

National Education Society (R.) Jawaharlal Nehru New College of Engineering, Shivamogga (Approved by AICTE, New Delhi, Certified by UGC 2f & 12B, Accredited by NAAC - B', UG



(Approved by AICTE, New Delhi, Certified by UGC 2f & 12B, Accredited by NAAC –'B', UG programs:CE,ME,EEE,ECE,CSE,ISE, ETE PG Programs: MBA, acredited by NBA:1.7.2022 to 30.6.2025, Recognized by Govt. of Karnataka and Affiliated to VTU, Belagavi)

INTERNAL QUALITY ASSURANCE CELL (IQAC)

2018 Scheme

Sl.No	Branch	Sem	Subject	CO,S
1	Common (B.E)	1 st	18CHE12 Engineering Chemistry	 1)Define and Describe the concept of engineering chemistry like electrodes , corrosion , energy system, environmental pollution and nano materials 2)Discuss and Explain the concept involved in construction and working of cells, mechanism of corrosion , properties of nano materials, chemical fuels & renewable energy resources 3)Determine the electrochemical parameter, fuel characteristic , water quality parameters and discover solution to corrosion , air pollution and water treatment and preparation of nano materials Analyse and estimate quality and composition of materials and adopt suitable techniques for various engineering problems.
2	Common (B.E)	1 st	18CPL17 C Programming Laboratory	 Identification of different components of a computer Develop different programming constructs for problem solving using C language Develop program in C language based on concepts of structure and pointers"

				4) Using modular programming concepts
				develop solutions to a problem"
				1) Handling various instrumentation techniques
	Image: constant of constan			for quantitative estimation.
3	Common	Common (B.E)1stEngineering Chemistry LaboratoryCommon (B.E)1st18CPS13 C Programming For Problem SolvingCommon (B.E)1st18EGH18 Technical English-1Common (B.E)1st18EGH18 Technical English-1	2) Compile the data s, write the journal and	
5	Common (B.E)1stISCHEL16 Engineering Chemistry LaboratoryCommon (B.E)1stISCPS13 C Programming For Problem SolvingCommon (B.E)1stISEGH18 Technical English-1Common (B.E)1stISEGH18 Technical English-1	generate the result		
		on1st18CHEL16 Engineering Chemistry Laboratoryon1st18CPS13 C Programming For Problem Solvingon1st18EGH18 Technical English-1on1st18EGH18 Technical English-1	3) Carryout quantitative analysis of material by	
			1st18CHEL16 Engineering Chemistry Laboratory1st18CPS13 C Programming For Problem Solving1st18EGH18 Technical English-11st18EGH18 Technical English-11st18ELN14 Basic Electronics	volumetric methods
				1)Understand the basics of computer hardware
				2) Understand the problem solving techniques
	Image: Common (B.E)1st18CHEL16 Engineering Chemistry LaboratoryCommon (B.E)1st18CPS13 C Programming For Problem SolvingCommon (B.E)1st18CPS13 C Programming For Problem SolvingCommon (B.E)1st18EGH18 Technical English-1Common (B.E)1st18EGH18 Technical English-1	18CPS13 C Programming For	using C programming constructs	
4	(B.E)	1 st	Problem Solving	3) Develop programs in C language based on modular programming
			Image: and sector of the se	4) Implement the programs in C language based
		Common B.E)1st18CHEL16 Engineering Chemistry LaboratoryCommon 	on the concepts of structures, pointers and pre	
				1) Use Grammatical English and essentials of
			st 18EGH18 Technical English-1	language skills and identify the nuances of
5	Common (B.E) 1 st 18EGH18 Technical English-1	1 st		phonetics, intonation and flawless
				2) Identify common errors in spoken and
				written communication, Understand and
				improve the nonverbal communication and kinesics.
				3) Implement English vocabulary at command
		and language proficiency		
				4) Prepare for general competitive exams.
				1) Describe the operation of electronic devices
				2) Describe IC 555, IC LM78XX,
				Communication System and mobile phone with
				basic building blocks.
				3) Analyze the working of electronic circuits
-	Common	a st	18ELN14	involving diodes, transistors, Op-amps and
6	(B.E)	1 st	Basic Electronics	gates and their applications
				4) Design the circuits involving Diodes, Op-
				Amps and Gates.
				5)Present a video lecture on an electronic circuit
				or device and use simulator for building simple
		Common (B.E)1st18EGH18 Technical English-1Common (B.E)1st18ELN14 Basic Electronics	electronic circuits	

