



<b>N</b>	C02	3	2										1		
	C03	3	2										1		
	C04	3	2										1		
	C05	3	2										1		
	C06	3	2										1		

<b>R161104</b>	<b>Applied Physics</b>	C01	Students acquire the ability to apply knowledge of Interference concepts of light.													
		C02	Students acquire the ability to apply knowledge of Diffraction concepts of light.													
		C03	Students will be able to understand the applications of Lasers.													
		C04	Knowledge of EM Wave propagation and its applications will be gained													
		C05	Students will be able to develop scientific point of view in solving problems in Quantum mechanic													
		C06	Students will be able to design and analyse Laws and principles of Semiconductor Physics and con													
		<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>			
	C01	3	2										1			
	C02	3	2										1			
	C03	3	2										1			
	C04	3	2										1			
	C05	3	2										1			
	C06	3	2										1			

<b>R161107</b>	<b>Computer Programming</b>	C01	Able to Design algorithmic solutions to problems and implementing algorithms inC.													
		C02	Able to Design algorithmic solutions to problems and implementing algorithms inC.													
		C03	Able to Illustrate branching, iteration and data representation using arrays.													
		C04	Able to Implement modular programming and recursive solution formulation.													
		C05	Able to Illustrate branching, iteration and data representation using arrays.													
		C06	Able to Comprehend pointers and dynamic memory allocation.													
		<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>	<b>PSO1</b>	<b>PSO2</b>	
	C01	1	1	3	1	1								3	3	
	C02	1	1	3	1	1								3	3	
	C03	2	2	2	2									3	2	
	C04	2	2	3	2	2								3	2	
	C05	2	2	2	2									3	2	
	C06	2	2	2	3	2								3	3	

<b>R161113</b>	<b>ENGG DRAWING</b>	C01	Able to understand different scales used in industry and draw various curves.													
		C02	Able to recognize principles of projections to draw orthographic projections.													
		C03	Able to interpret the projection principles to draw projections of straight lines.													
		C04	Able to understand the various ways to draw projection of planes.													
		C05	Able to draw projections of solids by applying principles of orthographic projections and isometric projections													
		C06	Able to convert isometric views into orthographic views and orthographic views to isometric													
		<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>	<b>PSO1</b>	<b>PSO2</b>	
	C01	3	3	2						1			1	1		

C02	3	2	2						1			1	1	2
C03	3	2	2						1			1	1	2
C04	2	2	2						1			1	2	2
C05	2	2	3						1			1	3	1
C06	2	2	3						1			1	1	1

ENGLISH COMMUNICATION SKILLS LAB	C01	Elicit information in English and respond appropriately													
	C02	Learn telephone etiquette and converse effectively													
	C03	Use functional English as demanded by situations through role plays													
	C04	Understand native and non-native accents of English													
	C05	Learn Phonetics of English and transcribe given texts													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01										1	3		1		
C02										1	3		1		
C03										1	3		1		
C04										1	3		1		
C05										1	3		1		

APPLIED PHYSICS LABORATORY	C01	Able to understand basic knowledge of physics & experimental experience like sound, acceleration & time.													
	C02	Able to understand basic electronics & experimental experience of electrical circuits.													
	C03	Able to understand electromagnetism and experimental experience.													
	C04	Able to understand the light properties & experimental experience of interference & diffraction.													
	C05	Able to understand basic electronics & experimental experience of electrical circuits.													
	C06	Able to understand electromagnetism and experimental experience.													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		
C01		3			3	2							1		
C02		3			3	2							1		
C03		3			3	2							1		
C04		3			3	2							1		
C05		3			3	2							1		
C06		3			3	2							1		

WORKSHOP & IT WORKSHOP	C01	To select suitable carpentry tools to prepare different types of joints.												
	C02	To identify tools required in the fitting operation to perform joint preparations.												
	C03	To understand the process of making different objects with thin sheets using proper tin smithy tools.												
	C04	To differentiate single phase, 3 phase wiring connections.												
	C05	Identify the basic computer peripheral and gain sufficient knowledge on assembling and disassembling a PC.												
	C06	Learn the installation procedure of Windows and Linux OS, Acquire knowledge on basic												

