BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE

Department of Electrical & Electronics Engineering

COURSE OUTCOMES

R16 REGULATION

I YEAR I SEMESTER

CO CODE	COURSE OUTCOME	TAXONOMY LEVEL
	COURSE NAME:ENGLISH-1(C111)	
C111.1	Classify and compare different resources to serve the needs of the society in different ways.	Application
C111.2	Apply road safety measures in day to day life in different modes of transport and write paragraphs effectively.	Analysing
C111.3	Apply science and technology in inventing latest engineering tools to discern their advantages and disadvantages.	Creating
C111.4	Choose viable and alternative sources of energy to tide over the crisis of depleting sources.	Evaluating
C111.5	Explain the importance of bio-diversity and ecological balance like preservation of Flora and Fauna and develop writing skills.	Understanding
C111.6	Discover various safety measures against hazards at home, labs, industry and work places as well and familiarize themselves with office etiquette & ethics.	Analysing
	COURSE NAME:MATHEMATICS-I (C112)	
C112.1	Solve the first order differential equations and able to apply physical problems.	Applying
C112.2	Solve higher order linear differential equations with constant coefficients.	Applying
C112.3	Find the Laplace transform of functions and evaluation of integrals and invers Laplace transform of different functions and solve the differential equations using Laplace transform.	Applying
C112.4	Find the partial derivative of different orders, finding maxima and minima of function of two variable, three variables and functional dependence.	Applying
C112.5	Find the partial derivative by elimination of arbitrary function and arbitrary constant.Solve the linear and non-linear PDE's.	Applying
C112.6	Solve the partial differential equations using homogenous and non homogenous.	Applying
	COURSE NAME:APPLIED CHEMISTRY (C113)	
C113.1	Analyze the concept of improvement of impact strength of plastic materials.	Analysing
C113.2	Make use of electrochemical series while preparing different cells.	Applying
C113.3	Analyze and interprets the formation of different nano materials.	Analysing
C113.4	Explain different forms of energy in atoms and molecules change upon interacting with electromagnetic radiation.	Applying
C113.5	Utilizes the non- conventional energy resources purposefully.	Understanding
C113.6	Obtain the knowledge of computational chemistry and molecular machines.	Remembering
	COURSE NAME:ENGINEERING MECHANICS (C114)	
C114.1	Explain the force concepts, Resultant of Force Systems and Friction.	Applying
C114.2	Develop FBD's, Explain spatial system of forces and Define various laws and Theorems.	Applying
C114.3	Demonstrate concepts of centroid and centre of gravity.	Applying
C114.4	Illustrate Area, Polar and Mass moment of Inertia and their applications.	Applying
C114.5	Explain motion in straight line and in curvilinear paths and plane motion.	Applying
C114.6	Explain Work-Energy and applications, fixed axis rotation, Impulse momentum method.	Applying
	COURSE NAME:COMPUTER PROGRAMMING (C115)	
C115.1	Demonstrate the basic components and software's used in computer programming language.	Understanding
C115.2	Develop and compile and debug programs in C language and Demonstrate syntaxes, predefine functions & operators in computer programming language.	Applying

C115.3	Build the c programs involving decision making statements, looping statements and understand the control flow of the program.	Applying
C115.4	Choose Functions and Recursion concepts to solve the complex c programs.	Evaluating
C115.5	Discuss arrays, strings and develop c programs using string manipulation functions.	Analysing
C115.6	Analyze different file handling functions and dynamic memory management functions .	Analysing

COURSE NAME:ENVIRONMENTAL STUDIES (C116)

C116.1	Explain the eco system and it's function in the environment.	Understanding
C116.2	Aware the importance of natural resources and it's conversation.	Understanding
C116.3	Analyse the diversity of life on earth and it's importance.	Analyzing
C116.4	Execute different programmes in eco friendly way.	Applying
C116.5	Describe the different laws to protect our environment.	Analyzing
C116.6	Conduct Research in safe and Responsible manners communicating the environmental subject more effectively.	Applying

COURSE NAME: APPLIED/ ENGINEERING CHEMISTRY LABORATORY(C117)

C117.1	Determine Wavelength of a source and radius of curvature of convex lens	Understanding
C117.2	Determine regidity modulus of a material	Analyzing
C117.3	Determine accelaration due to gravity	Applying
C117.4	Verify laws of vibrations and melds law	Analyzing
C117.5	Study the characteristics of diode	Analyzing
C117.6	Characteristics of Semiconductor	Analyzing

