	I	VII	EC8791	Embedded and Real	C403	Discuss ARM Processor Architecture and Peripherals	K2	3	3	3	3	3	2	2	1	1	1	-	2	3	3
3	I	VII	EC8791	Embedded and Real	C403	Describe the concepts of Embedded Programming	K3	3	3	3	3	3	2	2	1	1	1	-	2	3	3
4	I	VII	EC8791	Embedded and Real	C403	Discuss concepts of real-time operating system design	K2	3	3	3	3	3	2	2	1	1	1	-	2	3	3
5	I	VII	EC8791	Embedded and Real	C403	Model real-time applications using embedded-system concepts	K3	3	3	3	3	3	2	2	1	1	1	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC8702 - Ad hoc and Wireless Sensor Networks / C404	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	II	VII	EC8702	Ad hoc and Wireless	C404	Discuss Adhoc Networks and its routing protocols	K2	3	3	2	2	3	2	-	-	1	1	-	1	3	3
2	II	VII	EC8702	Ad hoc and Wireless	C404	Explain Sensor Networks and Architectures	K2	3	3	2	2	3	2	-	-	1	1	-	1	3	3
3	II	VII	EC8702	Ad hoc and Wireless	C404	Explain Wireless Sensor Networks and its protocols	K2	3	3	3	2	3	2	-	-	1	1	-	1	3	3
4	II	VII	EC8702	Ad hoc and Wireless	C404	Interpret Challenges in Network Security and solutions	K2	3	3	2	2	3	2	-	-	1	1	-	1	3	3
5	II	VII	EC8702	Ad hoc and Wireless	C404	Describe Sensor Network OS Platforms and Simulators	K2	3	3	2	2	3	2	-	-	1	1	-	1	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE8071 - Disaster Management / C405	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	II	VII	GE8071	Disaster Management	C405	Review the awareness of difference type disasters, reason and their ill effect on society with	K2	3	3	3	2	2	2	-	1	1	1	1	2	2	2
2	II	VII	GE8071	Disaster Management	C405	Classify the various methods of risk and vulnerability, reduction measures as well as mitigation.	K2	3	3	3	2	2	2	-	1	1	1	1	2	2	2
3	II	VII	GE8071	Disaster Management	C405	Acquire the knowledge of hazard and vulnerability profile in India, Disaster damage assessment and	K2	3	3	3	2	2	2	-	1	1	1	1	2	2	2
4	II	VII	GE8071	Disaster Management	C405	Ensure the responds of students to their surroundings with potential of risk management in India	K2	3	3	3	2	2	2	-	1	1	1	1	2	2	2
5	II	VII	GE8071	Disaster Management	C405	Examine with different case studies of disaster management.	K2	3	3	3	2	2	2	-	1	1	1	1	2	2	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: OCY751 - Waste Water Treatment / C406	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3

1	II	VII	OCY751	Waste Water Treatment	C406	List the various components of water and design the complete structure of treatment and transmission.	K2	3	3	3	2	2	3	2	1	1	1	1	2	2	2
2	II	VII	OCY751	Waste Water Treatment	C406	Draw the overall design for sewage water with characteristics and composition, generation, pumping	K2	3	3	3	2	2	3	2	1	1	1	1	2	2	2
3	II	VII	OCY751	Waste Water Treatment	C406	Elaborate the knowledge of conventional treatment, biological treatment in waste water treatment.	K2	3	3	3	2	2	3	2	1	1	1	1	2	2	2
4	II	VII	OCY751	Waste Water Treatment	C406	Explain the water distribution system with buildings the self-purification of streams and sludge by various	K2	3	3	3	2	2	3	2	1	1	1	1	2	2	2
5	II	VII	OCY751	Waste Water Treatment	C406	Ensure the recent advanced treatment system in water and reuse of sewage water.	K2	3	3	3	2	2	3	2	1	1	1	1	2	2	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC8711 - Embedded Laboratory / C407	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	VII	EC8711	Embedded Laboratory	C407	Demonstrate interfacing of ADC, DAC, LED, PWM and Real Time Clock with ARM	K3	3	3	3	3	3	3	2	2	3	3	2	2	3	3
2	I	VII	EC8711	Embedded Laboratory	C407	Model a system for Interfacing of keyboard and LCD	K3	3	3	3	3	3	3	2	2	3	3	2	2	3	3
3	I	VII	EC8711	Embedded Laboratory	C407	Experiment Interfacing EPROM and interrupt and Mail box using ARM	K3	3	3	3	3	3	3	2	2	3	3	2	2	3	3
4	I	VII	EC8711	Embedded Laboratory	C407	Demonstrate Flashing of LE DS, stepper motor and temperature sensor using ARM.	K3	3	3	3	3	3	3	2	2	3	3	2	2	3	3
5	I	VII	EC8711	Embedded Laboratory	C407	Evaluate zigbee protocol for Wireless Communication with ARM.	K5	3	3	3	3	3	3	2	2	3	3	2	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC8761 - Advanced Communication Laboratory / C408	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	VII	EC8761	Advanced	C408	Analyze the performance of simple optical link by measurement of losses and the mode characteristics of	K4	3	3	3	3	3	3	2	2	3	3	2	2	3	3
2	I	VII	EC8761	Advanced	C408	Analyze the Eye Pattern, Pulse broadening of optical fiber and the impact on BER	K4	3	3	3	3	3	3	2	2	3	3	2	2	3	3
3	I	VII	EC8761	Advanced	C408	Demonstrate the DC Characteristics of LED and PIN Photo diode.	K3	3	3	3	3	3	3	2	2	3	3	2	2	3	3
4	I	VII	EC8761	Advanced	C408	Model a Wireless Channel Simulation including fading and Doppler effects	K3	3	3	3	3	3	3	2	2	3	3	2	2	3	3
5	I	VII	EC8761	Advanced	C408	Experiment Channel Estimation, Synchronization & Equalization techniques in Wireless Communication	K3	3	3	3	3	3	3	2	2	3	3	2	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE8076 - Professional Ethics in Engineering / C409	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	IV	VIII	GE8076	Professional Ethics in	C409	Apply ethics in society, discuss the ethical issues related to engineering and realize the responsibilities	K1	3	3	2	2	3	3		3	2	2	-	2	3	3
2	IV	VIII	GE8076	Professional Ethics in	C409	Illustrate the moral issues and models of professional roles.	K2	3	3	2	2	3	3		3	2	2	-	2	3	3
3	IV	VIII	GE8076	Professional Ethics in	C409	Describe the awareness of human values to appreciate the rights of others and stress management.	K1	3	3	2	2	3	3		3	2	2	-	2	3	3
4	IV	VIII	GE8076	Professional Ethics in	C409	Formulate the responsibilities, rights and assesses of the safety and risk.	K1	3	3	2	2	3	3		3	2	2	-	2	3	3
5	IV	VIII	GE8076	Professional Ethics in	C409	Apply the social responsibility on multinational corporations related to engineering.	K2	3	3	2	2	3	3		3	2	2	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC8094-Satellite Communication / C410	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	IV	VIII	EC8094	Satellite	C410	State various laws and orbits in satellite communication	K2	3	3	2	3	3	3	1	1	1	1	-	2	3	3
2	IV	VIII	EC8094	Satellite	C410	Explain satellite subsystems	K2	3	3	2	3	3	3	1	1	1	2	-	2	3	3
3	IV	VIII	EC8094	Satellite	C410	Calculate link power budget for satellite	K3	3	3	2	3	3	3	1	1	1	1	-	2	3	3
4	IV	VIII	EC8094	Satellite	C410	Summarize access technology for satellite	K2	3	3	2	3	3	3	1	1	1	2	-	2	3	3
5	IV	VIII	EC8094	Satellite	C410	Discuss various satellite applications	K2	3	3	2	3	3	3	1	1	1	2	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC8811 - Project Work / C411	Regulation: 2017	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	IV	VIII	EC8811	Project Work	C411	Identify the social needs and innovate new low cost electronic products	K3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2	IV	VIII	EC8811	Project Work	C411	Formulate a problem statement and provide remedial solutions	K3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
3	IV	VIII	EC8811	Project Work	C411	Realize the need of good literature survey and adopting according to the technological	K3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	IV	VIII	EC8811	Project Work	C411	Design and do simulation of circuits and networks using Modern software	K3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
5	IV	VIII	EC8811	Project Work	C411	Work as team member with individual contribution towards a goal	K3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

COURSE OUTCOMES (COs)						CO-PO & PSO MAPPING																
S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: HS3152 - Professional English - I / C101	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	I	HS3152	Professional English - I	C101.1	Identify and use appropriate vocabulary in both formal and informal contexts.	K3	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
2	I	I	HS3152	Professional English - I	C101.2	Associate the basic grammatical structures with the guided writing.	K2	1	1				1	1		1	3		2			
3	I	I	HS3152	Professional English - I	C101.3	Use discourse markers for technical descriptions.	K3						1	1		1	3		2			
4	I	I	HS3152	Professional English - I	C101.4	Interpret and infer technical texts and non-verbal communication.	K2						1	1		1	3		2			
5	I	I	HS3152	Professional English - I	C101.5	Write definitions, descriptions, narrations and essays on various topics	K3						1	1		1	3		2			

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA3151 - Matrices and Calculus / C102	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	I	MA3151	Matrices and Calculus	C102.1	Identify eigenvalues and eigenvectors and apply orthogonal diagonalisation to convert quadratic form to canonical form.	K1	3	3	1	1					2	1		1	-	-
2	I	I	MA3151	Matrices and Calculus	C102.2	Apply suitable techniques of differentiation to various functions and identify the maxima and minima of functions of one variable	K2	3	3	1	1					2	1		1	-	-
3	I	I	MA3151	Matrices and Calculus	C102.3	Determine the total derivative of a function and identify the maxima and minima of functions of two variable	K1	3	3	1	1					2	1		1	-	-
4	I	I	MA3151	Matrices and Calculus	C102.4	Apply suitable techniques of Integration to various functions	K1	3	3	1	1					2	1		1	-	-
5	I	I	MA3151	Matrices and Calculus	C102.5	Use multiple integral ideas in solving areas, volumes.	K2	3	3	1	1					2	1		1	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: PH3151 - Engineering Physics / C103	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	I	PH3151	Engineering Physics	C103.1	Apply the principles of mechanics to solve problems	K3	3	3	1		1					2	-	-	-	-
2	I	I	PH3151	Engineering Physics	C103.2	Describe the concepts of electro magnetic waves	K2	3	3	1		1	2				2	-	-	-	-
3	I	I	PH3151	Engineering Physics	C103.3	Explain the fundamental knowledge in oscillations, optics and lasers.	K2	3	3	1		1					2	-	-	-	-
4	I	I	PH3151	Engineering Physics	C103.4	Discuss the basic knowledge of Quantum Mechanics	K2	3	3	1		1					2	-	-	-	-
5	I	I	PH3151	Engineering Physics	C103.5	Apply quantum mechanical principles towards the formation of energy bands	K3	3	3	1		1	1				2	-	-	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CY3151 - Engineering Chemistry / C104	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	I	CY3151	Engineering Chemistry	C104.1	Identify the terminologies used in water treatment processes, phase rule, energy sources.	K2	3					2				1	1	1	-	-
2	I	I	CY3151	Engineering Chemistry	C104.2	Classify the types of chemical reactions in water, concepts of nano science, different types of fuels and energy resources.	K2	3					2				1	1	1	-	-
3	I	I	CY3151	Engineering Chemistry	C104.3	Compare the BOD and COD, number of phases, calorific value of fuels.	K2	3					2				1	1	1	-	-
4	I	I	CY3151	Engineering Chemistry	C104.4	Distinguish types of the hardness of water, synthesis of nano materials for engineering and technology applications, selection of fuel for engineering processes and applications, energy resources and applications in energy sectors.	K2	3					2				1	1	1	-	-
5	I	I	CY3151	Engineering Chemistry	C104.5	Diagnose the quality of water, material selection by phase rule, fuels for engineering processes.	K2	3					2				1	1	1	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3151 - Problem Solving and Python Programming / C105	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	I	GE3151	Problem Solving and Python Programming	C105.1	Develop algorithmic solutions to simple computational problems	K2	3	3	3	3	2						2	2	3	1
2	I	I	GE3151	Problem Solving and Python Programming	C105.2	Read, write, execute by hand simple Python programs.	K2	3	3	3	3	2						2	2	3	1
3	I	I	GE3151	Problem Solving and Python Programming	C105.3	Structure simple Python programs for solving problems.	K2	3	3	3	3	2						2		3	1
4	I	I	GE3151	Problem Solving and Python Programming	C105.4	Decompose a Python program into functions.	K2	2	2	2	2	2						1		3	1
5	I	I	GE3151	Problem Solving and Python Programming	C105.5	Represent compound data using Python lists, tuples, dictionaries.	K2	1	2	2	2	1						1		2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3152 - தமிழ்மரபு / Heritage of Tamils / C106	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
1	I	I	GE3152	தமிழ்மரபு / Heritage of Tamils	C106.1	Describe the various types of Tamil Literature	K2	1								1	2			-	-
2	I	I	GE3152	தமிழ்மரபு / Heritage of Tamils	C106.2	Discuss about Tamil Arts and Sculpture	K2	1								1	2			-	-
3	I	I	GE3152	தமிழ்மரபு / Heritage of Tamils	C106.3	Explain the Tamil Folks and Martial Arts	K2	1								1	2			-	-
4	I	I	GE3152	தமிழ்மரபு / Heritage of Tamils	C106.4	Summarize the Thina Concepts of Tamil	K2	1								1	2			-	-
5	I	I	GE3152	தமிழ்மரபு / Heritage of Tamils	C106.5	Review the contribution of Tamil Culture to Indian Culture and National Movements	K2	1								1	2			-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3171 - Problem Solving and Python Programming Laboratory / C107	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.1	Develop algorithmic solutions to simple computational problems	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
2	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.2	Develop & execute simple python programs	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
3	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.3	Analyze and apply simple python programs using conditional & loops for solving problems	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
4	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.4	Decompose and execute a python program into functions	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
5	I	I	GE3171	Problem Solving and Python Programming Laboratory	C107.5	Represent compound data using python lists,tuples and dictionaries etc	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: BS3171 - Physics and Chemistry Laboratory / C108	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	BS3171	Physics and Chemistry Laboratory	C108.1	Explain the functions of Physics and Chemistry laboratory Equipments	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1
2	I	I	BS3171	Physics and Chemistry Laboratory	C108.2	Apply engineering properties of materials, principles of optics and thermal characteristics of Engineering Applications	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1
3	I	I	BS3171	Physics and Chemistry Laboratory	C108.3	Calculate the Energy band gap for semiconductor materials and Properties of Laser for Engineering Applications.	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1
4	I	I	BS3171	Physics and Chemistry Laboratory	C108.4	Calculate the quality parameters of different types in Water Samples	K3	3	3	2	2	2	1	1	-	2	2	-	2	3	1
5	I	I	BS3171	Physics and Chemistry Laboratory	C108.5	Apply the appropriate method to find the PH, conductance and potential values of various solutions	K3	3	3	2	2	2	2	1	-	2	2	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3172 - English Laboratory / C109	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	I	GE3172	English Laboratory	C109.1	Interpret the audio materials and build opinions about them	K3					3	2		1	3	3		2		
2	I	I	GE3172	English Laboratory	C109.2	Discuss the views about different points of view	K2					2	2		1	3	3		2		
3	I	I	GE3172	English Laboratory	C109.3	Explain fluently and accurately in formal and informal communicative contexts	K2					2	2		1	3	3		2		
4	I	I	GE3172	English Laboratory	C109.4	Describe products and processes and explain their uses and purposes clearly and accurately	K2					2	2		1	2	3		2		
5	I	I	GE3172	English Laboratory	C109.5	Explain their opinions effectively in both formal and informal discussions	K2					2	2		1	3	3		2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: HS3252 - Professional English - II / C110	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
1	I	II	HS3252	Professional English - II	C110.1	Compare and contrast products and ideas in technical texts.	K2						2			2	3		2		
2	I	II	HS3252	Professional English - II	C110.2	Recognize causal relations in speaking and writing.	K2						2			2	3		2		
3	I	II	HS3252	Professional English - II	C110.3	Identify problems and express the solutions as a written document	K2						2			2	3		2		
4	I	II	HS3252	Professional English - II	C110.4	Write effective resumes in the context of job search.	K2						2			2	3		2		
5	I	II	HS3252	Professional English - II	C110.5	Interpret and infer the denotative and connotative meanings of technical texts.	K2						2			2	3		2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA3251 - Statistics and Numerical Methods / C111	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	MA3251	Statistics and Numerical Methods	C111.1	Identify the small sample tests based on chi-square, Student's t and F distributions	K2	3	2	1	1					1	1		1		
2	I	II	MA3251	Statistics and Numerical Methods	C111.2	Distinguish between one way and two way classification	K2	3	2	1	1					1	1		1		
3	I	II	MA3251	Statistics and Numerical Methods	C111.3	Understand the numerical solution of algebraic,transcendental and system of linear equations	K2	3	2	1	1					1	1		1		
4	I	II	MA3251	Statistics and Numerical Methods	C111.4	Apply appropriate numerical methods to solve the interpolation with equal and unequal intervals	K2	3	2	1	1					1	1		1		
5	I	II	MA3251	Statistics and Numerical Methods	C111.5	Solve the solution for ordinary differential equation of first order	K2	3	2	1	1					1	1		1		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: PH3254 - Physics for Electronics Engineering / C112	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	PH3254	Physics for Electronics Engineering	C112.1	Ascertain about the concepts of crystalline state and their behavior of defects in solids.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1
2	I	II	PH3254	Physics for Electronics Engineering	C112.2	Classify electrical and magnetic behaviour of materials	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1
3	I	II	PH3254	Physics for Electronics Engineering	C112.3	Acquire the basic concepts of Semiconductors physics and relate to the devices such as diodes and their technological applications.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1

4	I	II	PH3254	Physics for Electronics Engineering	C112.4	Grasp and apply optical properties of materials to the optoelectronics devices and understand basics of Plasmonics.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1
5	I	II	PH3254	Physics for Electronics Engineering	C112.5	Interpret the basics of quantum structures and their applications in carbon nano tube devices.	K2	3	3	2	2	2	2	1	-	1	1	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: BE3254 - Electrical and Instrumentation Engineering / C113	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	BE3254	Electrical and Instrumentation Engineering	C113.1	Explain the working principle of electrical machines	K2	3	3	2	3	3	2	1	-	2	1	-	2	3	2
2	I	II	BE3254	Electrical and Instrumentation Engineering	C113.2	Analyze the output characterizes of electrical machines	K2	3	3	2	3	3	2	1	-	2	1	-	2	3	2
3	I	II	BE3254	Electrical and Instrumentation Engineering	C113.3	Choose the appropriate electrical machines for various applications	K2	3	3	2	3	3	2	2	-	2	1	-	2	3	2
4	I	II	BE3254	Electrical and Instrumentation Engineering	C113.4	Explain the types and operating principles of measuring instruments	K2	3	3	2	3	3	2	1	-	2	1	-	2	3	2
5	I	II	BE3254	Electrical and Instrumentation Engineering	C113.5	Explain the basic power system structure and protection schemes	K2	3	3	2	3	3	2	2	-	2	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3251 - Engineering Graphics / C114	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	GE3251	Engineering Graphics	C114.1	Use BIS conventions and specifications for engineering drawing.	K2	3	1	2		2					3		2	2	1
2	I	II	GE3251	Engineering Graphics	C114.2	Construct the conic curves, involutes and cycloid.	K2	3	1	2		2					3		2	2	1
3	I	II	GE3251	Engineering Graphics	C114.3	Solve practical problems involving projection of lines.	K2	3	1	2		2					3		2	2	1
4	I	II	GE3251	Engineering Graphics	C114.4	Draw the orthographic, isometric and perspective projections of simple solids.	K2	3	1	2		2					3		2	2	1
5	I	II	GE3251	Engineering Graphics	C114.5	Draw the development of simple solids.	K2	3	1	2		2					3		2	2	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3251 - Circuit Analysis / C115	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	EC3251	Circuit Analysis	C115.1	Apply advanced circuit analysis techniques to solve complex electrical circuits.	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
2	I	II	EC3251	Circuit Analysis	C115.2	Solve electrical circuit's parameters using Network Theorems	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
3	I	II	EC3251	Circuit Analysis	C115.3	Calculate resonance frequency, impedance, bandwidth and Q factor of resonant circuits and inductances for coupled circuits	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
4	I	II	EC3251	Circuit Analysis	C115.4	Determine Transient response of RC, RL and RLC circuits	K3	3	3	2	3	3	1	1	-	2	1	-	2	3	2
5	I	II	EC3251	Circuit Analysis	C115.5	Explain Coupled Circuits and Network Topology	K2	3	3	2	3	3	1	1	-	2	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3252 - தமிழரும் தொழில்நுட்பமும்/Tamilis and Technology / C116	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	GE3252	தமிழரும் தொழில்நுட்பமும்/Tamilis and Technology	C116.1	Review the Weaving and Ceramic Technology during Tamil Sangam Age	K2	1							2	1	2				
2	I	II	GE3252	தமிழரும் தொழில்நுட்பமும்/Tamilis and Technology	C116.2	Describe the Construction Technology and various Architecture during Tamil Sangam Age	K2	1							2	1	2				
3	I	II	GE3252	தமிழரும் தொழில்நுட்பமும்/Tamilis and Technology	C116.3	Discuss the Manufacturing Technology with Archeological Evidences	K2	1							2	1	2				
4	I	II	GE3252	தமிழரும் தொழில்நுட்பமும்/Tamilis and Technology	C116.4	Explain the Agriculture and Irrigation Technology during Tamil Sangam Age	K2	1							2	1	2				
5	I	II	GE3252	தமிழரும் தொழில்நுட்பமும்/Tamilis and Technology	C116.5	Decribe Tamil Software and Digitalization Tamil Literatures	K2	1							2	1	2				

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3271 - Engineering Practices Laboratory / C117	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II	GE3271	Engineering Practices Laboratory	C117.1	Model the real geometry of the shapes for industrial applications	K3	3	2	-	-	1	2	2	-	-	-	-	2	2	1
2	I	II	GE3271	Engineering Practices Laboratory	C117.2	Demonstrate residential house wiring, fluorescent lamp wiring and stair case wiring and pipe connections for the home application and industrial constructions	K4	3	2	-	-	1	2	2	-	-	-	-	2	2	1
3	I	II	GE3271	Engineering Practices Laboratory	C117.3	Analyze electrical quantities like voltage, current, energy and resistance and their measurement using CRO	K4	3	2	-	-	1	2	2	-	-	-	-	2	2	1
4	I	II	GE3271	Engineering Practices Laboratory	C117.4	Experiment the concept of connecting the metal by welding	K3	3	2	-	-	1	2	2	-	-	-	-	2	2	1

5	I	II	GE3271	Engineering Practices Laboratory	C117.5	Examine different logic gates, clock, rectifier and to solder devices and components	K3	3	2	-	-	1	2	2	-	-	-	-	2	2	1
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S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3271 - Circuit Analysis Laboratory / C118	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6
1	I	II	EC3271	Circuit Analysis Laboratory	C118.1	Experiment KVL & KCL.	K3	3	3	3	3	3	1	1	2	3	3	1	2	3	2
2	I	II	EC3271	Circuit Analysis Laboratory	C118.2	Calculate Current and Voltage for a circuit using Thevenin, Norton, Superposition Theorem.	K3	3	3	3	3	3	1	1	2	3	3	1	2	3	2
3	I	II	EC3271	Circuit Analysis Laboratory	C118.3	Analyze Power delivered using maximum power transfer Theorem	K4	3	3	3	3	3	1	1	2	3	3	1	2	3	2
4	I	II	EC3271	Circuit Analysis Laboratory	C118.4	Determine of Resonance Frequency of Series & Parallel RLC Circuits.	K3	3	3	3	3	3	1	1	2	3	3	1	2	3	2
5	I	II	EC3271	Circuit Analysis Laboratory	C118.5	Assess Transient analysis of RL and RC circuits.	K5	3	3	3	3	3	1	1	2	3	3	1	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: Communication Laboratory / Foreign Language / C119	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	I	II		Communication Laboratory / Foreign Language	C119.1	Discuss effectively in GD held in a formal/semi formal contexts.	K2						1		1	3	2		2		
2	I	II		Communication Laboratory / Foreign Language	C119.2	Discuss and present concepts and problems from various perspectives for solutions	K2						1		1	3	2		2		
3	I	II		Communication Laboratory / Foreign Language	C119.3	Write emails, letters and effective job applications.	K2						1		1	3	2		2		
4	I	II		Communication Laboratory / Foreign Language	C119.4	Write critical reports to convey data and information with clarity and precision	K2						1		1	3	2		2		
5	I	II		Communication Laboratory / Foreign Language	C119.5	Describe appropriate instructions and recommendations for safe execution of tasks	K2						1		1	3	2		2		

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: MA3355 - Random Processes and Linear Algebra / C201	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	MA3355	Random Processes and Linear Algebra	C201.1	Explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied contexts.	K2	3	3	2	3	3	1	1	-	2	1	-	2	-	-
2	II	III	MA3355	Random Processes and Linear Algebra	C201.2	Demonstrate accurate and efficient use of advanced algebraic techniques	K2	3	3	2	3	3	1	1	-	2	1	-	2	-	-
3	II	III	MA3355	Random Processes and Linear Algebra	C201.3	Apply the concept of random processes in engineering disciplines.	K3	3	3	2	3	3	1	1	-	2	1	-	2	-	-
4	II	III	MA3355	Random Processes and Linear Algebra	C201.4	Understand the fundamental concepts of probability with a thorough knowledge of standard distributions that can describe certain real-life phenomenon.	K3	3	3	2	3	3	1	1	-	2	1	-	2	-	-
5	II	III	MA3355	Random Processes and Linear Algebra	C201.5	Understand the basic concepts of one and two dimensional random variables and apply them to model engineering problems.	K3	3	3	2	3	3	1	1	-	2	1	-	2	-	-

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CS3353 - C Programming and Data Structures / C202	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	CS3353	C Programming and Data Structures	C202.1	Implement linear and non-linear data structure operations using C	K2	3	3	2	3	3	1	1	-	2	1	-	2	3	2
2	II	III	CS3353	C Programming and Data Structures	C202.2	Suggest appropriate linear / non-linear data structure for any given data set	K2	3	3	2	3	3	1	1	-	2	1	-	2	3	2
3	II	III	CS3353	C Programming and Data Structures	C202.3	Apply hashing concepts for a given problem	K2	3	3	2	3	3	1	1	-	2	1	-	2	3	2
4	II	III	CS3353	C Programming and Data Structures	C202.4	Modify or suggest new data structure for an application	K2	3	3	2	3	3	1	1	-	2	1	-	2	3	2
5	II	III	CS3353	C Programming and Data Structures	C202.5	Choose the sorting algorithm for an application	K2	3	3	2	3	3	1	1	-	2	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3354 - Signals and Systems / C203	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	EC3354	Signals and Systems	C203.1	Interpret the nature of the signals and system	K2	3	3	2	3	3	2	2	-	1	1	-	2	3	2
2	II	III	EC3354	Signals and Systems	C203.2	Apply Fourier Transform and Laplace Transform in continuous Time Signals	K3	3	3	3	3	3	2	1	-	1	1	-	2	3	2
3	II	III	EC3354	Signals and Systems	C203.3	Solve Linear Time Invariant Continuous Signals using Fourier Transform and Laplace Transform	K3	3	3	3	3	3	2	1	-	1	1	-	2	3	2
4	II	III	EC3354	Signals and Systems	C203.4	Analyse Fourier Transform and Z Transform in Discrete Time Signals	K3	3	3	3	3	3	2	1	-	1	1	-	2	3	2
5	II	III	EC3354	Signals and Systems	C203.5	Solve Linear Time Invariant Discrete Signals using Fourier Transform and Laplace Transform	K3	3	3	3	3	3	2	1	-	1	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3353- Electronic Devices and Circuits / C204	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	EC3353	Electronic Devices and Circuits	C204.1	Explain the structure and working of various Semiconductor Devices	K2	3	3	2	3	3	2	2	-	1	1	-	2	3	2
2	II	III	EC3353	Electronic Devices and Circuits	C204.2	Discuss BJT and MOSFET amplifiers and its Gain and Frequency response	K2	3	3	3	3	3	2	2	-	1	1	-	2	3	2
3	II	III	EC3353	Electronic Devices and Circuits	C204.3	Describe multistage amplifiers and Differential amplifiers and its Gain and Frequency response	K2	3	3	3	3	3	2	1	-	1	1	-	2	3	2
4	II	III	EC3353	Electronic Devices and Circuits	C204.4	Summarize Feedback amplifiers and Oscillators	K2	3	3	3	3	3	2	1	-	1	1	-	2	3	2
5	II	III	EC3353	Electronic Devices and Circuits	C204.5	Explain various Power amplifiers and DC to DC converters	K2	3	3	2	3	3	2	2	-	1	2	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3351 - Control Systems / C205	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	EC3351	Control Systems	C205.1	Discuss the various control system components and their representations.	K2	3	3	2	3	3	2	1	-	2	1	-	2	3	1
2	II	III	EC3351	Control Systems	C205.2	Calculate time response analysis for various control systems	K3	3	3	3	3	3	2	1	-	2	1	-	2	3	1
3	II	III	EC3351	Control Systems	C205.3	Determine frequency response plots for various systems	K3	3	3	3	3	3	2	1	-	2	1	-	2	3	1
4	II	III	EC3351	Control Systems	C205.4	Apply the concepts of various system stability criteria.	K3	3	3	3	3	3	2	1	-	2	1	-	2	3	1
5	II	III	EC3351	Control Systems	C205.5	Solve various transfer functions of digital control system using state variable models.	K3	3	3	3	3	3	2	1	-	2	2	-	2	3	1