7	Common (B.E)	1 st	18MAT11 Calculus And Linear Algebra	 To learn the importance of differentiation and partial differentiation for calculating the rate of change of single and multivariate functions. To analyse the different analytical methods to solve first order linear/ nonlinear equations, matrix theory for solving system of linear equations, eigen values ,Eigen vectors and diagonalization. Apply the knowledge of differential calculus to solve the problems related to polar curves composite functions, To apply the concept of change of variables and change the order of integration To evaluate multiple integrals. Use multiple integrals to find area and volume.
8	Common (B.E)	1 st	18ME15 Elements Of Mechanical Engineering	 Understanding the concept of energy sources like solar, wind, hydel, nuclear and biomass energy Understand the working principles of boilers, prime movers such as turbines and IC engines, refrigeration, and air conditioning. Understand various engineering materials, machine tools, machining processes, and the concept of flexible manufacturing systems
9	Common (B.E)	1 st	18CIV14 Elements of Civil Engineering and Mechanics	 Mention the applications of various fields of Civil Engineering Compute the resultant of given force system subjected to various loads Comprehend the action of Forces, Moments, and other loads on systems of rigid bodies and compute the reactive forces that develop as a result of the external loads Locate the Centroid and compute the Moment of Inertia of regular and built-up sections Express the relationship between the motion of bodies and analyze the bodies in motion
10	Common (B.E)	1 st	18EGDL15 Engineering Graphics	 1)Understand BIS Standards for Engineering Drawing, Orthographic and Iso-Metric projections of geometrical Entities 2) Draw the projection of Non-dimensional, One-dimensional, two-dimensional and Three- dimensional geometrical entities 3) Apply the concept of Engineering Drawing in practical applications
11	Common (B.E)	1 st	18EGH18 Technical English-I	 1)Use Grammatical English and essentials of language skills and identify the nuances of phonetics, intonation and flawless pronunciation 2) Identify common errors in spoken and written communication, Understand and

				improve the nonverbal communication and
				3) Implement English vocabulary at command and language proficiency.
				4) Prepare for general competitive exams.
				 1)Analyse D.C and A.C circuits 2) Analysis of single-phase and three-phase AC circuit.
12	Common (B.E)	1 st	18ELE13 Basic Electrical Engineering	 3) Explain the principle of operation and construction of single-phase Transformer and discuss the concept of electrical wiring, circuit-protecting devices and earthing.
				 4) Explain the principle of operation and construction of DC generators and DC motors. 5) Explain the principle of operation and construction of three-phase Synchronous generator and three-phase Induction motors
				1) Identify the common electrical components and measuring instruments used for conducting experiments in the electrical laboratory.
13	13Common (B.E)1st18ELEL17 Basic Electrical Engineering Laboratory	 2) Compare power factor of different lamps. 3) Determine impedance of an electrical circuit and power consumed in a 3 phase load. 4) Understand two way and three way control of 		
				lamps and measurement of earth resistance.1) To learn the importance of differentiation and partial differentiation for calculating the rate of
14	Common (B.E)	1 st	18MAT11 Calculus and Linear Algebra	 partial differentiation for calculating the rate of change of single and multi variate functions. 2) To analyse the different analytical methods to solve first order linear / nonlinear differential equations, matrix theory for solving system of linear equations, eigen values, eigen vectors and diagonalization. 3) To apply the knowledge of differential and integral calculus to solve the problems related to polar curves, composite functions, jacobians, multiple integrals, area and volume.
15	Common (B.E)	1 st	18PHY12 Physics	 Define: Simple harmonic motion, modulii of elasticity, numerical aperture, Fermi energy, & Eigen value and Eigen function Explain The concept of Damped and forced vibrations, Bending of beams, Torsion of a cylinder, Maxwell equations, & Quantisation of energy, Semiconductor and Carbon dioxide laser, dependence of fermi function on temperature, Hall e
				5) Apply Concept of resonance for tuning systems, shock waves in various fields, optical fibres in communication systems and Hall effect in electronic systems