COURSE NAME: ENGLISH COMMUNICATION SKILLS LABORATORY-I(C118)

C118.1	Explain why study spoken English is important to become successful in the competitive world and situational dialogues.	Understanding
C118.2	Construct appropriate sentences for requests, asking for and giving permissions, asking for and giving directions in live situations.	Applying
C118.3	Choose appropriate phrases for inviting, complaining, congratulating, apologizing, advising, suggesting, agreeing and disagreeing and expressing sympathy.	Evaluating
C118.4	Demonstrate the basics of English phonetics and the lack of one to one correspondence between the alphabet and the sounds of English.	Understanding
C118.5	Make use of International Phonetic Alphabet in order to improve pronunciation while Speaking and Listening.	Applying
C118.6	Categorize the principles of silent letters and pronunciation of inflections, stress and intonation in English.	Analyzing

COURSE NAME: COMPUTER PROGRAMMING LABORATORY(C119)

C119.1	Demonstrate the basic components and softwares used in computer programming language.	Understanding
C119.2	Develop and compile and debug programs in c language and demonstrate syntaxes,predefined functions and operators in computer programming language.	Applying
C119.3	Build the c programs involving decision making statements, looping statement and understand the control flow of the program.	Creating
C119.4	Students will able to choose functions and recursion concepts to solve the complex c programs.	Evaluating
C119.5	Discuss arrays, strings and develop c programs using string manipulation functions.	Creating
C119.6	Analyse different file handling functions and dynamic memory management functions.	Analyzing

I YEAR II SEMESTER

COURSE NAME: ENGLISH-II (C121)

C121.1	Relate the very purpose of education is to enhance knowledge and wisdom.	Understanding
C121.2	Develop global harmony and peaceful co-existence among people and society.	Applying
C121.3	Discover different cultures due to globalization and manage different cultural shocks.	Analyzing
C121.4	Examine out-dated traditions in society with the application of wisdom.	Applying
C121.5	Compare and contrast various protective measures of environment for peaceful existence of future generations and learn report writing for media.	Applying
C121.6	Select the eminent personalities and build luminous future successfully with their inherent passion, interest and burning desire in their areas of interests.	Applying

COURSE NAME: MATHEMATICS-II(C122)

C122.1	Solve the algebraic and transcendental equations by different methods.	Applying
C122.2	Solve the different interpolation formulae to find a polynomial or the value of the polynomial at a given point. (Application)	Evaluating

