Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	<b>PO</b> 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		\$230.1	Read, write and aptly understand what ever						2			3	3		2
	h – I	S239.2	Speak fluently with acceptable pronunciation and write using appropriate words, spellings, grammar and syntax						2			3	3		2
_	Englis	S239.3	Read the lines, between lines and beyond lines excelling in comprehension skills						2			3	3		2
SEM		S239.4	Draft Reports, memos, mails and letters as part of their work						2			3	3		2
<u> </u>		S239.5	Speak grammatically error free English						2			3	3		2
AEROSPACE ENGINEERIN		<b>S132.1</b>	Apply first order and first degree differential equation to calculate orthogonal trajectories and current flow in a simple LCR circuit.	3	2	2									2
	atics - I	S132.2	Discriminate among the structure and procedures of solving a higher order D.E with constant coefficients and variable coefficients.	3	2	2									2
	ed Mathem	<b>S132.3</b>	Compute the Jacobians and Maxima and Minima ( with constraints and without constraints) for functions of severable variables.	2	2	1									2
	Appli	\$132.4	Distinguish among the Pros and Cons between the Row operation methods and Iterative methods in solving system of linear equations.	3	2	2									2
		S132.5	Compute the Eigen values and Eigen vectors and powers, Inverse of a square	3	2	2									2

## **R14 First Year Courses CO Statements CO PO mapping**

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
			matrix through Cayley –Hamilton theorem.												
	~	<b>S232.1</b>	Identify the troubles due to hardness of water and its maintenance in industrial applications.	3	3	2			2	1					2
	hemistr	<b>\$232.2</b>	Analyse fuels, differentiate working of IC and diesel engines and identify the significance of flue gas analysis.	3	3	2			2	1					2
	eering C	\$232.3	Apply principles of corrosion and design and effective maintenance of various equipments.	3	2	3			2	1					2
	Engin	S232.4	Identify the importance of plastics and rubbers in technological applications.	3	2	2			2	1					2
		<b>S232.5</b>	Apply the principles of green chemistry and be able to use suitable liquid crystals in technology.	3	2	2			3	2					2
	aing	S170.1	Identify basic elements of C program structure (data types, expressions, control statements, various simple functions) in view of using them in problem solving.	2	3	1									1
	rogramn	<b>S170.2</b>	Apply various operations on derived data types like arrays and strings in problem solving.	2	3	2									1
	puter P	<b>S170.3</b>	Design and Implement modular programming and memory management using pointers.	2	3	2									1
	Compu	S170.4	Implement user defined data structures used in specific applications.	2	3	2									1
		<b>S170.5</b>	Compare different file I/O operations on text and binary files.	2	3	2									1

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
	ics	S235.1	Recognize the value of engineering graphics as a language of communication and understanding BIS conventions of lettering, lines and dimensioning; Develop an engineering curve using different approaches.	2	1	2		3	2			3	2		1
	g Graph	<b>S235.2</b>	Comprehend the basics of orthographic projections and deduce orthographic projections of a point and a line.	3	2	2		3				3	2		1
	eerin	S235.3	Visualize and deduce orthographic projections of planes	2	3	2		3				3	2		1
	Engin	S235.4	Visualize wide variety of solid objects and drawing the missing views.	2	3	2		3				3	2		1
		S235.5	Understand the significance of isometric drawing; apply the basic method of isometric drawing; infer the nature of engineering graphics, the relationship between 2D and 3D environments.	3	3	3		3	2			3	3		1
	ı on Lab	L144.1	Withstand the global competition in the job market with proficiency in English communication.				3					3	3		2
	, lisl cati	L144.2	Articulate English with good pronunciation.				3					3	3		2
	Eng munid	L144.3	Face competitive exams like GRE, TOEFL, IELTS etc.				3					3	3		2
	Com	L144.4	Face interviews and skillfully manage themselves in group discussions.				3					3	3		2
	C progra mming Lab	L126.1	Demonstrate C programming development environment, compiling, debugging, linking and executing a program using the	2	3	1	1	1			1		1		2

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	<b>PO</b> 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
			development environment.												
		L126.2	Apply and practice logical formulations to solve some simple problems leading to specific applications.	2	3	1	1	1			1		1		2
		L126.3	Design effectively the required programming components that efficiently solve computing problems.	2	3	1	1	1			1		1		2
	n de	L140.1	Assess quality of water based on the procedures given.	3	3		2		2	2					
	eering try La	L140.2	Perform different types of titrations in volumetric analysis	2	3										
	Ingin hemis	L140.3	Apply the principles of polymerization in the preparation of polymers.	3	2										
	C 7	L140.4	Exhibit skills in performing experiments based on theoritical fundamentals.	2	2										
	ıtion	L114.1	Understand the different parts of a Lab VIEW program	1	2			3							1
	nula ib.	L114.2	Learn simple debugging techniques	1	3			3							2
	c Sin La	L114.3	Learn how to make decisions in Lab VIEW	1	2			3							1
	Basi	L114.4	Learn how to create an executable file with Lab VIEW	1	2			3							1
EERI	II –	S240.1	Use English language effectively in written and spoken English						2			3	3		2
	lish	S240.2	Express the right ideas in right context.						2			3	3		2
ENG	Eng	S240.3	Manage the situation and negotiate business with good English communication						2			3	3		2

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		<b>S240.4</b>	Think and analyze the situations and make good presentations of their work and decisions						2			3	3		2
		S240.5	Prepare oneself to face interviews and also to participate in group discussions.						2			3	3		2
		<b>S133.1</b>	Apply Laplace transforms to solve ordinary differential equations	3	2	2									2
	tics – II	S133.2	Determine the Fourier coefficients in the Fourier series expansion of a given function in both Standard as well as arbitrary intervals.	3	2	2									2
	Mathema	S133.3	Distinguish Among the three transformation techniques Fourier Transforms, Fourier cosine transforms and Fourier sine transforms.	2	2	1									2
	pplied	S133.4	Apply Z-transforms to solve difference equation.	3	2	2									2
	A	S133.5	Discriminate among Cartesian, polar and spherical coordinate multiple integrals and their respective applications to areas and volumes.	3	2	2									2
	1g	S238.1	Identify the nature of Interference, Diffraction and Polarization.	3	3		2								3
	erin ics	S238.2	Explain the dual nature of matter particle.	3	3		2								3
	ngine Phys	S238.3	Apply the Lasers and Optical fibers in different fields.	3	3	2	2	2							3
	E	S238.4	Classify the different types of magnetic materials and their applications.	3	3	3	2	2							3

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		S238.5	Interpret the phenomenon of Super conductivity and their uses.	3	3		2	1							3
	S	S145.1	Apply various semiconductor devices in engineering fields.	2	2	2									1
	ering	S145.2	Analyze the operation and structure of the various electronic circuits.	2	2										
	c Elec ngine	S145.3	Examine the parameters and characteristics related to OP-AMP.	2	2										1
	Basi	S145.4	Apply the techniques of data conversion and timer operation.	2	2										
		S145.5	Analyze the basic digital electronic circuits	2	2										1
	nics	S282.1	Solve the different types of force systems under equilibrium condition	3	3	3	2					3	3	3	2
	on to Iecha	S282.2	Analyze the effect of friction on bodies in static condition	3	3	3	3					2	2	3	3
	oducti ing N	S282.3	Determine the area moment of inertia for various cross-sections	3	3	3	2					2	3	2	3
	Intro gineer	S282.4	Determine the mass moment of inertia for various 3-D bodies	3	3	3	3					2	2	1	3
	Eng	S282.5	Analyze motion of bodies and their projectiles.	3	3	3	3					2	2	1	3
	g q	L142.1	Explain the concept of diffration and find the wavelenth of light.	3	3	2	2					3			3
	neerir ics La	L142.2	Estimate the specific rotation of sugar solution.	3	3	2	2					3			3
	ngi hys	L142.3	Determine the frequency of AC source.	3	3							3			3
	Engir Physi	L142.4	Describe resonance and formation of stationary waves by using Melde's	3	3							3			3

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
			arrangement.												
	jineering.	L124.1	Understand the Auto-CAD basics and apply to solve practical problems used in industries where the speed and accuracy can be achieved					3				1		2	1
	ed Eng ics Lab	L124.2	Apply this idea and make design and modifications as required.					3				1		2	1
	ıter Aid Graphi	L124.3	Draw 2-dimensional drawings of conventional engineering objects using Auto-CAD					3				1		2	1
	Compu	L124.4	Draw different plane and solid geometrical engineering objects and Visualize the sectional views of the objects					3				1		2	1
	shop	L143.1	Model and Develop various basic prototypes in the carpentry trade	3		2	3	3	3			3			2
	Work	L143.2	Develop various basic prototypes in the trade of Welding	3		2	3	3	3			3			2
	ering	L143.3	Fabricate various basic prototypes in the trade of Tin smithy	3		2	3	3	3			3			2
	Enginee	L143.4	Understand various basic House Wiring concepts and implement them in simple electrical connections	3		2	3	3	3			3			2
	iics	L122.1	Analyse the behavior of electronic circuits.	2	2		3					3	3		1
	ectron ab.	L122.2	Identify a suitable electronic circuit for a particular application.	2	2	2	3					3	3		2
	C El	T 100 0	Illustarate the characteristics of various									2	2		1
	asio	L122.3	Semiconductor devices	2	2		3					3	3		1
	B	L122.4	Design transistor &FET amplifier circuits	3	2	2	3					3	3		1