				4) Analyse: The importance of sharpness of resonance, failure of classical free electron theory, importance of laser in data storage and
				range finders,
16	Common (B.E)	1 st	18PHYL16 Engineering Physics Laboratory	 Understand measurement techniques and usage of new instruments in engineering studies Construct and analyse electronic circuits and plot graphs Demonstrate the ability to prepare a valid laboratory record

Sl.No	Branch	Sem	Subject	CO,S
1	Common (B.E)	2nd	18CHE12 Engineering Chemistry	 1)Define and Describe the concept of engineering chemistry like electrodes , corrosion , energy system, environmental pollution and nano materials 2)Discuss and Explain the concept involved in construction and working of cells, mechanism of corrosion , properties of nano materials, chemical fuels & renewable energy resources 3)Determine the electrochemical parameter, fuel characteristic , water quality parameters and discover solution to corrosion , air pollution and water treatment and preparation of nano materials Analyse and estimate quality and composition of materials and adopt suitable techniques for various engineering problems.
2	Common (B.E)	2nd	18CPL17 C Programming Laboratory	 Identification of different components of a computer Develop different programming constructs for problem solving using C language Develop program in C language based on concepts of structure and pointers"

				4) Using modular programming concepts
				develop solutions to a problem"
				1) Handling various instrumentation techniques
				for quantitative estimation.
3	Image: Common (B.E)Image: Common	2) Compile the data s, write the journal and		
		generate the result		
		3) Carryout quantitative analysis of material by		
		volumetric methods		
				1)Understand the basics of computer hardware
			1900012	2) Understand the problem solving techniques
5	Common		C Programming For	using C programming constructs
4	Image: constraint of the sector of the sec	3) Develop programs in C language based on modular programming		
			4) Implement the programs in C language based	
	Common 19ECH19		on the concepts of structures, pointers and pre processor directives.	
				1) Use Grammatical English and essentials of
		2nd	18EGH18 Technical English-1	language skills and identify the nuances of
	Common (B.E)			phonetics, intonation and flawless
				2) Identify common errors in spoken and
5				written communication, Understand and
5				improve the nonverbal communication and
				3) Implement English vocabulary at command
				and language proficiency
				4) Prepare for general competitive exams.
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				basic building blocks.
				3) Analyze the working of electronic circuits
6	Common	21	18ELN14	involving diodes, transistors, Op-amps and
0	(B.E)	Znd	Basic Electronics	gates and their applications
				4) Design the circuits involving Diodes, Op-
				Amps and Gates.
				5)Present a video lecture on an electronic circuit
				or device and use simulator for building simple
				electronic circuits
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7	Common (B.E)	2nd	18MAT11 Calculus And Linear Algebra	 To learn the importance of differentiation and partial differentiation for calculating the rate of change of single and multivariate functions. To analyse the different analytical methods to solve first order linear/ nonlinear equations, matrix theory for solving system of linear equations, eigen values ,Eigen vectors and diagonalization. Apply the knowledge of differential calculus to solve the problems related to polar curves composite functions, To apply the concept of change of variables and change the order of integration To evaluate multiple integrals. Use multiple integrals to find area and volume.