C122.3	Find the Quadrature, the solutions of ordinary differential equations by different formulae. (Evaluation)	Applying
C122.4	Interpret a function as a Fourier series dirichlet's conditions. (Application)	Applying
C122.5	Solve the problems on Fourier transforms using real and complex functions. (Application)	Applying
C122.6	Demonstrate capacity to mode physical phenomena using PDE's and to apply problem solving using concepts and techniques from PDE and Fourier analysis applied to diverse situation in physics, engineering mathematics. (Application)	Applying
	COURSE NAME: MATHEMATICS-III(C123)	
C123.1	Find Rank and Solve the linear system of equations by using different methods.	Applying
C123.2	Find the eigen values and eigen vectors and also finding inverse and power of a matrix by using Cayley Hamilton theorem. And also diagonalise the matrix by using various methods. Finding Rank, Index, Signature and Nature of a Quadratic form.	Remembering
C123.3	Tracing the curve for the given equation, evaluate the double and triple integrals by direct methods, change of order of integration and change of variables.	Analyzing
C123.4	Evaluate the given integrals by using Beta and Gamma functions.	Evaluating
C123.5	Find the gradient of a scalar field, divergence and curl of vector field and vector identities.	Remembering
C123.6	Evaluate the line, surface and volume integrals. Solve the problems using Vector integral theorems.	Evaluating
	COURSE NAME:APPLIED PHYSICS(C124)	
C124.1	Explain the physical significance of optics and hence estimate the speed of light ,wave length ,refractive index by using interference.	Understanding
C124.2	Explain the resolving power of various optical instruments like grating, teliscope and micro scope.	Understanding
C124.3	Explain about polarized light and optical actvity using polarization and describe the construction and working of various lasers.	Understanding
C124.4	Develope various engineering applications involving electro magnetic fields.	Analyzing
C124.5	Apply the knowledge of basic quantum mechanics and summarize the importance of free electrons in determing the properties of metals.	Applying
C124.6	Classify materials as metals, insulators, semiconductors and explain the properties of semiconductors with application to the hall effect.	Analyzing
	COURSE NAME:ELECTRICAL CIRCUIT ANALYSIS-1(C125)	
C125.1	Apply the solution methods such as nodal analysis and mesh analysis	Applying
C125.2	Solve circuits using tree, node, branch, cut set, tie set methods.	Applying
C125.3	Discuss magnetic circuits concepts.	Remembering
C125.4	Apply ac circuits concepts to find various performance parameters of electrical network.	Analyzing
C125.5	Explain single phase circuit concepts to obtain locus diagrams and resonance.	Applying
C125.6	Evaluate various networks by using principles of network theorems.	Evaluating
	COURSE NAME:ENGINEERING DRAWING(C126)	
C126.1	Classify the basic concepts, methodologies of engineering drawing, visualize and construct curved profiles in developing new products like gears and other engineering applications.	Understanding
C126.2	Construct various types of scales for engineering application like maps, buildings, bridges.	Applying
C126.3	Analyse the concept of projections involving points and lines.	Analysing
C126.4	Analyse the theory of projection in planes and apply in manufacturing processes.	Analysing
C126.5	Analyse the concept of projection of solids inclined to both the planes.	Analysing
C126.6	Develop the orthographic projections and imagine the components by isometric projection by representing three dimensional objects in 2D in technical and engineering drawings.	Applying
	COURSE NAME:ENGLISH COMMUNICATION SKILLS LABORATORY-II(C127)	
C127.1	Demonstrate how to speak politely and effectively with supporting facts/points against the speakers who are taking the opposing views.	Understanding
C127.2	Analyze the given topic, share the information and opinions and act efficiently as an individual and team member.	Analyzing
C127.3	Select a suitable presentation with proper presentational aids to present the information.	Applying
C127.4	Develop an idea about various kinds and stages of interviews to face interviews confidently.	Applying
C127.5	Apply techniques to write Curriculum Vitae and E-mails to suit different contexts.	Applying
C127.6	Make use of idiomatic expressions of English in Speech and Writing and minimize common errors in usage of English.	Applying

COURSE NAME:APPLIED / ENGINEERING PHYSICS LABORATORY(C128)		
C128.1	Determine Wavelength of a source and radius of curvature of convex lens	Understand
C128.2	Determine regidity modulus of a material	Understand
C128.3	determine accelaration due to gravity	Analyzing
C128.4	verify laws of vibrations and melds law	Analyzing
C128.5	Study the characteristics of diode	Analyzing
C128.6	Study Characteristics of Semiconductor	Analyzing
COURSE NAME: APPLIED/ENGINEERING PHYSICS- VIRTUAL LAB-ASSIGNMENTS(C129)		
C129.1	Explain the slit width, wavelength using LASER	Understanding
C129.2	Explain the Numerical Aperture by using optical fiber.	Understanding
C129.3	Verify the photo electric effect.	Understanding
C129.4	Verify the laws of Damped oscillations and simple pendulum	Understanding
C129.5	Determining the value by using B-H curve and Hysteresis	Understanding
C129.6	Determining the value by using Hall effect.	Understanding
COURSE NAME:ENGG WORKSHOP & IT WORKSHOP(C1210)		
C1210.1	Prepare various joins with the available work materials.	Creating
C1210.2	Understand and connects diffreent circuits in housewiring.	Understanding
C1210.3	Identify the peripherals of computer,installation and assembling,disassembling.	Analysing
C1210.4	Identification&fix a problem and demonstrating importance of network.	Applying
C1210.5	Demonstrate search engines&cyber hygiene.	Understanding
C1210.6	Creating a project with MS office.	Creating