ENGINEERING	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
	C01	3	3				2		2				3	2	
	C02	3	3				2		2				3	3	2
	C03	3	3				2		2				3		
	C04	3	3				2		2				3		2
	C05	3	3				2		2				3	3	
	C06	3	3				2		2				3	2	1

R161201	ENGLISH-II	C01	Read and comprehend biographies and technical texts in English												
		C02	Write letters, emails effectively using appropriate format for technical communication												
		C03	Improve listening skills particularly related to Technical English and speak in English without inhibition												
		C04	Improve word power and identify grammatical errors in sentences												
		C05	Draft technical reports, summarize stories and articles												
		C06	critically respond in English to a real life situations and improve life skills and core skills necessary for effective communication												
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
C01											3		1		
C02											3		1		
C03									2		3		1		
C04											3		1		
C05											3		1		
C06									2		3		1		

R161203	MATHEMATICS-III	C01	An Ability to Solve the system of linear equations and Analyse their applications.												
		C02	An Ability to Compute an Eigen values and eigen vectors												
		C03	Evaluate double and Triple integrals and Apply to find surface area and volumes of solids.												
		C04	Able to Compare definite integral with special functions												
		C05	Able to Differentiate the scalar and vector functions.												
		C06	Able to Understand line, surface and volume integrals and Establish vector integral theorems.												
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	
C01		3	2										1		
C02		3	2										1		
C03		3	2										1		
C04		3	2										1		
C05		3	2										1		
C06		3	2										1		

**co1** **Able to** explain about synthesis, physical and mechanical properties, compounding and **reframing &** fabrication of polymers, plastics and elastomers and **Applications** of fibre reinforced polymers along with conducting polymers

R161211	Applied Chemistry	C02	Recognize specific characteristic properties of fuels including calorific value determination , Ranking and Analysis of coal by proximate and ultimate methods
		C03	Understanding the principles, Construction and working of galvanic cells, electrode potentials, concentration cells , rechargeable batteries Apply the knowledge of electro chemistry to corrosion, distinguish various types of corrosions and able to solve corrosion problems
		C04	Discovery of advanced materials i.e.nano materials, liquid crystals, super conductors and Illustrate the applications of cleaner and greener synthetic methods adapt in industries for healthy living
		C05	Understanding the structures of solid crystalline structures, synthesis of ultra pure semiconductors
		C06	Recognize non conventional energy sources, construction & working of photovoltaic cell, design of

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		
C01	2	3									2	0		
C02	3	3									2	2		
C03	2	2									1	3		
C04	3	2									1	3		
C05	2	1									1	1		
C06	2	2									1	2		

R161214	ELECTRICAL AND MECHANICAL TECHNOLOGY	C01	
		C02	
		C03	
		C04	
		C05	
		C06	

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01														
C02														
C03														
C04														
C05														
C06														

ES	C01	Able to Understand The concepts of the ecosystem
	C02	Able to Understand The natural resources and their importance
	C03	Able to learn The biodiversity of India and the threats to biodiversity ,and Apply conservation practices

R161212	ENVIRONMENTAL STUDIES	CO4	Able to learn Various attributes of the pollution and their impacts												
		CO5	Able to Understand Social issues both rural and urban environment												
		CO6	Able to Understand About environmental Impact assessment and Evaluate the stages involved in												
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	C01	3			3	2		3	3			3	2	2	
	C02	2			2	2		2	2			3	2	3	2
	C03	3			3	2		2	2			3	3		
	C04	2			3	2		2	2			3	3		2
	C05	3			1	3		3	3			3	2	3	
C06	3			3	3		3	3			2	2	2	1	

R161213	DATA STRUCTURES	CO1	Able to Define basic static and dynamic data structures and infer searching and sorting algorithms												
		CO2	Able to Infer appropriate data structures like stacks or queues in simple programs or program parts												
		CO3	Demonstrate usage of linked list in real world applications.												
		CO4	Illustrate binary trees with examples.												
		CO5	Apply algorithms for finding shortest path in graphs.												
		CO6	Able to understand sorting techniques												
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	C01	2	3	2	2									2	
	C02	2	2	3											2
C03		2		2	2							3	2		
C04	2	2			2							2			
C05	2			2								3		2	
C06	2			2								3		2	