Dept •	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	РО 11	P 0 12
		S239.1	Read, write and aptly understand what ever is written and spoken in English						2			3	3		2
	h – I	<b>S239.2</b>	Speak fluently with acceptable pronunciation and write using appropriate words, spellings, grammar and syntax						2			3	3		2
EMI	Englis	S239.3	Read the lines, between lines and beyond lines excelling in comprehension skills						2			3	3		2
S TN		S239.4	Draft Reports, memos, mails and letters as part of their work						2			3	3		2
MF		S239.5	Speak grammatically error free English						2			3	3		2
CIVIL ENGINEERING DEPARTM		<b>\$132.1</b>	Apply first order and first degree differential equation to calculate orthogonal trajectories and current flow in a simple LCR circuit.	3	2	2									2
	ttics - I	S132.2	Discriminate among the structure and procedures of solving a higher order D.E with constant coefficients and variable coefficients.	3	2	2									2
	d Mathema	S132.3	Compute the Jacobians and Maxima and Minima ( with constraints and without constraints) for functions of severable variables.	2	2	1									2
	Applie	S132.4	Distinguish among the Pros and Cons between the Row operation methods and Iterative methods in solving system of linear equations.	3	2	2									2
		\$132.5	Compute the Eigen values and Eigen vectors and powers, Inverse of a square matrix through Cayley –Hamilton theorem.	3	2	2									2

Dept •	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
	8	<b>S232.1</b>	Identify the troubles due to hardness of water and its maintenance in industrial applications.	3	3	2			2	1					2
	hemistr	\$232.2	Analyse fuels, differentiate working of IC and diesel engines and identify the significance of flue gas analysis.	3	3	2			2	1					2
	eering C	\$232.3	Apply principles of corrosion and design and effective maintenance of various equipments.	3	2	3			2	1					2
	Ingin	S232.4	Identify the importance of plastics and rubbers in technological applications.	3	2	2			2	1					2
		<b>\$232.5</b>	Apply the principles of green chemistry and be able to use suitable liquid crystals in technology.	3	2	2			3	2					2
	ging	S170.1	Identify basic elements of C program structure (data types, expressions, control statements, various simple functions) in view of using them in problem solving.	2	3	1									1
	rogramn	<b>S170.2</b>	Apply various operations on derived data types like arrays and strings in problem solving.	2	3	2									1
	puter P	<b>S170.3</b>	Design and Implement modular programming and memory management using pointers.	2	3	2									1
	Con	S170.4	Implement user defined data structures used in specific applications.	2	3	2									1
		S170.5	Compare different file I/O operations on text and binary files.	2	3	2									1
	ne eri ng Gr	S235.1	Recognize the value of engineering graphics	2	1	2		3	2			3	2		1

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
			as a language of communication and understanding BIS conventions of lettering, lines and dimensioning; Develop an engineering curve using different approaches.												
		\$235.2	Comprehend the basics of orthographic projections and deduce orthographic projections of a point and a line.	3	2	2		3				3	2		1
		S235.3	Visualize and deduce orthographic projections of planes	2	3	2		3				3	2		1
		S235.4	Visualize wide variety of solid objects and drawing the missing views.	2	3	2		3				3	2		1
		S235.5	Understand the significance of isometric drawing; apply the basic method of isometric drawing; infer the nature of engineering graphics, the relationship between 2D and 3D environments.	3	3	3		3	2			3	3		1
	n on Lab	L144.1	Withstand the global competition in the job market with proficiency in English communication.				3					3	3		2
	list	L144.2	Articulate English with good pronunciation.				3					3	3		2
	Eng munic	L144.3	Face competitive exams like GRE, TOEFL, IELTS etc.				3					3	3		2
	Com	L144.4	Face interviews and skillfully manage themselves in group discussions.				3					3	3		2
	C program ming Lab	L126.1	Demonstrate C programming development environment, compiling, debugging, linking and executing a program using the development environment.	2	3	1	1	1			1		1		2

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		L126.2	Apply and practice logical formulations to solve some simple problems leading to specific applications.	2	3	1	1	1			1		1		2
		L126.3	Design effectively the required programming components that efficiently solve computing problems.	2	3	1	1	1			1		1		2
	ab	L140.1	Assess quality of water based on the procedures given.	2	3										
	eering try La	L140.2	Perform different types of titrations in volumetric analysis	3	2										
	Ingin	L140.3	Apply the principles of polymerization in the preparation of polymers.	2	2										
	CI	L140.4	Exhibit skills in performing experiments based on theoritical fundamentals.												
	gineering b	L124.1	Understand the Auto-CAD basics and apply to solve practical problems used in industries where the speed and accuracy can be achieved.					3				1		2	1
	ed En ics La	L124.2	Apply this idea and make design and modifications as required.					3				1		2	1
	ıter Aide Graphi	L124.3	Draw 2-dimensional drawings of conventional engineering objects using Auto-CAD					3				1		2	1
	Compu	L124.4	Draw different plane and solid geometrical engineering objects and Visualize the sectional views of the objects					3				1		2	1
G PAR	glish - II	S240.1	Use English language effectively in written and spoken English						2			3	3		2
DE	En	S240.2	Express the right ideas in right context.						2			3	3		2

Dept •	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	РО 11	P O 12
		\$240.3	Manage the situation and negotiate business with good English communication						2			3	3		2
		S240.4	Think and analyze the situations and make good presentations of their work and decisions						2			3	3		2
		S240.5	Prepare oneself to face interviews and also to participate in group discussions.						2			3	3		2
		S133.1	Apply Laplace transforms to solve ordinary differential equations	3	2	2									2
	tics – II	S133.2	Determine the Fourier coefficients in the Fourier series expansion of a given function in both Standard as well as arbitrary intervals.	3	2	2									2
	Mathema	S133.3	Distinguish Among the three transformation techniques Fourier Transforms, Fourier cosine transforms and Fourier sine transforms.	2	2	1									2
	pplied	S133.4	Apply Z-transforms to solve difference equation.	3	2	2									2
	Al	S133.5	Discriminate among Cartesian, polar and spherical coordinate multiple integrals and their respective applications to areas and volumes.	3	2	2									2
	ering ics	S238.1	Identify the nature of Interference, Diffraction and Polarization.	3	3		2								3
	inee 1ysi	S238.2	Explain the dual nature of matter particle.	3	3		2								3
	Engi Pl	S238.3	Apply the Lasers and Optical fibers in different fields.	3	3	2	2	2							3

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		S238.4	Classify the different types of magnetic materials and their applications.	3	3	3	2	2							3
		S238.5	Interpret the phenomenon of Super conductivity and their uses.	3	3		2	1							3
	nics	<b>S135.1</b>	Simplify the system of forces and moments to equivalent systems and determine the resultant of a system	3	3					3					1
	Iecha	S135.2	Construct free body diagrams and develop appropriate equilibrium equations	3	3					3					1
	lied N	S135.3	Locate centroid and determine moment of inertia for composite areas	3	3					3					1
	ddy	S135.4	Analyze systems with friction.	3	3					3					1
	V	S135.5	Determine the relations of particles under projectile motion	3	3					3					1
	als and on	<b>S150.1</b>	Assess the several properties of stones, bricks, cement and tiles used in construction.	2					3	3	3	2			2
	<b>T</b> ateri ructio	S150.2	Understand different types of brick and stone masonry in building construction	2					3	3	3	2			2
	og N ISI	S150.3	Gain knowledge on building components.	2					3	3	3	2			2
	Lildin Cc	S150.4	Know the various finishing's in building construction	2					3	3	3	2			2
	B	S150.5	Exposed to finishing of buildings	2					3	3	3	2			2
	ering Lab	L142.1	Explain the concept of diffration and find the wavelenth of light.	3	3	2	2					3			3
	ıginee ıysics	L142.2	Estimate the specific rotation of sugar solution.	3	3	2	2					3			3
	EI	L142.3	Determine the frequency of AC source.	3	3							3			3

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		L142.4	Describe resonance and formation of stationary waves by using Melde's arrangement.	3	3							3			3
	ang ng and puter ded wing	L115.1	Draw different components of buildings with appropriate sign conventions					2	2	1					1
	Bun Planni Com Aid Dra	L115.2	Understand the terminology used in building drawing					2	2	1					1
	shop	L143.1	Model and Develop various basic prototypes in the carpentry trade	3		2	3	3	3			3			2
	Work	L143.2	Develop various basic prototypes in the trade of Welding	3		2	3	3	3			3			2
	ering	L143.3	Fabricate various basic prototypes in the trade of Tin smithy	3		2	3	3	3			3			2
	Engine	L143.4	Understand various basic House Wiring concepts and implement them in simple electrical connections	3		2	3	3	3			3			2
	doukshop	L154.1	Develop skill in S/W and H/W trouble shooting, and solve the problems of assembling and OS installation.	1			1				1	3	1		2
	V01	L154.2	Develop skill in using office suite.	2			1	3			1	1	1		2
	ITV	L154.3	Develop skill in using tools like RAPTOR, LaTeX and adobe Photoshop.	1			1	3			1	1	3		2
NCE	h – I	S239.1	Read, write and aptly understand what ever is written and spoken in English						2			3	3		2
R SCIE ENGINI	Englis	S239.2	Speak fluently with acceptable pronunciation and write using appropriate words, spellings, grammar and syntax						2			3	3		2