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3352 - Digital Systems Design / C206	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	EC3352	Digital Systems Design	C206.1	Discuss Number Systems and Boolean Minimization Techniques	K2	3	3	3	3	3	2	1	2	2	2	1	2	3	3
2	II	III	EC3352	Digital Systems Design	C206.2	Construct Combinational and Synchronous Sequential Logic Circuits using Logic Gates / Flip-Flops	K3	3	3	3	3	3	2	1	2	2	2	1	2	3	3
3	II	III	EC3352	Digital Systems Design	C206.3	Solve Asynchronous Sequential Circuits and Hazards free circuits	K3	3	3	3	3	3	2	1	2	2	2	1	2	3	3
4	II	III	EC3352	Digital Systems Design	C206.4	Summarize Various Digital Logic Families and Programmable Logic Devices	K2	3	3	3	3	3	2	1	2	2	2	1	2	3	3
5	II	III	EC3352	Digital Systems Design	C206.5	Experiment with various Combinational and Sequential Circuits in Hardware	K3	3	3	3	3	3	2	1	2	2	2	1	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3361 - Electronic Devices and Circuits Laboratory / C207	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	EC3361	Electronic Devices and Circuits Laboratory	C207.1	Show the Transfer characteristics of the PN Junction Diode and Zener diode	K3	3	3	2	3	3	1	1	2	3	3	1	2	3	2
2	II	III	EC3361	Electronic Devices and Circuits Laboratory	C207.2	Demonstrate various rectifier circuits	K3	3	3	2	3	3	1	1	2	3	3	1	2	3	2
3	II	III	EC3361	Electronic Devices and Circuits Laboratory	C207.3	Experiment Transfer characteristics of BJT and FET in different configurations	K3	3	3	2	3	3	1	1	2	3	3	1	2	3	2
	II	III	EC3361	Electronic Devices and Circuits Laboratory	C207.2	Analyse the Frequency Response of CE, CS, CB and CC amplifiers	K3	3	3	2	3	3	1	1	2	3	3	1	2	3	2
	II	III	EC3361	Electronic Devices and Circuits Laboratory	C207.3	Measure CMRR of Differential Amplifier	K3	3	3	2	3	3	1	1	2	3	3	1	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CS3362 - C Programming and Data Structures Laboratory / C208	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	CS3362	C Programming and Data Structures Laboratory	C208.1	Use different constructs of C and develop applications	K3	3	3	2	3	3	1	1	2	3	3	1	2	3	2
2	II	III	CS3362	C Programming and Data Structures Laboratory	C208.2	Write functions to implement linear and non-linear data structure operations	K3	3	3	2	3	3	1	1	2	3	3	1	2	3	2
3	II	III	CS3362	C Programming and Data Structures Laboratory	C208.3	Suggest and use the appropriate linear / non-linear data structure operations for a given problem	K3	3	3	2	3	3	1	1	2	3	3	1	2	3	2

4	II	III	CS3362	C Programming and Data Structures Laboratory	C208.4	Apply appropriate hash functions that result in a collision free scenario for data storage and Retrieval	K3	3	3	2	3	3	1	1	2	3	3	1	2	3	2
5	II	III	CS3362	C Programming and Data Structures Laboratory	C208.5	Implement Sorting and searching algorithms for a given application	K3	3	3	2	3	3	1	1	2	3	3	1	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3452 - Electromagnetic Fields / C210	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6
1	II	IV	EC3452	Electromagnetic Fields	C210.1	Discuss fundamental electromagnetic theorems and concepts	K2	3	3	3	3	3	2	1	1	1	1	-	2	3	2
2	II	IV	EC3452	Electromagnetic Fields	C210.2	Solve Electrostatic Problems using various concepts and laws.	K3	3	3	3	3	3	2	1	1	1	1	-	2	3	2
3	II	IV	EC3452	Electromagnetic Fields	C210.3	Solve Magnetostatic Problems using various concepts and laws.	K3	3	3	3	3	3	2	1	1	1	1	-	2	3	2
4	II	IV	EC3452	Electromagnetic Fields	C210.4	Examine Time-Varying Fields and Maxwell's Equations	K3	3	3	3	3	3	2	1	1	1	1	-	2	3	2
5	II	IV	EC3452	Electromagnetic Fields	C210.5	Compare Plane Electromagnetic Waves in Different mediums like lossless media and in lossy media	K2	3	3	3	3	3	1	1	1	1	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3401 - Networks and Security / C211	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6
1	II	IV	EC3401	Networks and Security	C211.1	Understand the Network Models and datalink layer functions	K2	3	3	3	3	3	2	1	1	2	2	1	2	3	3
2	II	IV	EC3401	Networks and Security	C211.2	Summarize Network Layer Protocols	K2	3	3	3	3	3	2	1	1	2	2	1	2	3	3
3	II	IV	EC3401	Networks and Security	C211.3	Interpret the methods of communication and congestion control by the Transport Layer	K2	3	3	3	3	3	2	1	1	2	2	1	2	3	3
4	II	IV	EC3401	Networks and Security	C211.4	Describe the Network Security Mechanisms	K2	3	3	3	3	3	2	1	1	2	2	1	2	3	3
5	II	IV	EC3401	Networks and Security	C211.5	Classify various hardware security attacks and their countermeasures	K2	3	3	3	3	3	2	1	1	2	2	1	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3451 - Linear Integrated Circuits / C212	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6
1	II	IV	EC3451	Linear Integrated Circuits	C212.1	Discuss Operational Amplifier's performance characteristics and its configurations	K2	3	3	2	3	3	3	2	-	1	1	-	2	3	2
2	II	IV	EC3451	Linear Integrated Circuits	C212.2	Explain various applications of Operational Amplifiers	K2	3	3	2	3	3	2	1	-	1	1	-	2	3	2
3	II	IV	EC3451	Linear Integrated Circuits	C212.3	Describe Analog Multiplier, PLL and its applications	K2	3	3	2	3	3	2	1	-	1	1	-	2	3	2
4	II	IV	EC3451	Linear Integrated Circuits	C212.4	Summarize various types of Analog to Digital and Digital to Analog Converters	K2	3	3	2	3	3	2	1	-	1	1	-	2	3	2
5	II	IV	EC3451	Linear Integrated Circuits	C212.5	Paraphrase Waveform Generators using OPAMP and Special Function ICs	K2	3	3	2	3	3	2	2	-	1	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3492 - Digital Signal Processing / C213	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	EC3492	Digital Signal Processing	C213.1	Apply DFT for the analysis of digital signals and systems	K3	3	3	3	3	3	2	1	2	2	2	1	2	3	3
2	II	IV	EC3492	Digital Signal Processing	C213.2	Solve IIR Filters and derive its characteristics	K3	3	3	3	3	3	2	1	2	2	2	1	2	3	3
3	II	IV	EC3492	Digital Signal Processing	C213.3	Model FIR Filters using various Windowing Techniques	K3	3	3	3	3	3	2	1	2	2	2	1	2	3	3
4	II	IV	EC3492	Digital Signal Processing	C213.4	Explain the Number Representation and Quantization	K2	3	3	3	3	3	2	1	2	2	2	1	2	3	3
5	II	IV	EC3492	Digital Signal Processing	C213.5	Discuss Various DSP Architecture and its Programming	K2	3	3	3	3	3	2	1	2	2	2	1	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3491 - Communication Systems / C214	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6
1	II	IV	EC3491	Communication Systems	C214.1	Gain knowledge in amplitude modulation techniques	K2	3	3	2	3	3	2	1	1	1	1	-	2	3	3
2	II	IV	EC3491	Communication Systems	C214.2	Understand the concepts of Random Process to the design of communication systems	K2	3	3	2	3	3	2	2	1	1	1	-	2	3	3
3	II	IV	EC3491	Communication Systems	C214.3	Apply knowledge in digital techniques	K2	3	3	3	3	3	2	2	1	1	1	-	2	3	3
4	II	IV	EC3491	Communication Systems	C214.4	Analyze sampling and quantization	K2	3	3	2	3	3	2	2	1	1	1	-	2	3	3
5	II	IV	EC3491	Communication Systems	C214.5	Design and develop modulation and demodulation techniques	K2	3	3	3	3	3	2	2	1	1	1	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3451 - Environmental Sciences and Sustainability / C215	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	III	GE3451	Environmental Sciences and Sustainability	C215.1	Recognize the functions of environment, ecosystems and biodiversity and their conservation.	K2	3	3	1	3	3	2	3	2	1	1	-	2	3	2
2	II	III	GE3451	Environmental Sciences and Sustainability	C215.2	Detail the knowledge about causes, effects of pollution, natural disasters and preventive measures to the society.	K2	3	3	1	3	3	2	3	2	1	1	-	2	3	2
3	II	III	GE3451	Environmental Sciences and Sustainability	C215.3	Apply the awareness of renewable and non-renewable resources and apply for future generations on the sustainable measures to preserve environment.	K2	3	3	1	3	3	2	3	2	1	1	-	2	3	2
4	II	III	GE3451	Environmental Sciences and Sustainability	C215.4	Classify the various measures of sustainable development and apply the development for suitable technological advancement.	K2	3	3	1	3	3	2	3	2	1	1	-	2	3	2
5	II	III	GE3451	Environmental Sciences and Sustainability	C215.5	Examine the collective ideas of sustainability practices and apply to green materials, energy cycles and the role of sustainable urbanization	K2	3	3	1	3	3	2	3	2	1	1	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3461 - Communication Systems Laboratory / C216	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	EC3461	Communication Systems Laboratory	C216.1	Design AM, FM & Digital Modulators for specific applications.	K3	3	3	2	3	3	2	2	2	3	3	1	2	3	2
2	II	IV	EC3461	Communication Systems Laboratory	C216.2	Compute the sampling frequency for digital modulation.	K3	3	3	2	3	3	2	2	2	3	3	1	2	3	2
3	II	IV	EC3461	Communication Systems Laboratory	C216.3	Simulate & validate the various functional modules of Communication system.	K3	3	3	2	3	3	2	2	2	3	3	1	2	3	2
4	II	IV	EC3461	Communication Systems Laboratory	C216.4	Demonstrate their knowledge in base band signaling schemes through implementation of digital modulation schemes.	K4	3	3	2	3	3	2	2	2	3	3	1	2	3	2
5	II	IV	EC3461	Communication Systems Laboratory	C216.5	Apply various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of Communication system.	K4	3	3	2	3	3	2	2	2	3	3	1	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3462 - Linear Integrated Circuits Laboratory / C217	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	II	IV	EC3462	Linear Integrated Circuits Laboratory	C217.1	Analyze various types of feedback amplifiers	K4	3	3	2	3	3	2	2	2	3	3	1	2	3	2
2	II	IV	EC3462	Linear Integrated Circuits Laboratory	C217.2	Design oscillators, tuned amplifiers, wave-shaping circuits and multivibrators	K3	3	3	2	3	3	2	2	2	3	3	1	2	3	2
3	II	IV	EC3462	Linear Integrated Circuits Laboratory	C217.3	Simulate and validate feedback amplifiers, oscillators, tuned amplifiers, wave-shaping circuits and multivibrators, filters using SPICE Tool.	K5	3	3	2	3	3	2	2	2	3	3	1	2	3	2
4	II	IV	EC3462	Linear Integrated Circuits Laboratory	C217.4	Demonstrate amplifiers, oscillators, D-A converters using operational amplifiers.	K3	3	3	2	3	3	2	2	2	3	3	1	2	3	2
5	II	IV	EC3462	Linear Integrated Circuits Laboratory	C217.5	Evaluate filters using op-amp and perform an experiment on frequency response	K4	3	3	2	3	3	2	2	2	3	3	1	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3501-Wireless Communication / C301	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	EC3501	Wireless Communication	C301.1	Understand The Concept And Design Of A Cellular System	K2	3	3	3	3	3	2	1	1	2	2	1	2	3	3
2	III	V	EC3501	Wireless Communication	C301.2	Describe about Mobile Radio Propagation	K2	3	3	3	3	3	2	1	1	2	2	1	2	3	3
3	III	V	EC3501	Wireless Communication	C301.3	Discuss Digital Modulation Techniques	K2	3	3	3	3	3	2	1	1	2	2	1	2	3	3
4	III	V	EC3501	Wireless Communication	C301.4	Illustrate the Concepts Of Multiple Access Techniques	K2	3	3	3	3	3	2	1	1	2	2	1	2	3	3
5	III	V	EC3501	Wireless Communication	C301.5	Characterize Wireless Networks in the Wireless channel system and allocate the cellular systems based on resource availability and traffic demands.	K2	3	3	3	3	3	2	1	1	2	2	1	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3552 - VLSI and Chip Design / C302	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	EC3552	VLSI and Chip Design	C302.1	Explain MOS Transistors Principles and its characteristics	K2	3	3	2	3	3	2	2	2	1	1	-	2	3	3
2	III	V	EC3552	VLSI and Chip Design	C302.2	Model Combinational Logic Circuits using various logic styles	K3	3	3	3	3	3	2	1	2	1	1	-	2	3	3
3	III	V	EC3552	VLSI and Chip Design	C302.3	Model Sequential Logic Circuits using various logic styles	K3	3	3	3	3	3	2	1	2	1	1	-	2	3	3
4	III	V	EC3552	VLSI and Chip Design	C302.4	Discuss Arithmetic Building Blocks, Subsystems and Memory Structures	K2	3	3	3	3	3	2	1	2	1	1	-	2	3	3
5	III	V	EC3552	VLSI and Chip Design	C302.5	Explain ASIC Design and various DFT techniques	K2	3	3	3	3	3	2	1	2	1	1	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3551 - Transmission lines and RF Systems / C303	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	EC3551	Transmission lines and RF Systems	C303.1	Explain the characteristics of transmission lines and its losses.	K2	3	3	3	3	3	2	-	-	1	1	-	2	3	3
2	III	V	EC3551	Transmission lines and RF Systems	C303.2	Calculate the standing wave ratio and input impedance in high frequency transmission lines.	K3	3	3	3	3	3	1	-	-	1	1	-	2	3	3
3	III	V	EC3551	Transmission lines and RF Systems	C303.3	Analyze impedance matching by stubs using Smith Charts.	K3	3	3	3	3	3	1	-	-	1	1	-	2	3	3

4	III	V	EC3551	Transmission lines and RF Systems	C303.4	Comprehend the characteristics of TE and TM waves.	K2	3	3	3	3	3	1	-	-	1	1	-	2	3	3
5	III	V	EC3551	Transmission lines and RF Systems	C303.5	Design a RF transceiver system for wireless communication	K2	3	3	3	3	3	1	-	-	1	1	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CEC347-Radar Technologies / C304	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6
1	III	V	CEC347	Radar Technologies	C304.1	Derive Radar Range equation	K3	3	3	2	2	3	1	2	2	1	2	-	2	3	2
2	III	V	CEC347	Radar Technologies	C304.2	Differentiate various radar types	K3	3	2	2	2	3	1	2	2	1	2	-	2	3	2
3	III	V	CEC347	Radar Technologies	C304.3	Analyze different tracking and filtering schemes	K3	3	3	2	2	3	1	2	2	1	2	-	2	3	2
4	III	V	CEC347	Radar Technologies	C304.4	Apply signal processing in target detection	K3	3	3	2	2	3	1	2	2	1	2	-	2	3	2
5	III	V	CEC347	Radar Technologies	C304.5	Design Radar transmitter and receiver blocks	K2	3	2	2	2	3	1	2	2	1	2	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CEC352-Satellite Communication / C305	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	CEC352	Satellite Communication	C305.1	State various laws and orbits in satellite communication	K2	3	3	2	3	3	1	2	2	1	2	-	2	3	3
2	III	V	CEC352	Satellite Communication	C305.2	Explain satellite subsystems	K2	3	3	2	3	3	1	2	2	1	2	-	2	3	3
3	III	V	CEC352	Satellite Communication	C305.3	Calculate link power budget for satellite	K3	3	3	2	3	3	1	2	2	1	2	-	2	3	3
4	III	V	CEC352	Satellite Communication	C305.4	Summarize access technology for satellite	K2	3	3	2	3	3	1	2	2	1	2	-	2	3	3
5	III	V	CEC352	Satellite Communication	C305.5	Discuss various satellite applications	K2	3	3	2	3	3	1	2	2	1	2	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CEC331- 4G/5G Communication Networks / C306	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	CEC331	4G/5G Communication Networks	C306.1	Explain the evolution of wireless networks.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
2	III	V	CEC331	4G/5G Communication Networks	C306.2	Describe the concepts of 5G networks.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
3	III	V	CEC331	4G/5G Communication Networks	C306.3	Outline the 5G architecture and protocols.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
4	III	V	CEC331	4G/5G Communication Networks	C306.4	Categorize the Static and dynamic spectrum management.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
5	III	V	CEC331	4G/5G Communication Networks	C306.5	Summarize the security aspects in 5G networks.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: EC3561 - VLSI Laboratory / C307	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	V	EC3561	VLSI Laboratory	C307.1	Experiment Combinational Circuits using HDL programming and Implement in FPGA	K3	3	3	3	3	3	3	2	2	3	3	2	2	3	3
2	III	V	EC3561	VLSI Laboratory	C307.2	Experiment Sequential Circuits and Memories using HDL programming and Implement in FPGA	K3	3	3	3	3	3	3	2	2	3	3	2	2	3	3
3	III	V	EC3561	VLSI Laboratory	C307.3	Analyze Power, Area and Timing of CMOS inverter, CMOS Basic Gates & Flip-Flops in Layout Level	K4	3	3	3	3	3	3	2	2	3	3	2	2	3	3
4	III	V	EC3561	VLSI Laboratory	C307.4	Analyze Power, Area and Timing of Counter circuit in Layout Level	K4	3	3	3	3	3	3	2	2	3	3	2	2	3	3
5	III	V	EC3561	VLSI Laboratory	C307.5	Compare input impedance, output impedance, gain and bandwidth of various analog amplifiers	K5	3	3	3	3	3	3	2	2	3	3	2	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: ET3491- Embedded Systems and IOT Design / C308	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	VI	ET3491	Embedded Systems and IoT Design	C308.1	Understand the architecture and features of 8051	K2	3	3	3	3	3	3	1	2	3	2	1	2	3	3
2	III	VI	ET3492	Embedded Systems and IoT Design	C308.2	Describe the design process of an embedded system	K2	3	3	3	3	3	3	1	2	3	2	1	2	3	3
3	III	VI	ET3493	Embedded Systems and IoT Design	C308.3	Apply the real – time processing in an embedded system	K3	3	3	3	3	3	3	1	2	3	2	1	2	3	3
4	III	VI	ET3494	Embedded Systems and IoT Design	C308.4	Classify the architecture and design flow of IoT	K2	3	3	3	3	3	3	1	2	3	2	1	2	3	3
5	III	VI	ET3495	Embedded Systems and IoT Design	C308.5	Develop an IoT based system	K3	3	3	3	3	3	3	1	2	3	2	1	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: CS3491-Artificial Intelligence and Machine Learning / C309	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	III	VI	CS3491	Artificial Intelligence and Machine Learning	C309.1	Use appropriate search algorithms for problem solving	K2	2	2	2	2	3	1		2	3				1	2	
2	III	VI	CS3491	Artificial Intelligence and Machine Learning	C309.2	Apply reasoning under uncertainty	K2	2	2	2	2	3	1		2	3					1	2
3	III	VI	CS3491	Artificial Intelligence and Machine Learning	C309.3	Build supervised learning models	K2	2	2	2	2	3	1		2	3					1	2
4	III	VI	CS3491	Artificial Intelligence and Machine Learning	C309.4	Build ensembling and supervised models	K2	2	2	2	2	3	1		2	3					1	2
5	III	VI	CS3491	Artificial Intelligence and Machine Learning	C309.5	Build deep learning neural network models	K2	2	2	2	2	3	1		2	3					1	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: Mixed Signal IC Design Testing / CEC310	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	VI	CEC342	Mixed Signal IC Design Testing	C310.1	Learn the fundamentals of mixed signal circuits	K2	3	3	2	2	3	2	1	2	3	2	-	2	3	2

2	III	VI	CEC342	Mixed Signal IC Design Testing	C310.2	Define the various measurement terminologies.	K2	3	2	2	2	3	2	1	2	3	2	-	2	3	2
3	III	VI	CEC342	Mixed Signal IC Design Testing	C310.3	Acquire knowledge of analog to digital converteres	K2	3	3	2	2	3	2	1	2	3	2	-	2	3	2
4	III	VI	CEC342	Mixed Signal IC Design Testing	C310.4	Learn testing of analog to digital converters	K2	3	3	2	2	3	2	1	2	3	2	-	2	3	2
5	III	VI	CEC342	Mixed Signal IC Design Testing	C310.5	Comprehend the attributes of a clock signal	K2	3	2	2	2	3	2	1	2	3	2	-	2	3	2

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: RFID System Design and Testing / C311	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	VI	CEC349	RFID SYSTEM DESIGN AND TESTING	C311.1	Classify RFID systems based on frequency, architecture and performance	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
2	III	VI	CEC350	RFID SYSTEM DESIGN AND TESTING	C311.2	Define standards for RFID technology	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
3	III	VI	CEC351	RFID SYSTEM DESIGN AND TESTING	C311.3	Illustrate the operation of various components of RFID systems	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
4	III	VI	CEC352	RFID SYSTEM DESIGN AND TESTING	C311.4	Describe the privacy and security issues in RFID Systems	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
5	III	VI	CEC353	RFID SYSTEM DESIGN AND TESTING	C311.5	Discuss the construction and applications of RFID enabled sensor	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: Advanced Digital Signal Processing / C312	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	III	VI	CEC332	Advanced Digital Signal Processing	C312.1	Comprehend multirate signal processing and demonstrate its applications	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
2	III	VI	CEC332	Advanced Digital Signal Processing	C312.2	Demonstrate an understanding of the power spectral density and apply to discrete random signals and systems	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
3	III	VI	CEC332	Advanced Digital Signal Processing	C312.3	Apply linear prediction and filtering techniques to discrete random signals for signal detection and estimation.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
4	III	VI	CEC332	Advanced Digital Signal Processing	C312.4	Analyze adaptive filtering problems and demonstrate its application	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3
5	III	VI	CEC332	Advanced Digital Signal Processing	C312.5	Apply power spectrum estimation techniques to random signals.	K2	3	3	3	3	3	2	2	2	1	1	-	1	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3791 - Human Values and Ethics / C401	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	IV	VII	GE3791	HUMAN VALUES AND ETHICS		Identify the importance of democratic, secular and scientific values in harmonious functioning of social life	K2	3	3	2	2	3	3	-	-	1	1	-	2	3	3
2	IV	VII	GE3791	HUMAN VALUES AND ETHICS		Practice democratic and scientific values in both their personal and professional life.	K2	3	3	2	2	3	3	-	-	1	1	-	2	3	3
3	IV	VII	GE3791	HUMAN VALUES AND ETHICS		Find rational solutions to social problems.	K2	3	3	2	2	3	3	-	-	1	1	-	2	3	3
4	IV	VII	GE3791	HUMAN VALUES AND ETHICS		Behave in an ethical manner in society	K2	3	3	2	2	3	3	-	-	1	1	-	2	3	3
5	IV	VII	GE3791	HUMAN VALUES AND ETHICS		Practice critical thinking and the pursuit of truth	K2	3	3	2	2	3	3	-	-	1	1	-	2	3	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: GE3751- Principles of Management / C402	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	IV	VII	GE3751	Principles of Management		Upon completion of the course, students will be able to have clear understanding of managerial functions like planning, organizing, staffing, leading & controlling.	K2	3	2	1	1	2	3	-	3	3	3	3	3	-	3
2	IV	VII	GE3751	Principles of Management		Have same basic knowledge on international aspect of management.	K2	3	2	1	1	2	2	-	3	3	3	3	3	-	3
3	IV	VII	GE3751	Principles of Management		Ability to understand management concept of organizing.	K2	3	2	1	1	2	3	-	3	3	3	3	3	-	3
4	IV	VII	GE3751	Principles of Management		Ability to understand management concept of directing.	K2	3	2	1	1	2	3	-	3	3	3	3	3	-	3
5	IV	VII	GE3751	Principles of Management		Ability to understand management concept of controlling.	K2	3	2	1	1	2	2	-	3	3	3	3	3	-	3

S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: OHS351-English for Competitive Examinations / C403	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	IV	VII	OHS351	English for Competitive Examinations		expand their vocabulary and gain practical techniques to read and comprehend a wide range of texts with the emphasis required	K2						1	1		2	3	2	2		
2	IV	VII	OHS351	English for Competitive Examinations		identify errors with precision and write with clarity and coherence	K2						1	1		2	3	2	2		
3	IV	VII	OHS351	English for Competitive Examinations		understand the importance of task fulfillment and the usage of task-appropriate vocabulary	K2						1	1		2	3	2	2		
4	IV	VII	OHS351	English for Competitive Examinations		communicate effectively in group discussions, presentations and interviews	K2						1	1		2	3	2	2		

5	IV	VII	OHS351	English for Competitive Examinations	write topic based essays with precision and accuracy	K2						1	1		2	3	2	2		
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S. No	Year	Sem	Course Code	Course Name	Course Name / Course No: OHS352-Project Report Writing / C404	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3
1	IV	VII	OHS352	Project Report Writing	Write effective project reports.		K2						1	1	2	1	3	2	2		
2	IV	VII	OHS352	Project Report Writing	Use statistical tools with confidence		K2						1	1	2	1	3	2	2		
3	IV	VII	OHS352	Project Report Writing	Explain the purpose and intension of the proposed project coherently and with clarity.		K2						1	1	2	1	3	2	2		
4	IV	VII	OHS352	Project Report Writing	Create writing texts to suit achieve the intended purpose.		K2						1	1	2	1	3	2	2		
5	IV	VII	OHS352	Project Report Writing	Master the art of writing winning proposals and projects.		K2						1	1	2	1	3	2	2		