H-COMMUNICATION SKILLS	CO1	Learn to make informed opinions considering pros and cons of a given situation or topic													
	CO2	Understand group dynamics and participate in Group Discussions													
	CO3	Make oral presentation using tools like MS PowerPoint													
	CO4	Prepare for an interview with the help of FAQs													
	CO5	Draft resume's and emails for career with effective expressions													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01									1	3		1			
C02									1	3		1			

ENGLIS	C03									1	3			1		
	C04									1	3			1		
	C05									1	3			1		

R16	APPLIED CHEMISTRY LABORATORY	C01	Use of chemicals in day to day life particularly in engineering is required to bring awareness in material chemistry (Nanomaterials , liquid crystals, spinels thermosetting plastics like Bakelite).													
		C02	Knowledge about electro chemicals in pH metry, potentiometry and conductivity cells in conductometry													
		C03	Knowledge about water quality analysis like pH turbidity(TDS),hardness, conductivity, detection o													
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12		
	C01			3	2					1	2				2	
	C02			2	3					1	3				1	
	C03			1	2					1	2				1	

C. PROGRAMMING LAB	C01	Able to Design solutions to the various problems in the field of computerscience.														
	C02	Able to Implement the concepts of arrays and strings.														
	C03	Ability to Analyze the concepts of modular programming and develop solutions.														
	C04	Able to Implement Programs with pointers and comprehend the dynamic memory allocation functions.														
	C05	Able to Develop programs that perform operations using derived data types														
	C06	Able to Implement programs for data transfers between files														
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	C01	1	1	3	1	1									3	3
	C02	2	2	2	2										3	2
	C03	2	2	3	2	2									3	2
	C04	2	2	2	3	2									3	3
	C05	1	2	3	2	2									3	2
	C06	1	2	3	2	2									3	2

TS	C01	To understand the basic concepts of semiconductor physics, which are useful to understand the operation of diodes and transistors													
	C02	To explain the operation and characteristics of PN junction diode and special diodes.													
	C03	Ability to understand operation and design aspects of rectifiers													

R1621041	ELECTRONIC DEVICES AND CIRCUIT	CO4	understand the characteristics of various transistor configurations and FETs													
		CO5	To become familiar with different biasing, stabilization, compensation techniques used in transistor circuits.													
		CO6	Develop a transistor linear circuit model at low frequencies thus explore the frequency response of Amplifiers													
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
		C01		3											3	
		C02		3											3	
		C03	3	3											3	
		C04		3												3
		C05		3												2
		C06			2											2

R1621042	SWITCHING THEORY AND LOGIC DESIGN	CO1	To Understand the different number systems, binary arithmetic operations, r's complement representation													
		CO2	To Apply different switching algebra theorems for logic functions and perform the reduction of logic expressions													
		CO3	To Evaluate the combinational logic circuits: Decoder, Encoder, Multiplexer, Comparator and etc.													
		CO4	To Memorize the combinational circuit design procedure and Apply the procedure to Design simple combinational circuits													
		CO5	To Analyse an element, different latches, flip-flops, registers and Design different modulus counters													
		CO6	To Design the state machines and to perform simple projects with a few flip-flops.													
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
		C01		2										2	1	2
		C02			2					2					2	1
		C03			3									2	2	2
C04		3											2	1		
C05				3								2	2	2		
C06				3									2	1		

521043	SIGNALS AND SYSTEMS	CO1	Describe signals mathematically and understand how to perform different operations on signals, understand principles of vector spaces, Concept of orthogonality.												
		CO2	Analyse the continuous-time signals and continuous-time systems using Fourier series. Analyse the properties of continuous-time systems.												
		CO3	Apply sampling theorem to convert continuous-time signals to discrete-time signal and reconstruct the signal.												
		CO4	Classify systems based on their properties and determine the response of LTI system. Understand the properties of LTI systems.												
		CO5	Compute Laplace transforms to analyze continuous time signals and systems and understand the concept of region of convergence.												
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1