Dept •	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		\$239.3	Read the lines, between lines and beyond lines excelling in comprehension skills						2			3	3		2
		S239.4	Draft Reports, memos, mails & letters as part of their work						2			3	3		2
		S239.5	Speak grammatically error free English						2			3	3		2
		<b>S132.1</b>	Apply first order and first degree differential equation to calculate orthogonal trajectories and current flow in a simple LCR circuit.	3	2	2									2
	ttics - I	S132.2	Discriminate among the structure and procedures of solving a higher order D.E with constant coefficients and variable coefficients.	3	2	2									2
	d Mathema	S132.3	Compute the Jacobians and Maxima and Minima ( with constraints and without constraints) for functions of severable variables.	2	2	1									2
	Applied M.	S132.4	Distinguish among the Pros and Cons between the Row operation methods and Iterative methods in solving system of linear equations.	3	2	2									2
		\$132.5	Compute the Eigen values and Eigen vectors and powers, Inverse of a square matrix through Cayley –Hamilton theorem.	3	2	2									2
	eering nistry	8232.1	Identify the troubles due to hardness of water and its maintenance in industrial applications.	3	3	2			2	1					2
	Engin Chen	\$232.2	Analyse fuels, differentiate working of IC and diesel engines and identify the significance of flue gas analysis.	3	3	2			2	1					2

Dept •	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	<b>PO</b> 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		\$232.3	Apply principles of corrosion and design and effective maintenance of various equipments.	3	2	3			2	1					2
		S232.4	Identify the importance of plastics and rubbers in technological applications.	3	2	2			2	1					2
		<b>S232.5</b>	Apply the principles of green chemistry and be able to use suitable liquid crystals in technology.	3	2	2			3	2					2
	ning	S170.1	Identify basic elements of C program structure (data types, expressions, control statements, various simple functions) in view of using them in problem solving.	2	3	1									1
	rogramn	<b>S170.2</b>	Apply various operations on derived data types like arrays and strings in problem solving.	2	3	2									1
	1 puter P	<b>S170.3</b>	Design and Implement modular programming and memory management using pointers.	2	3	2									1
	Compu	S170.4	Implement user defined data structures used in specific applications.	2	3	2									1
		<b>S170.5</b>	Compare different file I/O operations on text and binary files.	2	3	2									1
	I	S143.1	Analyze different types of electrical circuits.	3	3	3	2								1
	ering	S143.2	Interpret principle of working of different types of Machines	2	3	3	2								1
	sic Elect	S143.3	Use the techniques to measure efficiency and regulation of AC Machines	1	2	3	3								1
	Bas	S143.4	Explore the working of electrical and electronics measuring instruments.		3	2	1	2							1

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		S143.5	Analyse the parameters of electrical signals	3	2		3	1							1
	ı on Lab	L144.1	Withstand the global competition in the job market with proficiency in English communication.				3					3	3		2
	cati	L144.2	Articulate English with good pronunciation.				3					3	3		2
	Eng munid	L144.3	Face competitive exams like GRE, TOEFL, IELTS etc.				3					3	3		2
	Com	L144.4	Face interviews and skillfully manage themselves in group discussions.				3					3	3		2
	ing Lab	L126.1	Demonstrate C programming development environment, compiling, debugging, linking and executing a program using the development environment.	2	3	1	1	1			1		1		2
	ogramm	L126.2	Apply and practice logical formulations to solve some simple problems leading to specific applications.	2	3	1	1	1			1		1		2
	C pr	L126.3	Design effectively the required programming components that efficiently solve computing problems.	2	3	1	1	1			1		1		2
	ab ab	L140.1	Assess quality of water based on the procedures given.	3	3		2		2	2					
	eering try L	L140.2	Perform different types of titrations in volumetric analysis	2	3										
	Engin hemis	L140.3	Apply the principles of polymerization in the preparation of polymers.	3	2										
	C	L140.4	Exhibit skills in performing experiments based on theoritical fundamentals.	2	2										
	W or ks ho	L154.1	Develop skill in S/W and H/W trouble	1			1				1	3	1		2

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			shooting, and solve the problems of assembling and OS installation.												
		L154.2	Develop skill in using office suite.	2			1	3			1	1	1		2
		L154.3	Develop skill in using tools like RAPTOR, LaTeX and adobe Photoshop.	1			1	3			1	1	3		2
		S240.1	Use English language effectively in written and spoken English						2			3	3		2
Π	_	S240.2	Express the right ideas in right context.						2			3	3		2
SEM	sh – I	S240.3	Manage the situation and negotiate business with good English communication						2			3	3		2
R SCIENCE ENGINEERING SI	Engli	<b>S240.4</b>	Think and analyze the situations and make good presentations of their work and decisions						2			3	3		2
		S240.5	Prepare oneself to face interviews and also to participate in group discussions.						2			3	3		2
		<b>S133.1</b>	Apply Laplace transforms to solve ordinary differential equations	3	2	2									2
	ematics – II	S133.2	Determine the Fourier coefficients in the Fourier series expansion of a given function in both Standard as well as arbitrary intervals.	3	2	2									2
OMPUTER	olied Mathe	S133.3	Distinguish Among the three transformation techniques Fourier Transforms, Fourier cosine transforms and Fourier sine transforms.	2	2	1									2
Ŭ	Apl	S133.4	Apply Z-transforms to solve difference equation.	3	2	2									2
		S133.5	Discriminate among Cartesian, polar and	3	2	2									2

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			spherical coordinate multiple integrals and their respective applications to areas and volumes.												
	sics	<b>S238.1</b>	Identify the nature of Interference, Diffraction and Polarization.	3	3		2								3
	hys	S238.2	Explain the dual nature of matter particle.	3	3		2								3
	ring P	S238.3	Apply the Lasers and Optical fibers in different fields.	3	3	2	2	2							3
	gineel	S238.4	Classify the different types of magneatic materials and their applications.	3	3	3	2	2							3
	En	S238.5	Interpret the phenomenon of Super conductivity and their uses.	3	3		2	1							3
		<b>S191.1</b>	Evaluate digital number systems and use Boolean algebra theorems, Properties and Canonical form for digital logic circuit design	3	3	1									1
	gic Design	S191.2	Apply K-Maps and Tabulation methods for Simplification of Boolean expressions and construct logic circuit	3	3	3	1								
	gital Log	<b>S191.3</b>	Design Combinational logic circuits using Adders, Subtractors, Decoders, Multiplexers and Magnitude Comparators	3	3	3	1								
	Di	<b>S191.4</b>	Design Sequential logic circuits using Flip- flops, Shift registers, Counters and Memory unit	3	3	3	1								
		S191.5	Design Programmable logic devices (PROM,PAL,PLA)	2	3	3	1								
	Data Stru cture s	S178.1	Compare normal data type with abstract data type(ADT), explore the sections of	3	3	1									

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			ADT. Analyse example programs with data structures using analysing tools.												
		S178.2	Develop & analyse the algorithms for stack and queue operations leading to applications.	3	3	2									1
		S178.3	Analyse, implement and compare searching and sorting Techniques.	3	3	1									1
		S178.4	Design & analyse algorithms for operations on Binary Search Trees & AVL Trees data structures.	3	3	2	1								1
		<b>S178.5</b>	Evaluate Graph traversal and Minimum cost spanning tree algorithms and compare hashing methods on hash table data structure.	3	3	2	1								1
	ysics	L142.1	Explain the concept of diffration and find the wavelenth of light.	3	3	2	2					3			3
	ng Ph ab	L142.2	Estimate the specific rotation of sugar solution.	3	3	2	2					3			3
	L	L142.3	Determine the frequency of AC source.	3	3							3			3
	Engine	L142.4	Describe resonance and formation of stationary waves by using Melde's arrangement.	3	3							3			3
	jital nics Lab	L131.1	Design and Test the functionalities and Properties of Basic Gates, Universal Gates and Special Gates using Logisim Software.	2	1	3	1	3			1	1	1		
	Dig Electroi	L131.2	Design and verify functionalities of basic building blocks used in Combinational logic circuits	1	2	3	1	3			1	1	1		

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		L131.3	Design and verify functionalities of basic building blocks used in Sequential logic circuits	1	2	3	1	3			1	1	1		
	gineering	L123.1	Understand the Auto-CAD basics and apply to solve practical problems used in industries where the speed and accuracy can be achieved.					3				1		2	1
	ed En ving	L123.2	Apply this idea and make design and modifications as required.					3				1		2	1
	iter Aidd Drav	L123.3	Draw 2-dimensional drawings of conventional engineering objects using Auto-CAD					3				1		2	1
	Compu	L123.4	Draw different plane and solid geometrical engineering objects and Visualize the sectional views of the objects					3				1		2	1
	tures	L128.1	Implement & test the functionality of data structures like linked list, stacks & queues .	3	3	1	1				1	1	1		1
	Struc Lab	L128.2	Implement & test the functionality of searching & sorting techniques.	3	3	1	1				1	1	1		1
	Data	L128.3	Implement & test the functionality of trees and graph traversal techniques.	3	3	1	1				1	1	1		1
rion		S239.1	Read, write and aptly understand what ever is written and spoken in English						2			3	3		2
AND UNICAT NEERI	glish – I	<b>S239.2</b>	Speak fluently with acceptable pronunciation and write using appropriate words, spellings, grammar and syntax						2			3	3		2
MMI	En	S239.3	Read the lines, between lines and beyond lines excelling in comprehension skills						2			3	3		2
CC		<b>S239.4</b>	Draft Reports, memos, mails and letters as						2			3	3		2