DEPARTMENT OF MECH

COURSE OUTCOMES (COs)							CO-PO & PSO MAPPING																
Regulation: 2017							Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
S.No	Year	Sem	Course Code	Course Name	CO No.	Course Outcomes		K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3		
Course Code/Course No.: HS8151/C101							Regulation: 2017																
1	1	1	HS8151	Communicative English	C101.1	Prepare for active informal conversations and introduce themselves in English.	K3						1	1		1	3		2				
2	1	1	HS8151	Communicative English	C101.2	Write paragraphs/descriptions on general topics.	K3						1	1		1	3		2				
3	1	1	HS8151	Communicative English	C101.3	Construct appropriate syntax in English.	K3						1	1		1	3		2				
4	1	1	HS8151	Communicative English	C101.4	Interpret and infer technical text.	K3						1	1		1	3		2				
5	1	1	HS8151	Communicative English	C101.5	Write short essays of a general kind.	K3						1	1		1	3		2				
Course Code/Course No: MA8151 / C102							Regulation: 2017																
1	1	1	MA8151	Engineering Mathematics -I	C102.1	Describe both the limit definition and rules of differentiation to differentiate	K3	3	3	2	1					1	1		2				
2	1	1	MA8151	Engineering Mathematics -I	C102.2	Apply differentiation to solve maxima and minima problems	K3	3	3	2	1					1	1		2				
3	1	1	MA8151	Engineering Mathematics -I	C102.3	Calculate integrals by using Riemann sums and the Fundamental Theorem of	K3	3	3	2	1					1	1		2				
4	1	1	MA8151	Engineering Mathematics -I	C102.4	Apply integration to compute multiple integrals, area, volume, integrals in polar	K3	3	3	2	1					1	1		2				
	1	1	MA8152	Engineering Mathematics -I	C102.5	Apply various techniques in solving differential equations	K3	3	3	2	1					1	1		2				
Course Code/Course No: PH8151 / C103							Regulation: 2017																
1	1	1	PH8151	Engineering Physics	C103.1	Explain the basic properties of matter and its applications	K2	3	3	2	1	1						2					
2	1	1	PH8151	Engineering Physics	C103.2	Describe the concepts of wave, lasers, optical fibers and their practical applications.	K2	3	3	2	1	1							2				
3	1	1	PH8151	Engineering Physics	C103.3	Discuss the concepts of thermal properties of materials and their applications.	K2	3	3	2	1	1							2				
4	1	1	PH8151	Engineering Physics	C103.4	Explain the advanced concepts of quantum theory and its applications.	K2	3	3	2	1	1							2				
5	1	1	PH8151	Engineering Physics	C103.5	Describe crystal structures, the impacts of defects at the atomic and microstructure scales	K2	3	3	2	1	1							2				
Course Code/Course No: CY8151 / C104							Regulation: 2017																
1	1	1	CY8151	Engineering Chemistry	C104.1	Explain the materials, fuels, energy sources, treatment techniques of engineering processes and applications	K2	3					1					1	1	1			
2	1	1	CY8151	Engineering Chemistry	C104.2	Explain the basic concepts of phase rule applications to single and two component systems and alloys	K2	3					1						1		1		
3	1	1	CY8151	Engineering Chemistry	C104.3	Compare the knowledge of Preparation, properties and applications of engineering materials	K2	3					1					1	1	1			
4	1	1	CY8151	Engineering Chemistry	C104.4	Calculate the fuels's calorific value and its types	K2	3					1					1	1	1			
5	1	1	CY8151	Engineering Chemistry	C104.5	Explain the Principles and energy generation of batteries, solar cells, wind mills, nuclear reactors and fuel cells	K2	3					1					1	1	1			
Course Code/Course No: GE8151 / C105							Regulation: 2017																
1	1	1	GE8151	Problem Solving and Python Programming	C105.1	Develop algorithmic solutions to simple computational problems	K3	3	2	1	1	2						2	1	3	2	1	
2	1	1	GE8151	Problem Solving and Python Programming	C105.2	Write a executable simple python programs	K3	3	3	2	2	2	1	1	1	1	1			2	1	1	
3	1	1	GE8151	Problem Solving and Python Programming	C105.3	Apply conditional & loops statements to solve the simple python programs	K3	3	3	3	3	2	1	2	1	1				2	1	1	
4	1	1	GE8151	Problem Solving and Python Programming	C105.4	Write a python program using Lists, Tuples and Dictionaries	K3	3	2	2	2	2	1	2	1	1				1	1	1	
5	1	1	GE8151	Problem Solving and Python Programming	C105.5	Construct the python program using File, Module and Package concepts	K3	3	2	2	3	2	1	1	1	1				1	3	1	
Course Code/Course No: GE8152 / C106							Regulation: 2017																
1	1	1	GE8152	Engineering Graphics	C106.1	Develop the Plane Curves and Orthographic Projections	K3	2	1	1							1	2		1			
2	1	1	GE8152	Engineering Graphics	C106.2	Sketch the projection of lines an planes.	K3	2	1	1								1	2		1		
3	1	1	GE8152	Engineering Graphics	C106.3	Draw the Projections of Solids	K3	2	1	1								1	2		1		
4	1	1	GE8152	Engineering Graphics	C106.4	Draw the views of sectional solids and development of surfaces	K3	2	1	1								1	2		1		
5	1	1	GE8152	Engineering Graphics	C106.5	Draw the Isometric and Perspective Projections of solids	K3	2	1	1								1	2		1		
Course Code/Course No: GE8161 / C108							Regulation: 2017																
1	1	1	GE8161	Problem Solving and Python Programming Lab	C107.1	Develop algorithmic solutions to simple computational problems	K3	3	2	1	2	3						3		3	2	1	
2	1	1	GE8161	Problem Solving and Python Programming Lab	C107.2	Write a executable simple python programs	K3	3	2	1	2	3						3		3	2	1	
3	1	1	GE8161	Problem Solving and Python Programming Lab	C107.3	Apply conditional & loops statements to solve the simple python programs	K3	3	2	1	2	3						3		3	2	1	
4	1	1	GE8161	Problem Solving and Python Programming Lab	C107.4	Write a python program using Lists, Tuples and Dictionaries	K3	3	2	1	2	3						3		3	2	1	
5	1	1	GE8161	Problem Solving and Python Programming Lab	C107.5	Construct the python program using File, Module and Package concepts	K3	3	2	1	2	3						3		3	2	1	
Course Code/Course No: BS8161 / C107							Regulation: 2017																
1	1	1	BS8161	Physics and Chemistry Lab	C108.1	Explain the functions of Physics and Chemistry laboratory Equipments	K2	3	1	1			1					2	2	2	1		
2	1	1	BS8161	Physics and Chemistry Lab	C108.2	Apply engineering properties of materials, principles of optics and thermal characteristics of Engineering Applications	K2	3	1	1								2	2	2	1		
3	1	1	BS8161	Physics and Chemistry Lab	C108.3	Calculate the Energy band gap for semiconductor materials and Properties of Laser for Engineering Applications.	K2	3	1	1								2	2	2	1		
4	1	1	BS8161	Physics and Chemistry Lab	C108.4	Calculate the quality parameters of different types in Water Samples	K2	3	1	1			1					2	2	2	1		
5	1	1	BS8161	Physics and Chemistry Lab	C108.5	Apply the appropriate method to find the PH, conductance and potential values of various solutions	K2	3	1	1			1					2	2	2	1		
Course Code/Course No: HS8251/C109							Regulation: 2017																
1	1	1	HS8251	Engineering Mathematics -I	C109.1	Describe both the limit definition and rules of differentiation to differentiate	K3	3	3	2	1					1	1		2				

S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	I	II	HS8251	Technical English	C109.1	Interpret technical texts and write area- specific texts effortlessly.	K3						1	1		1	3		2		
2	I	II	HS8251	Technical English	C109.2	Associate verbal with non-verbal communication.	K2						1			1	3		2		
3	I	II	HS8251	Technical English	C109.3	Describe a process in English.	K2						1			1	3		2		
4	I	II	HS8251	Technical English	C109.4	Write reports and winning job applications	K2						1			1	3		2		
5	I	II	HS8251	Technical English	C109.5	Paraphrase lectures and talks in their area of specialization successfully	K2						1	1		1	3		2		
Course Code/Course No: MA8251 / C110						Regulation: 2017															
Course Code/Course No: MA8251 / C110						Regulation: 2017															
1	I	II	MA8251	Engineering Mathematics II	C110.1	Calculate eigenvalues & eigenvectors and apply orthogonal diagonalisation to convert quadratic form to canonical form.	K3	3	3	2	1					1	1		2		
2	I	II	MA8251	Engineering Mathematics II	C110.2	Solve the problems using Gradient, divergence & curl of a vector point function and related identities.	K3	3	3	2	1					1	1		2		
3	I	II	MA8251	Engineering Mathematics II	C110.3	Calculate line, surface and volume integrals using Gauss, Stokes and Green's theorems.	K3	3	3	2	1					1	1		2		
4	I	II	MA8251	Engineering Mathematics II	C110.4	Solve the problems using Analytic functions, conformal mapping and complex integration.	K3	3	3	2	1					1	1		2		
5	I	II	MA8251	Engineering Mathematics II	C110.5	Solve the problems using Laplace transform and inverse transform of simple functions, properties, various related theorems along with differential equations with constant coefficients.	K3	3	3	2	1					1	1		2		
Course Code/Course No: PH8251 /C111						Regulation: 2017															
Course Code/Course No: PH8251 /C111						Regulation: 2017															
1	I	II	PH8251	Materials Science	C111.1	Explain the various phase diagrams and their applications	K2	3	2	1						1	1		1		
2	I	II	PH8251	Materials Science	C111.2	Construct the iron-carbon equilibrium diagram and explain various microstructure and alloys	K3	3	2	1			1			1	1		1		
3	I	II	PH8251	Materials Science	C111.3	Discuss the mechanical properties of materials and their measurement	K2	3	2	1			1			1	1		1		
4	I	II	PH8251	Materials Science	C111.4	Summarize fundamentals of magnetism & superconductivity to explore the technological applications.	K2	3	2	1			1			1	1		1		
5	I	II	PH8251	Materials Science	C111.5	Describe the basics of ceramics, composites and nanomaterials.	K2	3	2	1			1			1	1		1		
Course Code/Course No: BE8253 / C112						Regulation: 2017															
Course Code/Course No: BE8253 / C112						Regulation: 2017															
1	I	II	BE8253	Basic Electrical,Electronics and Measurement Engineering	C112.1	Apply the basic circuit components and theorem in DC electric circuits	K3	3	2	2						1	1		1		
2	I	II	BE8253	Basic Electrical,Electronics and Measurement Engineering	C112.2	Describe the AC electric circuits wiring	K2	3	2	2						1	1		1		
3	I	II	BE8253	Basic Electrical,Electronics and Measurement Engineering	C112.3	Explain the working principles of electrical machines	K2	2	1	1						1	1		1		
4	I	II	BE8253	Basic Electrical,Electronics and Measurement Engineering	C112.4	Discuss the concepts of various electronic devices	K2	2	1	1	1	1				1	1		1		
5	I	II	BE8253	Basic Electrical,Electronics and Measurement Engineering	C112.5	Apply appropriate instruments for electrical measurement for a specific application	K3	2	1	1	1	1				1	1		1		
Course Code/Course No: GE8291 / C113						Regulation: 2017															
Course Code/Course No: GE8291 / C113						Regulation: 2017															
1	I	II	GE8291	Environmental Science and Engineering	C113.1	Describe the functions of environment, ecosystems and biodiversity and their conservation.	K2	1					2	3	3	1	1		2		
2	I	II	GE8291	Environmental Science and Engineering	C113.2	Discuss the causes & effects of environmental pollution, natural disasters for the preventive measures in the society	K2	1					3	3	3	3	1		2		
3	I	II	GE8291	Environmental Science and Engineering	C113.3	Explain the renewable and non-renewable resources for the sustainable measures for future generations	K2	1					3	3	3	3	1		2		
4	I	II	GE8291	Environmental Science and Engineering	C113.4	Discuss the different goals of sustainable development and apply them for suitable technological advancement for the society	K2	1					3	3	3	3	1		2		
5	I	II	GE8291	Environmental Science and Engineering	C113.5	Explain the Developments in standard of living has lead to serious environmental disasters	K2	1					3	3	3	3	1		2		
Course Code/Course No: GE8292 /C114						Regulation: 2017															
Course Code/Course No: GE8292 /C114						Regulation: 2017															
1	I	II	GE8292	Engineering Mechanics	C114.1	Determine the force and moment scalar and vector methods of static bodies	K3	3	2	2						1	1		1	2	1
2	I	II	GE8292	Engineering Mechanics	C114.2	Construct the free body diagram and analyse the rigid body in equilibrium	K3	3	2	2						1	1		1	2	1
3	I	II	GE8292	Engineering Mechanics	C114.3	Evaluate the properties of surfaces and solids	K3	3	2	2						1	1		1	2	1
4	I	II	GE8292	Engineering Mechanics	C114.4	Calculate dynamic forces exerted in rigid body	K3	3	2	2						1	1		1	2	1
5	I	II	GE8292	Engineering Mechanics	C114.5	Determine the friction and the effects by the laws of friction	K3	3	2	2						1	1		1	2	1
Course Code/Course No: GE8261 / C115						Regulation: 2017															
Course Code/Course No: GE8261 / C115						Regulation: 2017															
1	I	II	GE8261	Engineering Practices Lab	C115.1	Describe the Various Equipments in Engineering Practice Laboratories	K2	1								2	2		1		
2	I	II	GE8261	Engineering Practices Lab	C115.2	Draw pipe line plan, lay and connect various pipe fittings for plumbing work and make joints in wood materials used in common household work	K3	1								2	2		1		
3	I	II	GE8261	Engineering Practices Lab	C115.3	Practice the making of Simple objects using welding, Sheet Metal and Machining for Household Work	K3	1								2	2		1		
4	I	II	GE8261	Engineering Practices Lab	C115.4	Construct various electrical joints in common household electrical work	K3	1								2	2		1		
5	I	II	GE8261	Engineering Practices Lab	C115.5	Design and test simple electronic circuits by mounting components on PCB	K3	1								2	2		1		
Course Code/Course No: BE8261 / C116						Regulation: 2017															
Course Code/Course No: BE8261 / C116						Regulation: 2017															
1	I	II	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	C116.1	Determine the speed characteristic of different electrical machines	K3	2	1	1	1					1	2		1	1	
2	I	II	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	C116.2	Design simple circuits involving diodes and transistors	K3	2	1	1	1					1	2		1	1	
3	I	II	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	C116.3	Summarize the basic operational principles of DC, AC , Stepper motors and Transformers	K2	2	1	1	1					1	2		1		1

3	I	II	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	C116.4	Explain various methods for the utilization of electrical power	K2	2	1	1	1							1	2		1												
3	I	II	BE8261	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	C116.5	Explain the functions of operational amplifiers	K2	2	1	1	1							1	2		1												
Course Code/Course No: MA8353 / C201							Regulation: 2017																										
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2													
1	II	III	MA8353	Transforms and Partial Differential Equations	C201.1	Apply the concept of partial differential equation to solve the problems	K3	2	2	2	2								2			1	2										
2	II	III	MA8353	Transforms and Partial Differential Equations	C201.2	Determine the Fourier coefficients in the Fourier series expansion of the specified function of various complex problems in engineering.	K3	2	2	2	2								2			1	2										
3	II	III	MA8353	Transforms and Partial Differential Equations	C201.3	Apply the fourier series techniques in solving one and two dimensional heat flow problems	K3	2	2	2	2								2			1	2										
4	II	III	MA8353	Transforms and Partial Differential Equations	C201.4	Solve the problems in Fourier Transforms	K3	2	2	2	2								2			1	2										
5	II	III	MA8353	Transforms and Partial Differential Equations	C201.5	Solve partial differential equations using Z transform techniques	K3	2	2	2	2								2			1	2										
Course Code/Course No: ME8391 /C202							Regulation: 2017																										
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2													
1	II	III	ME8391	ENGINEERING THERMODYNAMICS	C202.1	Apply the first law of thermodynamics for simple open and closed systems	K3	3	3	2	2								2			2	3	2									
2	II	III	ME8391	ENGINEERING THERMODYNAMICS	C202.2	Calculate the entropy and availability for both open and closed systems using the second law of thermodynamics.	K3	3	2	2	2								2			2	3	2									
3	II	III	ME8391	ENGINEERING THERMODYNAMICS	C202.3	Calculate the performance of steam power plant by using Rankine cycle and compare various improved cycles	K3	3	2	2	2								2			2	3	2									
4	II	III	ME8391	ENGINEERING THERMODYNAMICS	C202.4	Compute thermodynamic relations for ideal and real gases	K3	3	2	2	2								2			2	3	2									
5	II	III	ME8391	ENGINEERING THERMODYNAMICS	C202.5	Calculate the properties of moist air using Psychrometry charts and analysis the performance of the Air conditioning systems.	K3	3	3	2	2	2							2			2	3	2									
Course Code/Course No: CE8394 /C203							Regulation: 2017																										
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2													
1	II	III	CE8394	FLUID MECHANICS AND MACHINERY	C203.1	Apply fluid mechanics theory to predict the properties and characteristics of a fluid	K3	3	2	2	2	2							2			2	3	2									
2	II	III	CE8394	FLUID MECHANICS AND MACHINERY	C203.2	Determine the major and minor losses associated with pipe flow in piping networks	K3	3	2	2	2	2							2			2	3	2									
3	II	III	CE8394	FLUID MECHANICS AND MACHINERY	C203.3	Develop the function relationship between non-dimensional number in fluid mechanics	K3	3	2	2	2								2			2	3	2									
4	II	III	CE8394	FLUID MECHANICS AND MACHINERY	C203.4	Compute the performance parameters of pumps.	K3	3	2	2	2	2							2			2	3	2									
5	II	III	CE8394	FLUID MECHANICS AND MACHINERY	C203.5	Determine the performance parameters of hydraulic turbines	K3	3	2	2	2	2							2			2	3	2									
Course Code/Course No: ME8351 /C204							Regulation: 2017																										
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2													
1	II	III	ME8351	MANUFACTURING TECHNOLOGY - I	C204.1	Explain the various special casting process and identify casting defects	K2	3	1		2								2	2		2	3	2									
2	II	III	ME8351	MANUFACTURING TECHNOLOGY - I	C204.2	Describe the various welding process and identify its defects	K2	3	1		2								2	2		2	3	2									
3	II	III	ME8351	MANUFACTURING TECHNOLOGY - I	C204.3	Summarize various metal forming techniques and identify defects in rolled parts	K2	3	1		2								2	2		2	3	2									
4	II	III	ME8351	MANUFACTURING TECHNOLOGY - I	C204.4	Explain sheet metal operations and unconventional forming process	K2	3	1		2								2	2		2	3	2									
5	II	III	ME8351	MANUFACTURING TECHNOLOGY - I	C204.5	Apply various moulding methods of thermoplastic components for industrial applications	K3	3	2		2								2	2		2	3	2									
Course Code/Course No: EE8353 /C205							Regulation: 2017																										
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2													
1	II	III	EE8353	ELECTRICAL DRIVES AND CONTROLS	C205.1	Explain the basic concepts of an electrical drives	K2	3	2										2	2		2											
2	II	III	EE8353	ELECTRICAL DRIVES AND CONTROLS	C205.2	Describe the drive motor characteristics of single and three phase motors	K2	3	2		2								2	2		2											
3	II	III	EE8353	ELECTRICAL DRIVES AND CONTROLS	C205.3	Explain the starting methods of DC and AC motors.	K2	3	2		2								2	2		2											
4	II	III	EE8353	ELECTRICAL DRIVES AND CONTROLS	C205.4	Explain the concepts of conventional and solid state speed control of DC drives	K2	3	2		2								2	2		2											
5	II	III	EE8353	ELECTRICAL DRIVES AND CONTROLS	C205.5	Explain the concepts of conventional and solid state speed control of AC drives	K2	3	2		2								2	2		2											
Course Code/Course No: ME8361 /C206							Regulation: 2017																										
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2													
1	II	III	ME8361	MANUFACTURING TECHNOLOGY LABORATORY - I	C206.1	Apply the machining operations to make the work piece as per given shape and size using Lathe and calculate the corresponding machining time.	K3	3	2		2								2	2		2	3	2									
2	II	III	ME8361	MANUFACTURING TECHNOLOGY LABORATORY - I	C206.2	Produce intricate shapes on the given work piece as per given dimension using Horizontal Milling, vertical milling machine and Shaper	K3	3	2		2								2	2		2	3	2									
3	II	III	ME8361	MANUFACTURING TECHNOLOGY LABORATORY - I	C206.3	Apply different types of arc welding for to produce different types of metal joints	K3	3	2		2								2	2		2	3	2									
4	II	III	ME8361	MANUFACTURING TECHNOLOGY LABORATORY - I	C206.4	Apply bending and shearing operations to fabricate simple sheet metal components.	K3	3	2		2								2	2		2	3	2									
5	II	III	ME8361	MANUFACTURING TECHNOLOGY LABORATORY - I	C206.5	Apply the moulding tools, patterns, and moulding boxes to make different sand moulds	K3	3	2		3								2	2		2	3	2									

Course Code/Course No: ME8381 / C207						Regulation: 2017															
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	III	ME8381	COMPUTER AIDED MACHINE DRAWING	C207.1	Classify and illustrate the BIS specifications for metal joints in an engineering drawing.	K3	3	2	2	2			1	1	2		2	3	1	
2	II	III	ME8381	COMPUTER AIDED MACHINE DRAWING	C207.2	Apply the principles of Dimensions, Fits and Tolerances in an engineering drawing.	K3	3	2	2	2			1	1	2		2	3	1	
3	II	III	ME8381	COMPUTER AIDED MACHINE DRAWING	C207.3	Apply/use commands in 2-D drawing.	K3	3	2	2	2			1	1	2		2	3	1	
4	II	III	ME8381	COMPUTER AIDED MACHINE DRAWING	C207.4	Construct 3D part drawing with dimensions, label and all the orthographic views,	K3	3	2	2	2			1	1	2		2	3	1	
4	II	III	ME8381	COMPUTER AIDED MACHINE DRAWING	C207.5	Construct 3D Assembly drawing, exploded view, sectional view and Bill of material	K3	3	2	2	2			1	1	2		2	3	1	
Course Code/Course No: EE8361/C208							Regulation: 2017	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	III	EE8361	ELECTRICAL ENGINEERING LABORATORY	C208.1	Describe the functions of electrical Machines and starters	K2	3	2	2	2			1	2	2		1	1	1	
2	II	III	EE8361	ELECTRICAL ENGINEERING LABORATORY	C208.2	Determine the performance parameters of electric generators and draw its characteristic curves	K3	3	2	2	2			1	2	2		1	1	1	
3	II	III	EE8361	ELECTRICAL ENGINEERING LABORATORY	C208.3	Compute performance of motor with various loads and draw its characteristic curves	K3	3	2	2	2			1	2	2		1	1	1	
4	II	III	EE8361	ELECTRICAL ENGINEERING LABORATORY	C208.4	Construct the characteristic curves of transformers	K3	3	2	2	2			1	2	2		1	1	1	
5	II	III	EE8361	ELECTRICAL ENGINEERING LABORATORY	C208.5	Explain DC & AC Starters	K2	3	2	2	2			1	2	2		1	1	1	
Course Code/Course No: HS8381/C209							Regulation: 2017	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	III	HS8381	INTERPERSONAL SKILLS / LISTENING & SPEAKING	C209.1	Discuss effectively in GD held in a formal/semi formal contexts.	K2							1	3	3		2			
2	II	III	HS8381	INTERPERSONAL SKILLS / LISTENING & SPEAKING	C209.2	Discuss and present concepts and problems from various perspectives for solutions	K2							1	3	3		2			
3	II	III	HS8381	INTERPERSONAL SKILLS / LISTENING & SPEAKING	C209.3	Write emails, letters and effective job applications.	K2							1	3	3		2			
4	II	III	HS8381	INTERPERSONAL SKILLS / LISTENING & SPEAKING	C209.4	Write critical reports to convey data and information with clarity and precision	K2							1	3	3		2			
5	II	III	HS8381	INTERPERSONAL SKILLS / LISTENING & SPEAKING	C209.5	Describe appropriate instructions and recommendations for safe execution of tasks	K2							1	3	3		2			
Course Code/Course No: MA8452/C210							Regulation: 2017	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	IV	MA8452	STATISTICS AND NUMERICAL METHODS	C210.1	Apply the concept of testing of hypothesis for small and large samples in real life problems	K3	2	2	2	2				2			1	2	1	
2	II	IV	MA8452	STATISTICS AND NUMERICAL METHODS	C210.2	Apply the concepts of design of experiments in engineering	K3	2	2	2	2				2			1	2	1	
3	II	IV	MA8452	STATISTICS AND NUMERICAL METHODS	C210.3	Determine the numerical solution of algebraic,transcendental and system of linear equations	K3	2	2	2	2				2			1	2	1	
4	II	IV	MA8452	STATISTICS AND NUMERICAL METHODS	C210.4	Apply appropriate numerical methods to solve the interpolation with equal and unequal intervals	K3	2	2	2	2				2			1	2	1	
5	II	IV	MA8452	STATISTICS AND NUMERICAL METHODS	C210.5	Solve the ordinary differential equation of first order	K3	2	2	2	2				2			1	2	1	
Course Code/Course No: ME8492/C211							Regulation: 2017	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	IV	ME8492	KINEMATICS OF MACHINERY	C211.1	Explain the simple kinematic mechanisms and its inversions	K2	3	2	2	2	2			2			2	3	2	
2	II	IV	ME8492	KINEMATICS OF MACHINERY	C211.2	Solve velocity and acceleration of simple mechanisms	K3	3	2	2	2	2			2			2	3	2	
3	II	IV	ME8492	KINEMATICS OF MACHINERY	C211.3	Construct Cam profile	K3	3	2	2	2	2			2			2	3	2	
4	II	IV	ME8492	KINEMATICS OF MACHINERY	C211.4	Solve problems on gears and gear trains	K3	3	2	2	2	2			2			2	3	2	
5	II	IV	ME8492	KINEMATICS OF MACHINERY	C211.5	Apply the concepts of friction to perform kinematic analysis of mechanical elements	K3	3	2	2	2	2			2			2	3	2	
Course Code/Course No: ME8451/C212							Regulation: 2017	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	IV	ME8451	MANUFACTURING TECHNOLOGY - II	C212.1	Explain the mechanism of material removal processes and concepts of tool wear, machinability and surface finish	K2	3	2		2			2	2			2	3	2	
2	II	IV	ME8451	MANUFACTURING TECHNOLOGY - II	C212.2	Describe the taper turning and thread cutting operations using centre lathe and constructional features of centre lathe and other special purpose lathes.	K2	3	2		2			2	2			2	3	2	
3	II	IV	ME8451	MANUFACTURING TECHNOLOGY - II	C212.3	Explain the constructional and operational features of shaper, milling, drilling process, gear shaper and gear hobber	K2	3	2		2			2	2			2	3	2	
4	II	IV	ME8451	MANUFACTURING TECHNOLOGY - II	C212.4	Describe the types of grinding process, its typical application and broaching	K2	3	2		2			2	2			2	3	2	
5	II	IV	ME8451	MANUFACTURING TECHNOLOGY - II	C212.5	Summarize the numerical control of machine tools and write a part program.	K3	3	2		3			2	2			2	3	2	
Course Code/Course No: ME8491/C213							Regulation: 2017	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	IV	ME8491	ENGINEERING METALLURGY	C213.1	Explain the alloys, Iron-Iron carbon phase diagram and steel classification.	K2	3	2					2	2			2	3	2	
2	II	IV	ME8491	ENGINEERING METALLURGY	C213.2	Explain CCR diagrams and different heat treatment processes	K2	3	2	2	2			2	2			2	3	2	
3	II	IV	ME8491	ENGINEERING METALLURGY	C213.3	Differentiate the effect of alloying elements on ferrous and non-ferrous metals	K2	3	2					2	2			2	3	2	
4	II	IV	ME8491	ENGINEERING METALLURGY	C213.4	Summarize the properties and applications of polymer, ceramic and metal matrix composites	K2	3	2					2	2			2	3	2	
5	II	IV	ME8491	ENGINEERING METALLURGY	C213.5	Explain the testing methods to determine mechanical properties.	K2	3	2		3			2	2			2	3	2	
Course Code/Course No: CE8395/C214							Regulation: 2017	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	II	IV	CE8395	STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS	C214.1	Apply the concepts of stress and strain in simple and compound bars and understand principal stresses and principal planes	K3	3	2	2	2	2			2	2		2	3	2	