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9	Common (B.E)	2nd	18CIV14 Elements of Civil Engineering and Mechanics	 Mention the applications of various fields of Civil Engineering Compute the resultant of given force system subjected to various loads Comprehend the action of Forces, Moments, and other loads on systems of rigid bodies and compute the reactive forces that develop as a result of the external loads Locate the Centroid and compute the Moment of Inertia of regular and built-up sections Express the relationship between the motion of bodies and analyze the bodies in motion
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				improve the nonverbal communication and kinesics
				3) Implement English vocabulary at command and language proficiency.
				4) Prepare for general competitive exams.
12	Common (B.E)	2nd	18ELE13 Basic Electrical Engineering	 Analyse D.C and A.C circuits Analysis of single-phase and three-phase AC circuit. Explain the principle of operation and construction of single-phase Transformer and discuss the concept of electrical wiring, circuit-protecting devices and earthing. Explain the principle of operation and construction of DC generators and DC motors. Explain the principle of operation and construction of three-phase Synchronous generator and three-phase Induction motors
13	Common (B.E)	2nd	18ELEL17 Basic Electrical Engineering Laboratory	 Identify the common electrical components and measuring instruments used for conducting experiments in the electrical laboratory. Compare power factor of different lamps. Determine impedance of an electrical circuit and power consumed in a 3 phase load. Understand two way and three way control of lamps and measurement of earth resistance.
14	Common (B.E)	2nd	18MAT11 Calculus and Linear Algebra	 To learn the importance of differentiation and partial differentiation for calculating the rate of change of single and multi variate functions. To analyse the different analytical methods to solve first order linear / nonlinear differential equations, matrix theory for solving system of linear equations, eigen values, eigen vectors and diagonalization. To apply the knowledge of differential and integral calculus to solve the problems related to polar curves, composite functions, jacobians, multiple integrals, area and volume.
15	Common (B.E)	2nd	18PHY12 Physics	 Define: Simple harmonic motion, modulii of elasticity, numerical aperture, Fermi energy, & Eigen value and Eigen function Explain The concept of Damped and forced vibrations, Bending of beams, Torsion of a cylinder, Maxwell equations, & Quantisation of energy, Semiconductor and Carbon dioxide laser, dependence of fermi function on temperature, Hall e Apply Concept of resonance for tuning systems, shock waves in various fields, optical fibres in communication systems and Hall effect in electronic systems

				4) Analyse: The importance of sharpness of resonance, failure of classical free electron theory, importance of laser in data storage and range finders,
16	Common (B.E)	2nd	18PHYL16 Engineering Physics Laboratory	 Understand measurement techniques and usage of new instruments in engineering studies Construct and analyse electronic circuits and plot graphs Demonstrate the ability to prepare a valid laboratory record

21 SCHEME

1	Common (B.E)	1 st	21CHE12 Engineering Chemistry	 Define and describe the concepts of chemistry in engineering and technological application Apply the knowledge of chemistry in solving engineering and societal problems Analyze and determine the quality and
				composition of engineering material suitablefor technological applications4) Adopt instrumentation techniques formaterial characterization.
2	Common (B.E)	1 st	21CHEL16 Engineering Chemistry Laboratory	 Handling various instrumentation techniques for quantitative estimation of analyte Carryout quantitative analysis of materials by volumetric method Compile the data's, write the journal and generate the result.
3	Common (B.E)	1 st	21CPL17 Computer Programming Laboratory	 1)Explain problem statements and identify appropriate solutions 2) Demonstrate the use of IDE, C Compiler, and identify and rectify the syntax and syntactic errors during programming