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
			part of their work												
		S239.5	Speak grammatically error free English						2			3	3		2
		S298.1	Apply first order and first degree D.E to calculate orthogonal trajectories and temperature, quantity growth using Newton's Laws	3	2	2									2
		S298.2	Discriminate among the structure and procedures of solving a higher order D.E with constant coefficients and variable coefficients.	3	2	2									2
	ematics - I	S298.3	Compute the Jacobians and Maxima and Minima (with constraints and without constraints) for functions of severable variables.	2	2	1									2
	Math	S298.4	Apply concepts of PDE to solve wave equation in one dimension, heat equation and Laplace equation.	3	2	2									2
		S298.5	Distinguish among the Pros and Cons between the Row operation methods and Iterative methods in solving system of linear equations and compute the Eigen values and Eigen vectors and powers, Inverse of a square matrix through Cayley –Hamilton theorem.	3	2	2									2
	eerin ⁄sics	S238.1	Identify the nature of Interference, Diffraction and Polarization.	3	3		2								3
	gin Phy	S238.2	Explain the dual nature of matter particle.	3	3		2								3
	Eng	S238.3	Apply the Lasers and Optical fibers in	3	3	2	2	2							3

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			different fields.												
		S238.4	Classify the different types of magnetic materials and their applications.	3	3	3	2	2							3
		S238.5	Interpret the phenomenon of Super conductivity and their uses.	3	3		2	1							3
	gining	S170.1	Identify basic elements of C program structure (data types, expressions, control statements, various simple functions) in view of using them in problem solving.	2	3	1									1
	rogramn	S170.2	Apply various operations on derived data types like arrays and strings in problem solving.	2	3	2									1
	Computer Prog	S170.3	Design and Implement modular programming and memory management using pointers.	2	3	2									1
		S170.4	Implement user defined data structures used in specific applications.	2	3	2									1
		S170.5	Compare different file I/O operations on text and binary files.	2	3	2									1
	ઝ	S211.1	Apply network reduction techniques for analysis of circuits	2	2	1	_	-	-	_	_	-	_	-	1
	rcuits s - I	S211.2	Analyze the magnetic circuits and find network topology	2	3	1	-	_	-	_	_	_	_	-	1
	al Cii work	S211.3	Differentiate time and frequency domain analysis of AC circuits.	2	2	1	-	-	-	-	-	-	-	-	1
	ectric Net	S211.4	Apply resonance concept and network theorems to practical circuits.	2	3	1	-	-	-	-	-	-	-	-	1
		S211.5	Find transient response of different DC and AC network and apply SPICE for practical	2	1	1	-	-	-	-	-	-	-	-	1

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			circuits.												
	ing Lab	L126.1	Demonstrate C programming development environment, compiling, debugging, linking and executing a program using the development environment.	2	3	1	1	1			1		1		2
	ogramm	L126.2	Apply and practice logical formulations to solve some simple problems leading to specific applications.	2	3	1	1	1			1		1		2
	C pr	L126.3	Design effectively the required programming components that efficiently solve computing problems.	2	3	1	1	1			1		1		2
	shop	L143.1	Model and Develop various basic prototypes in the carpentry trade	3		2	3	3	3			3			2
	Work	L143.2	Develop various basic prototypes in the trade of Welding	3		2	3	3	3			3			2
	ering	L143.3	Fabricate various basic prototypes in the trade of Tin smithy	3		2	3	3	3			3			2
	Engine	L143.4	Understand various basic House Wiring concepts and implement them in simple electrical connections	3		2	3	3	3			3			2
	ysics	L142.1	Explain the concept of diffration and find the wavelenth of light.	3	3	2	2					3			3
	ng Ph	L142.2	Estimate the specific rotation of sugar solution.	3	3	2	2					3			3
	erii L	L142.3	Determine the frequency of AC source.	3	3							3			3
	Engine	L142.4	Describe resonance and formation of stationary waves by using Melde's arrangement.	3	3							3			3

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	gineering	L123.1	Understand the Auto-CAD basics and apply to solve practical problems used in industries where the speed and accuracy can be achieved.					3				1		2	1
	ed En wing	L123.2	Apply this idea and make design and modifications as required.					3				1		2	1
	iter Aid Drav	L123.3	Draw 2-dimensional drawings of conventional engineering objects using Auto-CAD					3				1		2	1
	Compu	L123.4	Draw different plane and solid geometrical engineering objects and Visualize the sectional views of the objects					3				1		2	1
NOL		S240.1	Use English language effectively in written and spoken English						2			3	3		2
COMMUNICATI ING SEM II	_	S240.2	Express the right ideas in right context.						2			3	3		2
	sh – I	S240.3	Manage the situation and negotiate business with good English communication						2			3	3		2
	Engli	<b>S240.4</b>	Think and analyze the situations and make good presentations of their work and decisions						2			3	3		2
AND		S240.5	Prepare oneself to face interviews and also to participate in group discussions.						2			3	3		2
CTRONICS AND ENGINEER	natics – II	S229.1	Estimate the best fit polynomial for the given tabulated data using the methods of Newton's interpolation and Lagrange's interpolation.	3	2	2									2
ELECT	Mathen	S229.2	Distinguish among the criteria of selection and procedures of various Numerical integration rules.	3	2	2									2

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		S229.3	Solve an initial value problem involving an ordinary differential equation by using various numerical methods and fit a curve to the given data point	2	2	1									2
		S229.4	Apply the knowledge of Bessel's and Legendre's functions in enginering area	3	2	2									2
		S229.5	Solve the mathematical models by using Probability	3	2	2									2
	~	S232.1	Identify the troubles due to hardness of water and its maintenance in industrial applications.	3	3	2			2	1					2
	hemistry	S232.2	Analyse fuels, differentiate working of IC and diesel engines and identify the significance of flue gas analysis.	3	3	2			2	1					2
	eering C	S232.3	Apply principles of corrosion and design and effective maintenancce of various equipments.	3	2	3			2	1					2
	Ingine	S232.4	Identify the importance of plastics and rubbers in technological applications.	3	2	2			2	1					2
	Η	\$232.5	Apply the principles of green chemistry and be able to use suitable liquid crystals in technology.	3	2	2			3	2					2
	al & - П	S212.1	Analyze various parameters of two port networks	2	3	1	-	-	-	-	-	-	-	-	1
	Electric Circuits Vetworks	S212.2	Synthesize different LC, RC, and RL networks by using Foster and Cauer methods	2	3	3	_	_	-	-	_	-	-	_	1
		S212.3	Design various types of passive filters.	2	3	3	-	-	-	-	-	-	-	-	1

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			Design symmetrical, asymmetrical												
		S212.4	attenuators & equalizers.	2	3	3	-	-	-	-	-	-	-	-	1
			Understand principles and characteristics of												
		S212.5	electrical machines.	1	-	-	-	-	-	-	-	-	-	-	1
	~		Analyze the behaviour of charge particles in												
	SS	<u>S224.1</u>	semi conductors.	3	2	-	-	-	-	-	-	-	-	-	2
	ice		Gain the knowledge of various Diode												
	)ev lits	S224.2	characteristics.	3	2	-	-	-	-	-	-	-	-	-	2
	ic I rcu	S224.3	Understand the operation of transistor	3	1	-	-	-	-	-	-	-	-	-	2
	Ci		Design the biasing techniques for BJT and												
	ctr	S224.4	FET.	3	3	2	-	-	-	-	-	-	-	-	2
	Ile		Apply the knowledge of diodes for design of												
		S224.5	rectifiers and regulators.	3	2	2	-	-	-	-	-	-	-	-	2
	q		Withstand the global competition in the job												
	<b>Ľ</b>		market with proficiency in English				3					3	3		2
	L L L	L144.1	communication.												
	lis	L144.2	Articulate English with good pronunciation.				3					3	3		2
	Inic		Face competitive exams like GRE, TOEFL,				2					n	2		2
	mu	L144.3	IELTS etc.				3					3	3		
	L L L L L L L L L L L L L L L L L L L		Face interviews and skillfully manage				2					n	2		
	Ŭ	L144.4	themselves in group discussions.				3					3	3		
			Assess quality of water based on the	2	2		2		2	2					
	lg lab	L140.1	procedures given.	3	3				2						
	rin y L		Perform different types of titrations in	2	2										
	nee str	L140.2	volumetric analysis		3										
	ngi		Apply the principles of polymerization in	2	2										
Eng	Er Che	L140.3	the preparation of polymers.	3											
		L140.4	Exhibit skills in performing experiments	2	2										

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			based on theoritical fundamentals.												
	cal s & rks	L135.1	Analyze the basic operation on electrical circuit.	1	1	-	2	2	-	-	-	-	-	_	-
	ctri suit wo Jab	L135.2	Evaluate two-port network parameters.	1	2	-	3	3	-	-	-	-	-	_	-
	Ele Circ Net	L135.3	Understand frequency response of passive filters.	1	1	-	1	1	-	-	-	-	-	-	-
	nic & Lab	L139.1	Analyze the operation of devices like diodes, transistors and FETs practically.	3				3	2					2	3
	ectror evices cuits ]	L139.2	Design electronic circuits using basic devices.	3				3	2					2	3
70	El De Cir	L139.3	Design rectifier circuits with and without filters.	3		3		3	2					2	3
CS		S239.1	Read, write and aptly understand what ever is written and spoken in English						2			3	3		2
CTRONICS M I	sh – I	S239.2	Speak fluently with acceptable pronunciation and write using appropriate words, spellings, grammar and syntax						2			3	3		2
ELEC G SE	Englis	S239.3	Read the lines, between lines and beyond lines excelling in comprehension skills						2			3	3		2
ELECTRICAL AND EL ENGINEERING		S239.4	Draft Reports, memos, mails & letters as part of their work						2			3	3		2
		S239.5	Speak grammatically error free English						2			3	3		2
	lied atics - I	<b>S132.1</b>	Apply first order and first degree differential equation to calculate orthogonal trajectories and current flow in a simple LCR circuit.	3	2	2									2
	App Mathem	\$132.2	Discriminate among the structure and procedures of solving a higher order D.E with constant coefficients and variable	3	2	2									2