3	II	IV	CE8395	STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS	C214.2	Construct shear force and bending moment diagrams and stress distribution on various types of beams.	K3	3	2	2	2	2						2	2		2	3	2	
4	II	IV	CE8395	STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS	C214.3	Apply basic equation of simple torsion in designing of shafts and helical spring.	K3	3	2	2	2	2						2	2		2	3	2	
5	II	IV	CE8395	STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS	C214.4	Calculate the slope and deflection in beams using different methods.	K3	3	2	2	2	2						2	2		2	3	2	
6	II	IV	CE8395	STRENGTH OF MATERIALS FOR MECHANICAL ENGINEERS	C214.5	Apply the concepts of stresses on thin, thick cylinder and spherical shells	K3	3	2	2	2	2						2	2		2	3	2	
Course Code/Course No: ME8493/C215							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
1	II	IV	ME8493	THERMAL ENGINEERING- I	C215.1	Solve problems using various air standard cycles and thermodynamic concepts.	K3	3	2	2	2				2	2			2	3	2			
2	II	IV	ME8493	THERMAL ENGINEERING- I	C215.2	Solve problems in single stage and multistage air compressors	K3	3	2	2	2				2	2			2	3	2			
3	II	IV	ME8493	THERMAL ENGINEERING- I	C215.3	Describe the various features, components and auxiliaries of IC engines.	K2	3	2	2	2				2	2			2	3	2			
4	II	IV	ME8493	THERMAL ENGINEERING- I	C215.4	Explain the working of Injection, Ignition, cooling and lubrication systems and its applications and determine the performance parameters of IC Engines.	K3	3	2	2	2				2	2			2	3	2			
5	II	IV	ME8493	THERMAL ENGINEERING- I	C215.5	Solve the problems on Gas turbines and its improved cycles	K3	3	2	2	2				2	2			2	3	2			
Course Code/Course No: ME8462/C216							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
1	II	IV	ME8462	MANUFACTURING TECHNOLOGY LABORATORY -II	C216.1	Classify the machine tools	K3	3	2		2			1	2	2			2	3	2			
2	II	IV	ME8462	MANUFACTURING TECHNOLOGY LABORATORY -II	C216.2	Produce intricate shapes on the given work piece as per given dimension using Horizontal Milling, vertical milling machine and Shaper	K3	3	2		2			1	2	2			2	3	2			
3	II	IV	ME8462	MANUFACTURING TECHNOLOGY LABORATORY -II	C216.3	Apply the hobbess, gear shapers, milling machines in fabrication of Gears.	K3	3	2		2			1	2	2			2	3	2			
4	II	IV	ME8462	MANUFACTURING TECHNOLOGY LABORATORY -II	C216.4	Predict the Cutting forces in Milling and turning using Tool dynamometer	K3	3	2		2			1	2	2			2	3	2			
5	II	IV	ME8462	MANUFACTURING TECHNOLOGY LABORATORY -II	C216.5	Apply the G-Codes and M-codes in CNC Part Programming.	K3	3	2		2			1	2	2			2	3	2			
Course Code/Course No: CE8381/C217							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
1	II	IV	CE8381	STRENGTH OF MATERIALS AND FLUIDMECHANICS AND MACHINERYLABORATORY	C217.1	Determine the hardness, toughness and tensile strength of materials using IZOD test, Charpy test and using UTM.	K3	3	2	2	2			2	2	2			2	3	2			
2	II	IV	CE8381	STRENGTH OF MATERIALS AND FLUIDMECHANICS AND MACHINERYLABORATORY	C217.2	Determine the deflection of beams and springs.	K3	3	2	2	2			2	2	2			2	3	2			
3	II	IV	CE8381	STRENGTH OF MATERIALS AND FLUIDMECHANICS AND MACHINERYLABORATORY	C217.3	Explain the heat treatment process.	K2	3	2	2	2			2	2	2			2	3	2			
4	II	IV	CE8381	STRENGTH OF MATERIALS AND FLUIDMECHANICS AND MACHINERYLABORATORY	C217.4	Determine the flow rate using flow measuring devices	K3	3	2	2	2			2	2	2			2	3	2			
5	II	IV	CE8381	STRENGTH OF MATERIALS AND FLUIDMECHANICS AND MACHINERYLABORATORY	C217.5	Evaluate the performance characteristics and draw performance curves of pumps and turbines.	K3	3	2	2	2			2	2	2			2	3	2			
Course Code/Course No: HS8461/C218							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
1	II	IV	HS8461	ADVANCED READING AND WRITING	C218.1	Write different types of simple paragraphs	K3							1	2	3			2					
2	II	IV	HS8461	ADVANCED READING AND WRITING	C218.2	Prepare different types of job applications	K3							1	2	3			2					
3	II	IV	HS8461	ADVANCED READING AND WRITING	C218.3	Write different types of essays with critical Analysis	K3							1	2	3			2					
4	II	IV	HS8461	ADVANCED READING AND WRITING	C218.4	Interpret and evaluate texts critically.	K3							1	2	3			2					
5	II	IV	HS8461	ADVANCED READING AND WRITING	C218.5	Apply critical thinking in various professional contexts.	K3							1	2	3			2					
Course Code/Course No: ME8595/C301							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
1	III	V	ME8595	THERMAL ENGINEERING- II	C301.1	Apply thermodynamic concepts and solve problems in Steam Nozzles	K3	3	2	2	2				2	2			2	3	2			
2	III	V	ME8595	THERMAL ENGINEERING- II	C301.2	Explain the functioning features of different types of Boilers and auxiliaries and calculate performance parameters	K3	3	2	2	2				2	2			2	3	2			
3	III	V	ME8595	THERMAL ENGINEERING- II	C301.3	Calculate the performance of steam turbine through velocity diagram	K3	3	2	2	2				2	2			2	3	2			
4	III	V	ME8595	THERMAL ENGINEERING- II	C301.4	Explain the concept of Cogeneration and the concept of utilizing residual heat in thermal systems	K2	3	2	2	2				2	2			2	3	2			
5	III	V	ME8595	THERMAL ENGINEERING- II	C301.5	Apply thermodynamic concepts to R&AC systems and solve problems using refrigerant table / psychrometric charts	K3	3	2	2	2				2	2			2	3	2			
Course Code/Course No: ME8593/C302							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
1	III	V	ME8593	DESIGN OF MACHINE ELEMENTS	C302.1	Apply principal stresses and factor of safety for various theories of failure under different loading conditions.	K3	3	2	2	2				2	2			2	3	2			
3	III	V	ME8593	DESIGN OF MACHINE ELEMENTS	C302.2	Design the shafts, keys and couplings.	K3	3	2	2	2				2	2			2	3	2			

4	III	V	ME8593	DESIGN OF MACHINE ELEMENTS	C302.3	Design the permanent and temporary fasteners.	K3	3	2	2	2							2	2		2	3	2
5	III	V	ME8593	DESIGN OF MACHINE ELEMENTS	C302.4	Calculate various dimensions of energy storing elements and engine components.	K3	3	2	2	2	2						2	2		2	3	2
6	III	V	ME8593	DESIGN OF MACHINE ELEMENTS	C302.5	Design a bearing for th given application	K3	3	2	2	2							2	2		2	3	2
Course Code/Course No: ME8501/C303							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
1	III	V	ME8501	METROLOGY AND MEASUREMENTS	C303.1	Discuss the concepts of measurements to apply in various metrological instruments.	K2	3	2		1				2	2			2	3	2		
2	III	V	ME8501	METROLOGY AND MEASUREMENTS	C303.2	Apply the principle and applications of linear and angular measuring instruments, assembly and transmission elements.	K3	3	2	2	2	1			2	2			2	3	2		
3	III	V	ME8501	METROLOGY AND MEASUREMENTS	C303.3	Describe the advanced measuring instruments like laser, CMM and interferometers.	K2	3	2	2	2	1			2	2			2	3	2		
4	III	V	ME8501	METROLOGY AND MEASUREMENTS	C303.4	Describe the straightness, flatness and roundness measurements and their applications.	K2	3	2		2				2	2			2	3	2		
5	III	V	ME8501	METROLOGY AND MEASUREMENTS	C303.5	Distinguish between the various measuring instruments for power, flow and temperature measurements.	K2	3	2		2				2	2			2	3	2		
Course Code/Course No: ME8594/C304							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
1	III	V	ME8594	DYNAMICS OF MACHINES	C304.1	Calculate static and dynamic forces of mechanisms.	K3	3	2	2	2	2			2	2			2	3	2		
2	III	V	ME8594	DYNAMICS OF MACHINES	C304.2	Explain the working of flywheels and punching presses and solve related problems	K3	3	2	2	2	2			2	2			2	3	2		
3	III	V	ME8594	DYNAMICS OF MACHINES	C304.3	Calculate the balancing of masses and their locations of reciprocating and rotating masses.	K3	3	2	2	2	2			2	2			2	3	2		
4	III	V	ME8594	DYNAMICS OF MACHINES	C304.4	Compute the frequency of free vibration.	K3	3	2	2	2	2			2	2			2	3	2		
5	III	V	ME8594	DYNAMICS OF MACHINES	C304.5	Compute the frequency of forced vibration, governors and gyroscopic effect on automobiles, ships and airplanes.	K3	3	2	2	2	2			2	2			2	3	2		
Course Code/Course No: ORO551/C305							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
1	III	V	ORO551	RENEWABLE ENERGY SOURCES	C305.1	Explain the physics of solar radiation.	K2	3	2	1	1	2	2		2	2			2	3	2		
2	III	V	ORO551	RENEWABLE ENERGY SOURCES	C305.2	Describe the solar energy collectors	K2	3	2	1	1	2	2		2	2			2	3	2		
3	III	V	ORO551	RENEWABLE ENERGY SOURCES	C305.3	Discuss the solar energy storage and its application	K2	3				2	2		2	2			2	3	2		
4	III	V	ORO551	RENEWABLE ENERGY SOURCES	C305.4	Explain the wind energy and biomass with its economic aspects.	K2	3	2	1	1	2	2		2	2			2	3	2		
5	III	V	ORO551	RENEWABLE ENERGY SOURCES	C305.5	Describe the geothermal, tidal, wave and direct energy conversion method	K2	3				2	2		2	2			2	3	2		
Course Code/Course No: ME8511/C306							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
1	III	V	ME8511	KINEMATICS AND DYNAMICS LABORATORY	C306.1	Explain the gear parameters, kinematic mechanism and gyroscopic effect	K3	3	2	2	2	2		1	2	2			2	3	2		
2	III	V	ME8511	KINEMATICS AND DYNAMICS LABORATORY	C306.2	Determine the mass moment of inertia of a mechanical element	K3	3	2	2	2	2		1	2	2			2	3	2		
3	III	V	ME8511	KINEMATICS AND DYNAMICS LABORATORY	C306.3	Calculate lift of the types of Governor	K3	3	2	2	2	2		1	2	2			2	3	2		
4	III	V	ME8511	KINEMATICS AND DYNAMICS LABORATORY	C306.4	Explain the balancing of rotating and reciprocating masses.	K3	3	2	2	2	2		1	2	2			2	3	2		
5	III	V	ME8511	KINEMATICS AND DYNAMICS LABORATORY	C306.5	Calculate the natural frequency, torsional frequency, damping co efficient of free vibrations.	K3	3	2	2	2	2		1	2	2			2	3	2		
Course Code/Course No: ME8512/C307							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
1	III	V	ME8512	THERMAL ENGINEERING LABORATORY	C307.1	Construct the valve timing and port timing diagram for four stroke and two stroke engine	K3	3	2	2	2	2		2	2	2			2	3	2		
2	III	V	ME8512	THERMAL ENGINEERING LABORATORY	C307.2	Determine the characteristic of fuels / lubricants used in IC engines	K3	3	2	2	2	2		2	2	2			2	3	2		
3	III	V	ME8512	THERMAL ENGINEERING LABORATORY	C307.3	Apply the various loads like hydraulic, electrical and mechanical loading on single cylinder IC engine to evaluate performance characteristics of IC engines	K3	3	2	2	2	2	2	2	2	2			2	3	2		
4	III	V	ME8512	THERMAL ENGINEERING LABORATORY	C307.4	Compute the performance of Multi cylinder engine by heat balance test	K3	3	2	2	2	2	2	2	2	2			2	3	2		
5	III	V	ME8512	THERMAL ENGINEERING LABORATORY	C307.5	Explain the working and performance of steam generator and steam turbine	K3	3	2	2	2	2	2	2	2	2			2	3	2		
Course Code/Course No: ME8513/C308							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			
1	III	V	ME8513	METROLOGY AND MEASUREMENTS LABORATORY	C308.1	Apply the various linear measuring tools to ensure the quality of products	K3	3			2				2	2			2	3	2		
2	III	V	ME8513	METROLOGY AND MEASUREMENTS LABORATORY	C308.2	Compute the various dimensions of Gears and its profile measurements.	K3	3	2	2	2	2			2	2			2	3	2		
3	III	V	ME8513	METROLOGY AND MEASUREMENTS LABORATORY	C308.3	Determine the flatness of the surface and nomenclature of screw thread using optics techniques.	K3	3	2	2	2	2			2	2			2	3	2		
4	III	V	ME8513	METROLOGY AND MEASUREMENTS LABORATORY	C308.4	Determine the angular measurements using sign bar, bevel protractor for quality inspection	K3	3	2	2	2	2			2	2			2	3	2		
5	III	V	ME8513	METROLOGY AND MEASUREMENTS LABORATORY	C308.5	Estimate the force and torque using simple laboratory setup.	K3	3	2		2				2	2			2	3	2		
Course Code/Course No: ME8651/C309							Regulation: 2017																
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2			

1	III	VI	ME8651	DESIGN OF TRANSMISSION SYSTEMS	C309.1	Apply the basic concepts of transmission systems	K3	3	2	2	2							2			2	3	2	
2	III	VI	ME8651	DESIGN OF TRANSMISSION SYSTEMS	C309.2	Design flexible transmission components for engines and machines.	K3	3	2	2	2							2				2	3	2
3	III	VI	ME8651	DESIGN OF TRANSMISSION SYSTEMS	C309.3	Design spur gears, Bevel gears and Helical gears used in Engine and machines.	K3	3	2	2	2							2				2	3	2
5	III	VI	ME8651	DESIGN OF TRANSMISSION SYSTEMS	C309.4	Apply the function of a gear box and its components and able to design gear boxes.	K3	3	2	2	2							2				2	3	2
6	III	VI	ME8651	DESIGN OF TRANSMISSION SYSTEMS	C309.5	Design cam, clutches and brakes for transmission system.	K3	3	2	2	2							2				2	3	2
Course Code/Course No: ME8691/C310							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3			
1	III	VI	ME8691	COMPUTER AIDED DESIGN AND MANUFACTURING	C310.1	Describe the product life cycle and design process and the role of CAD/CAM in it.	K2	3	2	2	2							2	2			2	3	2
2	III	VI	ME8691	COMPUTER AIDED DESIGN AND MANUFACTURING	C310.2	Distinguish the various types of curves, surface modelling and solid modelling techniques in CAD.	K2	3	2	2	2	3						2	2			2	3	2
3	III	VI	ME8691	COMPUTER AIDED DESIGN AND MANUFACTURING	C310.3	Choose the different types of Standard systems used in CAD	K2	3										2	2			2	3	2
4	III	VI	ME8691	COMPUTER AIDED DESIGN AND MANUFACTURING	C310.4	Write CNC part programming for Turning and Milling using G codes and M Codes.	K2	3			3							2	2			2	3	2
5	III	VI	ME8691	COMPUTER AIDED DESIGN AND MANUFACTURING	C310.5	Summarize the different types of techniques used in Cellular Manufacturing and FMS	K2	3										2	2			2	3	2
Course Code/Course No: ME8693/C311							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3			
1	III	VI	ME8693	HEAT AND MASS TRANSFER	C311.1	Calculate the heat conduction to different surface configurations under steady state & transient conditions	K3	3	2	2	2	2						2	2			2	3	2
2	III	VI	ME8693	HEAT AND MASS TRANSFER	C311.2	Determine the free and forced convective heat transfer coefficient to internal and external flows through/over various surface configurations	K3	3	2	2	2	2						2	2			2	3	2
3	III	VI	ME8693	HEAT AND MASS TRANSFER	C311.3	Apply the phenomena of boiling and condensation, apply LMTD and NTU methods of thermal analysis to different types of heat exchanger	K3	3	2	2	2	2						2	2			2	3	2
4	III	VI	ME8693	HEAT AND MASS TRANSFER	C311.4	Apply the principles to radiative heat transfer between different types of surfaces to solve problems	K3	3	2	2	2	2						2	2			2	3	2
5	III	VI	ME8693	HEAT AND MASS TRANSFER	C311.5	Solve problems on diffusive and convective mass transfer for different applications	K3	3	2	2	2	2						2	2			2	3	2
Course Code/Course No: ME8692/C312							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3			
1	III	VI	ME8692	FINITE ELEMENT ANALYSIS	C312.1	Describe the principles and concepts of Finite Element Methods.	K3	3	2	2	2	3						2				2	3	2
2	III	VI	ME8692	FINITE ELEMENT ANALYSIS	C312.2	Apply the Finite Element Methods for simple 1-D problems such as Solid Mechanics, Heat Transfer and Vibration.	K3	3	2	2	2	3						2				2	3	2
3	III	VI	ME8692	FINITE ELEMENT ANALYSIS	C312.3	Solve the second order 2-D equations involving scalar variable functions.	K3	3	2	2	2	3						2				2	3	2
5	III	VI	ME8692	FINITE ELEMENT ANALYSIS	C312.4	Determine the 2-D vector variable problems, Plane Stress, Plane Strain and Axisymmetric elements.	K3	3	2	2	2	3						2				2	3	2
6	III	VI	ME8692	FINITE ELEMENT ANALYSIS	C312.5	Apply finite element method to solve problems on iso parametric element and dynamic Problems.	K3	3	2	2	2	3						2				2	3	2
Course Code/Course No: ME8694/C313							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3			
1	III	VI	ME8694	HYDRAULICS AND PNEUMATICS	C313.1	Solve the work, power and torque problems and classify the different types of pumps	K3	3	2	2	2							2	2			2	3	2
2	III	VI	ME8694	HYDRAULICS AND PNEUMATICS	C313.2	Summarize the features and functions of hydraulic motors,actuators and flow control valves	K2	3										2	2			2	3	2
3	III	VI	ME8694	HYDRAULICS AND PNEUMATICS	C313.3	Explain industrial hydraulic circuits for different situations	K2	3										2	2			2	3	2
4	III	VI	ME8694	HYDRAULICS AND PNEUMATICS	C313.4	Apply cascade method to sketch Pneumatic and electropneumatic circuits for industrial needs.	K3	3	2	2	2							2	2			2	3	2
5	III	VI	ME8694	HYDRAULICS AND PNEUMATICS	C313.5	Apply concept the design of hydraulic and pneumatic circuits for various industrial application	K3	3	2	2	2	3						2	2			2	3	2
Course Code/Course No: ME8091/C314							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3			
1	III	VI	ME8091	AUTOMOBILE ENGINEERING	C314.1	Describe the various parts of the automobile and their functions and materials.	K2	3	1									2	2			1	3	2
2	III	VI	ME8091	AUTOMOBILE ENGINEERING	C314.2	Discuss the engine auxiliary systems and engine emission control.	K2	3	1					2	2	2	2					1	3	2
3	III	VI	ME8091	AUTOMOBILE ENGINEERING	C314.3	Distinguish the working of different types of transmission systems.	K2	3	1									2	2			1	3	2
4	III	VI	ME8091	AUTOMOBILE ENGINEERING	C314.4	Explain the Steering, Brakes and Suspension Systems.	K2	3	1									2	2			1	3	2
5	III	VI	ME8091	AUTOMOBILE ENGINEERING	C314.5	Predict possible alternate sources of energy for IC Engines	K2	3	1					2	2	2	2					1	3	2
Course Code/Course No: ME8681/C315							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3			
1	III	VI	ME8681	CAD/ CAM LABORATORY	C315.1	Explain 3D Modelling software	K3	3	2	2	2	3						1	2			2	3	2
2	III	VI	ME8681	CAD/ CAM LABORATORY	C315.2	Apply engineering drawing standards as per BIS conventions to draw CAD drawing	K3	3	2	2	2	3						1	2	2		2	3	2
3	III	VI	ME8681	CAD/ CAM LABORATORY	C315.3	Draw 3D and Assembly drawing using CAD software	K3	3	2	2	2	3						1	2	2		2	3	2
4	III	VI	ME8681	CAD/ CAM LABORATORY	C315.4	Write manual part programming with G and M codes using CAM software	K3	3	2	2	2	3						1	2	2		2	3	2
5	III	VI	ME8681	CAD/ CAM LABORATORY	C315.5	Write part programming for CNC Turning and CNC Milling	K3	3	2	2	2	3						1	2	2		2	3	2
Course Code/Course No: ME8682/C316							Regulation: 2017																	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3			
2	III	VI	ME8682	DESIGN AND FABRICATION PROJECT	C316.1	Define a problem, its scope and importance for purposes of investigation	K3	3	2	2	2		1	1	2	2	3	2	3	3	2			
3	III	VI	ME8682	DESIGN AND FABRICATION PROJECT	C316.2	Determine design objectives, functional requirements and arrive at specifications	K3	3	2	2	2		1	1	2	2	3	3	3	3	2			
4	III	VI	ME8682	DESIGN AND FABRICATION PROJECT	C316.3	Apply the mathematical, engineering and other relevant knowledge for the selected problem	K3	3	2	2	2	3	1	1	2	2	3	2	3	3	2			
5	III	VI	ME8682	DESIGN AND FABRICATION PROJECT	C316.4	Apply formal idea generation tools to develop multiple engineering design solutions	K3	3	2	2	2	3	1	1	2	2	3	3	3	3	2			
6	III	VI	ME8682	DESIGN AND FABRICATION PROJECT	C316.5	Develop models/prototypes to develop a diverse set of design solutions	K5	3	2	2	2	3	1	1	2	2	3	2	3	3	2			

Course Code/Course No: HS8581/C317						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3		
1	III	VI	HS8581	PROFESSIONAL COMMUNICATION	C317.1	Prepare the material and make effective presentations	K3								1	2	3		2				
2	III	VI	HS8581	PROFESSIONAL COMMUNICATION	C317.2	Discuss effectively in GD held in a formal/semi formal contexts	K2								1	2	3		2				
3	III	VI	HS8581	PROFESSIONAL COMMUNICATION	C317.3	Prepare for the job interviews	K3								1	2	3		2				
4	III	VI	HS8581	PROFESSIONAL COMMUNICATION	C317.4	Develop adequate Soft Skills required for the workplace	K3								1	2	3		2				
5	III	VI	HS8581	PROFESSIONAL COMMUNICATION	C317.5	Develop the various skills in grooming for any profession	K3								1	2	3		2				
Course Code/Course No: ME8792/C401						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3		
1	IV	VII	ME8792	POWER PLANT ENGINEERING	C401.1	Explain the layout, construction and working of the components inside a thermal power plant.	K2	3									2	2		2	3	2	
2	IV	VII	ME8792	POWER PLANT ENGINEERING	C401.2	Describe the layout, construction and working of the components inside a Diesel, Gas and Combined cycle power plants	K2	3	2	2	2						2	2		2	3	2	
3	IV	VII	ME8792	POWER PLANT ENGINEERING	C401.3	Illustrate the layout, construction and working of the components inside nuclear power plants	K2	3									2	2		2	3	2	
4	IV	VII	ME8792	POWER PLANT ENGINEERING	C401.4	Explain the layout, construction and working of the components inside Renewable energy power plants	K2	3									2	2		2	3	2	
5	IV	VII	ME8792	POWER PLANT ENGINEERING	C401.5	Discuss the power plant economics and environmental hazards and estimate the costs of electrical energy production.	K2										2	2		2	3	2	
Course Code/Course No: ME8793/C402						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3		
1	IV	VII	ME8793	PROCESS PLANNING AND COST ESTIMATION	C402.1	Explain the elements process planning	K2	3	2	2	2						2	2		2	3	2	
2	IV	VII	ME8793	PROCESS PLANNING AND COST ESTIMATION	C402.2	Develop process planning activity chart.	K3	3	2	2	2						2	2		2	3	2	
3	IV	VII	ME8793	PROCESS PLANNING AND COST ESTIMATION	C402.3	Computer the unit cost and depreciation	K3	3	2	2	2						2	2		2	3	2	
4	IV	VII	ME8793	PROCESS PLANNING AND COST ESTIMATION	C402.4	Compute the job order cost for different type of shop floor.	K3	3	2	2	2						2	2		2	3	2	
5	IV	VII	ME8793	PROCESS PLANNING AND COST ESTIMATION	C402.5	Calculate the machining time for various machining operations.	K3	3	2	2	2						2	2		2	3	2	
Course Code/Course No: ME8791/C403						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3		
1	IV	VII	ME8791	MECHATRONICS	C403.1	Describe the interdisciplinary applications of Electronics, Electrical, Mechanical and Computer Systems for the Control of Mechanical, Electronic Systems and sensor technology.	K2	3	2		3						2	2	3	2	3	2	
2	IV	VII	ME8791	MECHATRONICS	C403.2	Discuss the architecture of Microprocessor and Microcontroller, Pin Diagram, Addressing Modes of Microprocessor and Microcontroller.	K2	3	2		3						2	2	3	2	3	2	
3	IV	VII	ME8791	MECHATRONICS	C403.3	Discuss Programmable Peripheral Interface, Architecture of 8255 PPI, and various device interfacing	K2	3	2		3						2	2	3	2	3	2	
4	IV	VII	ME8791	MECHATRONICS	C403.4	Explain the architecture, programming and application of programmable logic controllers to problems and challenges in the areas of Mechatronic engineering.	K2	3	2		3						2	2	3	2	3	2	
5	IV	VII	ME8791	MECHATRONICS	C403.5	Discuss various Actuators and Mechatronics system using the knowledge and skills acquired through the course and also from the given case studies	K2	3	2		3						2	2	3	2	3	2	
Course Code/Course No: OML751/C404						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3		
1	IV	VII	OML751	TESTING OF MATERIALS	C404.1	Explain purpose of testing, testing standards, testing organizations, advantages of testing and results of testing	K2	3	2	2	2	3			2	2	2	3	2	3	2	2	
2	IV	VII	OML751	TESTING OF MATERIALS	C404.2	Choose and operate mechanical testing methods to determine mechanical properties	K3	3	2	2	2	3			2	2	2	3	2	3	2	2	
3	IV	VII	OML751	TESTING OF MATERIALS	C404.3	Choose and operate NDT methods to determine flaws, cracks, errors in finished components	K3	3	2	2	2	3			2	2	2	3	2	3	2	2	
4	IV	VII	OML751	TESTING OF MATERIALS	C404.4	Discuss the materials internal arrangements and producing high quality images	K2	3	2		3				2	2	2	3	2	3	2	2	
5	IV	VII	OML751	TESTING OF MATERIALS	C404.5	Describe the various thermal and chemical testing methods	K2	3	2		3				2	2	2	3	2	3	2	2	
Course Code/Course No: GE8077/C405						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3		
1	IV	VII	GE8077	TOTAL QUALITY MANAGEMENT	C405.1	Describe the tools and techniques of quality management to manufacturing and services processes.	K2	3	2								1	2	2	3	2	3	2
2	IV	VII	GE8077	TOTAL QUALITY MANAGEMENT	C405.2	Explain TQM Principles like 5S, KAIZEN in the respective industry	K2	3	2		2						1	2	2	3	2	3	2
3	IV	VII	GE8077	TOTAL QUALITY MANAGEMENT	C405.3	Illustrate the TQM tools and techniques	K2	3	2		2						1	2	2	3	2	3	2
4	IV	VII	GE8077	TOTAL QUALITY MANAGEMENT	C405.4	Apply the various tools of Performance measures for the implementation of quality management.	K3	3	2								1	2	2	3	2	3	2
5	IV	VII	GE8077	TOTAL QUALITY MANAGEMENT	C405.5	Explain the regulatory system and its documentation procedures.	K2	3	2								1	2	2	3	2	3	2
Course Code/Course No: GE8071/C406						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3		
1	IV	VII	ME8099	ROBOTICS	C406.1	Explain the concepts of industrial robots, classification, specifications and coordinate systems.	K2	3	2		2						2	2		2	3	2	
2	IV	VII	GE8071	ROBOTICS	C406.2	Define the different types of robot drive systems as well as robot end effectors.	K2	3	2		2						2	2		2	3	2	
3	IV	VII	GE8071	ROBOTICS	C406.3	Demonstrate the different sensors and image processing techniques.	K2	3	2		2						2	2		2	3	2	
4	IV	VII	GE8071	ROBOTICS	C406.4	Write robotic programs for different tasks and familiarize with the kinematics motions of robot.	K4	3	3	2	2	2					2	2		2	3	2	
5	IV	VII	GE8071	ROBOTICS	C406.5	Explain the application of robots in various industrial sectors and interpolate the economic analysis of robots	K2	3	3	2	2	2					2	2		2	3	2	