II YEAR I SEMESTER

COURSE NAME: ELECTRICAL CIRCUIT ANALYSIS-II (C211)		
C211.1	Solve the three-phase circuits under balanced load condition	Evaluating
C211.2	Solve the three-phase circuits under unbalanced load condition.	Understanding
C211.3	Analyse the transient behavior of electrical networks with DC, Pulse and AC excitations.	Analyzing
C211.4	Calculate the parameters of a network based on input and Output excitation/response.	Evaluate
C211.5	Calculate the parameters of a network based on input and Output excitation/response.	Creating
C211.6	Analyse the electrical circuits by applying Fourier series and Fourier Transform.	Analyzing
COURSE NAME:ELECTRICAL MACHINES-1(C212)		
C212.1	Able to assimilate the concepts of electromechanical energy conversion	Understanding
C212.2	Able to mitigate the ill-effects of armature reaction and improve commutation in dc machines.	Understanding
C212.3	Able to understand the torque production mechanism and control the speed of dc motors	Evaluating
C212.4	Able to analyze the performance of single phase transformers	Understanding
C212.5	Able to predetermine regulation, losses and efficiency of single phase transformers.	Understanding
C212.6	Able to parallel transformers, control voltages with tap changing methods and achieve three-phase to two-phase transformation	Evaluating
COURSE NAME:BASIC ELECTRONICS&DEVICES (C213)		
Faculty Name: M.Adi Lakshmi Devi		
C213.1	Students can able to learn the basics of semiconductor physics.	Remembering
C213.2	Students can able to study the construction details, operation and characteristics of various semiconductor diodes.	Understanding
C213.3	Students can able to understand the operation and analysis of rectifiers with and without filters. Further study the operation of series and shunt regulators using zener diodes..	Creating
C213.4	Students can able to study the characteristics of different bipolar junction transistors and their biasing stabilization and compensation techniques and analyze transistor amplifiers using h-parameters..	Analyzing
C213.5	Students can able to understand the basics of FET,Thyristors, Power IGBTs and Power MOSFETs.	Evaluating
C213.6	Students can able to understand the concepts of positive and negative feedbacks and their role in amplifiers and oscillators.	
COURSE NAME:ELECTROMAGNETIC FIELDS(C214)		
C214.1	Apply vector calculus to static electric - magnetic fields in different engineering situations.	Applying
C214.2	Design and calculate the capacitance values and energy stored in dielectrics.	Creating

C214.3	Evaluate the magnetic field intensity due to current and the application of ampere's law and to analyze maxwell's equation in different form.	Evaluating
C214.4	Assess the magnetic forces and torque produced by current in magnetic field.	Evaluating
C214.5	Solve problems involving self and mutual inductances and energy stored in magnetic fields.	Creating
C214.6	Examine Maxwell's equations in time varying Electromagnetic fields.	Analyzing
	COURSE NAME: THERMAL & HYDRO PRIME MOVERS(C215)	
C215.1	Apply the Otto, diesel cycles for finding the performance of S.I andC.Iengine.	Applying
C215.2	Illustrate the steam formation and its utilities through the standard steam data tables.	Understanding
C215.3	Examine the simple gas turbine fundamentals and methods to improve the efficiency of gas turbines.	Analyzing
C215.4	Evaluate the performance characteristics of centrifugal and reciprocating pumps.	Creating
C215.5	compare the constructional features, operational details of various types of hydraulic turbines.	Analyzing
C215.6	Identify the main components of hydro electric power plants.	Applying
	COURSE NAME:MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS(C216)	
C216.1	Interpret the fundamental concepts of managerial economics.	Understanding
C216.2	Classify and compare various costs in managerial decision making process.	Analyzing
C216.3	Analyse different kinds of markets and various pricing strategies.	Analyzing
C216.4	Identify various forms of business optimization and their procedures	Applying
C216.5	Identity fundamental concepts of accounting and analyse financial statements.	Analyzing
C216.6	Identity fundamental concepts of accounting and analyse financial statements.	Evaluating
	COURSE NAME:: THERMAL AND HYDRO LABORATORY(C217)	
C217.1	Measure the impact of jet on different types of plates	Evaluating
C217.2	Determine the co-efficient of discharge of an Orifice meter & Venturimeter	Applying
C217.3	Conduct the performance test on a Single stage centrifugal pump & Reciprocating pump	Applying
C217.4	Conduct the performance test on a twin cylinder diesel engine & multi cylinder engine	Applying
C217.5	Conduct Heat balance test, Morse test & Retardation Test	Analyzing
C217.6	Determine the valve timing diagram of SI engine & CI engine	Evaluating
	COURSE NAME: ELECTRICAL CIRCUITS LABORATORY (C218)	
C218.1	verify and demonstrate various theorems.	Evaluating
C218.2	Determine self and mutual inductance of a magnetic circuit, parameters of a given coil and measurement of 3- phase power.	Remembering
C218.3	verify locus diagrams, resonance and two port networks.	Analyzing
	II YEAR II SEMESTER	
	COURSE NAME: ELECTRICAL MEASUREMENTS (C221)	
C221.1	1.Are you able to measure voltage and current by using different types of instruments?	Understanding
C221.2	2.Did you able to understand working princples of different types of measuring instruments to measure power and energy?	Understanding
C221.3	3.Are you able to understand working princples of DC and AC potentio meters?	Evaluating
C221.4	4.Are you able to understand working princples of various bridges to measure inductance restitance and capacitance?.	Applying
C221.5	5.Are you able to understand working princples of various magnetic measuring instruments?	Analyzing
C221.6	6.Did you able to apply CRO for findout unknown frequency and phase difference?	Applying
	COURSE NAME: ELECTRICAL MACHINES-II (C222)	
C222.1	Understand the principle of operation and performance of 3-phase induction motor.	Understanding
C222.2	Quantify the performance of induction motor and induction generator in terms of torque and slip.	Analyzing
C222.3	understand the torque producing mechanism of a single phase induction motor.	Applying
C222.4	understand the principle of emf generation, the effect of armature reaction and predetermination of voltage regulation in synchronous generators.	Creating
C222.5	study parallel operation and control of real and reactive powers for synchronous generators.	Creating
C222.6	understand the operation, performance and starting methods of synchronous motors.	Understanding
	COURSE NAME: SWITCHING THEORY & LOGIC DESIGN (C223)	
C223.1	Recall the number systems and basic logic operations	Remembering
C223.2	Demonstarte Boolean theorems minimization of functions using K-map and Tabulation Method	Understanding