				3) Development of algorithms and programs
				using constructs of C programming
				language.
				4) Reporting the observations
				1) Understand and apply the Fundamentals of
				Communication Skills in their communication
				skills. Identify the nuances of phonetics,
				intonation and enhance pronunciation skills.
			21EGH18	2) To impart basic English grammar and
4	Common	1 st	Communicative English	essentials of language skills as per present
	(B.E)			requirement.
				3) Understand and use all types of English
				vocabulary and language proficiency & Adopt
				the Techniques of Information Transfer
				through presentation.
				1) Describe the concepts of electronic circuits
		1 st	21ELN14 Basic Electronics & Communication Engineering	encompassing power supplies, amplifiers and
				oscillators.
				2) Present the basics of digital logic
				engineering including data representation,
				circuits and the microcontroller system with
				associated sensors and actuators.
	9			3) Discuss the characteristics and
5	(B.E)			technological advances of embedded systems.
				4) Relate to the fundamentals of
				communication engineering spanning from the
				frequency spectrum to the various circuits
				involved including antennas.
				5) Explain the different modes of
				communications from wired to wireless and
				the computing involved.
				1) Understand basic concepts of mechanical
				engineering in the fields of energy and its
6	Common	1 st	21EME15 Elements of Mechanical	utilization. materials technology
0	(B.E)	1	Engineering	manufacturing techniques, and transmission
			21EGH18 Communicative English	systems through demonstrations
	(B.E) 1 st Elements of Mechanical Engineering	systems unough demonstrations.		

				2) Understand the application of energy
				sources in Power generation and utilization,
				Engineering materials, manufacturing, and
				machining techniques leading to the latest
				advancements and transmission systems in day
				to day activities
				3) Apply the skills in developing simple
				mechanical elements and processes
				1) Apply the knowledge of calculus to solve
				problems related to polar curves and its
				applications in
			21MAT11 Calculus & Differential Equations	determining the bentness of a curve.
				2) Learn the notion of partial differentiation to
		1 st		calculate rate of change of multivariate
				functions and solve problems related to
	Common (B.E)			composite functions and Jacobian.
7				3) Solve first-order linear/nonlinear ordinary
				differential equations analytically using
				standard methods.
				4) Demonstrate various models through higher
				order differential equations and solve such
				linear ordinary differential equations.
				5) Test the consistency of a system of linear
				equations and to solve them by direct and
				iterative methods.
				1) Elucidate the basic architecture and
				functionalities of a computer and also
		1 st	21PSP13	recognize the hardware parts.
	Common (B.E)		Problem-Solving through Programming	2) Apply programming constructs of C
8				language to solve the real world problem
				3) Explore user-defined data structures like
				arrays in implementing solutions to problems

				4) Design and Develop Solutions to problems
				using modular programming constructs using
				functions
				1) Understand the various fields of civil
				engineering.
				2) Compute the resultant of a force system and
				resolution of a force.
			21CIV14	3) Comprehend the action for forces, moments,
9	Common (B E)	1 st	Elements of Civil Engineering and Mechanics	and other types of loads on rigid bodies and
	(2.2)			compute the reactive forces.
				4) Locate the centroid and compute the
				moment of inertia of regular and built-up
				sections.
				5) Analyze the bodies in motion.
				1) Understand and apply the Fundamentals of
		1 st	21EGH18 Communicative English	Communication Skills in their communication
	Common (B.E)			skills. Identify the nuances of phonetics,
10				intonation and enhance pronunciation skills.
				2) To impart basic English grammar and
				essentials of language skills as per present
				requirement.
				3) Understand and use all types of English
				vocabulary and language proficiency .Adopt
				the Techniques of Information Transfer
				through presentation.
				1) Analyse Basic DC Electric Circuits.
				2) Analyse Basic AC Electric Circuits.
				3) Explain the working principles of
		1 st	21ELE13	Transformers and DC Electrical Machines
11	Common		Basic Electrical Engineering	4) Explain the working principles of Three
11	(B.E)			phase Induction Motors and Synchronous
				Generators.
				5) Explain the concepts of electric power
				transmission, Electricity billing and personal
				safety measures.
L	1	1	1	