Course Code/Course No: ME8711/C407						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3	
1	IV	VII	ME8711	SIMULATION ANALYSIS LABORATORY	C407.1	Explain the ANSYS and MATLAB procedure	K3	3	2	2	2	3			1	2	2		2	3	2	
2	IV	VII	ME8711	SIMULATION ANALYSIS LABORATORY	C407.2	Determine stresses and strains induced in plates, brackets and beams problems	K3	3	2	2	2	3			1	2	2		2	3	2	
3	IV	VII	ME8711	SIMULATION ANALYSIS LABORATORY	C407.3	Analyze the stresses and strains induced in plates, brackets and beams and heat transfer problems	K4	3	2	2	2	3			1	2	2		2	3	2	
4	IV	VII	ME8711	SIMULATION ANALYSIS LABORATORY	C407.4	Compute the natural frequency and mode shape analysis of 2D components and beams.	K3	3	2	2	2	3			1	2	2		2	3	2	
5	IV	VII	ME8711	SIMULATION ANALYSIS LABORATORY	C407.5	Prepare MATLAB simulations of air conditioning systems, hydraulic and pneumatic cylinders, and cam follower mechanisms.	K3	3	2	2	2	3			1	2	2		2	3	2	
Course Code/Course No: ME8781/C408						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3	
1	IV	VII	ME8781	MECHTRONICS LABORATORY	C408.1	Describe the language programming of 8085 – Addition, Subtraction, Multiplication, Division, Sorting, Code Conversion.	K3	3	2	2	2	3			1	2	2		2	3	2	
2	IV	VII	ME8781	MECHTRONICS LABORATORY	C408.2	Explain the Stepper motor interfacing, Traffic light interface and various types of transducers.	K3	3	2	2	2	3			1	2	2		2	3	2	
3	IV	VII	ME8781	MECHTRONICS LABORATORY	C408.3	Illustrate the functioning of mechatronics system with various pneumatic, hydraulic and electrical systems.	K3	3	2	2	2	3			1	2	2		2	3	2	
4	IV	VII	ME8781	MECHTRONICS LABORATORY	C408.4	Illustrate the functioning of control systems with the help of PLC and microcontrollers.	K3	3	2	2	2	3			1	2	2		2	3	2	
5	IV	VII	ME8781	MECHTRONICS LABORATORY	C408.5	Analysis of basic hydraulic, pneumatic and electrical circuits using hydroSIM and Pneumo SIM	K4	3	2	2	2	3			1	2	2		2	3	2	
Course Code/Course No: ME8712/C409						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3	
1	IV	VII	ME8712	TECHNICAL SEMINAR	C409.1	Select current topics/Problems/Techniques/Methods from the literature survey	K3	3							1	2	3		2	3	1	
2	IV	VII	ME8712	TECHNICAL SEMINAR	C409.2	Summarize the recent development on the chosen research topic	K3	3							1	2	3		2	3	1	
3	IV	VII	ME8712	TECHNICAL SEMINAR	C409.3	Prepare the presentation on the identified topics	K3	3							1	2	3		2	3	1	
4	IV	VII	ME8712	TECHNICAL SEMINAR	C409.4	Develop the Communication Skills	K3	3							1	2	3		2	3	1	
5	IV	VII	ME8712	TECHNICAL SEMINAR	C409.5	Develop the presentation Skills	K3	3							1	2	3		2	3	1	
Course Code/Course No: MG8591/C410						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3	
1	IV	VIII	MG8591	PRINCIPLES OF MANAGEMENT	C410.1	Explain the definition of management, evolution of management, types of business organization and role of managers in a business entity	K2	3							2	2	2	3	2	3	1	
2	IV	VIII	MG8591	PRINCIPLES OF MANAGEMENT	C410.2	Discuss the planning strategy, setting an objective oriented planning, tools and techniques applied for planning and decision	K2	3							2	2	2	3	2	3	1	
3	IV	VIII	MG8591	PRINCIPLES OF MANAGEMENT	C410.3	Illustrate the organization structure, roles, delegation of authority. Understand the human resource planning, recruitment process, training and development	K2	3							2	2	2	3	2	3	1	
4	IV	VIII	MG8591	PRINCIPLES OF MANAGEMENT	C410.4	Describe the importance of workforce, motivation to employees, job enrichment, essentials of communication between entities of business.	K2	3							2	2	2	3	2	3	1	
5	IV	VIII	MG8591	PRINCIPLES OF MANAGEMENT	C410.5	Explain budget controls, productivity improvement and control framework for achieving the management objectives.	K2	3	2	2	2				2	2	2	3	2	3	1	
Course Code/Course No: IE8693/C411						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3	
1	IV	VIII	IE8693	PRODUCTION PLANNING AND CONTROL	C411.1	Explain production planning and control concepts	K2	3							2	2	2	2		2	3	1
2	IV	VIII	IE8693	PRODUCTION PLANNING AND CONTROL	C411.2	Describe various methodologies in work study and motion study.	K2	3	2	2	2				2	2	2	2		2	3	1
3	IV	VIII	IE8693	PRODUCTION PLANNING AND CONTROL	C411.3	Discuss the functions of product planning and process planning	K2	3							2	2	2	2	1	2	3	1
4	IV	VIII	IE8693	PRODUCTION PLANNING AND CONTROL	C411.4	Apply production schedule and control techniques	K3	3	2	2	2				2	2	2	2	1	2	3	1
5	IV	VIII	IE8693	PRODUCTION PLANNING AND CONTROL	C411.5	Develop manufacturing plans using MRP II and ERP systems.	K3	3	2	2	2				2	2	2	2	1	2	3	1
Course Code/Course No: ME8811/C412						Regulation: 2017		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3	
1	IV	VIII	ME8811	PROJECT WORK	C412.1	Write the problem statement based on Literature survey	K3	3	3	3	2	2	2	2	3	3	3	3	3	3	3	3
2	IV	VIII	ME8811	PROJECT WORK	C412.2	Analyse the literature and develop the solution procedure	K4	3	3	3	2	2	2	2	3	3	3	3	3	3	3	3
3	IV	VIII	ME8811	PROJECT WORK	C412.3	Devise suitable tools and methods to solve the problem/project	K4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
4	IV	VIII	ME8811	PROJECT WORK	C412.4	Prepare bill of materials, cost analysis, manufacturing process and make prototype	K3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
5	IV	VIII	ME8811	PROJECT WORK	C412.5	Report the outcome and write the dissertation	K3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

DEPARTMENT OF MECH

COURSE OUTCOMES (COs)							CO-PO & PSO MAPPING																		
S.No	Year	Sem	Course Code	Course Name	CO No.	Regulation: 2021 Course Outcomes	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2				
								K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3			
Course Code/Course No.: HS3152/C101							Regulation: 2021																		
1	1	1	HS3152	Professional English - I	C101.1	Employ appropriate vocabulary in both formal and informal contexts	K3					1	1			2	3		2						
2	1	1	HS3152	Professional English - I	C101.2	Associate the basic grammatical structures with the guided writing.	K2					1	1			2	3		2						
3	1	1	HS3152	Professional English - I	C101.3	Apply discourse markers for technical descriptions.	K3					1	1			2	3		2						
4	1	1	HS3152	Professional English - I	C101.4	Interpret and infer technical texts and non-verbal communication.	K2					1	1			2	3		2						
5	1	1	HS3152	Professional English - I	C101.5	Write definitions, descriptions, narrations and essays on various topics	K3					1	1	1		2	3		2						
Course Code/Course No.: MA3151/C102							Regulation: 2021																		
1	1	1	MA3151	Matrices and Calculus	C102.1	Calculate eigenvalues & eigenvectors and apply orthogonal diagonalisation	K3	3	2	1	1						1	1		1					
2	1	1	MA3151	Matrices and Calculus	C102.2	Apply suitable techniques of differentiation to various functions to identify	K3	3	2	1	1						1	1		1					
3	1	1	MA3151	Matrices and Calculus	C102.3	Determine the total derivative of a function to identify the maxima and	K3	3	2	1	1						1	1		1					
4	1	1	MA3151	Matrices and Calculus	C102.4	Apply suitable techniques of Integration to various functions	K3	3	2	1	1						1	1		1					
5	1	1	MA3151	Matrices and Calculus	C102.5	Calculate areas and volumes using multiple integral ideas	K3	3	2	1	1						1	1		1					
Course Code/Course No.: PH3151/C103							Regulation: 2021																		
1	1	1	PH3151	Engineering Physics	C103.1	Apply the principles of mechanics to solve problems	K3	3	3	2	1	2	1						1						
2	1	1	PH3151	Engineering Physics	C103.2	Describe the concepts of electro magnetic waves	K2	3	3	2	1	2	1						1						
3	1	1	PH3151	Engineering Physics	C103.3	Explain the fundamental knowledge in oscillations, optics and lasers.	K2	3	3	2	1	2	1						1						
4	1	1	PH3151	Engineering Physics	C103.4	Discuss the basic knowledge of Quantum Mechanics	K2	3	3	2	1	2	1						1						
5	1	1	PH3151	Engineering Physics	C103.5	Apply quantum mechanical principles towards the formation of energy bands	K3	3	3	2	1	2	1						1						
Course Code/Course No.: CY8151/C104							Regulation: 2021																		
1	1	1	CY8151	Engineering Chemistry	C104.1	Describe the water treatment processes	K2	3	1	1			1						1	1	1				
2	1	1	CY8151	Engineering Chemistry	C104.2	Apply the concepts of nano science in Engineering Applications	K2	3	1	1			1							1	2	1			
3	1	1	CY8151	Engineering Chemistry	C104.3	Apply the knowledge of phase rule and composites for material selection requirements	K2	3	1	1			1							1	1	1			
4	1	1	CY8151	Engineering Chemistry	C104.4	Select suitable fuels for engineering processes and applications	K2	3	1	1			1							1	1	1			
5	1	1	CY8151	Engineering Chemistry	C104.5	Apply suitable energy resources for Engineering sectors.	K2	3	1	1			1							1	2	1			
Course Code/Course No.: GE3151/C105							Regulation: 2021																		
1	1	1	GE3151	Problem Solving and Python Programming	C105.1	Develop algorithmic solutions to simple computational problems	K3	3	2	1	1	2							2	1					
2	1	1	GE3151	Problem Solving and Python Programming	C105.2	Write a executable simple python programs	K3	3	3	2	2	2	1	1	1	1				2	1	1			
3	1	1	GE3151	Problem Solving and Python Programming	C105.3	Apply conditional & loops statements to solve the simple python programs	K3	3	3	3	3	2	1	2	1	1				2	1	1			
4	1	1	GE3151	Problem Solving and Python Programming	C105.4	Write a python program using Lists, Tuples and Dictionaries	K3	3	2	2	2	2	1	2	1	1				1	1	1			
5	1	1	GE3151	Problem Solving and Python Programming	C105.5	Construct the python program using File, Module and Package concepts	K3	3	2	2	3	2	1	1	1					1	3	1			
Course Code/Course No.: GE3152 /C106							Regulation: 2021																		
1	1	1	GE3152	Heritage of Tamils	C106.1	Describe the various types of Tamil Literature	K2	1											1	2					
2	1	1	GE3152	Heritage of Tamils	C106.2	Discuss about Tamil Arts and Sculpture	K2	1											1	2					
3	1	1	GE3152	Heritage of Tamils	C106.3	Explain the Tamil Folks and Martial Arts	K2	1											1	2					
4	1	1	GE3152	Heritage of Tamils	C106.4	Summarize the Thina Concepts of Tamil	K2	1											1	2					
5	1	1	GE3152	Heritage of Tamils	C106.5	Review the contribution of Tamil Culture to Indian Culture and National Movements	K2	1											1	2					
Course Code/Course No.: GE3171 /C107							Regulation: 2021																		
1	1	1	GE3171	Problem Solving and Python Programming Lab	C107.1	Develop algorithmic solutions to simple computational problems	K3	3	2	1	2	3							3				3	2	1
2	1	1	GE3171	Problem Solving and Python Programming Lab	C107.2	Write a executable simple python programs	K3	3	2	1	2	3							3				3	2	1
3	1	1	GE3171	Problem Solving and Python Programming Lab	C107.3	Apply conditional & loops statements to solve the simple python programs	K3	3	2	1	2	3							3				3	2	1
4	1	1	GE3171	Problem Solving and Python Programming Lab	C107.4	Write a python program using Lists, Tuples and Dictionaries	K3	3	2	1	2	3							3				3	2	1
5	1	1	GE3171	Problem Solving and Python Programming Lab	C107.5	Construct the python program using File, Module and Package concepts	K3	3	2	1	2	3							3				3	2	1
Course Code/Course No.: BS3171 /C108							Regulation: 2021																		
1	1	1	BS3171	Physics and Chemistry Lab	C108.1	Explain the functions of Physics and Chemistry laboratory Equipments	K2	3	1	1									2	2	2	1			
2	1	1	BS3171	Physics and Chemistry Lab	C108.2	Apply engineering properties of materials, principles of optics and thermal characteristics of Engineering Applications	K2	3	1	1			1						2	2	2	1			
3	1	1	BS3171	Physics and Chemistry Lab	C108.3	Calculate the Energy band gap for semiconductor materials and Properties of Laser for Engineering Applications.	K2	3	1	1			1						2	2	2	1			
4	1	1	BS3171	Physics and Chemistry Lab	C108.4	Calculate the quality parameters of different types in Water Samples	K2	3	1	1			1						2	2	2	1			
5	1	1	BS3171	Physics and Chemistry Lab	C108.5	Apply the appropriate method to find the PH, conductance and potential values of various solutions	K2	3	1	1			1						2	2	2	1			
Course Code/Course No.: GE3172 /C109							Regulation: 2021																		
1	1	1	GE3172	English Laboratory	C109.1	Interpret the audio materials and build opinions about them	K3					3	1		1	3	3		2						
2	1	1	GE3172	English Laboratory	C109.2	Discuss the views about different points of view	K2					2	1		1	3	3		2						
3	1	1	GE3172	English Laboratory	C109.3	Explain fluently and accurately in formal and informal communicative contexts	K2					2	1		1	3	3		2						
4	1	1	GE3172	English Laboratory	C109.4	Describe products and processes and explain their uses and purposes clearly and accurately	K2					2	1		1	2	3		2						

S.No	Year	Sem	Course Code	Course Name	CO No.	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
5	I	I	GE3172	English Laboratory	C109.5	Explain their opinions effectively in both formal and informal discussions	K2					2	1		1	3	3		2			
Course Code/Course No.: HS3252 /C110						Regulation: 2021																
Course Code/Course No.: MA3251/C111						Regulation: 2021																
1	I	II	HS3252	Professional English - II	C110.1	Compare and contrast products and ideas in technical texts.	K2	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
2	I	II	HS3252	Professional English - II	C110.2	Associate causal relations in speaking and writing.	K2						1			2	3		2			
3	I	II	HS3252	Professional English - II	C110.3	Explain the problems with the solutions as a written document	K2									2	3		2			
4	I	II	HS3252	Professional English - II	C110.4	Write effective resumes in the context of job search.	K2						1			2	3		2			
5	I	II	HS3252	Professional English - II	C110.5	Interpret and infer the denotative and connotative meanings of technical texts.	K2									2	3		2			
Course Code/Course No.: PH3251/C112						Regulation: 2021																
1	I	II	MA3251	Statistics and Numerical Methods	C111.1	Apply the concept of testing of hypothesis for small and large samples in real life problems	K3	3	2	1	1						1	1		1		
2	I	II	MA3251	Statistics and Numerical Methods	C111.2	Apply the basic concepts of classifications of design of experiments	K3	3	2	1	1						1	1		1		
3	I	II	MA3251	Statistics and Numerical Methods	C111.3	Apply the numerical techniques of differentiation and integration for engineering problems.	K3	3	2	1	1						1	1		1		
4	I	II	MA3251	Statistics and Numerical Methods	C111.4	Apply appropriate numerical methods to solve the interpolation with equal and unequal intervals	K3	3	2	1	1						1	1		1		
5	I	II	MA3251	Statistics and Numerical Methods	C111.5	Solve the ordinary differential equation of first order	K3	3	2	1	1						1	1		1		
Course Code/Course No.: BE3251/C113						Regulation: 2021																
1	I	II	PH3251	Materials Science	C112.1	Explain crystal structure and its impact on material properties	K2	3	2	2	1	1					1	1		1		
2	I	II	PH3251	Materials Science	C112.2	Illustrate the electrical and mechanical properties of materials	K2	3	2	2	1	1					1	1		1		
3	I	II	PH3251	Materials Science	C112.3	Describe the semiconductor physics and functioning of semiconductor devices	K2	3	2	2	1	1					1	1		1		
4	I	II	PH3251	Materials Science	C112.4	Explain the optical properties of materials and working principles of various optical devices	K2	3	2	2	1	1					1	1		1		
5	I	II	PH3251	Materials Science	C112.5	Explain the functions of nanoelectronic devices	K2	3	2	2	1	1					1	1		1		
Course Code/Course No.: GE3251/C114						Regulation: 2021																
1	I	II	BE3251	Basic Electrical and Electronics Engineering	C113.1	Compute the electric circuit parameters for simple problems	K3	2	2	1	2	2								1	1	2
2	I	II	BE3251	Basic Electrical and Electronics Engineering	C113.2	Explain the working principle and applications of electrical machines	K2	2	2	2	2	2								1	2	2
3	I	II	BE3251	Basic Electrical and Electronics Engineering	C113.3	Illustrate the characteristics of analog electronic devices	K2	2	2	2	2	2								2	1	2
4	I	II	BE3251	Basic Electrical and Electronics Engineering	C113.4	Explain the basic concepts of digital electronics	K2	2	2	1	2	2								2	2	2
5	I	II	BE3251	Basic Electrical and Electronics Engineering	C113.5	Explain the operating principles of measuring instruments	K2	3	2	2	2	2								1	1	2
Course Code/Course No.: GE3252/C115						Regulation: 2021																
1	I	II	GE3252	Engineering Graphics	C114.1	Develop the Plane Curves and Orthographic Projections	K3	2	2	2							1	2		1		
2	I	II	GE3251	Engineering Graphics	C114.2	Sketch the projection of lines on planes.	K3	2	2	2							1	2		1		
3	I	II	GE3251	Engineering Graphics	C114.3	Draw the Projections of Solids	K3	2	2	2							1	2		1		
4	I	II	GE3251	Engineering Graphics	C114.4	Draw the views of sectional solids and development of surfaces	K3	2	2	2							1	2		1		
5	I	II	GE3251	Engineering Graphics	C114.5	Draw the Isometric and Perspective Projections of solids	K3	2	2	2							1	2		1		
Course Code/Course No.: GE3271 /C116						Regulation: 2021																
1	I	II	GE3271	Engineering Practices Laboratory	C116.1	Describe the Various Equipments in Engineering Practice Laboratories	K2	1								2	2	2		1		
2	I	II	GE3271	Engineering Practices Laboratory	C116.2	Draw pipe line plan, lay and connect various pipe fittings for plumbing work and make joints in wood materials used in common household work	K3	1				1				2	2	2		1		
3	I	II	GE3271	Engineering Practices Laboratory	C116.3	Construct various electrical joints in common household electrical work	K3	1								2	2	2		1		
4	I	II	GE3271	Engineering Practices Laboratory	C116.4	Practice the making of Simple objects using welding, Sheet Metal and Machining for Household Work	K3	1				2				2	2	2		1		
5	I	II	GE3271	Engineering Practices Laboratory	C116.5	Design and test simple electronic circuits by mounting components on PCB	K3	1				2				2	2	2		1		
Course Code/Course No.: BE3271 /C117						Regulation: 2021																
1	I	II	BE3271	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	C117.1	Examine Ohm's and Kirchoff's law	K3	2												2	2	1
2	I	II	BE3271	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	C117.2	Determine the performance parameters of electric generators and draw its characteristic curves	K3	2												2	2	1
3	I	II	BE3271	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	C117.3	Compute performance of motor with various loads and draw its characteristic curves	K3	2												2	2	1
4	I	II	BE3271	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	C117.4	Construct the characteristic curves of transformers	K3	2												2	2	1
5	I	II	BE3271	Basic Electrical, Electronics and Instrumentation Engineering Laboratory	C117.5	Describe the different logic gates and DSO	K2	2												2	2	1
Course Code/Course No.: GE3272 /C118						Regulation: 2021																

S.No	Year	Sem	Course Code	Course Name	CO No.	Course Outcomes	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
1	I	II	GE3272	Communication Laboratory / Foreign Language	C118.1	Discuss effectively in GD held in a formal/semi formal contexts.	K2						1		1	3	2		2		
2	I	II	GE3272	Communication Laboratory / Foreign Language	C118.2	Discuss and present concepts and problems from various perspectives for solutions	K2						1		1	3	2		2		
3	I	II	GE3272	Communication Laboratory / Foreign Language	C118.3	Write emails, letters and effective job applications.	K2						1		1	3	2		2		
4	I	II	GE3272	Communication Laboratory / Foreign Language	C118.4	Write critical reports to convey data and information with clarity and precision	K2						1		1	3	2		2		
5	I	II	GE3272	Communication Laboratory / Foreign Language	C118.5	Describe appropriate instructions and recommendations for safe execution of tasks	K2						1		1	3	2		2		
Course Code/Course No: MA3351 /C201							Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Course Outcomes	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
1	I	III	MA3351	Transforms and Partial Differential Equations	C201.1	Apply the concept of partial differential equation to solve the problems	K3	2	2	2					2	2		2	2		
2	I	III	MA3351	Transforms and Partial Differential Equations	C201.2	Determine the Fourier coefficients in the Fourier series expansion of the specified function of various complex problems in engineering.	K3	2	2	2					2	2		2	2		
3	I	III	MA3351	Transforms and Partial Differential Equations	C201.3	Apply the fourier series techniques in solving one and two dimensional heat flow problems	K3	2	2	2					2	2		2	2		
4	I	III	MA3351	Transforms and Partial Differential Equations	C201.4	Solve the problems in Fourier Transforms	K3	2	2	2					2	2		2	2		
5	I	III	MA3351	Transforms and Partial Differential Equations	C201.5	Solve partial differential equations using Z transform techniques	K3	2	2	2					2	2		2	2		
Course Code/Course No: ME3351 /C202							Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Course Outcomes	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
1	II	III	ME3351	Engineering Mechanics	C202.1	Determine the force and moment scalar and vector methods of static bodies	K3	3	2	2					2	2		2	2	1	
2	II	III	ME3351	Engineering Mechanics	C202.2	Construct the free body diagram and analyse the rigid body in equilibrium	K3	3	2	2					2	2		2	2	1	
3	II	III	ME3351	Engineering Mechanics	C202.3	Evaluate the properties of surfaces and solids	K3	3	2	2					2	2		2	2	1	
4	II	III	ME3351	Engineering Mechanics	C202.4	Determine the friction and the effects by the laws of friction	K3	3	2	2					2	2		2	2	1	
5	II	III	ME3351	Engineering Mechanics	C202.5	Calculate dynamic forces exerted in rigid body	K3	3	2	2					2	2		2	2	1	
Course Code/Course No: ME3391 /C203							Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Course Outcomes	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
1	II	III	ME3391	Engineering Thermodynamics	C203.1	Apply the first law of thermodynamics for simple open and closed systems under steady.	K3	3	3	1	2	1			2	2		2	3	2	
2	II	III	ME3391	Engineering Thermodynamics	C203.2	Apply the second law of thermodynamics in analysing the performance of thermal devices through energy and entropy calculations.	K3	3	2	1	2				2	2		2	3	2	
3	II	III	ME3391	Engineering Thermodynamics	C203.3	Calculate the performance of steam power plant by steam tables and Mollier chart and also compare various improved cycles	K3	3	2	2	2	1			2	2		2	3	2	
4	II	III	ME3391	Engineering Thermodynamics	C203.4	Compute the macroscopic properties of ideal and real gases using gas laws and appropriate thermodynamic relations.	K3	3	2	2	2				2	2		2	3	2	
5	II	III	ME3391	Engineering Thermodynamics	C203.5	Determine the properties of gas mixtures and applying various thermodynamic relations	K3	3	3	2	2	1			2	2		2	3	2	
Course Code/Course No: CE3391 /C204							Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Course Outcomes	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
1	II	III	CE3391	Fluid Mechanics and Machinery	C204.1	Solve the problems on fluids under kinematics and dynamics by conservation laws	K3	3	2	2	2	1			2	2		2	3	2	
2	II	III	CE3391	Fluid Mechanics and Machinery	C204.2	Determine losses in pipelines for both laminar and turbulent conditions. Also, describe the concept of boundary layer and its thickness	K3	3	2	2	2	1			2	2		2	3	2	
3	II	III	CE3391	Fluid Mechanics and Machinery	C204.3	Apply the relationship among the parameters involved in the given fluid phenomenon and to predict the performances of prototype by model studies	K3	3	2	2	2				2	2		2	3	2	
4	II	III	CE3391	Fluid Mechanics and Machinery	C204.4	Describe the working principles of various turbines and design the various types of turbines.	K3	3	2	2	2	1			2	2		2	3	2	
5	II	III	CE3391	Fluid Mechanics and Machinery	C204.5	Explain the working principles of centrifugal, reciprocating and rotary pumps and design the centrifugal and reciprocating pumps	K3	3	2	2	2	1			2	2		2	3	2	
Course Code/Course No: ME3392 /C205							Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Course Outcomes	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
1	II	III	ME3392	Engineering Materials and Metallurgy	C205.1	Explain the alloys, Iron-Iron carbon phase diagram and steel classification.	K2	3	2			2			2	2		2	3	2	
2	II	III	ME3392	Engineering Materials and Metallurgy	C205.2	Explain CCR diagrams and different heat treatment processes	K2	3	2			2			2	2		2	3	2	
3	II	III	ME3392	Engineering Materials and Metallurgy	C205.3	Differentiate the effect of alloying elements on ferrous and non-ferrous metals	K2	3	2			2			2	2		2	3	2	
4	II	III	ME3392	Engineering Materials and Metallurgy	C205.4	Summarize the properties and applications of polymer, ceramic and metal matrix composites	K2	3	2			2			2	2		2	3	2	
5	II	III	ME3392	Engineering Materials and Metallurgy	C205.5	Explain the testing methods to determine mechanical properties.	K2	3	2			3			2	2		2	3	2	
Course Code/Course No: ME3393 /C206							Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Course Outcomes	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
1	II	III	ME3393	Manufacturing Processes	C206.1	Explain the various special casting process and identify casting defects	K3	3	2	2		2			2	2		2	3	1	
2	II	III	ME3393	Manufacturing Processes	C206.2	Describe the various welding process and identify its defects	K3	3	2	2		2			2	2		2	3	1	
3	II	III	ME3393	Manufacturing Processes	C206.3	Summarize various bulk deformation techniques and identify defects in rolled parts	K3	3	2	2		2			2	2		2	3	1	
4	II	III	ME3393	Manufacturing Processes	C206.4	Explain sheet metal operations and unconventional forming process	K3	3	2	2		2			2	2		2	3	1	
5	II	III	ME3393	Manufacturing Processes	C206.5	Distinguish various methods of moulding methods of thermoplastic components and typical industrial applications	K3	3	2	2		2			2	2		2	3	1	
Course Code/Course No: ME3381 /C207							Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Course Outcomes	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
1	II	III	ME3381	Computer Aided Machine Drawing	C207.1	Classify and illustrate the BIS specifications for metal joints in an engineering drawing.	K3	3	2	2	2	2			2	2		2	3	1	
2	II	III	ME3381	Computer Aided Machine Drawing	C207.2	Apply the principles behind dimensions and tolerances in an engineering drawing.	K3	3	2	2	2	2			2	2		2	3	1	
3	II	III	ME3381	Computer Aided Machine Drawing	C207.3	Apply commands in 2-D drafting	K3	3	2	2	2	2			2	2		2	3	1	