R1621026	MANAGERIAL ECONOMICS & FINANCIAL	C01	Able to introduce Managerial Economics to engineering students, concepts of demand like law determinants												
		C02	Able to evaluate the student knowledge of production & cost estimation.												
		C03	Able to introduce markets, theory of the firm and pricing policies in different markets.												
		C04	Able to know the different forms of business organization and their merits and demerits of both												
		C05	Able to understand the different accounting systems preparation of financial statements.												
		C06	Able to understand the concepts of capital, capitalization techniques used to evaluate capital												
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1
	C01	2	1										1	2	1
	C02	2	2	2									1	2	2
	C03	1	2	2	1								1	2	1
	C04	1	2	2	2								1	2	2
	C05	1	2	2	2					1		1	1	2	1
	C06	1	2	2	2					1		1	1	2	2
	ELECTRONIC DEVICES AND CIRCUITS LAB	C01	Provides an ability to recognize and verify functioning of various passive elements, CRO probes an												
C02		Understand the characteristics of various diodes like PN- Junction diode, Zener diode and LED's													
C03		Verify the working of different transistors and identifies the procedure of doing the experiment.													
C04		Design the power supply circuits with basic semiconductor devices (active & passive elements) me													
C05		Ability to measure and record the experimental data, analyze the results, and prepare a formal lab													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01				3	2		2							3	
C02				3	2		2							3	
C03				3	2									2	
C04				3	2										2
C05			3	3		3								2	
NETWORKS AND ELECTRICAL TECHNOLOGY LAB	C01	Able to understand the electrical network theorems.													
	C02	Able to explain the time response of RL/RC Networks.													
	C03	Able to understand the Two port network parameters analytical verification.													
	C04	Able to understand about the operation and performance of DC Machines.													
	C05	Able to understand about the operation and performance of Transformers.													
	C06	Ability to understand about performance characteristics of AC Machines.													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	C01	3	2	1	1		1				1	1			
	C02	2	2	1	1						1	1	1		
	C03	2	1	1							1				
C04	2	1	1			1		1							
C05	3	2	1				1			1	1				
C06	2	1		1						1					

R1622041	ELECTRONIC CIRCUIT ANALYSIS	CO1	To Analyse and Remember the different parameters of BJT and FET at high frequencies												
		CO2	To Design the multistage amplifiers under different coupling techniques												
		CO3	To identify the type of negative feedback technique and formulate the Gain, Input and Output Impedances of different negative feedback Techniques												
		CO4	To Understand and Design low frequency Oscillators using BJT and FET												
		CO5	To Classify the Power amplifiers and Compare them in terms of efficiency.												
		CO6	To Explain the different types of Tuned Amplifiers and their effects of Cascading.												
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	CO1	3	2			2								3	2
	CO2	3	3		2									3	2
	CO3	3	2		3									2	3
	CO4				3	3								3	2
	CO5	2	3		3									3	2
CO6		3		2	3								2	3	

R1622042	CONTROL SYSTEMS	CO1	Understand the concepts of open loop and closed loop systems, mathematical models of mechanical systems												
		CO2	Develop the acquaintance in analyzing the system response in time-domain and frequency domain												
		CO3	Analyze the system in terms of absolute stability and relative stability by different approaches.												
		CO4	Design the control systems for various applications using time-domain and frequency domain analysis												
		CO5	To design compensators in time and frequency domain.												
		CO6	Determine the controllability and observability of the control system using the concepts of state variables												
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	CO1	3	2	3										3	2
	CO2	3											2	2	3
	CO3		2		2									2	2
	CO4			2									2	2	3
	CO5			2									2	2	3
CO6	3			2									2	2	

	CO1	Define primary electric, magnetic quantities and the basic laws in static EM fields and apply them												
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<b>PULSE AND DIGITAL CIRCUITS LAB</b>	C01	To understand the concept of Linear & Non-Linear wave shaping circuits													
	C02	To learn the Switching Characteristics of transistor													
	C03	To Understand fundamentals of basic logic gates and design applications													
	C04	To Understand Sampling Gates and to Design NAND and NOR gates using various logic families.													
	C05	To design and analyze various multivibrator circuits													
	C06	To design different time-base circuits.													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01		2	2	2										3	1
C02		3	2											2	3
C03		2	2	3										3	2
C04			2	2										3	2
C05			3	2										2	3
C06			2	2										2	2

<b>LINEAR IC APPLICATIONS LAB</b>	C01	To Understand the basic Mathematical operations of Operational Amplifier													
	C02	To Design and Observe the frequency response of Active Filters.													
	C03	To Measure the theoretical and practical frequency of oscillations of oscillators using Operational Amplifier													
	C04	To construct different Waveform Generators using Operational Amplifier and 555 Timer													
	C05	To Experiment with different Voltage Regulators IC's.													
	C06	To Build different Analog –Digital Converters and Digital – Analog Converters													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01		3	2											3	2
C02			3							3			2	3	2
C03					3					3				2	3
C04					3					3				3	2
C05				2									3	2	3
C06				3						2			3	2	3

C01	To understand the internal logical structure of Digital Integrated Circuits													
C02	To learn the IEEE Standard Hardware Description Language.													