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			coefficients.												
		<b>S132.3</b>	Compute the Jacobians and Maxima and Minima ( with constraints and without constraints) for functions of severable variables.	2	2	1									2
		S132.4	Distinguish among the Pros and Cons between the Row operation methods and Iterative methods in solving system of linear equations.	3	2	2									2
		S132.5	Compute the Eigen values and Eigen vectors and powers, Inverse of a square matrix through Cayley –Hamilton theorem.	3	2	2									2
	sics	S238.1	Identify the nature of Interference, Diffraction and Polarization.	3	3		2								3
	hys	S238.2	Explain the dual nature of matter particle.	3	3		2								3
	ring P	S238.3	Apply the Lasers and Optical fibers in different fields.	3	3	2	2	2							3
	gineel	S238.4	Classify the different types of magneatic materials and their applications.	3	3	3	2	2							3
	En	S238.5	Interpret the phenomenon of Super conductivity and their uses.	3	3		2	1							3
	nputer amming	S170.1	Identify basic elements of C program structure (data types, expressions, control statements, various simple functions) in view of using them in problem solving.	2	3	1									1
	Cor Progr	S170.2	Apply various operations on derived data types like arrays and strings in problem solving.	2	3	2									1

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		<b>S170.3</b>	Design and Implement modular programming and memory management using pointers.	2	3	2									1
		S170.4	Implement user defined data structures used in specific applications.	2	3	2									1
		S170.5	Compare different file I/O operations on text and binary files.	2	3	2									1
	igineering Mechanics	S146.1	Apply the principles of free body diagrams & equilibrium conditions in industries while designing any component	3	2		2	2							
		S146.2	Identify the forces and moments acting on rigid body	3	2		2	2							
		S146.3	Solve the static equilibrium of rigid bodies	3	2		2	2							
		S146.4	Estimate the trajectory and range of missiles in defense	3	2		2	2							
		L123.1	Understand the Auto-CAD basics and apply to solve practical problems used in industries where the speed and accuracy can be achieved.					3				1		2	1
	ed En ving	L123.2	Apply this idea and make design and modifications as required.					3				1		2	1
	ıter Aido Drav	L123.3	Draw 2-dimensional drawings of conventional engineering objects using Auto-CAD					3				1		2	1
	Compu	L123.4	Draw different plane and solid geometrical engineering objects and Visualize the sectional views of the objects					3				1		2	1

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	ing Lab	L126.1	Demonstrate C programming development environment, compiling, debugging, linking and executing a program using the development environment.	2	3	1	1	1			1		1		2
	ogramm	L126.2	Apply and practice logical formulations to solve some simple problems leading to specific applications.	2	3	1	1	1			1		1		2
	C pr	L126.3	Design effectively the required programming components that efficiently solve computing problems.	2	3	1	1	1			1		1		2
	ysics	L142.1	Explain the concept of diffration and find the wavelenth of light.	3	3	2	2					3			3
	ng Ph	L142.2	Estimate the specific rotation of sugar solution.	3	3	2	2					3			3
	eriı Lá	L142.3	Determine the frequency of AC source.	3	3							3			3
	Engine	L142.4	Describe resonance and formation of stationary waves by using Melde's arrangement.	3	3							3			3
	shop	L143.1	Model and Develop various basic prototypes in the carpentry trade	3		2	3	3	3			3			2
	Work	L143.2	Develop various basic prototypes in the trade of Welding	3		2	3	3	3			3			2
	ering	L143.3	Fabricate various basic prototypes in the trade of Tin smithy	3		2	3	3	3			3			2
	Enginee	L143.4	Understand various basic House Wiring concepts and implement them in simple electrical connections	3		2	3	3	3			3			2
CTR ONI CS	Engli sh – II	S240.1	Use English language effectively in written and spoken English						2			3	3		2

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		S240.2	Express the right ideas in right context.						2			3	3		2
		S240.3	Manage the situation and negotiate business with good English communication						2			3	3		2
		<b>S240.4</b>	Think and analyze the situations and make good presentations of their work and decisions						2			3	3		2
		S240.5	Prepare oneself to face interviews and also to participate in group discussions.						2			3	3		2
		<b>S133.1</b>	Apply Laplace transforms to solve ordinary differential equations	3	2	2									2
	tics – II	S133.2	Determine the Fourier coefficients in the Fourier series expansion of a given function in both Standard as well as arbitrary intervals.	3	2	2									2
	l Mathema	S133.3	Distinguish Among the three transformation techniques Fourier Transforms, Fourier cosine transforms and Fourier sine transforms.	2	2	1									2
	pplied	<b>S133.4</b>	Apply Z-transforms to solve difference equation.	3	2	2									2
	Ą	S133.5	Discriminate among Cartesian, polar and spherical coordinate multiple integrals and their respective applications to areas and volumes.	3	2	2									2
	neering mistry	<b>S232.1</b>	Identify the troubles due to hardness of water and its maintenance in industrial applications.	3	3	2			2	1					2
	Engi Che	S232.2	Analyse fuels, differentiate working of IC and diesel engines and identify the	3	3	2			2	1					2

Dept ·	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P O 12
			significance of flue gas analysis.												
			Apply principles of corrosion and design and effective maintenance of various	3	2	3			2	1					2
		S232.3	equipments.												
		S232.4	Identify the importance of plastics and rubbers in technological applications.	3	2	2			2	1					2
		<b>S232.5</b>	Apply the principles of green chemistry and be able to use suitable liquid crystals in technology.	3	2	2			3	2					2
	cuits	S209.1	Evaluate steady state behavior of single port networks for DC and AC Excitations	3	3										1
	Cir	S209.2	Analyze Electric and Magnetic circuits.	3	2										2
	rical - I	S209.3	Apply network topology techniques and theorems to calculate responses	3	3										2
	Elect	S209.4	Design Series and Parallel resonance circuits	3	2										2
	tures	S178.1	Compare normal data type with abstract data type(ADT), explore the sections of ADT. Analyse example programs with data structures using analysing tools.	3	3	1									
	ta Struc	\$178.2	Develop & analyse the algorithms for stack and queue operations leading to applications.	3	3	2									1
	Dat	S178.3	Analyse, implement and compare searching and sorting Techniques.	3	3	1									1
		S178.4	Design & analyse algorithms for operations on Binary Search Trees & AVL Trees data	3	3	2	1								1

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
			structures.												
			Evaluate Graph traversal and Minimum cost spanning tree algorithms and compare hashing methods on hash table data												
		S178.5	structure.	3	3	2	1								1
	ab	L140.1	Assess quality of water based on the procedures given.	3	3		2		2	2					
	eering try La	L140.2	Perform different types of titrations in volumetric analysis	2	3										
	Ingin	L140.3	Apply the principles of polymerization in the preparation of polymers.	3	2										
	C T	L140.4	Exhibit skills in performing experiments based on theoritical fundamentals.	2	2										
	ation	L114.1	Understand the different parts of a Lab VIEW program	1	2			3							1
	nul Ip.	L114.2	Learn simple debugging techniques	1	3			3							2
	L <sup>2</sup>	L114.3	Learn how to make decisions in Lab VIEW	1	2			3							1
	Basic	L114.4	Learn how to create an executable file with Lab VIEW	1	2			3							1
	h ion Lab	L144.1	Withstand the global competition in the job market with proficiency in English communication.				3					3	3		2
	glisl	L144.2	Articulate English with good pronunciation.				3					3	3		2
	Eng muni	L144.3	Face competitive exams like GRE, TOEFL, IELTS etc.				3					3	3		2
	Com	L144.4	Face interviews and skillfully manage themselves in group discussions.				3					3	3		2
	St ct ur	L128.1	Implement & test the functionality of data	3	3	1	1				1	1	1		1

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	РО 11	P 0 12
			structures like linked list, stacks & queues .												
			Implement & test the functionality of												
		L128.2	searching & sorting techniques.	3	3	1	1				1	1	1		1
			Implement & test the functionality of trees												
		L128.3	and graph traversal techniques.	3	3	1	1				1	1	1		1
		\$239.1	Read, write and aptly understand what ever is written and spoken in English						2			3	3		2
		5257.1	Speak fluently with acceptable												
Z	_		pronunciation and write using appropriate						2			3	3		2
IO		S239.2	words, spellings, grammar and syntax									_	_		
AT	silis		Read the lines, between lines and beyond						2			2	2		2
L	Bug	S239.3	lines excelling in comprehension skills						2			3	3		
G SEM I			Draft Reports, memos, mails & letters as						2			3	3		2
		S239.4	part of their work						2			5	5		
		S239.5	Speak grammatically error free English						2			3	3		2
SN N			Apply first order and first degree differential												
DI			equation to calculate orthogonal trajectories	3	2	2									2
<b>E</b>	I	<u>S132.1</u>	and current flow in a simple LCR circuit.												<u> </u>
SE	tics		Discriminate among the structure and												
UN N	ma		procedures of solving a higher order D.E	3	2	2									2
<b>O</b>	hei	6122.2	with constant coefficients and variable												
IR	Iat	5132.2	Comments.												
Ŭ	N P		Minima (with constraints and without												
ILEC	lie		constraints) for functions of severable	2	2	1									2
щ	ddv	\$132.3	variables												
		0152.5	Distinguish among the Pros and Cons												
		S132.4	between the Row operation methods and	3	2	2									2