4	II	III	ME3381	Computer Aided Machine Drawing	C207.4	Apply commands in 3-D drafting.	K3	3	2	2	2	2			2	2	2		2	3	1	
5	II	III	ME3381	Computer Aided Machine Drawing	C207.5	Construct 3D part drawing and Assembly drawing of machine components like Coupling, Joints, Valves, etc.,	K3	3	2	2	2	2			2	2	2		2	3	1	
Course Code/Course No: ME3382 / C208							Regulation: 2021															
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	II	III	ME3382	Manufacturing Technology Laboratory	C208.1	Apply arc welding to produce different types of metal joints	K3	3	2	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
2	II	III	ME3382	Manufacturing Technology Laboratory	C208.2	Prepare different sand moulds using moulding tools, patterns, moulding boxes.	K3	3	2			2			2	2	2			2	3	1
3	II	III	ME3382	Manufacturing Technology Laboratory	C208.3	Produce intricate shapes on the given work piece as per given dimension using Horizontal Milling, vertical milling machine Shaper and Gear Shaper	K3	3	2			2			2	2	2			2	3	1
4	II	III	ME3382	Manufacturing Technology Laboratory	C208.4	Predict the Cutting forces in Milling and Turning using Tool dynamometer	K3	3	2			2			2	2	2			2	3	1
5	II	III	ME3382	Manufacturing Technology Laboratory	C208.5	Apply abrasive machining with Surface, centerless grinding to obtain surface integrity of metal components	K3	3	2			2			2	2	2			2	3	1
Course Code/Course No: GE3361 / C209							Regulation: 2021															
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	II	III	GE3361	Professional Development	C209.1	Prepare quality documents, by structuring and organizing content for their day to day technical and academic requirements using MS Word	K3		K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
2	II	III	GE3361	Professional Development	C209.2	Apply MS EXCEL to perform data operations and analytics, record, retrieve data as per requirements and visualize data for ease of understanding	K3					2			2	2	2			2		
3	II	III	GE3361	Professional Development	C209.3	Apply macros and secure the workbook	K3					2			2	2	2			2		
4	II	III	GE3361	Professional Development	C209.4	Prepare high quality academic presentations by including common tables, charts, graphs, interlinking other elements using MS PowerPoint	K3					2			2	2	2			2		
5	II	III	GE3361	Professional Development	C209.5	Develop high quality academic presentations by using media objects such as audio, video and animations using MS PowerPoint	K3					2			2	2	2			2		
Course Code/Course No: ME3491 / C210							Regulation: 2021															
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	II	IV	ME3491	Theory of Machines	C210.1	Determine velocity and acceleration of simple mechanism and draw the cam profile	K3	3	2	2	2	2				2	2			2	3	2
2	II	IV	ME3491	Theory of Machines	C210.2	Solve problems on gears and gear trains of different configuration	K3	3	2	2	2	2				2	2			2	3	2
3	II	IV	ME3491	Theory of Machines	C210.3	Calculate the frictional force in different mechanical elements	K3	3	2	2	2	2				2	2			2	3	2
4	II	IV	ME3491	Theory of Machines	C210.4	Calculate static and dynamic forces of mechanisms.	K3	3	2	2	2	2				2	2			2	3	2
5	II	IV	ME3491	Theory of Machines	C210.5	Calculate the balancing masses and their locations of reciprocating and rotating masses and Compute the frequency of free vibration, forced vibration and damping coefficient.	K3	3	2	2	2	2				2	2			2	3	2
Course Code/Course No: ME3451 / C211							Regulation: 2021															
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	II	IV	ME3451	Thermal Engineering	C211.1	Apply thermodynamic concepts to different air standard cycles and solve problems	K3	3	2	2	2					2	2			2	3	2
2	II	IV	ME3451	Thermal Engineering	C211.2	Solve problems in steam nozzle and calculate critical pressure ratio.	K3	3	2	2	2	2				2	2			2	3	2
3	II	IV	ME3451	Thermal Engineering	C211.3	Explain the flow in steam turbines, draw velocity diagrams, flow in Gas turbines and solve problems.	K2	3	2	2	2	2				2	2			2	3	2
4	II	IV	ME3451	Thermal Engineering	C211.4	Explain the functioning and features of IC engine, components and auxiliaries	K3	3	2	2	2	2				2	2			2	3	2
5	II	IV	ME3451	Thermal Engineering	C211.5	Calculate the various performance parameters of IC engines	K3	3	2	2	2	2				2	2			2	3	2
Course Code/Course No: ME3492 / C212							Regulation: 2021															
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	II	IV	ME3492	Hydraulics and Pneumatics	C212.1	Illustrate the working principles of fluid power systems and hydraulic pumps.	K3	3	2	2	2	1				2	2			2	3	2
2	II	IV	ME3492	Hydraulics and Pneumatics	C212.2	Illustrate the working principles of hydraulic actuators and control components.	K2	3	2	2	2	1				2	2			2	3	2
3	II	IV	ME3492	Hydraulics and Pneumatics	C212.3	Describe the various applications of hydraulic circuits and systems.	K2	3	2	2	2	1				2	2			2	3	2
4	II	IV	ME3492	Hydraulics and Pneumatics	C212.4	Illustrate the working principles of pneumatic circuits and power system and its components	K3	3	2			1				2	2			2	3	2
5	II	IV	ME3492	Hydraulics and Pneumatics	C212.5	Identify various troubles shooting methods in fluid power systems	K3	3	2			1				2	2			2	3	2
Course Code/Course No: ME3493 / C213							Regulation: 2021															
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	II	IV	ME3493	Manufacturing Technology	C213.1	Explain the mechanism of material removal processes and concepts of tool wear, machinability and surface finish	K2	3	2			2				2	2			2	3	2
2	II	IV	ME3493	Manufacturing Technology	C213.2	Describe the taper turning and thread cutting operations using centre lathe and constructional features of centre lathe and other special purpose lathes.	K2	3	2			2				2	2			2	3	2
3	II	IV	ME3493	Manufacturing Technology	C213.3	Explain the constructional and operational features of shaper, milling, drilling, grinding, broaching process, gear shaper and gear hobber	K2	3	2			2				2	2			2	3	2
4	II	IV	ME3493	Manufacturing Technology	C213.4	Summarize the numerical control of machine tools and its control methods, coolant systems and safety features	K2	3	2			2				2	2			2	3	2
5	II	IV	ME3493	Manufacturing Technology	C213.5	Apply G-codes, M- codes to write manual part programming for computer numerical controlled machines	K3	3	2			3				2	2			2	3	2
Course Code/Course No: CE3491 / C214							Regulation: 2021															
S.No	Year	Sem	Course Code	Course Name	CO No.		Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
1	II	IV	CE3491	Strength of Materials	C214.1	Apply the concepts of stress and strain in simple and compound bars and understand principal stresses and principal planes	K3	3	2	2	2	2				2	2			2	3	2
2	II	IV	CE3491	Strength of Materials	C214.2	Draw shear force and bending moment diagrams and stress distribution on various types of beams.	K3	3	2	2	2	2				2	2			2	3	2
3	II	IV	CE3491	Strength of Materials	C214.3	Apply basic equation of simple torsion in designing of shafts and helical spring.	K3	3	2	2	2	2				2	2			2	3	2
4	II	IV	CE3491	Strength of Materials	C214.4	Calculate the slope and deflection in beams using different methods.	K3	3	2	2	2	2				2	2			2	3	2

S.No	Year	Sem	Course Code	Course Name	CO No.	Regulation: 2021	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
5	II	IV	CE3491	Strength of Materials	C214.5	Apply the concepts of stresses on thin , thick cylinder and spherical shells	K3	3	2	2	2	2				2	2		2	3	2	
Course Code/Course No: GE3451 / C215						Regulation: 2021																
Knowledge level							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3		
1	II	IV	GE3451	Environmental Sciences and Sustainability	C215.1	Describe the functions of environment, ecosystems and biodiversity and their conservation.	K2	3								2	2		2			
2	II	IV	GE3451	Environmental Sciences and Sustainability	C215.2	Discuss the causes & effects of environmental pollution, natural disasters for the preventive measures in the society	K2	3								2	2		2			
3	II	IV	GE3451	Environmental Sciences and Sustainability	C215.3	Explain the renewable and non-renewable resources for the sustainable measures for future generations	K2	3								2	2		2			
4	II	IV	GE3451	Environmental Sciences and Sustainability	C215.4	Discuss the different goals of sustainable development and apply them for suitable technological advancement for the society	K2	3								2	2		2			
5	II	IV	GE3451	Environmental Sciences and Sustainability	C215.5	Explain the knowledge of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization.	K2	3								2	2		2			
Course Code/Course No: CE3481 / C216						Regulation: 2021																
Knowledge level							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3		
1	II	IV	CE3481	Strength of Materials and Fluid Machinery Laboratory	C216.1	Compute the hardness, toughness and tensile strength of materials using IZOD test, Charpy test and using UTM.	K3	3	2	2	2	2				2	2	2	2	3	2	
2	II	IV	CE3491	Strength of Materials and Fluid Machinery Laboratory	C216.2	Estimate the deflection of beams and springs.	K3	3	2	2	2	2				2	2	2	2	3	2	
3	II	IV	CE3491	Strength of Materials and Fluid Machinery Laboratory	C216.3	Determine the coefficient of discharge of flow measuring devices and metacentric height	K2	3	2	2	2	2				2	2	2	2	3	2	
4	II	IV	CE3491	Strength of Materials and Fluid Machinery Laboratory	C216.4	Evaluate the performance characteristics of pumps and draw the performance curves	K3	3	2	2	2	2				2	2	2	2	3	2	
5	II	IV	CE3491	Strength of Materials and Fluid Machinery Laboratory	C216.5	Evaluate the performance characteristics of hydraulic turbines and draw the performance curves	K3	3	2	2	2	2				2	2	2	2	3	2	
Course Code/Course No: ME3461 / C217						Regulation: 2021																
Knowledge level							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3		
1	II	IV	ME3461	Thermal Engineering Laboratory	C217.1	Construct the valve timing and port timing diagram for four stroke and two stroke engine	K3	3	2	2	2	2				2	2	2	2	3	2	
2	II	IV	ME3461	Thermal Engineering Laboratory	C217.2	Determine the characteristic of fuels / lubricants used in IC engines	K3	3	2	2	2	2				2	2	2	2	3	2	
3	II	IV	ME3461	Thermal Engineering Laboratory	C217.3	Apply the various loads on single cylinder IC engine to evaluate performance characteristics of IC engines	K3	3	2	2	2	2	2			2	2	2	2	3	2	
4	II	IV	ME3461	Thermal Engineering Laboratory	C217.4	Evaluate the COP of refrigeration cycle	K3	3	2	2	2	2	2			2	2	2	2	3	2	
5	II	IV	ME3461	Thermal Engineering Laboratory	C217.5	Compute the Performance and Energy Balance on a Steam Generator	K3	3	2	2	2	2				2	2	2	2	3	2	
Course Code/Course No: ME3591 / C301						Regulation: 2021																
Knowledge level							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3		
1	III	V	ME3591	Design of Machine Elements	C301.1	Describe the design machine components that are subject to static and variable loads.	K3	3	2	2	2	2				2	2		2	3	2	
2	III	V	ME3591	Design of Machine Elements	C301.2	Evaluate the concepts design to shafts, key and couplings.	K3	3	2	2	2	2				2	2		2	3	2	
3	III	V	ME3591	Design of Machine Elements	C301.3	Apply the concepts of design to bolted, Knuckle, Cotter, riveted and welded joints.	K3	3	2	2	2	2				2	2		2	3	2	
4	III	V	ME3591	Design of Machine Elements	C301.4	Apply the design aspect in helical, leaf springs, flywheels, connecting rods and crank shafts.	K3	3	2	2	2	2				2	2		2	3	2	
5	III	V	ME3591	Design of Machine Elements	C301.5	Evaluate the concepts of design and select sliding and rolling contact bearings, seals and gaskets.	K3	3	2	2	2	2				2	2		2	3	2	
Course Code/Course No: ME3592 / C302						Regulation: 2021																
Knowledge level							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3		
1	III	V	ME3592	Metrology and Measurements	C302.1	Discuss the concepts of measurements to apply in various metrological instruments.	K2	3	2			1				2	2		2	3	2	
2	III	V	ME3592	Metrology and Measurements	C302.2	Explain the principle and applications of linear and angular measuring instruments, assembly and transmission elements.	K3	3	2	2	2	1				2	2		2	3	2	
3	III	V	ME3592	Metrology and Measurements	C302.3	Apply the tolerance symbols and tolerance analysis for industrial applications.	K2	3	2	2	2	1				2	2		2	3	2	
4	III	V	ME3592	Metrology and Measurements	C302.4	Explain the different types of surface measurement techniques	K2	3	2	2	2	2				2	2		2	3	2	
5	III	V	ME3592	Metrology and Measurements	C302.5	Discuss the advanced measurement tools and techniques and machine vision	K2	3	2			2				2	2		2	3	2	
Course Code/Course No: CME343 / C303						Regulation: 2021																
Knowledge level							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3		
1	III	V	CME343	New Product Development	C303.1	Explain the fundamental concepts and customer specific requirements of the New Product development	K2	3	2	2						2	2		2	3	2	
2	III	V	CME343	New Product Development	C303.2	Discuss the Material specification standards, analysis and fabrication, manufacturing process.	K2	3	2	2						2	2		2	3	2	
3	III	V	CME343	New Product Development	C303.3	Describe the Feasibility Studies & reporting of New Product development	K2	3	2	2						2	2		2	3	2	
4	III	V	CME343	New Product Development	C303.4	Explain the New product qualification and Market Survey on similar products of new product development	K2	3	2	2						2	2		2	3	2	
5	III	V	CME343	New Product Development	C303.5	Apply the Reverse Engineering, Cloud points generation, converting cloud data to 3D model	K3	3	2	2						2	2		2	3	2	
Course Code/Course No: CME344 / C304						Regulation: 2021																
Knowledge level							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3		
1	III	V	CME344	Product Life Cycle Management	C304.1	Summarize the history, concepts and terminology of PLM	K2	3	2	2						2	2		2	3	2	
2	III	V	CME344	Product Life Cycle Management	C304.2	Describe the functions and features of PLM/PDM	K2	3	2	2						2	2		2	3	2	
3	III	V	CME344	Product Life Cycle Management	C304.3	Discuss the different modules offered in commercial PLM/PDM tools.	K2	3	2	2	2					2	2		2	3	2	
4	III	V	CME344	Product Life Cycle Management	C304.4	Illustrate the PLM/PDM approaches for industrial applications.	K2	3	2	2	2					2	2		2	3	2	
5	III	V	CME344	Product Life Cycle Management	C304.5	Explain the PLM/PDM with legacy data bases, CAx& ERP systems	K2	3	2	2	2					2	2		2	3	2	
Course Code/Course No: CME347 / C305						Regulation: 2021																
Knowledge level							PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2		
							K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3		

1	III	V	CME347	Lean Manufacturing	C305.1	Discuss the concepts of six sigma	K2	3	2							2	2		2	3	2
2	III	V	CME347	Lean Manufacturing	C305.2	Describe the lean manufacturing tools and PDCA for sustainable improvements	K2	3	2							2	2		2	3	2
3	III	V	CME347	Lean Manufacturing	C305.3	Illustrate about the deeper understanding methodologies of Lean manufacturing.	K2	3	2							2	2		2	3	2
4	III	V	CME347	Lean Manufacturing	C305.4	Discuss lean concepts and its elements.	K2	3	2							2	2		2	3	2
5	III	V	CME347	Lean Manufacturing	C305.5	Describe the implementation and challenges of lean manufacturing.	K2	3	2							2	2		2	3	2
Course Code/Course No: MX3084 /C306						Regulation: 2021		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	III	V	MX3084	Disaster Risk Reduction and Management	C306.1	Describe the concepts of Disaster, Vulnerability and Disaster Risk reduction (DRR)	K2	3					2		1	1		1	3	2	
2	III	V	MX3084	Disaster Risk Reduction and Management	C306.2	Explain the disaster risk reduction methods and techniques	K2	3	2				2		1	1		1	3	2	
3	III	V	MX3084	Disaster Risk Reduction and Management	C306.3	Discuss the disaster management and its policies	K2	3					2		1	1	2	1	3	2	
4	III	V	MX3084	Disaster Risk Reduction and Management	C306.4	Illustrate the disaster management tools and technology	K2	3	2				2		1	1	2	1	3	2	
5	III	V	MX3084	Disaster Risk Reduction and Management	C306.5	Analyse the disaster management case studies	K4	3	2				2		1	1	2	1	3	2	
Course Code/Course No: ME3511 /C307						Regulation: 2021		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	III	V	ME3511	Summer Internship	C307.1	Create engineering-standard figures, reports and drawings to complement writing and presentations	K3	3	2			2	2	2	2	2	2		3	3	
2	III	V	ME3511	Summer Internship	C307.2	Recognize a variety of working and learning preferences and also appreciate the value of diversity on a team	K3	3	2			2	2	2	2	2	2		3	3	
3	III	V	ME3511	Summer Internship	C307.3	Examine and apply moral & ethical principles to known case studies	K3	3	2			2	2	2	2	2	2		3	3	
4	III	V	ME3511	Summer Internship	C307.4	Describe various economic and financial costs/benefits of an engineering activity	K3	3	2			2	2	2	2	2	2		3	3	
5	III	V	ME3511	Summer Internship	C307.5	Identify risks/impacts in the life-cycle of an engineering product or activity	K3	3	2			2	2	2	2	2	2		3	3	
Course Code/Course No: ME3581 /C308						Regulation: 2021		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
1	III	V	ME3581	Metrology and Dynamics Laboratory	C308.1	Apply the various linear and angular measuring tools to ensure the quality of products	K3	3	2			2			2	2	2		2	3	2
2	III	V	ME3581	Metrology and Dynamics Laboratory	C308.2	Determine the angular measurements using sign bar, bevel protractor for quality inspection	K3	3	2	2		2			2	2	2		2	3	2
3	III	V	ME3581	Metrology and Dynamics Laboratory	C308.3	Estimate the gear and surface measurement parameters using advanced tools	K3	3	2	2		2			2	2	2		2	3	2
4	III	V	ME3581	Metrology and Dynamics Laboratory	C308.4	Determine lift of different governors and mass moment of inertia of mechanical elements	K3	3	2	2		2			2	2	2		2	3	2
5	III	V	ME3581	Metrology and Dynamics Laboratory	C308.5	Calculate the natural frequency, torsional frequency, damping co efficient of free vibrations.	K3	3	2			2			2	2	2		2	3	2
Course Code/Course No: ME3581 /C309						Regulation: 2021		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
6	III	V	ME3581	Heat and Mass Transfer	C309.1		K3	3	2	2	2	2			2	2		2	3	2	
7	III	V	ME3581	Heat and Mass Transfer	C309.2		K3	3	2	2	2	2			2	2		2	3	2	
8	III	V	ME3581	Heat and Mass Transfer	C309.3		K3	3	2	2	2	2			2	2		2	3	2	
9	III	V	ME3581	Heat and Mass Transfer	C309.4		K3	3	2	2	2	2			2	2		2	3	2	
10	III	V	ME3581	Heat and Mass Transfer	C309.5		K3	3	2	2	2	2			2	2		2	3	2	
Course Code/Course No: ME3581 /C310						Regulation: 2021		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
11	III	VI	CME338	Value Engineering	C310.1		K2	3	2	2					1	1		1	3	2	
12	III	VI	CME338	Value Engineering	C310.2		K2	3	2	2					1	1		1	3	2	
13	III	VI	CME338	Value Engineering	C310.3		K2	3	2	2					1	1		1	3	2	
14	III	VI	CME338	Value Engineering	C310.4		K2	3	2	2					1	1		1	3	2	
15	III	VI	CME338	Value Engineering	C310.5		K2	3	2	2					1	1		1	3	2	
Course Code/Course No: ME3581 /C311						Regulation: 2021		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
16	III	VI	CME340	CAD/CAM	C311.1		K2	3	2	2		3			2	2		2	3	2	
17	III	VI	CME340	CAD/CAM	C311.2		K2	3	2	2		3			2	2		2	3	2	
18	III	VI	CME340	CAD/CAM	C311.3		K2	3	2	2		3			2	2		2	3	2	
19	III	VI	CME340	CAD/CAM	C311.4		K2	3	2	2		3			2	2		2	3	2	
20	III	VI	CME340	CAD/CAM	C311.5		K2	3	2	2		3			2	2		2	3	2	
Course Code/Course No: ME3581 /C312						Regulation: 2021		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
21	III	VI	CME341	Design for X	C312.1		K2	3	2	2					2	2		2	3	2	
22	III	VI	CME341	Design for X	C312.2		K2	3	2	2					2	2		2	3	2	
23	III	VI	CME341	Design for X	C312.3		K2	3	2	2					2	2		2	3	2	
24	III	VI	CME341	Design for X	C312.4		K2	3	2	2					2	2		2	3	2	
25	III	VI	CME341	Design for X	C312.5		K3	3	2	2					2	2		2	3	2	
Course Code/Course No: ME3581 /C313						Regulation: 2021		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3	
26	III	VI	CRA332	Drone Technologies	C313.1		K3	3	2	2	2	2			2	2		2	3	2	
27	III	VI	CRA332	Drone Technologies	C313.2		K3	3	2	2	2	2			2	2		2	3	2	
28	III	VI	CRA332	Drone Technologies	C313.3		K3	3	2	2	2	2			2	2		2	3	2	
29	III	VI	CRA332	Drone Technologies	C313.4		K3	3	2	2	2	2			2	2		2	3	2	
30	III	VI	CRA332	Drone Technologies	C313.5		K3	3	2	2	2	2			2	2		2	3	2	
Course Code/Course No: ME3581 /C314						Regulation: 2021		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2

S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K2	K6	K3	
31	III	VI	OCS353	Data Science Fundamentals	C314.1		3	2	2	2	2			2	2		2	3	2	
32	III	VI	OCS353	Data Science Fundamentals	C314.2		3	2	2	2	2			2	2		2	3	2	
33	III	VI	OCS353	Data Science Fundamentals	C314.3		3			2	2			2	2		2	3	2	
34	III	VI	OCS353	Data Science Fundamentals	C314.4		3			2	2			2	2		2	3	2	
35	III	VI	OCS353	Data Science Fundamentals	C314.5		3			2	2			2	2		2	3	2	
Course Code/Course No: ME3581 /C315						Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
36	III	VI	MX3087	Political and Economic Thought for a Humane Society	C315.1	K3						3			2	2	3	2		
37	III	VI	MX3087	Political and Economic Thought for a Humane Society	C315.2	K3						3			2	2	3	2		
38	III	VI	MX3087	Political and Economic Thought for a Humane Society	C315.3	K3						3			2	2	3	2		
39	III	VI	MX3087	Political and Economic Thought for a Humane Society	C315.4	K3						3			2	2	3	2		
40	III	VI	MX3087	Political and Economic Thought for a Humane Society	C315.5	K3						3			2	2	3	2		
Course Code/Course No: ME3581 /C316						Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
41	III	VI	ME3681	CAD/CAM Laboratory	C316.1	K3	3	2	2	2	3			1	2	2		2	3	2
42	III	VI	ME3681	CAD/CAM Laboratory	C316.2	K3	3	2	2	2	3			1	2	2		2	3	2
43	III	VI	ME3681	CAD/CAM Laboratory	C316.3	K3	3	2	2	2	3			1	2	2		2	3	2
44	III	VI	ME3681	CAD/CAM Laboratory	C316.4	K3	3	2	2	2	3			1	2	2		2	3	2
45	III	VI	ME3681	CAD/CAM Laboratory	C316.5	K3	3	2	2	2	3			1	2	2		2	3	2
Course Code/Course No: ME3581 /C317						Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
46	III	VI	ME3682	Heat Transfer Laboratory	C317.1	K3	3	2	2	2	2			1	2	2		2	3	2
47	III	VI	ME3682	Heat Transfer Laboratory	C317.2	K3	3	2	2	2	2			1	2	2		2	3	2
48	III	VI	ME3682	Heat Transfer Laboratory	C317.3	K3	3	2	2	2	2			1	2	2		2	3	2
49	III	VI	ME3682	Heat Transfer Laboratory	C317.4	K3	3	2	2	2	2			1	2	2		2	3	2
50	III	VI	ME3682	Heat Transfer Laboratory	C317.5	K3	3	2	2	2	2			1	2	2		2	3	2
Course Code/Course No: ME3581 /C318						Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
51	IV	VII	ME3791	Mechatronics and IoT	C401.1	K2	3	2			3				2	2	3	2	3	2
52	IV	VII	ME3791	Mechatronics and IoT	C401.2	K2	3	2			3				2	2	3	2	3	2
53	IV	VII	ME3791	Mechatronics and IoT	C401.3	K2	3	2			3				2	2	3	2	3	2
54	IV	VII	ME3791	Mechatronics and IoT	C401.4	K2	3	2			3				2	2	3	2	3	2
55	IV	VII	ME3791	Mechatronics and IoT	C401.5	K2	3	2			3				2	2	3	2	3	2
Course Code/Course No: ME3581 /C319						Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
56	IV	VII	ME3792	Computer Integrated Manufacturing	C402.1	K2	3	2	2		3				2	2		2	3	2
57	IV	VII	ME3792	Computer Integrated Manufacturing	C402.2	K2	3	2	2		3				2	2		2	3	2
58	IV	VII	ME3792	Computer Integrated Manufacturing	C402.3	K2	3	2	2		3				2	2		2	3	2
59	IV	VII	ME3792	Computer Integrated Manufacturing	C402.4	K2	3	2	2		3				2	2		2	3	2
60	IV	VII	ME3792	Computer Integrated Manufacturing	C402.5	K2	3	2	2		3				2	2		2	3	2
Course Code/Course No: ME3581 /C320						Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
61	IV	VII	GE3791	Human Values and Ethics	C403.1	K3						2		3	2	2		2	2	2
62	IV	VII	GE3791	Human Values and Ethics	C403.2	K3						2		3	2	2		2	2	2
63	IV	VII	GE3791	Human Values and Ethics	C403.3	K3						2		3	2	2		2	2	2
64	IV	VII	GE3791	Human Values and Ethics	C403.4	K3						2		3	2	2		2	2	2
65	IV	VII	GE3791	Human Values and Ethics	C403.5	K3						2		3	2	2		2	2	2
Course Code/Course No: ME3581 /C321						Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
66	IV	VII	GE3792-2	Industrial Management	C404.1	K3	2	2				2		2	2	3	2	3	2	2
67	IV	VII	GE3792-2	Industrial Management	C404.2	K3	2	2				2		2	2	3	2	3	2	2
68	IV	VII	GE3792-2	Industrial Management	C404.3	K3	2	2				2		2	2	3	2	3	2	2
69	IV	VII	GE3792-2	Industrial Management	C404.4	K3	2	2				2		2	2	3	2	3	2	2
70	IV	VII	GE3792-2	Industrial Management	C404.5	K3	2	2				2		2	2	3	2	3	2	2
Course Code/Course No: ME3581 /C322						Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
71	IV	VII	OCS352	IoT Concepts and Applications	C405.1	K2	3	2			3				2	2	3	2	3	2
72	IV	VII	OCS352	IoT Concepts and Applications	C405.2	K2	3	2			3				2	2	3	2	3	2
73	IV	VII	OCS352	IoT Concepts and Applications	C405.3	K2	3	2			3				2	2	3	2	3	2
74	IV	VII	OCS352	IoT Concepts and Applications	C405.4	K2	3	2			3				2	2	3	2	3	2
75	IV	VII	OCS352	IoT Concepts and Applications	C405.5	K2	3	2			3				2	2	3	2	3	2
Course Code/Course No: ME3581 /C323						Regulation: 2021														
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
76	IV	VII	OHS351	English for Competitive Examinations	C406.1	K3								2	2	3		2		
77	IV	VII	OHS351	English for Competitive Examinations	C406.2	K2								2	2	3		2		
78	IV	VII	OHS351	English for Competitive Examinations	C406.3	K3								2	2	3		2		

79	IV	VII	OHS351	English for Competitive Examinations	C406.4													2	2	3		2			
80	IV	VII	OHS351	English for Competitive Examinations	C406.5														2	2	3		2		
Course Code/Course No: ME3581 /C324						Regulation: 2021																			
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2					
						K3	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K3	K2	K6	K3				
81	IV	VII	OHS352	Project Report Writing	C407.1		3	2	2	2	3			2	2	2				2	3	2			
82	IV	VII	OHS352	Project Report Writing	C407.2		3	2	2	2	3			2	2	2				2	3	2			
83	IV	VII	OHS352	Project Report Writing	C407.3		3	2	2	2	3			2	2	2				2	3	2			
84	IV	VII	OHS352	Project Report Writing	C407.4		3	2	2	2	3			2	2	2				2	3	2			
85	IV	VII	OHS352	Project Report Writing	C407.5		3	2	2	2	3			2	2	2				2	3	2			
Course Code/Course No: ME3581 /C325						Regulation: 2021																			
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2					
						K3	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3					
86	IV	VII	ME3781	Mechatronics and IoT Laboratory	C408.1		3	2	2	2	3			2	2	2			2	3	2				
87	IV	VII	ME3781	Mechatronics and IoT Laboratory	C408.2		3	2	2	2	3			2	2	2			2	3	2				
88	IV	VII	ME3781	Mechatronics and IoT Laboratory	C408.3		3	2	2	2	3			2	2	2			2	3	2				
89	IV	VII	ME3781	Mechatronics and IoT Laboratory	C408.4		3	2	2	2	3			2	2	2			2	3	2				
90	IV	VII	ME3781	Mechatronics and IoT Laboratory	C408.5		3	2	2	2	3			2	2	2			2	3	2				
Course Code/Course No: ME3581 /C326						Regulation: 2021																			
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2					
						K3	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3					
91	IV	VIII	ME3711	Summer Internship	C409.1		3	2	2	2	3			2	2	2			2	3	2				
92	IV	VIII	ME3711	Summer Internship	C409.2		3	2	2	2	3			2	2	2			2	3	2				
93	IV	VIII	ME3711	Summer Internship	C409.3		3	2	2	2	3			2	2	2			2	3	2				
94	IV	VIII	ME3711	Summer Internship	C409.4		3	2	2	2	3			2	2	2			2	3	2				
95	IV	VIII	ME3711	Summer Internship	C409.5		3	2	2	2	3			2	2	2			2	3	2				
Course Code/Course No: ME3581 /C327						Regulation: 2021																			
S.No	Year	Sem	Course Code	Course Name	CO No.	Knowledge level	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2					
						K3	K3	K4	K6	K4	K3	K3	K2	K3	K3	K3	K3	K2	K6	K3					
96	IV	VIII	ME3811	Project Work / Internship	C410.1		3	3	3	2	2	2	2	3	3	3	3	3	3	3	3				
97	IV	VIII	ME3811	Project Work / Internship	C410.2		3	3	3	2	2	2	2	3	3	3	3	3	3	3	3				
98	IV	VIII	ME3811	Project Work / Internship	C410.3		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3				
99	IV	VIII	ME3811	Project Work / Internship	C410.4		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3				
100	IV	VIII	ME3811	Project Work / Internship	C410.5		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3				