C223.3	Analyze various combinational circuits by applying the acquired knowledge in K-maps and logic gates.	Applying
C223.4	Classify PROM,PAL,PLA and compare their Merits and Demerits	Understanding
C223.5	Analyze various Synchrounous ,Asynchronous Counters and Registers	Creating
C223.6	Analyze Clocked sequential circuits state diagrams and state tables.	Analyzing
	COURSE NAME: CONTROL SYSTEMS (C224)	
C224.1	Model the transfer function of physical systems, determination of overall transfer function using block diagram algebra and signal flow graphs Model the transfer function of physical systems, determination of overall transfer function using block diagram algebra and signal flow graphs. (Apply).	Applying
C224.2	Determine the time response specifications of second order systems and to estimate the error constants. (Evaluating)	Evaluating
C224.3	Analyze absolute stability and relative stability of LTI systems using Rout's stability criterion and root locus method. (Analyzing)	Analyzing
C224.4	Analyze stability of LTI systems using frequency response methods. (Analyzing)	Analyzing
C224.5	Able to design Lag, Lead, Lag-Lead compensators to improve systems performance using Bode diagram. (Creating)	Creating
C224.6	To model the physical systems as state models and to determine their system response to judge systems controllability and observability. (Applying)	Applying
	COURSE NAME: POWER SYSTEMS-1 (C225)	
C225.1	Demonstrate the general layout, major equipments and auxiliaries in thermal power station.	Understanding
C225.2	Explain the general layout, major equipments and different types of reactors in nuclear power	Understanding
C225.3	Solve the different types of distribution systems	Analyzing
C225.4	Compare the air and gas insulated substations	Creating
C225.5	Identify the single, multi core cables with different insulating materials.	Understanding
C225.6	Analyze the different economic factors of power generation and Calculation of tariff for different customers.	Analyzing
	COURSE NAME: MANAGEMENT SCIENCE (C226)	
C226.1	Explain the management functions and decision making process.	Understanding
C226.2	Analyse the materials management and inventory management techniques.	Analyzing
C226.3	Explain the concepts of functional management and marketing management.	Understanding
C226.4	Solve the concepts of project management problems.	Applying
C226.5	Interpret the concepts of strategic management.	Understanding
C226.6	Evaluate energy consumption levels at various modes of operation.	Creating
	COURSE NAME: ELECTRICAL MACHINES-1 LABORATORY(C227)	
C227.1	Determine the magnetic characteristics of DC Shunt generator and understand the the mechanism of self excitation.	Applying
C227.2	Determine performance of DC machines and Transformers	Applying
C227.3	Control the speed of DC motor using armature control and field control methods	Creating
C227.4	Predetermine the efficiency of transformers, DC shunt motor and assess their performance	Applying
C227.5	Obtain three phase to two phase transformation	Applying
C227.6	Obtain seperation of losses of single phase transformer and DC shunt motor	Applying
	COURSE NAME: ELECTRONICS DEVICES & CIRCUITS LABORATORY(C228)	
C228.1	Explain about analog meters, digital meters, RPS, DMM and CRO.	Understanding
C228.2	Utilize the voltage and current relationships of PN Diode and Zener diode.	Applying
C228.3	Construct and Develop efficiency and % regulations of Halfwave and Fullwave rectifiers with and without filters.	Applying
C228.4	Identify and compare the characteristics of BJT, FET, SCR and UJT in different configurations.	Applying
C228.5	Construct the different amplifier circuits for BJT and FET.	Applying