R1632043	VLSI-DESIGN	C01													
		C02													
		C03													
		C04													
		C05													
		C06													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	C01														
	C02														
	C03														
	C04														
	C05														
	C06														

R1632044	DIGITAL SIGNAL PROCESSING	C01	To analyse the Discrete Time Signals and Systems												
		C02	To illustrate the importance of FFT algorithm for computation of Discrete Fourier Transform												
		C03	To compare the various digital filter structures.												
		C04	To design the FIR and IIR Filter design procedures												
		C05	To construct multi-rate sampling conversion												
		C06	To experiment the digital filters with DSP processors												
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	C01	3	2											3	1
	C02	2	2			3								2	3
	C03	2				3								1	3
	C04		2			2								1	2
	C05					2								2	2
	C06	2				3		2						2	3

	C01													
	C02													

OOPS THROUGH JAVA

C03	
C04	
C05	
C06	

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01														
C02														
C03														
C04														
C05														
C06														

MPMC LAB

C01	
C02	
C03	
C04	
C05	
C06	

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01														
C02														
C03														
C04														
C05														
C06														

VLSI LAB

C01	Comprehend the industry standard process including Rational unified process
C02	Persuade him/herself to design a software development process the fits the complexity of solving projects
C03	Apply design patterns to refine models.
C04	Differentiate how the object-oriented approach differs from the traditional approach to systems analysis and design.
C05	Recognize the difference between various object relationships: inheritance, association, whole-part, and dependency relationships.
C06	Construct various UML models (including use case diagrams, class diagrams, interaction

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01	1	2	2	1	1	2			1	1			2	1

C02			2									2	1
C03		1	1	1							2	2	2
C04	1	1	2	2	1							2	1
C05	1	1	1	1	1				2	2		3	1
C06		2	2	2	2	2			1	3		3	3

DIGITAL COMMUNICATIONS LAB	C01	
	C02	
	C03	
	C04	
	C05	
	C06	

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01														
C02														
C03														
C04														
C05														
C06														

RADAR SYSTEMS	C01	Understand the basic concepts of a simple radar and radar cross-section of simple targets
	C02	Apply the knowledge of different types of radars in practical situations.
	C03	Analyse the performance of various radars.
	C04	Acquire the knowledge of Radar Tracking techniques and analyse them.
	C05	Design and synthesize Radar receivers
	C06	Demonstrate the performance of various Radar Antennas.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01	3	2		2								2	2	3
C02	3	2										2	2	3
C03	3	2	2									2	2	3

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C04	2	3		2								2	2	3
C05	3	3	3									3	3	3
C06	2	3		2								3	3	3

R1641042	DIGITAL IMAGE PROCESSING	C01	Understand the need for image transforms and their properties												
		C02	Apply appropriate technique for image enhancement both in spatial and frequency domains												
		C03	Analyze the effects of image degradation models and apply restoration												
		C04	Demonstrate color image enhancement and compare different color models.												
		C05	Analyze different spatial, frequency and wavelet based image compression techniques												
		C06	Experiment with all morphological operations on images and can be able to do image segmentation												
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	C01	2	2											2	2
	C02	2	3											3	2
	C03	3	2											3	2
	C04	3	2			2								3	2
	C05	3	3			3	2							3	3
	C06	3	3			3	2						3	3	3

R1641043	COMPUTER NETWORKS	C01	Summarize the basic terminology and various protocols used in the networking as well as standards existed in the networking technology												
		C02	Demonstrate various techniques used in physical transmission of data without errors and various												
		C03	Explain the design issues and protocols related to data transfer.												
		C04	Explain the design issues and protocols related to data transfer.												
		C05	Compare and Select the appropriate protocols used for controlling the medium access amongst												
		C06	Examine various transport layer protocols and its application in computer networks.												
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	C01		3	2										2	2
	C02	2													3
	C03	2		3										2	
	C04	2		3										2	
	C05	2		3										3	
	C06				3									3	3

R1641044	OPTICAL COMMUNICATIONS	C01	Understanding the functionality of various components in fiber optical communication system.												
		C02	Acquire knowledge in understanding losses & dispersion in optical fibers												
		C03	Identify appropriate optical fiber connectors & acquire understanding on splicing techniques.												
		C04	Analyze different types of photo detectors, optical test equipment and apply to optical fiber and I												

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OPTICAL COMMUNIC.