COURSE OUTCOMES (COs)						CO-PO & PSO MAPPING					
COURSE CODE : C101 Course Name: BA5101 - Economic Analysis for Business						BTL	PO1	PO2	PO3	PO4	PO5
S.Nr	Year	Sem	Sub Code	Sub Name	Course Outcomes						
1	I	I	BA5101	Economic Analysis for Business	C101.1	K2	3	2	1	2	2
2	I	I	BA5101	Economic Analysis for Business	C101.2	K2	1	2	1	2	1
3	I	I	BA5101	Economic Analysis for Business	C101.3	K2	1	2	1	2	3
4	I	I	BA5101	Economic Analysis for Business	C101.4	K3	3	1	1	2	1
5	I	I	BA5101	Economic Analysis for Business	C101.5	K3	2	2	1	1	2
COURSE CODE : C102 Course Name: BA5102 - PRINCIPLES OF MANAGEMENT						BTL	PO1	PO2	PO3	PO4	PO5
1	I	I	BA5102	PRINCIPLES OF MANAGEMENT	C102.1	K2	3	2	2	2	3
2	I	I	BA5102	PRINCIPLES OF MANAGEMENT	C102.2	K2	2	2	2	1	2
3	I	I	BA5102	PRINCIPLES OF MANAGEMENT	C102.3	K2	2	2	2	1	2
4	I	I	BA5102	PRINCIPLES OF MANAGEMENT	C102.4	K2	3	1	2	1	2
5	I	I	BA5102	PRINCIPLES OF MANAGEMENT	C102.5	K2	2	2	1	1	2
COURSE CODE : C103 Course Name: BA5103 - ACCOUNTING FOR MANAGEMENT						BTL	PO1	PO2	PO3	PO4	PO5
1	I	I	BA5103	ACCOUNTING FOR MANAGEMENT	C103.1	K2	3	3	1	2	3
2	I	I	BA5103	ACCOUNTING FOR MANAGEMENT	C103.2	K2	2	3	1	1	3
3	I	I	BA5103	ACCOUNTING FOR MANAGEMENT	C103.3	K3	3	3	1	1	2
4	I	I	BA5103	ACCOUNTING FOR MANAGEMENT	C103.4	K5	3	3	1	2	1
5	I	I	BA5103	ACCOUNTING FOR MANAGEMENT	C103.5	K2	2	2	1	1	2
COURSE CODE : C104 Course Name: BA5104 - LEGAL ASPECTS OF BUSINESS						BTL	PO1	PO2	PO3	PO4	PO5
1	I	I	BA5104	LEGAL ASPECTS OF BUSINESS	C104.1	K2	2	1	1	3	2
2	I	I	BA5104	LEGAL ASPECTS OF BUSINESS	C104.2	K2	1	1	1	2	1
3	I	I	BA5104	LEGAL ASPECTS OF BUSINESS	C104.3	K6	2	1	1	3	1
4	I	I	BA5104	LEGAL ASPECTS OF BUSINESS	C104.4	K2	1	2	1	1	3
5	I	I	BA5104	LEGAL ASPECTS OF BUSINESS	C104.5	K2	2	1	1	1	2
COURSE CODE : C105 Course Name: BA5105 ORGANIZATIONAL BEHAVIOUR						BTL	PO1	PO2	PO3	PO4	PO5
1	I	I	BA5105	ORGANIZATIONAL BEHAVIOUR	C105.1	K2	3	2	2	2	2
2	I	I	BA5105	ORGANIZATIONAL BEHAVIOUR	C105.2	K2	3	3	2	1	3
3	I	I	BA5105	ORGANIZATIONAL BEHAVIOUR	C105.3	K2	2	2	1	1	2
4	I	I	BA5105	ORGANIZATIONAL BEHAVIOUR	C105.4	K2	3	2	3	1	2
5	I	I	BA5105	ORGANIZATIONAL BEHAVIOUR	C105.5	K2	2	2	2	2	2
COURSE CODE : C 106 Course Name: BA5106 STATISTICS FOR MANAGEMENT						BTL	PO1	PO2	PO3	PO4	PO5
1	I	I	BA5106	STATISTICS FOR MANAGEMENT	C106.1	K3	3	3	1	1	3
2	I	I	BA5106	STATISTICS FOR MANAGEMENT	C106.2	K2	3	3	1	1	3
3	I	I	BA5106	STATISTICS FOR MANAGEMENT	C106.3	K2	3	3	1	1	2
4	I	I	BA5106	STATISTICS FOR MANAGEMENT	C106.4	K3	3	3	1	1	1
5	I	I	BA5106	STATISTICS FOR MANAGEMENT	C106.5	K4	3	3	1	2	2
Course Code C 107 Course Name: BA5107 TOTAL QUALITY MANAGEMENT						BTL	PO1	PO2	PO3	PO4	PO5
1	I	I	BA5107	TOTAL QUALITY MANAGEMENT	C107.1	K2	2	2	1	1	2
2	I	I	BA5107	TOTAL QUALITY MANAGEMENT	C107.2	K2	3	3	1	1	2
3	I	I	BA5107	TOTAL QUALITY MANAGEMENT	C107.3	K3	3	3	1	2	2
4	I	I	BA5107	TOTAL QUALITY MANAGEMENT	C107.4	K2	2	3	1	1	2
5	I	I	BA5107	TOTAL QUALITY MANAGEMENT	C107.5	K4	2	3	1	1	2
Course Code C 108 Course Name: BA5111 SPOKEN AND WRITTEN COMMUNICATION						BTL	PO1	PO2	PO3	PO4	PO5
1	I	I	BA5111	SPOKEN AND WRITTEN COMMUNICATION	C108.1	K2	1	3	2	1	3
2	I	I	BA5111	SPOKEN AND WRITTEN COMMUNICATION	C108.2	K3	2	3	2	1	2
3	I	I	BA5111	SPOKEN AND WRITTEN COMMUNICATION	C108.3	K3	2	2	1	1	3
4	I	I	BA5111	SPOKEN AND WRITTEN COMMUNICATION	C108.4	K3	2	3	1	1	1
5	I	I	BA5111	SPOKEN AND WRITTEN COMMUNICATION	C108.5	K3	2	2	1	1	3
Course Code C201 Course Name: BA5201 APPLIED OPERATIONS RESEARCH						BTL	PO1	PO2	PO3	PO4	PO5
1	I	II	BA5201	APPLIED OPERATIONS RESEARCH	C201.1	K3	3	3	1	2	2
2	I	II	BA5201	APPLIED OPERATIONS RESEARCH	C201.2	K3	3	3	1	2	2
3	I	II	BA5201	APPLIED OPERATIONS RESEARCH	C201.3	K3	3	3	1	1	1
4	I	II	BA5201	APPLIED OPERATIONS RESEARCH	C201.4	K4	2	3	1	1	3
5	I	II	BA5201	APPLIED OPERATIONS RESEARCH	C201.5	K3	2	3	1	1	1
Course Code C202 Course Name: BA5202 BUSINESS RESEARCH METHODS						BTL	PO1	PO2	PO3	PO4	PO5
1	I	II	BA5202	BUSINESS RESEARCH METHODS	C202.1	K2	3	3	1	1	2
2	I	II	BA5202	BUSINESS RESEARCH METHODS	C202.2	K2	2	3	1	1	2
3	I	II	BA5202	BUSINESS RESEARCH METHODS	C202.3	K2	2	2	1	1	2

4	I	II	BA5202	BUSINESS RESEARCH METHODS	C202.4	Apply the appropriate analytical tools for analysis	K3	2	2	1	1	1	1
5	I	II	BA5202	BUSINESS RESEARCH METHODS	C202.5	Prepare the research report adopting the right tools for enhancing the quality of presentation	K3	2	3	1	1	1	3

Course Code: C203 Course Name: BA5203 FINANCIAL MANAGEMENT

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	I	II	BA5203	FINANCIAL MANAGEMENT	C203.1	Discuss the principles and techniques of financial management to make effective financial decisions	K2	2	3	1	2	2
2	I	II	BA5203	FINANCIAL MANAGEMENT	C203.2	Explain the Investment Decision and to enrich their knowledge on Risk, Uncertainty and Time value of Money.	K2	2	3	1	1	2
3	I	II	BA5203	FINANCIAL MANAGEMENT	C203.3	Evaluate the value of the firm through Dividend decisions	K4	2	3	2	1	2
4	I	II	BA5203	FINANCIAL MANAGEMENT	C203.4	Calculate the requirements of working capital to create policies for financing current assets	K3	2	2	2	1	2
5	I	II	BA5203	FINANCIAL MANAGEMENT	C203.5	Determine the short-term and long-term sources of finance	K3	2	2	1	1	2

Course Code: C204 Course Name: BA5204 HUMAN RESOURCE MANAGEMENT

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	I	II	BA5204	HUMAN RESOURCE MANAGEMENT	C204.1	Discuss the skills needed for success as a human resources professional	K2	3	1	2	2	2
2	I	II	BA5204	HUMAN RESOURCE MANAGEMENT	C204.2	Explain changing environment and its implication for managing the Human Resources.	K5	3	1	2	2	2
3	I	II	BA5204	HUMAN RESOURCE MANAGEMENT	C204.3	Describe the HRM practices in training and development methods	K5	2	1	2	1	2
4	I	II	BA5204	HUMAN RESOURCE MANAGEMENT	C204.4	Illustrate employee engagement techniques.	K3	3	1	2	1	2
5	I	II	BA5204	HUMAN RESOURCE MANAGEMENT	C204.5	Explain the various performance appraisal and training Methods	K2	2	2	1	1	2

Course Code: C205 Course Name: BA5205 INFORMATION MANAGEMENT

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	I	II	BA5205	INFORMATION MANAGEMENT	C205.1	Discuss the concept and methodologies of Information Management	K2	3	3	1	1	2
2	I	II	BA5205	INFORMATION MANAGEMENT	C205.2	Apply information system tools in management which adds more value for the organization	K3	2	3	1	1	1
3	I	II	BA5205	INFORMATION MANAGEMENT	C205.3	Describe the fundamental concepts of database and data warehousing	K2	3	3	1	2	2
4	I	II	BA5205	INFORMATION MANAGEMENT	C205.4	Explain the security system and control techniques of Information Management	K2	2	3	1	1	1
5	I	II	BA5205	INFORMATION MANAGEMENT	C205.5	Discuss the recent trends of Information System in Business	K2	1	2	1	2	3

Course Code: C206 Course Name: BA5206 OPERATIONS MANAGEMENT

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	I	II	BA5206	OPERATIONS MANAGEMENT	C206.1	Apply the concept of operation management to make business decisions	K3	2	3	1	2	2
2	I	II	BA5206	OPERATIONS MANAGEMENT	C206.2	Describe relevant concepts and tools to optimize the process/production system.	K2	2	3	1	1	2
3	I	II	BA5206	OPERATIONS MANAGEMENT	C206.3	Explain the product design and different work systems	K2	2	2	1	1	2
4	I	II	BA5206	OPERATIONS MANAGEMENT	C206.4	Discuss the cost and control techniques in materials management	K2	3	3	1	1	2
5	I	II	BA5206	OPERATIONS MANAGEMENT	C206.5	Illustrate the various scheduling techniques in project management	K3	3	2	1	1	1

Course Code: C207 Course Name: BA5207 MARKETING MANAGEMENT

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	I	II	BA5207	MARKETING MANAGEMENT	C207.1	Discuss the principles and concepts in marketing management	K2	2	2	1	3	2
2	I	II	BA5207	MARKETING MANAGEMENT	C207.2	Describe the dynamic of the global business environment from a competitive and economic perspective.	K5	2	2	1	2	2
3	I	II	BA5207	MARKETING MANAGEMENT	C207.3	Develop comprehensive B2B and B2C marketing plans based on sound customer and competitive research, and that reflect an organization's domestic and international strategic vision	K3	2	3	1	2	2
4	I	II	BA5207	MARKETING MANAGEMENT	C207.4	Examine the role of consumers as purchasers and users of goods and services using various theories and models of consumer behaviour.	K3	3	2	1	1	1
5	I	II	BA5207	MARKETING MANAGEMENT	C207.5	Develop a professional sales solution for a product or service to a prospective business-buying customer using appropriate sales methodologies	K3	3	2	1	2	3

Course Code: C 208 Course Name: BA5211 DATAANALYSIS & BUSINESS MODELLING LABORATORY

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	I	II	BA5211	DATA ANALYSIS & BUSINESS MODELLING LABORATORY	C208.1	Apply data analysis techniques for conducting hypothesis testing.	K3	3	3	1	1	3
2	I	II	BA5211	DATA ANALYSIS & BUSINESS MODELLING LABORATORY	C208.2	Determine the relationship between variables using data analytical tools	K3	2	3	1	1	2
3	I	II	BA5211	DATA ANALYSIS & BUSINESS MODELLING LABORATORY	C208.3	Determine the business elements in real time business world using analytical tools.	K3	2	3	1	1	2
4	I	II	BA5212	DATA ANALYSIS & BUSINESS MODELLING LABORATORY	C208.4	Predict Risk and sensitivity analysis and portfolio selection based on business data.	K3	3	3	1	1	2
5	I	II	BA5213	DATA ANALYSIS & BUSINESS MODELLING LABORATORY	C208.5	Illustrate the networking, inventory models and queuing theory using data analytical tools.	K3	2	2	1	1	3

Course Code: C 301 Course Name: BA 5301 - International Business Management

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 5301	International Business Management	C301.1	Describe the global business environment	K2	2	2	1	3	2
2	II	III	BA 5301	International Business Management	C301.2	Explain about global trade investments and its theories	K2	2	1	1	3	2
3	II	III	BA 5301	International Business Management	C301.3	Illustrate the international portfolio management	K3	2	1	1	2	2
4	II	III	BA 5301	International Business Management	C301.4	Discuss the functional domain practices in global business	K2	2	1	1	2	2
5	II	III	BA 5301	International Business Management	C301.5	Describe conflicts situations and ethical issues in global business.	K2	2	2	1	1	2

Course Code: C 302 Course Name: BA 5302 - Strategic Management

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 5302	Strategic Management	C302.1	Distinguish the strategic management process and social responsibility of business	K2	3	2	2	2	3
2	II	III	BA 5302	Strategic Management	C302.2	Illustrate the need for competitive advantage for organization	K2	3	2	2	2	2
3	II	III	BA 5302	Strategic Management	C302.3	Describe the various insights of corporate and business strategies	K2	3	3	2	2	2
4	II	III	BA 5302	Strategic Management	C302.4	Generalize the various control systems required for implementation of organizational strategy	K2	3	3	1	2	3
5	II	III	BA 5302	Strategic Management	C302.5	Establish the cognitive knowledge about various strategic issues and new business development models	K3	2	2	2	3	3

Course Code: C 303 Course Name: BA 5002 - Consumer Behaviour

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 5002	Consumer Behaviour	C303.1	Discuss Consumer behaviour concept and applications	K2	2	3	1	2	2
2	II	III	BA 5002	Consumer Behaviour	C303.2	Explain the various models of industrial and individual consumer behaviour	K2	1	2	1	2	2
3	II	III	BA 5002	Consumer Behaviour	C303.3	Illustrate the factors that influence internally in consumer behaviour	K3	2	2	1	1	2
4	II	III	BA 5002	Consumer Behaviour	C303.4	Describe the external influencing factors of consumer behaviour	K2	2	3	1	1	2
5	II	III	BA 5002	Consumer Behaviour	C303.5	Discuss the essence of consumer purchase decisions	K2	2	2	1	1	2

Course Code: C304 Course Name: BA 5004 - Integrated Marketing Communication

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 5004	Integrated Marketing Communication	C304.1	Describe the advertisement concept and its implications	K2	2	3	1	2	3
2	II	III	BA 5004	Integrated Marketing Communication	C304.2	Explain the strategy related to media and types of advertisements.	K5	2	2	1	2	3
3	II	III	BA 5004	Integrated Marketing Communication	C304.3	Analyze the importance of sales promotion and its design	K4	3	3	1	1	2
4	II	III	BA 5004	Integrated Marketing Communication	C304.4	Discuss the process of personal selling and report preparation	K2	2	2	2	2	2
5	II	III	BA 5004	Integrated Marketing Communication	C304.5	Summarize the concept of public relations and its effectiveness in consumer decisions.	K5	2	3	1	1	2

Course Code C 305 Course Name: BA 5005 - Retail Marketing											
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5
1	II	III	BA 5005	Retail Marketing	C305.1 Discuss the insights of retail operation	K2	2	2	1	3	2
2	II	III	BA 5005	Retail Marketing	C305.2 Develop effective methods and strategies required for retail management	K3	1	1	1	2	2
3	II	III	BA 5005	Retail Marketing	C305.3 Explain concept of utilizing resources and techniques used in retail management	K2	2	1	1	1	2
4	II	III	BA 5005	Retail Marketing	C305.4 Describe the store location, merchandising, products and pricing	K2	1	1	1	1	2
5	II	III	BA 5005	Retail Marketing	C305.5 Establish knowledge about shopping behaviour	K3	2	2	1	1	2
Course Code C 306 Course Name: BA 5008 - Banking Financial Services Management											
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5
1	II	III	BA 5008	Banking Financial Services Management	C306.1 Discuss the functions of Indian Banking system	K2	3	2	1	3	2
2	II	III	BA 5008	Banking Financial Services Management	C306.2 Explain the sources of funds and loans types proposed by bank	K2	2	2	1	2	1
3	II	III	BA 5008	Banking Financial Services Management	C306.3 Describe the risk management process in banking	K2	2	3	1	2	1
4	II	III	BA 5008	Banking Financial Services Management	C306.4 Examining the performance of banks	K3	2	1	2	2	3
5	II	III	BA 5008	Banking Financial Services Management	C306.5 Discuss the E - banking services and RBI initiatives	K2	2	2	1	3	2
Course Code C 307 Course Name: BA 5011 - Merchant Banking and Financial Services											
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5
1	II	III	BA 5011	Merchant Banking and Financial Services	C307.1 Discuss the Indian financial and banking system	K2	2	2	1	2	2
2	II	III	BA 5011	Merchant Banking and Financial Services	C307.2 Explain the Pre and Post Issue activities in financial system	K2	2	2	2	2	1
3	II	III	BA 5011	Merchant Banking and Financial Services	C307.3 Describe the different Fee Based Financial Services	K2	2	2	1	1	3
4	II	III	BA 5011	Merchant Banking and Financial Services	C307.4 Illustrate the Leasing, Hire Purchasing and its Tax Implications	K3	2	2	1	2	1
5	II	III	BA 5011	Merchant Banking and Financial Services	C307.5 Summarize the Fund Based Financial Services	K5	1	2	1	2	2
Course Code C 308 Course Name: BA 5012 - Security Analysis and Portfolio Management											
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5
1	II	III	BA 5012	Security Analysis and Portfolio Management	C308.1 Discuss the concept of investment and types of investments	K2	2	3	1	2	2
2	II	III	BA 5012	Security Analysis and Portfolio Management	C308.2 Explain the working system of securities market and Stock exchanges	K2	2	3	1	1	2
3	II	III	BA 5012	Security Analysis and Portfolio Management	C308.3 Describe the fundamentals forecasting techniques and analysis	K2	2	3	1	2	1
4	II	III	BA 5012	Security Analysis and Portfolio Management	C308.4 Illustrate the Technical analysis of securities and market indicators	K3	2	3	1	2	1
5	II	III	BA 5012	Security Analysis and Portfolio Management	C308.5 Classify the various methods of portfolio management	K4	1	2	2	1	2
Course Code C 309 Course Name: BA 5015 - Industrial Relations and Labour Welfare											
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5
1	II	III	BA 5015	Industrial Relations and Labour Welfare	C309.1 Discuss the industrial relation concept and growth of trade unions	K2	3	2	2	1	2
2	II	III	BA 5015	Industrial Relations and Labour Welfare	C309.2 Examine how to resolve industrial relations and human relations problems	K3	3	3	1	2	2
3	II	III	BA 5015	Industrial Relations and Labour Welfare	C309.3 Explain the different statutory labour welfare measures	K2	2	2	1	2	2
4	II	III	BA 5015	Industrial Relations and Labour Welfare	C309.4 Describe about prevention of accidents and hazard identification	K2	2	2	1	1	2
5	II	III	BA 5015	Industrial Relations and Labour Welfare	C309.5 Illustrate the welfare provisions available for different labour categories	K3	2	2	1	1	1
Course Code C310 Course Name: BA 5017 - Managerial behaviour and Effectiveness											
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5
1	II	III	BA 5017	Managerial behaviour and Effectiveness	C310.1 Explain the various dimensions of managerial jobs	K2	2	3	3	1	2
2	II	III	BA 5017	Managerial behaviour and Effectiveness	C310.2 Discuss appropriate style of managerial behaviour and approach to manage people	K2	2	2	3	1	2
3	II	III	BA 5017	Managerial behaviour and Effectiveness	C310.3 Describe the practices followed in managerial effectiveness	K2	3	2	3	1	1
4	II	III	BA 5017	Managerial behaviour and Effectiveness	C310.4 Summarize the different managerial styles in effectiveness	K2	3	2	3	1	2
5	II	III	BA 5017	Managerial behaviour and Effectiveness	C310.5 Discuss the winning attitude, competitive spirit and creativity for success	K2	3	3	3	1	2
Course Code C 311 Course Name: BA 5018 - Organizational Theory, Design and Development											
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5
1	II	III	BA 5018	Organizational Theory, Design and Development	C311.1 Discuss the organization environment and its related different approaches	K2	2	2	2	1	2
2	II	III	BA 5018	Organizational Theory, Design and Development	C311.2 Explain the design in which an organization functions and the challenges involved	K2	2	2	1	2	2
3	II	III	BA 5018	Organizational Theory, Design and Development	C311.3 Illustrate the different types of culture in organization and related strategies	K3	2	2	2	1	2
4	II	III	BA 5018	Organizational Theory, Design and Development	C311.4 Describe the types and forms of organization changes	K2	2	3	2	1	2
5	II	III	BA 5018	Organizational Theory, Design and Development	C311.5 Discuss the Organizational life cycle, evolution and sustenance	K2					
Course Code C312 Course Name: BA 5025 - Logistics Management											
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5
1	II	III	BA 5025	Logistics Management	C312.1 Discuss the role of logistics in global business	K2	2	2	1	3	2
2	II	III	BA 5025	Logistics Management	C312.2 Explain the distribution channels and select the best service provider	K2	2	2	1	2	2
3	II	III	BA 5025	Logistics Management	C312.3 Describe the transportation system and packaging	K2	3	2	1	1	2
4	II	III	BA 5025	Logistics Management	C312.4 Identify the distribution channel with optimum time and cost	K2	2	2	1	1	1
5	II	III	BA 5025	Logistics Management	C312.5 Illustrate the current trends in logistics management	K3	2	2	1	2	2
Course Code C313 Course Name: BA 5028 - Project Management											
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5
1	II	III	BA 5028	Project Management	C313.1 Explain the project portfolio process	K2	2	3	3	1	2
2	II	III	BA 5028	Project Management	C313.2 Examine the project planning and budgeting	K3	2	3	3	2	2
3	II	III	BA 5028	Project Management	C313.3 Discuss the project management principles to optimize resource utilization and time optimisation	K2	3	2	2	1	2
4	II	III	BA 5028	Project Management	C313.4 Identify the key project quality concern areas	K4	2	2	1	1	2
5	II	III	BA 5028	Project Management	C313.5 Analyze the types of project organization & conflict management	K4	3	3	1	2	2
Course Code C314 Course Name: BA 5030 - Supply Chain Management											
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5
1	II	III	BA 5030	Supply Chain Management	C314.1 Examine the competitive supply chain using strategies, models and techniques	K3	2	2	2	2	2
2	II	III	BA 5030	Supply Chain Management	C314.2 Discuss the world class supply base management	K2	1	2	1	2	2
3	II	III	BA 5030	Supply Chain Management	C314.3 Discover the models for facility location and capacity planning	K3	2	2	1	2	2
4	II	III	BA 5030	Supply Chain Management	C314.4 Explain the impact of supply chain on inventory	K3	2	2	2	1	2
5	II	III	BA 5030	Supply Chain Management	C314.5 Describe the recent trends and application of IT in supply chain management	K2	2	2	1	1	2
COURSE CODE: C 315 Course Name: BA 5311 - Summer Internship											
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5
1	II	III	BA 5311	Creativity and Innovation	C315.1 Ability to test the theoretical learning in practical situations	K3	3	2	1	1	2
2	II	III	BA 5311	Creativity and Innovation	C315.2 Ability to apply various soft skills during performance or the task assigned in the organization	K3	2	2	2	1	2
3	II	III	BA 5311	Creativity and Innovation	C315.3 Analyze the functioning of organization and recommend changes for improvement	K4	3	3	2	1	2
4	II	III	BA 5311	Creativity and Innovation	C315.4 Able to assess the SWOT of the organization	K2	3	3	2	1	3
5	II	III	BA 5311	Creativity and Innovation	C315.5 Develop skills in preparing detailed report	K3	1	1	1	1	3

COURSE CODE: C 401 Course Name: BA 5411 - Project Work							Course Outcomes					
S.No	Year	Sem	Sub Code	Sub Name		BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 5411	Project Work	C401.1	Identify the project title, scope of work in the specialized domain	K2	3	1	2	2	2
2	II	III	BA 5411	Project Work	C401.2	Compare the literature in the selected project work	K4	3	1	2	2	2
3	II	III	BA 5411	Project Work	C401.3	Prepare suitable questionnaire to collect data for the problem analysis	K3	3	2	3	3	2
4	II	III	BA 5411	Project Work	C401.4	Choose an appropriate business analytical tool to analyze the problem	K4	3	3	2	1	2
5	II	III	BA 5411	Project Work	C401.5	Inter the result and write the report	K5	3	3	3	2	2