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P O 12
			Iterative methods in solving system of linear equations.												
		\$132.5	Compute the Eigen values and Eigen vectors and powers, Inverse of a square matrix through Cayley –Hamilton theorem.	3	2	2									2
	ics	S238.1	Identify the nature of Interference, Diffraction and Polarization.	3	3		2								3
	hys	S238.2	Explain the dual nature of matter particle.	3	3		2								3
	ring F	<b>S238.3</b>	Apply the Lasers and Optical fibers in different fields.	3	3	2	2	2							3
	Iginee	S238.4	Classify the different types of magneatic materials and their applications.	3	3	3	2	2							3
	En	S238.5	Interpret the phenomenon of Super conductivity and their uses.	3	3		2	1							3
	ning	S170.1	Identify basic elements of C program structure (data types, expressions, control statements, various simple functions) in view of using them in problem solving.	2	3	1									1
	rogramn	<b>S170.2</b>	Apply various operations on derived data types like arrays and strings in problem solving.	2	3	2									1
	puter P	<b>S170.3</b>	Design and Implement modular programming and memory management using pointers.	2	3	2									1
	Com	S170.4	Implement user defined data structures used in specific applications.	2	3	2									1
		<b>S170.5</b>	Compare different file I/O operations on text and binary files.	2	3	2									1

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		S156.1	Identify basic electrical components such as resistors, capacitors and inductors and define Ohm's law,Kirchoffs law and Faradays law of electromagnetic induction	3	3										
	ory	S156.2	Describe the Electrical Circuit Concepts, Graph Theory, Concept of Reactance, self and mutual inductance, power factor and j notation	3	3										
	Circuit The	S156.3	Apply Kirchhoff's voltage and current laws to the analysis of electric circuits,the concepts of electric network topology to solve circuit problems and different circuit theorems for AC and DC circuits to obtain solutions.	3	3										
		S156.4	Analyze circuits with ideal, independent, controlled voltage and current sources, Series R-L,R-C and R-L-C circuits .	3	3										
		S156.5	Design simple electrical networks and interpret them	3	3										
	ing Lab	L126.1	Demonstrate C programming development environment, compiling, debugging, linking and executing a program using the development environment.	2	3	1	1	1			1		1		2
	ogrammi	L126.2	Apply and practice logical formulations to solve some simple problems leading to specific applications.	2	3	1	1	1			1		1		2
	C pro	L126.3	Design effectively the required programming components that efficiently solve computing problems.	2	3	1	1	1			1		1		2

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
	ysics	L142.1	Explain the concept of diffration and find the wavelenth of light.	3	3	2	2					3			3
	ng Ph b	L142.2	Estimate the specific rotation of sugar solution.	3	3	2	2					3			3
	L <sup>2</sup>	L142.3	Determine the frequency of AC source.	3	3							3			3
	Engine	L142.4	Describe resonance and formation of stationary waves by using Melde's arrangement.	3	3							3			3
	shop	L143.1	Model and Develop various basic prototypes in the carpentry trade	3		2	3	3	3			3			2
	Work	L143.2	Develop various basic prototypes in the trade of Welding	3		2	3	3	3			3			2
	ering	L143.3	Fabricate various basic prototypes in the trade of Tin smithy	3		2	3	3	3			3			2
	Engine	L143.4	Understand various basic House Wiring concepts and implement them in simple electrical connections	3		2	3	3	3			3			2
	gineering	L123.1	Understand the Auto-CAD basics and apply to solve practical problems used in industries where the speed and accuracy can be achieved.					3				1		2	1
	ed En ving	L123.2	Apply this idea and make design and modifications as required.					3				1		2	1
	iter Aidd Drav	L123.3	Draw 2-dimensional drawings of conventional engineering objects using Auto-CAD					3				1		2	1
	Compu	L123.4	Draw different plane and solid geometrical engineering objects and Visualize the sectional views of the objects					3				1		2	1

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Π		S240.1	Use English language effectively in written and spoken English						2			3	3		2
M		S240.2	Express the right ideas in right context.						2			3	3		2
NG SE	sh – I	S240.3	Manage the situation and negotiate business with good English communication						2			3	3		2
NEERI	Engli	<b>S240.4</b>	Think and analyze the situations and make good presentations of their work and decisions						2			3	3		2
IDU		S240.5	Prepare oneself to face interviews and also to participate in group discussions.						2			3	3		2
ECTRONICS AND INSTRUMENTATION E		<b>S133.1</b>	Apply Laplace transforms to solve ordinary differential equations	3	2	2									2
	tics – 11	S133.2	Determine the Fourier coefficients in the Fourier series expansion of a given function in both Standard as well as arbitrary intervals.	3	2	2									2
	l Mathemat	S133.3	Distinguish Among the three transformation techniques Fourier Transforms, Fourier cosine transforms and Fourier sine transforms.	2	2	1									2
	pplied	<b>S133.4</b>	Apply Z-transforms to solve difference equation.	3	2	2									2
		S133.5	Discriminate among Cartesian, polar and spherical coordinate multiple integrals and their respective applications to areas and volumes.	3	2	2									2
ELE	Enginee ring Chemis try	<b>S232.1</b>	Identify the troubles due to hardness of water and its maintenance in industrial applications.	3	3	2			2	1					2

Dept •	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P O 12
		<b>S232.2</b>	Analyse fuels, differentiate working of IC and diesel engines and identify the significance of flue gas analysis.	3	3	2			2	1					2
		<b>\$232.3</b>	Apply principles of corrosion and design and effective maintenance of various equipments.	3	2	3			2	1					2
		S232.4	Identify the importance of plastics and rubbers in technological applications.	3	2	2			2	1					2
		<b>S232.5</b>	Apply the principles of green chemistry and be able to use suitable liquid crystals in technology.	3	2	2			3	2					2
	and	S224.1	Analyze the behaviour of charge particles in semi conductors.	3										2	2
	vices its	S224.2	Gain the knowledge of various Diode characteristics.	3			3		2					2	2
	ic De ircui	S224.3	Understand the operation of transistor	3			3		2					2	2
	ctroni C	S224.4	Design the biasing techniques for BJT and FET.	3		3	2							2	2
	Ele	S224.5	Apply the knowledge of diodes for design of rectifiers and regulators.	3		3	2		2					2	2
	Structures	S178.1	Compare normal data type with abstract data type(ADT), explore the sections of ADT. Analyse example programs with data structures using analysing tools.	3	3	1									
	Data	S178.2	Develop & analyse the algorithms for stack and queue operations leading to applications.	3	3	2									1

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P O 12
		S178.3	Analyse, implement and compare searching and sorting Techniques.	3	3	1									1
		<b>S178.4</b>	Design & analyse algorithms for operations on Binary Search Trees & AVL Trees data structures.	3	3	2	1								1
			Evaluate Graph traversal and Minimum cost spanning tree algorithms and compare hashing methods on hash table data												
		S178.5 L140.1	structure. Assess quality of water based on the procedures given.	3	3	2	2		2	2					
	eering try La	L140.2	Perform different types of titrations in volumetric analysis	2	3										
	Engin	L140.3	Apply the principles of polymerization in the preparation of polymers.	3	2										
	C 7	L140.4	Exhibit skills in performing experiments based on theoritical fundamentals.	2	2										
	ı ion Lab	L144.1	Withstand the global competition in the job market with proficiency in English communication.				3					3	3		2
	glisl	L144.2	Articulate English with good pronunciation.				3					3	3		2
	Eng	L144.3	Face competitive exams like GRE, TOEFL, IELTS etc.				3					3	3		2
	Com	L144.4	Face interviews and skillfully manage themselves in group discussions.				3					3	3		2
	ronic vices nd cuits	L139.1	Analyze the operation of devices like diodes, transistors and FETs practically.	3				3	2					2	3
	Elect Dev ai Cird	L139.2	Design electronic circuits using basic devices.	3				3	2					2	3

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		L139.3	Design rectifier circuits with and without filters.	3		3		3	2					2	3
	tures	L128.1	Implement & test the functionality of data structures like linked list, stacks & queues.	3	3	1	1				1	1	1		1
	Struc Lab	L128.2	Implement & test the functionality of searching & sorting techniques.	3	3	1	1				1	1	1		1
	Data	L128.3	Implement & test the functionality of trees and graph traversal techniques.	3	3	1	1				1	1	1		1
SEM 1		S239.1	Read, write and aptly understand what ever is written and spoken in English						2			3	3		2
LOGY S	sh – I	S239.2	Speak fluently with acceptable pronunciation and write using appropriate words, spellings, grammar and syntax						2			3	3		2
IONH	Englis	S239.3	Read the lines, between lines and beyond lines excelling in comprehension skills						2			3	3		2
TEC		S239.4	Draft Reports, memos, mails & letters as part of their work						2			3	3		2
NC		S239.5	Speak grammatically error free English						2			3	3		2
INFORMATION	ics - I	<b>S132.1</b>	Apply first order and first degree differential equation to calculate orthogonal trajectories and current flow in a simple LCR circuit.	3	2	2									2
	Mathemat	S132.2	Discriminate among the structure and procedures of solving a higher order D.E with constant coefficients and variable coefficients.	3	2	2									2
	Applied	S132.3	Compute the Jacobians and Maxima and Minima ( with constraints and without constraints) for functions of severable variables.	2	2	1									2