				1) Verify KCL, KVL and maximum power
				transfer theorem for DC circuits.
				2) Compare power factors of different types of
				lamps and measure choke coil parameters.
				3) Demonstrate the measurement of the
			Basic Electrical Engineering	impedance of an electrical circuit and power
12	Common	1 st	Laboratory	consumed by a 3-phase load. Efficiency of a
	(D.L)			single-phase transformer by direct load test
				4) Analyze two-way and three-way control of
				lamps. Interpret the suitability of earth
				resistance measured.
				5) Explain the effects of open and short circuits
				in simple circuits.
				1) Understand and visualize the objects with
		1 st	21EVNL15 Engineering Visualization	definite shape and dimensions.
				2) Analyze the shape and size of objects
1.0	Common (B.E)			through different views
13				3) Develop the lateral surfaces of the object.
				4) Create a 3D view using CAD software.
				5) Identify the interdisciplinary engineering
				approach through its graphical representation.
				1) To explain the concept of design thinking
				for product and service development.
				2) To explain the fundamental concept of
			21IDT19	innovation and design thinking.
			Innovation and Design	3) To discuss the methods of implementing
			Thinking	design thinking in the real world.
14	Common	1 st		4) Generate and Develop design ideas through
	(D . L)			different techniques
				5) Case Studies and real-time product
				examples for better understanding of concepts
				6) Activities on innovation and creativity to
				provide hands-on experience.

				1) Apply the knowledge of calculus to solve
				problems related to polar curves and its
				applications in determining the bentness of a
				curve.
				2) Learn the notion of partial differentiation to
				calculate rate of change of multivariate
				functions and solve problems related to
				composite functions and Jacobian.
	Common	1 st	21MAT11	3) Solve first-order linear/nonlinear ordinary
15	(B.E)	1	Calculus & Differential	differential equations analytically using
			Equations	standard methods.
				4) Demonstrate various models through higher
				order differential equations and solve such
				linear ordinary differential equations.
				5) Test the consistency of a system of linear
				equations and to solve them by direct and
				iterative methods.
				1) Interpret the types of mechanical vibrations
		1 st	21PHY12 Engineering Physics	and their applications
				2) Demonstrate the quantisation of energy for
				microscopic system
				3) Apply LASER and Optical fibers in opto-
16	Common			elctronic systems
10	(B.E)			4) Illustrate merits of Quantum free electron
				theory and the applications of Hall effect
				5) Analyse the importance of XRD and
				Electron Microscopy in nanomaterial
				characterisation
				1) Compare various measurement techniques
17		1 st		involved in Physics
			Engineering Physics	2) Construct and analyse electronic circuits and
	Common (B.E)		Laboratory	plot graphs
1/				3)Estimate the error in measurements
				4) Demonstrate the ability to prepare a valid
				laboratory record
				······································

1	Common (B.E)	2 nd	21CHE12 Engineering Chemistry	 Define and describe the concepts of chemistry in engineering and technological application Apply the knowledge of chemistry in solving engineering and societal problems Analyze and determine the quality and composition of engineering material suitable for technological applications Adopt instrumentation techniques for
				material characterization.
2	Common (B.E)	2 nd	21CHEL16 Engineering Chemistry Laboratory	 Handling various instrumentation techniques for quantitative estimation of analyte Carryout quantitative analysis of materials by volumetric method
				3) Compile the data's, write the journal and generate the result.
3	Common (B.E)	2 nd	21CPL17 Computer Programming Laboratory	 1)Explain problem statements and identify appropriate solutions 2) Demonstrate the use of IDE, C Compiler, and identify and rectify the syntax and syntactic errors during programming 3) Development of algorithms and programs using constructs of C programming language. 4) Reporting the observations
4	Common (B.E)	2 nd	21EGH18 Communicative English	 Understand and apply the Fundamentals of Communication Skills in their communication skills. Identify the nuances of phonetics, intonation and enhance pronunciation skills. To impart basic English grammar and essentials of language skills as per present requirement.