III YEAR I SEMESTER

COURSE NAME: POWER SYSTEMS-II (C311)

C311.1	Analyze the parameters of various types of transmission lines during various conditions.	Analysing
C311.2	Understand the performance of short and medium transmission lines in power systems	Understanding
C311.3	Understand the performance of long transmission lines in power systems	Evaluating
C311.4	Understand travelling waves on transmission line	Analysing
C311.5	Understand the various factors related to charge on transmission lines	Remembering

C311.6	understand sag/tension of transmission lines and performance of insulators insulators.	Creating
	COURSE NAME:RENEWABLE ENERGY SOURCES (C312)	
C312.1	selecting a suitable motor for electric drives with respect to loading conditions	Analyzing
C312.2	Employ the most appropriate heating and welding techniques for industrial applications.	Creating
C312.3	Distinguish the entities in the illumination systems and their units and measurement of illumination	Creating
C312.4	Design interior and exterior lighting systems and illumination levels for various purposes of light fittings.	Understanding
C312.5	Distinguish the different schemes of traction and its main components.	Evaluating
C312.6	Evaluate energy consumption levels at various modes of operation.	Understanding
	COURSE NAME: SIGNALS & SYSTEMS (C313)	
C313.1	selecting a suitable motor for electric drives with respect to loading conditions	Understanding
C313.2	Employ the most appropriate heating and welding techniques for industrial applications..	Analyzing
C313.3	Distinguish the entities in the illumination systems and their units and measurement of illumination.	Understanding
C313.4	Design interior and exterior lighting systems and illumination levels for various purposes of light fittings.	Creating
C313.5	Distinguish the different schemes of traction and its main components.	Analyzing
C313.6	Evaluate energy consumption levels at various modes of operation.	Analyzing
	COURSE NAME: PULSE & DIGITAL CIRCUITS (C314)	
C314.1	Analyze and design linear wave shaping circuits.	Analyzing
C314.2	Analyze and design Non-linear wave shaping circuits.	Analyzing
C314.3	Recall the characteristics of various switching devices such as diode and transistor.	Remembering
C314.4	Design Multivibrators for various applications.	Creating
C314.5	Design Time base generators for various applications and to show synchronization techniques and explains the sweep circuits.	Creating
C314.6	Build the basic sampling gates and their types and their applications and to realize different logic gates and analyzing the outputs.	Applying
	COURSE NAME: POWER ELECTRONICS (C315)	
C315.1	Analyze the characteristics of various power semiconductor devices and to model the firing and protecting circuits for power semiconductor devices	Creating
C315.2	Develop the single phase converters for different loads and to evaluate the converters performance by analyzing different electrical parameters	Analyzing
C315.3	Justify the three phase full converters for different loads and to distinguish between single phase and three phase converters.	Analyzing
C315.4	Develop and study the performance characteristics of various DC to DC Converters and to derive the suitable formulae for mathematical approximation	Creating
C315.5	Assess the working of various inverters and evaluate the PWM techniques for voltage control and harmonic mitigation	Evaluating
C315.6	Design a suitable AC to AC regulator for variable AC supply requirements for different applications	Creating
	COURSE NAME: ELECTRICAL MACHINES-II LAB (C316)	
C316.1	Obtain the performance of three phase induction motor by conducting brake test	Evaluating
C316.2	Compute the Equivalent Circuit paramerters of three phase & single phase Induction Motors	Applying
C316.3	Obtain the control of speed of three phase induction motor.	Applying
C316.4	Predetermine the regulation of three–phase alternator by various methods.	Applying
C316.5	Determine the Xd/ Xq ratio of alternator and asses the performance of three–phase synchronous motor	Applying
C316.6	Evaluate the power factor improvement of single phase induction motor	Applying
	COURSE NAME: CONTROL SYSTEMS LAB(C317)	
C317.1	Model the transfer function of physical systems, determination of overall transfer function using block diagram algebra and signal flow graphs.	Applying
C317.2	Determine the time response specifications of second order systems and to estimate the error constants.	Evaluating