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		S132.4	Distinguish among the Pros and Cons between the Row operation methods and Iterative methods in solving system of linear equations.	3	2	2									2
		\$132.5	Compute the Eigen values and Eigen vectors and powers, Inverse of a square matrix through Cayley –Hamilton theorem.	3	2	2									2
	~	<b>S232.1</b>	Identify the troubles due to hardness of water and its maintenance in industrial applications.	3	3	2			2	1					2
	hemistr	<b>S232.2</b>	Analyse fuels, differentiate working of IC and diesel engines and identify the significance of flue gas analysis.	3	3	2			2	1					2
	eering C	<b>\$232.3</b>	Apply principles of corrosion and design and effective maintenance of various equipments.	3	2	3			2	1					2
	Ingin	S232.4	Identify the importance of plastics and rubbers in technological applications.	3	2	2			2	1					2
	-	<b>\$232.5</b>	Apply the principles of green chemistry and be able to use suitable liquid crystals in technology.	3	2	2			3	2					2
	outer mming	S170.1	Identify basic elements of C program structure (data types, expressions, control statements, various simple functions) in view of using them in problem solving.	2	3	1									1
	Com] Progra	<b>S170.2</b>	Apply various operations on derived data types like arrays and strings in problem solving.	2	3	2									1
		<b>S170.3</b>	Design and Implement modular	2	3	2									1

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P O 12
			programming and memory management using pointers												
		S170.4	Implement user defined data structures used in specific applications.	2	3	2									1
		S170.5	Compare different file I/O operations on text and binary files.	2	3	2									1
	-	S143.1	Analyze different types of electrical circuits.	1	1	1	2								3
	octrica ering	S143.2	Understand principle of working of different types of Machines	2	1	1	2								3
	ic Ele ngine	S143.3	Use the techniques to measure efficiency and regulation of AC Machines	3	2	1	1								3
	Bas	S143.4	Understand the working of electrical and electronics measuring instruments.		1	2	3	2							3
	ı ion Lab	L144.1	Withstand the global competition in the job market with proficiency in English communication.				3					3	3		2
	glisł cati	L144.2	Articulate English with good pronunciation.				3					3	3		2
	Eng	L144.3	Face competitive exams like GRE, TOEFL, IELTS etc.				3					3	3		2
	Com	L144.4	Face interviews and skillfully manage themselves in group discussions.				3					3	3		2
	ramming .ab	L126.1	Demonstrate C programming development environment, compiling, debugging, linking and executing a program using the development environment.	2	3	1	1	1			1		1		2
	C prog	L126.2	Apply and practice logical formulations to solve some simple problems leading to specific applications.	2	3	1	1	1			1		1		2

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		L126.3	Design effectively the required programming components that efficiently solve computing problems.	2	3	1	1	1			1		1		2
	ab	L140.1	Assess quality of water based on the procedures given.	3	3		2		2	2					
	eering try La	L140.2	Perform different types of titrations in volumetric analysis	2	3										
	Engin hemis	L140.3	Apply the principles of polymerization in the preparation of polymers.	3	2										
	C	L140.4	Exhibit skills in performing experiments based on theoritical fundamentals.	2	2										
	und uite	L175.1	Have a clear understanding on flow of control		3	3	3			3		3		2	2
	ptor 2 fice su Lab.	L175.2	Mastering the flow chart for problem solving real world problems.		3	3	3					3		2	2
	Ra Of	L175.3	To evalate, document and present the problems.		3	3	3					3		2	2
rion Em II		S240.1	Use English language effectively in written and spoken English						2			3	3		2
VIA V SH	<b>_</b>	S240.2	Express the right ideas in right context.						2			3	3		2
INFORMA ECHNOLOGY S	sh – I	S240.3	Manage the situation and negotiate business with good English communication						2			3	3		2
	Engli	S240.4	Think and analyze the situations and make good presentations of their work and decisions						2			3	3		2
TF		S240.5	Prepare oneself to face interviews and also to participate in group discussions.						2			3	3		2
	M at he m	S133.1	Apply Laplace transforms to solve ordinary	3	2	2									2

Dept •	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	<b>PO</b> 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
			differential equations												
		S133.2	Determine the Fourier coefficients in the Fourier series expansion of a given function in both Standard as well as arbitrary intervals.	3	2	2									2
		S133.3	Distinguish Among the three transformation techniques Fourier Transforms, Fourier cosine transforms and Fourier sine transforms.	2	2	1									2
		<b>S133.4</b>	Apply Z-transforms to solve difference equation.	3	2	2									2
		\$133.5	Discriminate among Cartesian, polar and spherical coordinate multiple integrals and their respective applications to areas and volumes	3	2	2									2
	sics	S238.1	Identify the nature of Interference, Diffraction and Polarization.	3	3		2								3
	hys	S238.2	Explain the dual nature of matter particle.	3	3		2								3
	cing P	S238.3	Apply the Lasers and Optical fibers in different fields.	3	3	2	2	2							3
	gineeı	S238.4	Classify the different types of magneatic materials and their applications.	3	3	3	2	2							3
	En	S238.5	Interpret the phenomenon of Super conductivity and their uses.	3	3		2	1							3
	ronic vices nd cuits	S224.1	Analyze the behaviour of charge particles in semi conductors.	3										2	2
	Elect s De ai Circ	S224.2	Gain the knowledge of various Diode characteristics.	3			3		2					2	2

Dept ·	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P O 12
		S224.3	Understand the operation of transistor	3			3		2					2	2
		S224.4	Design the biasing techniques for BJT and FET.	3		3	2							2	2
		S224.5	Apply the knowledge of diodes for design of rectifiers and regulators.	3		3	2		2					2	2
		S178.1	Compare normal data type with abstract data type(ADT), explore the sections of ADT. Analyse example programs with data structures using analysing tools.	3	3	1									
	ctures	S178.2	Develop & analyse the algorithms for stack and queue operations leading to applications.	3	3	2									1
	a Stru	<b>S178.3</b>	Analyse, implement and compare searching and sorting Techniques.	3	3	1									1
	Dat	<b>S178.4</b>	Design & analyse algorithms for operations on Binary Search Trees & AVL Trees data structures.	3	3	2	1								1
			Evaluate Graph traversal and Minimum cost spanning tree algorithms and compare hashing methods on hash table data												
		S178.5	structure.	3	3	2	1								1
	ing ab	L142.1	Explain the concept of diffration and find the wavelenth of light.	3	3	2	2					3			3
	gineer sics I	L142.2	Estimate the specific rotation of sugar solution.	3	3	2	2					3			3
	Eng Phy	L142.3	Determine the frequency of AC source.	3	3							3			3
		L142.4	Describe resonance and formation of	3	3							3			3

Dept •	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P O 12
			stationary waves by using Melde's												
	kshop	L154.1	Develop skill in S/W and H/W trouble shooting, and solve the problems of assembling and OS installation.	1			1				1	3	1		2
	Vor	L154.2	Develop skill in using office suite.	2			1	3			1	1	1		2
	IT γ	L154.3	Develop skill in using tools like RAPTOR, LaTeX and adobe Photoshop.	1			1	3			1	1	3		2
	ering	L123.1	Apply this idea and make design and modifications as required.					3				1		2	1
	l Engine ing	L123.2	Draw 2-dimensional drawings of conventional engineering objects using Auto-CAD					3				1		2	1
	er Aidec Draw	L123.3	Draw different plane and solid geometrical engineering objects and Visualize the sectional views of the objects					3				1		2	1
	Comput	L123.4	Draw different plane and solid geometrical engineering objects and Visualize the sectional views of the objects					3				1		2	1
	ctures	L128.1	Implement & test the functionality of data structures like linked list, stacks & queues .	3	3	1	1				1	1	1		1
	Struc Lab	L128.2	Implement & test the functionality of searching & sorting techniques.	3	3	1	1				1	1	1		1
	Data	L128.3	Implement & test the functionality of trees and graph traversal techniques.	3	3	1	1				1	1	1		1
L NGIN ERIN	glish - I	S239.1	Read, write and aptly understand what ever is written and spoken in English						2			3	3		2
E	En	S239.2	Speak fluently with acceptable						2			3	3		2

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P O 12
			pronunciation and write using appropriate												
		S239.3	Read the lines, between lines and beyond lines excelling in comprehension skills						2			3	3		2
		S239.4	Draft Reports, memos, mails & letters as part of their work						2			3	3		2
		S239.5	Speak grammatically error free English						2			3	3		2
		S132.1	Apply first order and first degree differential equation to calculate orthogonal trajectories and current flow in a simple LCR circuit.	3	2	2									2
	Applied Mathematics - I	S132.2	Discriminate among the structure and procedures of solving a higher order D.E with constant coefficients and variable coefficients.	3	2	2									2
		S132.3	Compute the Jacobians and Maxima and Minima ( with constraints and without constraints) for functions of severable variables.	2	2	1									2
		S132.4	Distinguish among the Pros and Cons between the Row operation methods and Iterative methods in solving system of linear equations.	3	2	2									2
		\$132.5	Compute the Eigen values and Eigen vectors and powers, Inverse of a square matrix through Cayley –Hamilton theorem.	3	2	2									2
	Enginee ring Chemis try	S232.1	Identify the troubles due to hardness of water and its maintenance in industrial applications.	3	3	2			2	1					2