				3) Understand and use all types of English
				vocabulary and language proficiency & Adopt
				the Techniques of Information Transfer
				through presentation.
				1) Describe the concepts of electronic circuits
				encompassing power supplies, amplifiers and
				oscillators.
				2) Present the basics of digital logic
				engineering including data representation,
				circuits and the microcontroller system with
				associated sensors and actuators.
	Common	2^{nd}	21ELN14 Basic Electronics &	3) Discuss the characteristics and
5	(B.E)	2	Communication Engineering	technological advances of embedded systems.
				4) Relate to the fundamentals of
				communication engineering spanning from the
				frequency spectrum to the various circuits
				involved including antennas.
				5) Explain the different modes of
				communications from wired to wireless and
				the computing involved.
				1) Understand basic concepts of mechanical
		2 nd	21EME15 Elements of Mechanical Engineering	engineering in the fields of energy and its
				utilization, materials technology,
				manufacturing techniques, and transmission
				systems through demonstrations.
				2) Understand the application of energy
6	Common			sources in Power generation and utilization,
	(B.E)			Engineering materials, manufacturing, and
				machining techniques leading to the latest
				advancements and transmission systems in day
				to day activities
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				mechanical elements and processes
_	Common	and		1) Apply the knowledge of calculus to solve
7	7 (B.E)	.E) 2 nd		problems related to polar curves and its
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				applications in
				determining the bentness of a curve.
				2) Learn the notion of partial differentiation to
				calculate rate of change of multivariate
				functions and solve problems related to
			21MAT11 Calculus & Differential	composite functions and Jacobian.
			Equations	3) Solve first-order linear/nonlinear ordinary
				differential equations analytically using
				standard methods.
				4) Demonstrate various models through higher
				order differential equations and solve such
				linear ordinary differential equations.
				5) Test the consistency of a system of linear
				equations and to solve them by direct and
				iterative methods.
				1) Elucidate the basic architecture and
				functionalities of a computer and also
			21PSP13 Problem Solving through	recognize the hardware parts.
			Problem-Solving through Programming	2) Apply programming constructs of C
	~			language to solve the real world problem
8	Common (B.E)	2^{nd}		3) Explore user-defined data structures like
	()			arrays in implementing solutions to problems
				like searching and sorting
				4) Design and Develop Solutions to problems
				using modular programming constructs using
				functions
				1) Understand the various fields of civil
9		2 nd		engineering.
	Common (B E)			2) Compute the resultant of a force system and
				resolution of a force.
	()		21CIV14	3) Comprehend the action for forces, moments,
			Engineering and Mechanics	and other types of loads on rigid bodies and
				compute the reactive forces.

				4) Locate the centroid and compute the
				moment of inertia of regular and built-up
				sections.
				5) Analyze the bodies in motion.
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11	(B.E)			phase Induction Motors and Synchronous
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				1) Verify KCL, KVL and maximum power
				transfer theorem for DC circuits.
12		2nd		2) Compare power factors of different types of
	Common			lamps and measure choke coil parameters.
	(B.E)			3) Demonstrate the measurement of the
			21ELEL17 Basic Electrical Engineering Laboratory	impedance of an electrical circuit and power
				consumed by a 3-phase load. Efficiency of a
				single-phase transformer by direct load test

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			21MAT11 Calculus & Differential Equations	 3) Solve first-order linear/nonlinear ordinary differential equations analytically using standard methods. 4) Demonstrate various models through higher order differential equations and solve such linear ordinary differential equations. 5) Test the consistency of a system of linear equations and to solve them by direct and iterative methods.
16	Common (B.E)	2 nd	21PHY12 Engineering Physics	 Interpret the types of mechanical vibrations and their applications Demonstrate the quantisation of energy for microscopic system Apply LASER and Optical fibers in opto- elctronic systems Illustrate merits of Quantum free electron theory and the applications of Hall effect Analyse the importance of XRD and Electron Microscopy in nanomaterial characterisation
17	Common (B.E)	2 nd	21PHYL16 Engineering Physics Laboratory	 Compare various measurement techniques involved in Physics Construct and analyse electronic circuits and plot graphs Estimate the error in measurements Demonstrate the ability to prepare a valid laboratory record