COURSE OUTCOMES (CO)						CO-PO & PSO MAPPING						
S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
COURSE CODE: C101 Course Name: BA 4101 - Statistics for Management												
1	I	I	BA 4101	Statistics for Management	C101.1	Apply probability theory for objective solutions in business decision making	K3	3	3	1	1	2
2	I	I	BA 4101	Statistics for Management	C101.2	Solve business problems using sampling distribution and estimation	K2	3	3	1	1	3
3	I	I	BA 4101	Statistics for Management	C101.3	Apply statistical techniques to data sets, and correctly interpret the results.	K3	3	3	1	1	2
4	I	I	BA 4101	Statistics for Management	C101.4	Apply non-parametric test for drawing meaningful conclusions	K3	3	3	1	1	1
5	I	I	BA 4101	Statistics for Management	C101.5	Apply the statistical techniques in Real time business problems	K3	3	3	1	2	2
COURSE CODE: C102 Course Name: BA 4102 - Management concepts and Organizational Behavior												
1	I	I	BA 4102	Management concepts and Organizational Behavior	C102.1	Discuss various management concepts and skills required in the business world	K2	3	2	2	1	2
2	I	I	BA 4102	Management concepts and Organizational Behavior	C102.2	Explain the various functions of management in & real time management context	K2	3	3	1	1	3
3	I	I	BA 4102	Management concepts and Organizational Behavior	C102.3	Describe the complexities associated with management of individual behavior in the organizations	K2	3	1	2	1	2
4	I	I	BA 4102	Management concepts and Organizational Behavior	C102.4	Estimate the skill set to manage the group behaviour in Organizations	K2	2	1	3	1	2
5	I	I	BA 4102	Management concepts and Organizational Behavior	C102.5	Discuss the current trends in managing organizational behaviour	K2	1	1	1	2	2
COURSE CODE: C103 Course Name: BA 4103 - Managerial Economics												
1	I	I	BA 4103	Managerial Economics	C103.1	Describe the concepts of scarcity and efficiency	K2	3	2	1	2	2
2	I	I	BA 4103	Managerial Economics	C103.2	Explain the principles of microeconomics relevant to managing an organization	K2	1	2	1	2	1
3	I	I	BA 4103	Managerial Economics	C103.3	Discuss the Firm's equilibrium in Dynamic market conditions	K2	1	2	1	2	3
4	I	I	BA 4103	Managerial Economics	C103.4	Apply the concepts of Macroeconomic environment in business	K3	3	1	1	2	1
5	I	I	BA 4103	Managerial Economics	C103.5	Articulate various economic forces in the society	K3	2	2	1	1	2
COURSE CODE: C104 Course Name: BA 4104 - Accounting for Decision Making												
1	I	I	BA 4104	Accounting for Decision Making	C104.1	Explain the financial accounting concepts	K2	2	3	1	2	2
2	I	I	BA 4104	Accounting for Decision Making	C104.2	Prepare the financial statement with analysis for real time Balance sheet	K3	2	3	1	1	2
3	I	I	BA 4104	Accounting for Decision Making	C104.3	Apply the management and cost accounting techniques in Business	K3	1	3	1	1	2
4	I	I	BA 4104	Accounting for Decision Making	C104.4	Apply the management and cost accounting techniques for decision making	K3	1	3	2	1	1
5	I	I	BA 4104	Accounting for Decision Making	C104.5	Solve Problems on budgeting control using the accountability standards of practices in India	K3	2	3	1	1	3
COURSE CODE: C105 Course Name: BA 4105 - Legal Aspects of Business												
1	I	I	BA 4105	Legal Aspects of Business	C105.1	Discuss the fundamental legal principles in developing various contracts and commercial laws	K2	2	1	1	3	2
2	I	I	BA 4105	Legal Aspects of Business	C105.2	Describe the common forms of business associations and elements of Corporate Governance	K2	1	1	1	1	2
3	I	I	BA 4105	Legal Aspects of Business	C105.3	Develop insights regarding the laws related to industrial environment	K3	2	1	1	3	1
4	I	I	BA 4105	Legal Aspects of Business	C105.4	Explain the fundamentals of corporate tax and GST	K2	1	2	1	2	1
5	I	I	BA 4105	Legal Aspects of Business	C105.5	Explain the role of consumer rights and cyber laws in the modern business environment	K2	1	1	1	2	1
COURSE CODE: C106 Course Name: BA 4106 - Information Management												
1	I	I	BA 4106	Information Management	C106.1	Explain the basics of data and information systems	K2	1	2	1	1	2
2	I	I	BA 4106	Information Management	C106.2	Describe the system development methodologies	K2	1	2	1	1	2
3	I	I	BA 4106	Information Management	C106.3	Discuss the database management system and its types	K2	2	2	1	2	2
4	I	I	BA 4106	Information Management	C106.4	Explain the various technologies in information system and its security	K2	2	2	1	1	1
5	I	I	BA 4106	Information Management	C106.5	Apply the knowledge of information systems in business	K3	2	1	1	1	3
COURSE CODE: C107 Course Name: BA 4032 - Entrepreneurship Development												
1	I	I	BA 4032	Entrepreneurship Development	C107.1	Apply the entrepreneurial competency for effective business management	K3	2	1	3	2	2
2	I	I	BA 4032	Entrepreneurship Development	C107.2	Explain the entrepreneurial environment in the businesses	K3	2	3	1	2	2
3	I	I	BA 4032	Entrepreneurship Development	C107.3	Prepare the Business plan models	K3	2	1	2	1	2
4	I	I	BA 4032	Entrepreneurship Development	C107.4	Explain the techniques to establish the Business Ventures	K2	1	2	1	2	2
5	I	I	BA 4032	Entrepreneurship Development	C107.5	Describe the effective business towards growth and development	K2	2	2	1	1	2
COURSE CODE: C108 Course Name: BA 4111 - Indian Ethos (Seminar)												
1	I	I	BA 4111	Indian Ethos	C108.1	Discuss the basic concepts of Indian business	K2	2	3	1	2	2
2	I	I	BA 4111	Indian Ethos	C108.2	Prepare the solution for ethical business issues	K3	1	1	2	1	2
3	I	I	BA 4111	Indian Ethos	C108.3	Explain the efficient business value system	K2	1	1	2	2	2
4	I	I	BA 4111	Indian Ethos	C108.4	Associate business towards societal ethics	K2	1	1	1	2	2
5	I	I	BA 4111	Indian Ethos	C108.5	Describe the business responsibilities	K2	1	1	1	1	2
COURSE CODE: C109 Course Name: BA 4112 - Business Communication (Laboratory)												
1	I	I	BA 4112	Business Communication	C109.1	Interpret the good managerial communication skills	K3	1	2	3	1	2
2	I	I	BA 4112	Business Communication	C109.2	Articulate the different forms of written communication in business	K2	1	1	2	1	3
3	I	I	BA 4112	Business Communication	C109.3	Develop good presentation skills	K3	1	2	1	1	1
4	I	I	BA 4112	Business Communication	C109.4	Develop the interview skills	K3	1	1	1	1	2
5	I	I	BA 4112	Business Communication	C109.5	Prepare the business reports	K3	1	2	1	1	2
COURSE CODE: C 201 Course Name: BA 4201 - Quantitative Techniques for Decision Making												
1	I	II	BA 4201	Quantitative Techniques for Decision Making	C201.1	Apply the Linear programming in product mix decisions	K3	3	3	1	2	2
2	I	II	BA 4201	Quantitative Techniques for Decision Making	C201.2	Prepare the Transportation and assignment in logistics and job allocation scenarios	K3	3	3	1	2	2
3	I	II	BA 4201	Quantitative Techniques for Decision Making	C201.3	Apply Game theory and heuristics of decision making in real time decisions	K3	3	3	1	1	1
4	I	II	BA 4201	Quantitative Techniques for Decision Making	C201.4	Solve problems in inventory management and replacement models in manufacturing context	K3	2	3	1	1	3
5	I	II	BA 4201	Quantitative Techniques for Decision Making	C201.5	Apply the concept of Queuing and simulation in real time scenario optimisation	K3	2	3	1	1	2
COURSE CODE: C 202 Course Name: BA 4202 - Financial Management												
1	I	II	BA 4202	Financial Management	C202.1	Describe the concepts of financial decision of an organization	K2	2	3	1	2	2
2	I	II	BA 4202	Financial Management	C202.2	Apply budgeting concepts to make investment decision	K2	3	3	1	1	2
3	I	II	BA 4202	Financial Management	C202.3	Compute the financial leverage and dividend decisions	K3	2	3	2	1	2
4	I	II	BA 4202	Financial Management	C202.4	Calculate the working capital and inventory	K3	2	2	2	1	2
5	I	II	BA 4202	Financial Management	C202.5	Determine the short-term and long-term sources of finance	K2	2	2	1	1	1
COURSE CODE: C 203 Course Name: BA 4203 - Human Resource Management												
1	I	II	BA 4203	Human Resource Management	C203.1	Discuss the various aspects of HRM	K2	3	1	2	2	2
2	I	II	BA 4203	Human Resource Management	C203.2	Describe human resource planning and recruitment	K2	3	3	1	1	2
3	I	II	BA 4203	Human Resource Management	C203.3	Explain the various training and development methods	K2	2	1	2	1	2
4	I	II	BA 4203	Human Resource Management	C203.4	Illustrate employee engagement techniques	K2	3	1	2	1	2
5	I	II	BA 4203	Human Resource Management	C203.5	Explain various performance evaluation and control methods	K2	2	2	1	1	1
COURSE CODE: C 204 Course Name: BA 4204 - Operations Management												
1	I	II	BA 4204	Operations Management	C204.1	Apply the concept of operation management to make business decisions	K3	2	2	1	2	2
2	I	II	BA 4204	Operations Management	C204.2	Explain about capacity planning, strategic sourcing and procurement in organizations	K2	3	2	2	2	2
3	I	II	BA 4204	Operations Management	C204.3	Describe the product development and design process	K2	3	3	2	1	1
4	I	II	BA 4204	Operations Management	C204.4	Estimate the future demand and describe its constraints	K2	2	3	2	2	2
5	I	II	BA 4204	Operations Management	C204.5	Discuss the Quality management tools and practices	K2	3	2	2	1	2
COURSE CODE: C 205 Course Name: BA 4205 - Business Research Methods												
1	I	II	BA 4205	Business Research Methods	C205.1	Explain the process of scientific research approaches	K2	3	3	1	1	2

2	I	II	BA 4206	Business Research Methods	C206.2	Develop the research proposals	K3	2	3	1	1	3
3	I	II	BA 4206	Business Research Methods	C206.3	Solve organizational problems based on data collection	K3	2	2	1	1	2
4	I	II	BA 4206	Business Research Methods	C206.4	Apply data analysis tools to make business decisions	K3	2	2	1	1	1
5	I	II	BA 4206	Business Research Methods	C206.5	Prepare the research reports	K3	2	3	1	1	2

COURSE CODE: C 206 Course Name: BA 4206 - Business Analytics

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	I	II	BA 4206	Business Analytics	C206.1	Develop business analytics for decision making	K2	2	3	1	1	2
2	I	II	BA 4206	Business Analytics	C206.2	Apply appropriate tool for the analytics scenario	K2	2	3	2	1	2
3	I	II	BA 4206	Business Analytics	C206.3	Apply the descriptive analytics tools to solve business problems	K3	3	3	1	2	2
4	I	II	BA 4206	Business Analytics	C206.4	Summarize the applications of predictive analytics in the process of business decision	K2	2	2	1	1	1
5	I	II	BA 4206	Business Analytics	C206.5	Describe business process and improvement using prescriptive analytics	K3	2	3	1	1	3

COURSE CODE: C 207 Course Name: BA 4207 - Marketing Management

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	I	II	BA 4207	Marketing Management	C207.1	Interpret contemporary marketing theories to the demands of business and management practice	K3	3	3	1	2	2
2	I	II	BA 4207	Marketing Management	C207.2	Predict the marketing strategies for consumer and industrial marketing	K3	2	2	2	2	2
3	I	II	BA 4207	Marketing Management	C207.3	Express the choice of marketing mix elements and managing integrated marketing channels	K2	2	3	2	2	2
4	I	II	BA 4207	Marketing Management	C207.4	Describe the nature of consumer buying behaviour	K2	2	2	1	1	1
5	I	II	BA 4207	Marketing Management	C207.5	Explain the marketing research and new trends in the area of marketing	K2	3	3	1	2	2

COURSE CODE: C 208 Course Name: BA 4211 - Business Ethics (Seminar)

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	I	II	BA 4211	Business Ethics	C208.1	Predict the business ethics issues and offer solutions	K3	3	3	2	2	3
2	I	II	BA 4211	Business Ethics	C208.2	Experiment the concepts of Indian ethics and value systems at work	K3	3	2	1	1	3
3	I	II	BA 4211	Business Ethics	C208.3	Predict the solutions for ethical business issues	K3	3	3	2	2	2
4	I	II	BA 4211	Business Ethics	C208.4	Articulate the efficient value system and culture	K3	3	2	1	1	3
5	I	II	BA 4211	Business Ethics	C208.5	Establish the business and manage towards well being of the society	K3	3	2	2	2	2

COURSE CODE: C 209 Course Name: BA 4212 - Data Analysis and Business Modeling (Laboratory)

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	I	II	BA 4212	Data Analysis and Business Modeling	C209.1	Apply data analysis techniques for conducting hypothesis testing	K3	3	3	1	1	2
2	I	II	BA 4212	Data Analysis and Business Modeling	C209.2	Determine the relationship between variables using data analytical tools	K2	2	3	1	1	2
3	I	II	BA 4212	Data Analysis and Business Modeling	C209.3	Determine the business elements in real time business world using analytical tools	K2	2	3	1	1	3
4	I	II	BA 4212	Data Analysis and Business Modeling	C209.4	Predict Risk and simplicity analysis and portfolio selection based on business data	K3	3	3	1	1	2
5	I	II	BA 4212	Data Analysis and Business Modeling	C209.5	Illustrate the networking, inventory models and queuing theory using data analytical tools	K2	2	2	1	1	3

COURSE CODE: C 301 Course Name: BA 4301 - Strategic Management

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	I	III	BA 4301	Strategic Management	C301.1	Distinguish the strategic management process and social responsibility of business	K2	3	2	2	2	3
2	I	III	BA 4301	Strategic Management	C301.2	Illustrate the need for competitive advantage for organization	K2	3	2	2	2	2
3	I	III	BA 4301	Strategic Management	C301.3	Describe the various insights of corporate and business strategies	K2	3	3	2	2	2
4	I	III	BA 4301	Strategic Management	C301.4	Generalize the various control systems required for implementation of organizational strategy	K2	3	3	1	2	3
5	I	III	BA 4301	Strategic Management	C301.5	Establish the cognitive knowledge about various strategic issues and new business development models	K2	2	2	2	3	3

COURSE CODE: C 302 Course Name: BA 4302 - International Business

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4302	International Business	C302.1	Describe the driving factors of international Business	K2	2	2	1	3	2
2	II	III	BA 4302	International Business	C302.2	Discuss the theories of trade and business investment practiced in global market	K2	3	2	1	3	2
3	II	III	BA 4302	International Business	C302.3	Explain the various market entry and its strategy in global business organization	K2	2	2	1	2	2
4	II	III	BA 4302	International Business	C302.4	Examine to identify the various global production and supply chain issues	K2	2	2	1	3	2
5	II	III	BA 4302	International Business	C302.5	Articulate the cognitive knowledge of managing business across the cultures	K2	2	2	2	3	2

COURSE CODE: C 303 Course Name: BA 4001 - Security Analysis and Portfolio Management

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4001	Security Analysis and Portfolio Management	C303.1	Explain the concept of investment and identify the investment alternatives to investors	K2	2	2	2	1	1
2	II	III	BA 4001	Security Analysis and Portfolio Management	C303.2	Describe the fundamental and industry analysis	K2	2	3	1	2	2
3	II	III	BA 4001	Security Analysis and Portfolio Management	C303.3	Describe the concept of technical analysis and various indicators	K2	2	3	2	1	2
4	II	III	BA 4001	Security Analysis and Portfolio Management	C303.4	Explain how to construct an efficient portfolio	K2	2	2	1	1	2
5	II	III	BA 4001	Security Analysis and Portfolio Management	C303.5	Explore the various methods through which portfolio evaluation could be done	K2	2	3	1	1	2

COURSE CODE: C 304 Course Name: BA 4002 - Financial Markets

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4002	Financial Markets	C304.1	Discuss the basic concepts of the finance markets in India	K2	2	2	1	2	1
2	II	III	BA 4002	Financial Markets	C304.2	Explain the underlying structure and functions of Indian financial markets	K2	2	2	1	2	2
3	II	III	BA 4002	Financial Markets	C304.3	Describe the methods of issuing shares and the role of intermediaries in the primary market	K2	1	1	1	2	2
4	II	III	BA 4002	Financial Markets	C304.4	Summarize the trading mechanism in stock market	K2	2	2	1	1	1
5	II	III	BA 4002	Financial Markets	C304.5	Describe the instruments, participants and trading in debt market	K2	2	2	1	1	2

COURSE CODE: C 305 Course Name: BA 4003 - Banking and Financial Services

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4003	Banking and Financial Services	C305.1	Explain the overall structure and functions of Indian Financial System	K2	2	2	1	1	2
2	II	III	BA 4003	Banking and Financial Services	C305.2	Discuss the regulations governing the Indian Banking system	K2	2	2	2	1	2
3	II	III	BA 4003	Banking and Financial Services	C305.3	Describe the loans proposed by banks to various prospective borrowers with different risk profiles and evaluate the performance of banks	K2	1	1	1	1	1
4	II	III	BA 4003	Banking and Financial Services	C305.4	Discuss the concepts of a bank's credit policy	K2	2	1	1	1	2
5	II	III	BA 4003	Banking and Financial Services	C305.5	Illustrate fee-based and fund-based financial services in India	K2	2	1	1	1	2

COURSE CODE: C 306 Course Name: BA 4008 - Retail Marketing

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4008	Retail Marketing	C 306.1	Discuss the insights of retail operation	K2	2	2	1	3	2
2	II	III	BA 4008	Retail Marketing	C 306.2	Develop effective methods and strategies required for retail management	K2	1	1	1	2	2
3	II	III	BA 4008	Retail Marketing	C 306.3	Explain concept of utilizing resources and techniques used in retail management	K2	2	1	1	1	2
4	II	III	BA 4008	Retail Marketing	C 306.4	Describe the store location, merchandising, products and pricing	K2	1	2	1	1	2
5	II	III	BA 4008	Retail Marketing	C 306.5	Establish knowledge about shopping behaviour	K2	2	2	1	1	2

COURSE CODE: C 307 Course Name: BA 4010 - Integrated Marketing Communication

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4010	Integrated Marketing Communication	C307.1	Explain the traditional communication forms in Marketing	K2	3	2	1	2	2
2	II	III	BA 4010	Integrated Marketing Communication	C307.2	Discuss the essential concepts and techniques for the development and designing an effective Integrated Marketing Communication programme	K2	3	3	1	1	2
3	II	III	BA 4010	Integrated Marketing Communication	C307.3	Explain how IMC fits into the marketing mix	K2	2	2	2	2	2
4	II	III	BA 4010	Integrated Marketing Communication	C307.4	Develop awareness about marketing communications tools, and how each can be used effectively, individually or in an integrated mix	K2	2	2	2	1	2
5	II	III	BA 4010	Integrated Marketing Communication	C307.5	Summarize the process by which integrated marketing communications programs are planned, developed, executed and measured	K2	2	2	1	2	2

COURSE CODE: C 308 Course Name: BA 4011 - Services Marketing

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4011	Services Marketing	C308.1	Describe the service based and physical product based marketing activities	K2	2	2	1	2	2
2	II	III	BA 4011	Services Marketing	C308.2	Develop marketing planning and control systems appropriate to service based activities	K3	2	2	1	2	3
3	II	III	BA 4011	Services Marketing	C308.3	Explain the models and development of service quality	K2	2	1	1	2	2
4	II	III	BA 4011	Services Marketing	C308.4	Illustrate the service design system and promotional methods	K2	2	2	1	2	2
5	II	III	BA 4011	Services Marketing	C308.5	Discuss the strategies required for creating service excellence in various industries	K2	2	1	2	2	2

COURSE CODE: C 309 Course Name: BA 4015 - Strategic Human Resource Management

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4015	Strategic Human Resource Management	C309.1	Explain the HR Strategy and specific role of HR System	K2	3	3	2	1	2
2	II	III	BA 4015	Strategic Human Resource Management	C309.2	Analyze the tools and techniques used by organizations to meet current challenges	K2	2	2	2	2	3
3	II	III	BA 4015	Strategic Human Resource Management	C309.3	Discuss the cross-cultural issues and manifold risk by understand the international approaches to deal with people in organisations	K2	3	3	1	1	2

4	II	III	BA 4016	Strategic Human Resource Management	C309.4	Describe the alternative approach to deal with problem situations in organisations by using counselling and coaching techniques	K2	2	2	1	1	2
5	II	III	BA 4016	Strategic Human Resource Management	C309.5	Explain the career development theories, models inorder to gain effective self insight and skills	K2	2	3	2	1	2

COURSE CODE: C 310 Course Name: BA 4016 - Industrial Relations and Labour Legislations

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4016	Industrial Relations and Labour Legislations	C310.1	Discuss the industrial relations system and Trade unions	K2	3	2	1	2	2
2	II	III	BA 4016	Industrial Relations and Labour Legislations	C310.2	Analyze the Industrial Disputes and labour welfare measures	K2	3	2	2	2	3
3	II	III	BA 4016	Industrial Relations and Labour Legislations	C310.3	Describe the Labour Legislation and legal provisions for factory workers, wages and Bonus	K2	2	2	1	1	2
4	II	III	BA 4016	Industrial Relations and Labour Legislations	C310.4	Explain the Legal provisions for equal remuneration, gratuity, compensation, Industrial employment and Apprenticeship	K2	3	2	1	1	1
5	II	III	BA 4016	Industrial Relations and Labour Legislations	C310.5	Discuss the legal provisions for EPF, ES, Maternity, contract labour, and child labour prevention.	K2	3	2	1	1	2

COURSE CODE: C 311 Course Name: BA 4017 - Organizational Design, Change and Development

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4017	Organizational Design, Change and Development	C311.1	Discuss the fundamentals of organizational design and structure	K2	2	3	1	2	2
2	II	III	BA 4017	Organizational Design, Change and Development	C311.2	Describe the Change process, types, and models of change in organizations	K2	2	3	2	2	2
3	II	III	BA 4017	Organizational Design, Change and Development	C311.3	Explain the fundamentals of organizational development	K2	2	2	2	1	2
4	II	III	BA 4017	Organizational Design, Change and Development	C311.4	Identify the Organizational development Interventions	K2	2	3	2	1	2
5	II	III	BA 4017	Organizational Design, Change and Development	C311.5	Express the Organizational evolution and sustenance	K2	3	2	2	1	3

COURSE CODE: C 312 Course Name: BA 4021 - Supply Chain Management

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4021	Supply Chain Management	C312.1	Discuss the fundamentals of supply chain	K2	3	2	1	2	2
2	II	III	BA 4021	Supply Chain Management	C312.2	Explain the design supply chain networks to enhance supply chain performance	K2	2	2	1	2	2
3	II	III	BA 4021	Supply Chain Management	C312.3	Describe the plan demand based on inventory and supply	K2	2	2	1	1	2
4	II	III	BA 4021	Supply Chain Management	C312.4	Discuss the role of logistics in supply chain performance	K2	1	1	1	2	2
5	II	III	BA 4021	Supply Chain Management	C312.5	Illustrate the innovations for sustainable supply chains	K2	2	2	-	1	2

COURSE CODE: C 313 Course Name: BA 4024 - Services Operation Management

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4024	Services Operation Management	C313.1	Describe the setup of service operations	K2	3	3	1	2	2
2	II	III	BA 4024	Services Operation Management	C313.2	Discuss the design services and its technologies	K2	2	3	-	2	3
3	II	III	BA 4024	Services Operation Management	C313.3	Illustrate the quality in service design and delivery	K2	2	3	1	2	2
4	II	III	BA 4024	Services Operation Management	C313.4	Apply the models to design service facility	K2	2	2	1	2	2
5	II	III	BA 4024	Services Operation Management	C313.5	Explain the ways to sustain in service business	K2	3	3	2	1	2

COURSE CODE: C 314 Course Name: BA 4026 - Project Management

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4026	Project Management	C314.1	Describe the roles and responsibilities of a project manager	K2	2	3	2	2	2
2	II	III	BA 4026	Project Management	C314.2	Estimate the project plan and budget projects	K2	2	3	3	1	2
3	II	III	BA 4026	Project Management	C314.3	Discuss the schedule and allocate resources to projects	K2	3	3	3	1	2
4	II	III	BA 4026	Project Management	C314.4	Explain the various project organization and conflict management	K2	2	2	2	1	2
5	II	III	BA 4026	Project Management	C314.5	Discuss the project control and preparation of reports	K2	2	3	2	1	3

COURSE CODE: C 315 Course Name: BA 4027 - Data Mining for Business Intelligence

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4027	Data Mining for Business Intelligence	C315.1	Illustrate various data mining techniques	K2	2	3	1	1	2
2	II	III	BA 4027	Data Mining for Business Intelligence	C315.2	Examine the basic data mining processes, algorithms R systems to interact with expert data miners and consultants	K2	3	3	1	2	2
3	II	III	BA 4027	Data Mining for Business Intelligence	C315.3	Interpret various prediction technique	K3	2	3	1	1	1
4	II	III	BA 4027	Data Mining for Business Intelligence	C315.4	Discuss supervised and unsupervised learning techniques	K2	2	2	1	1	2
5	II	III	BA 4027	Data Mining for Business Intelligence	C315.5	Categorize and implement a basic neural network or fuzzy logic	K3	3	2	1	1	3

COURSE CODE: C 316 Course Name: BA 4029 - Social Media and Web Analytics

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4029	Social Media and Web Analytics	C316.1	Discuss the social media skills	K2	3	2	2	2	2
2	II	III	BA 4029	Social Media and Web Analytics	C316.2	Articulate a mass communication strategy and guide campaign	K2	2	2	2	1	2
3	II	III	BA 4029	Social Media and Web Analytics	C316.3	Explain about social media policies	K2	3	3	1	3	2
4	II	III	BA 4029	Social Media and Web Analytics	C316.4	Describe the fundamental concepts of web analytics	K2	2	2	1	1	1
5	II	III	BA 4029	Social Media and Web Analytics	C316.5	Illustrate website design, decision campaign optimisation,search analytics	K3	3	3	1	1	2

COURSE CODE: C 317 Course Name: BA 4030 - E - Business Management

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4030	E - Business Management	C317.1	Describe and manage an E-Business	K2	3	3	1	1	2
2	II	III	BA 4030	E - Business Management	C317.2	Illustrate the technological infrastructure	K2	2	2	1	1	1
3	II	III	BA 4030	E - Business Management	C317.3	Articulate the customer oriented business applications	K3	2	3	1	1	2
4	II	III	BA 4030	E - Business Management	C317.4	Discuss various E-payment protocols and security	K3	2	2	1	1	1
5	II	III	BA 4030	E - Business Management	C317.5	Articulate various ethical, legal privacy and encryption policies issue	K2	2	2	1	3	2

COURSE CODE: C 318 Course Name: BA 4311 - Creativity and Innovation Laboratory

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4311	Creativity and Innovation	C318.1	Develop insights about approaches to creativity and innovation	K2	2	2	1	1	2
2	II	III	BA 4311	Creativity and Innovation	C318.2	Apply heuristic models in Creativity	K3	3	2	2	2	2
3	II	III	BA 4311	Creativity and Innovation	C318.3	Discuss the nature of creativity	K2	2	2	1	1	3
4	II	III	BA 4311	Creativity and Innovation	C318.4	Apply creativity in problem solving	K3	3	3	2	1	2
5	II	III	BA 4311	Creativity and Innovation	C318.5	Explain the radical and disruptive models of innovation	K2	2	2	1	1	3

COURSE CODE: C 319 Course Name: BA 4312 - Summer Internship

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4312	Creativity and Innovation	C319.1	Ability to test the theoretical learning in practical situations	K3	3	2	1	1	3
2	II	III	BA 4312	Creativity and Innovation	C319.2	Ability to apply various soft skills during performance of the task assigned in the organization	K3	2	2	2	1	2
3	II	III	BA 4312	Creativity and Innovation	C319.3	Analyze the functioning of organization and recommend changes for improvement	K4	3	3	2	1	2
4	II	III	BA 4312	Creativity and Innovation	C319.4	Abie to assess the SWOT of the organization	K3	3	3	2	1	1
5	II	III	BA 4312	Creativity and Innovation	C319.5	Develop skills in preparing detailed report	K3	1	1	1	1	3

COURSE CODE: C 401 Course Name: BA 4411 - Project Work

S.No	Year	Sem	Sub Code	Sub Name	Course Outcomes	BTL	PO1	PO2	PO3	PO4	PO5	
1	II	III	BA 4411	Project Work	C401.1	Identify the project title, scope of work in the specialized domain	K2	3	1	2	2	2
2	II	III	BA 4411	Project Work	C401.2	Complete the literature in the selected project work	K4	1	1	2	2	3
3	II	III	BA 4411	Project Work	C401.3	Prepare suitable questionnaire to collect data for the problem analysis	K3	3	2	3	3	2
4	II	III	BA 4411	Project Work	C401.4	Devise an appropriate business analytical tool to analyze the problem	K4	3	3	2	1	2
5	II	III	BA 4411	Project Work	C401.5	Infer the result and write the report	K5	3	3	3	2	3