C05	Design and Examine optical receivers
C06	Evaluate link power budget in optical system design.

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01	3	2											2	2
C02	2	2	3									2	2	3
C03	2	3	2									2		3
C04	2	2	3									2	2	2
C05			3		2							3	2	3
C06		2	3		2							3	3	3

SYSTEM DESIGN THROUGH VERILOG

C01	
C02	
C03	
C04	
C05	
C06	

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01														
C02														
C03														
C04														
C05														
C06														

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ED SYSTEM

C01	
C02	
C03	
C04	
C05	

<b>R164</b>	<b>EMBEDDI</b>	C06														
			<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>	<b>PSO1</b>	<b>PSO2</b>
		C01														
		C02														
		C03														
		C04														
		C05														
		C06														

<b>MICROWAVE AND OCLAB</b>	C01	To analyze the characteristics of microwave sources and devices													
	C02	To measure different waveguide parameters.													
	C03	To measure scattering parameters of microwave components													
	C04	To analyze the characteristics of different optical sources													
	C05	To measure optical fiber parameter and losses													
	C06	To perform different modulation techniques and analyze different optical links													
		<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>	<b>PSO1</b>	<b>PSO2</b>
	C01		3			3			2					3	2
	C02		3			3			2					3	2
	C03		3			3			2					3	2
	C04		3			3			2					3	2
	C05		3			3			2					3	2
	C06		3			3			2					3	2

<b>DIGITAL SIGNAL PROCESSING LAB</b>	C01														
	C02														
	C03														
	C04														
	C05														
	C06														
		<b>PO1</b>	<b>PO2</b>	<b>PO3</b>	<b>PO4</b>	<b>PO5</b>	<b>PO6</b>	<b>PO7</b>	<b>PO8</b>	<b>PO9</b>	<b>PO10</b>	<b>PO11</b>	<b>PO12</b>	<b>PSO1</b>	<b>PSO2</b>
	C01														
	C02														
	C03														
	C04														
	C05														
	C06														

<b>S</b>	C01	To Understand inner workings of cellular system and Describe the elements of cellular systems.												
	C02	To Categorize different interferences and Analyse signal coverage in various environments.												

<b>CELLULAR MOBILE COMMUNICATION</b>	C03	To Evaluate different antennas using at cell site and mobile units													
	C04	To Discriminate the frequency management and channel assignments in cellular system													
	C05	To Generalize and Plan the handoffs in cellular systems.													
	C06	To create and Develop new technologies in wireless systems.													
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
	C01	3		2		2								3	2
C02		3	3		3								3	2	
C03		3	3	3	3								2	3	
C04			3		2								3	2	
C05			3	3	3								3	2	
C06		3	3		3							3	2	3	

<b>ELECTRONIC MEASUREMENTS AND INSTRUMENTATION</b>	C01	To select the instrument to be used based on the requirements.												
	C02	To Understand and analyse different signal generators and analysers												
	C03	To Illustrate the design of oscilloscopes for different applications.												
	C04	To Analyse various bridges and its applications												
	C05	To Choose different transducers for measurement of different parameters.												
	C06	To Measure the physical parameters like pressure, humidity, velocity etc												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C01	3		3									2	3	3
C02	3								3				3	2
C03		3	3						3				2	2
C04		2			2							3	2	2
C05			3		2							3	3	3
C06	2		3									3	3	2

<b>TWORKS</b>	C01	Describe the functions and usage of sensors especially for various sensing applications and be acc												
	C02	Illustrate various wireless standards and communication protocols on the Physical link layers												
	C03	Evaluate the medium access control protocols of wireless networks suitable for WSNs												
	C04	Explore key routing protocols for sensor networks and main design issues												