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		\$232.2	Analyse fuels, differentiate working of IC and diesel engines and identify the significance of flue gas analysis.	3	3	2			2	1					2
		<b>\$232.3</b>	Apply principles of corrosion and design and effective maintenance of various equipments.	3	2	3			2	1					2
		S232.4	Identify the importance of plastics and rubbers in technological applications.	3	2	2			2	1					2
		<b>S232.5</b>	Apply the principles of green chemistry and be able to use suitable liquid crystals in technology.	3	2	2			3	2					2
	aing	S170.1	Identify basic elements of C program structure (data types, expressions, control statements, various simple functions) in view of using them in problem solving.	2	3	1									1
	rogramn	<b>S170.2</b>	Apply various operations on derived data types like arrays and strings in problem solving.	2	3	2									1
	Iputer P	<b>S170.3</b>	Design and Implement modular programming and memory management using pointers.	2	3	2									1
	Com	S170.4	Implement user defined data structures used in specific applications.	2	3	2									1
		S170.5	Compare different file I/O operations on text and binary files.	2	3	2									1
	Engineeri ng Graphics	S235.1	Recognize the value of engineering graphics as a language of communication and understanding BIS conventions of lettering, lines and dimensioning; Develop an	2	1	2		3	2			3	2		1

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
			engineering curve using different approaches.												
		<b>S235.2</b>	Comprehend the basics of orthographic projections and deduce orthographic projections of a point and a line.	3	2	2		3				3	2		1
		S235.3	Visualize and deduce orthographic projections of planes	2	3	2		3				3	2		1
		S235.4	Visualize wide variety of solid objects and drawing the missing views.	2	3	2		3				3	2		1
		S235.5	Understand the significance of isometric drawing; apply the basic method of isometric drawing; infer the nature of engineering graphics, the relationship between 2D and 3D environments.	3	3	3		3	2			3	3		1
	h ion Lab	L144.1	Withstand the global competition in the job market with proficiency in English communication.				3					3	3		2
	glis! cati	L144.2	Articulate English with good pronunciation.				3					3	3		2
	Eng	L144.3	Face competitive exams like GRE, TOEFL, IELTS etc.				3					3	3		2
	Com	L144.4	Face interviews and skillfully manage themselves in group discussions.				3					3	3		2
	ramming Lab	L126.1	Demonstrate C programming development environment, compiling, debugging, linking and executing a program using the development environment.	2	3	1	1	1			1		1		2
	C prog	L126.2	Apply and practice logical formulations to solve some simple problems leading to specific applications.	2	3	1	1	1			1		1		2

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
		L126.3	Design effectively the required programming components that efficiently solve computing problems.	2	3	1	1	1			1		1		2
	a da	L140.1	Assess quality of water based on the procedures given.	3	3		2		2	2					
	eering try Lá	L140.2	Perform different types of titrations in volumetric analysis	2	3										
	Ingin	L140.3	Apply the principles of polymerization in the preparation of polymers.	3	2										
	- D	L140.4	Exhibit skills in performing experiments based on theoritical fundamentals.	2	2										
	Simulation Lab	L114.1	Understand the different parts of a Lab VIEW program	1	2			3							1
		L114.2	Learn simple debugging techniques	1	3			3							2
		L114.3	Learn how to make decisions in Lab VIEW	1	2			3							1
	Basic	L114.4	Learn how to create an executable file with Lab VIEW	1	2			3							1
ICAL EM II		S240.1	Use English language effectively in written and spoken English						2			3	3		2
		S240.2	Express the right ideas in right context.						2			3	3		2
ECH/ RING	sh – I	S240.3	Manage the situation and negotiate business with good English communication						2			3	3		2
M GINEE	Engli	<b>S240.4</b>	Think and analyze the situations and make good presentations of their work and decisions						2			3	3		2
EN		S240.5	Prepare oneself to face interviews and also to participate in group discussions.						2			3	3		2
	M at he m	<b>S133.1</b>	Apply Laplace transforms to solve ordinary	3	2	2									2

Dept •	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P 0 12
			differential equations												
		S133.2	Determine the Fourier coefficients in the Fourier series expansion of a given function in both Standard as well as arbitrary intervals.	3	2	2									2
		S133.3	Distinguish Among the three transformation techniques Fourier Transforms, Fourier cosine transforms and Fourier sine transforms.	2	2	1									2
		S133.4	Apply Z-transforms to solve difference equation.	3	2	2									2
		8133.5	Discriminate among Cartesian, polar and spherical coordinate multiple integrals and their respective applications to areas and volumes.	3	2	2									2
	sics	S238.1	Identify the nature of Interference, Diffraction and Polarization.	3	3		2								3
	hys	S238.2	Explain the dual nature of matter particle.	3	3		2								3
	cing P	S238.3	Apply the Lasers and Optical fibers in different fields.	3	3	2	2	2							3
	gineeı	S238.4	Classify the different types of magneatic materials and their applications.	3	3	3	2	2							3
	En	S238.5	Interpret the phenomenon of Super conductivity and their uses.	3	3		2	1							3
	Basıc echanica I ıgineerin	S147.1	Distinguishes various metal joining, manufacturing processes and machine tools components						2	2				1	1
	M Er	S147.2	Apply the concepts of centroid, center of	3	3	1			3	1	2				

Dept •	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	PO 11	P O 12
			gravity and moment of inertia for plane figures and solid bodies.												
		<b>S147.3</b>	Analyze the concepts of thermodynamics and potential of other sources of energy.	3	3		2		2	1					2
		S147.4	Comprehends the various fuels and lubricants for various engines.						2	2				1	1
		S147.5	Compare the working of heat engines, steam and gas turbine systems.						2	2				1	1
		<b>S237.1</b>	Analyze the stability of rigid bodies under different types of force systems through free body diagrams approach.	3	3	1									1
	ıg Mechanics	<b>S237.2</b>	Analyze the stability of rigid bodies in contact under different types of friction and frictional forces	3	2	1									1
		<b>S237.3</b>	Compute the displacement, velocity and acceleration of the particles & Estimatethe trajectory and range of projectiles.	3	2	1									1
	Engineerii	S237.4	Analyze the different types of motion and stability of rigid bodies on earth and in space under various force systems and different conditions of velocity and acceleration.	3	3	1									1
		<b>S237.5</b>	Analyze the stability of rigid bodies in motion and their stability using the work – energy principle.	3	3	1									1
	neeri 1ysics ab	L142.1	Explain the concept of diffration and find the wavelenth of light.	3	3	2	2					3			3
	Engi ng Pl L:	L142.2	Estimate the specific rotation of sugar solution.	3	3	2	2					3			3

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	<b>PO</b> 1	PO 2	PO 3	PO 4	PO 5	PO 6	РО 7	PO 8	PO 9	PO 10	РО 11	P 0 12
		L142.3	Determine the frequency of AC source.	3	3							3			3
			Describe resonance and formation of												
			stationary waves by using Melde's	3	3							3			3
		L142.4	arrangement.												
	50		Understand the Auto-CAD basics and apply												
	i.i.		to solve practical problems used in					3				1		2	1
	nee		industries where the speed and accuracy can									-			
	ab	L124.1	be achieved.											Ļ	<u> </u>
	E		Apply this idea and make design and					3				1		2	1
	led	L124.2	modifications as required.					_						<b> </b>	
	Aid aph		Draw 2-dimensional drawings of									1			1
	Computer . Grs	T 10 1 0	conventional engineering objects using					3				I		2	
		L124.3	Auto-CAD											<u> </u>	
			Draw different plane and solid geometrical					2				1		2	1
		T 104 4	engineering objects and Visualize the					3				I		2	
		L124.4	sectional views of the objects											<u> </u>	
	dor	T 1 4 2 1	Model and Develop various basic prototypes	3		2	3	3	3			3			2
	ksl	L143.1	In the carpentry trade											<u> </u>	
	/or	T 142 2	bevelop various basic prototypes in the	3		2	3	3	3			3			2
	5	L143.2	Exprised verify have a set of the											<u> </u>	
	ing	T 1 / 2 2	radicate various basic prototypes in the	3		2	3	3	3			3			2
	eer	L143.3	Understand various basic House Wiring												
	gin		concents and implement them in simple	3		2	3	3	3			3			2
	<b>u</b> ∃	I 1/3 /	electrical connections	5			5	5	5			5			
	.i. C	1173.7	Understands to find the Viscosity of												
	nc ani eer ab	L113 1	different oils using Viscometers						2	2	2				1
	sas ch: al gin	1117,1	Compute the Radius of Gyration using												<u> </u>
	T Me Eng	L113.2	compound pendulum and bifilar suspension.	2	2		2								

Dept	COURS E	COURS E CODE	COURSE OUTCOMES	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	<b>PO</b> 7	PO 8	PO 9	PO 10	РО 11	P 0 12
		L113.3	Analyze valve and port timing diagrams in I.C engines.		3		2		2	2					1
		L113.4	Fabricate the different welded jointsusing different welding techniques and develop the skills to work on different machine tools.	3		3			2	2					1