C317.3	Able to design Lag, Lead, Lag-Lead compensators to improve systems performance using Bode diagram	Creating
	COURSE NAME: ELECTRICAL MEASUREMENTS LABORATORY(C318)	
C318.1	Calibrate single phase energy meter ,power factor meter	Applying
C318.2	calibrate watt meter and energy meter	Applying
C318.3	Measurement of choke coil parameters	Applying
C318.4	Testing of transformer oil by using H.T test kit	Applying
C318.5	Meaurement of resistance by using kelvin double bridge	Applying
C318.6	Measurrement of capacitance by using schering bridge	Applying
	COURSE NAME: IPR & PATENTS (C319)	
C319.1	Interpret the Concept of IPR Importance and mechanisms.	Understanding
C319.2	Utilize knowledge regarding copyrights to get them registered.	Applying
C319.3	Identify the filing procedure of patents and role of Patent Cooperation Treaty.	Applying
C319.4	Analyze rights and responsibilities of holder of Trademarks and Likelihood of Confusion - Dilution of Ownership.	Analyzing
C319.5	Illustrate the concepts of trade secrets and cyber laws.	Understanding
	III YEAR II SEMESTER	
	COURSE NAME: POWER ELECTRONIC CONTROLLERS & DRIVES (C321)	
C321.1	Summarize the concepts of conventional DC drive	Understanding
C321.2	Analyze the performance of various semi-conductor controlled DC drives	Analyzing
C321.3	Identify and enhance uses of dc drive in modern applications	Applying
C321.4	Analyze the performance of AC motors with various control strategies	Analyzing
C321.5	Interpretation of AC drive systems	Evaluating
C321.6	Identify the suitability of control methods of AC Drives for industrial applications	Applying
	COURSE NAME: POWER SYSTEM ANALYSIS (C322)	
C322.1	Able to understand the per unit system and draw impedance diagram for a power system network.	Creating
C322.2	Analyse load flow computations and load flow results using different methods.	Evaluating
C322.3	Formulate Y-bus and Z-bus for power system network.	Creating
C322.4	Interpret a network under both balanced and unbalanced fault condition and interpret result to provide the data for design of protecting devices	Understanding
C322.5	Examine positive sequence, negative sequence and zero sequence system and fault analysis	Analyzing
C322.6	Examine positive sequence, negative sequence and zero sequence system	Analyzing
	COURSE NAME: MICRO PROCESSOR & MICRO CONTROLLERS (C323)	
C323.1	Illustrate The 8086 Architecture and Register organization ,Pin diagram and general bus operations, compare 8086 with xxx86	Understanding
C323.2	Classify The Addressing modes and Instruction set, Minimum mode and maximum mode of 8086	Understanding
C323.3	Apply Various interfacing modules like 8255, A to D converters, Interfacing 8257, IO devices and Key board interface with 8086	Applying
C323.4	Summarize The 8051 Micro Controller Architecture, timers, types of instructions and various modules.	Understanding
C323.5	Illustrate The PIC registers, serial IOs, architecture.	Understanding
C323.6	Develop different types of logical operations and data conversions with the help of I/O programming.	Creating
	COURSE NAME: DATA STRUCTURES (C324)	
C324.1	Describe the basic concepts of data structures and algorithms. (Remembering)	Remembering
C324.2	Interpret arrays, stack, queue operations and applications (Understanding).	Understanding
C324.3	Select the appropriate data structure choosing given problem (Applying)	Evaluating
C324.4	Solve problem involving trees (Applying).	Creating
C324.5	Analyze different paths algorithms related graphs. (Analyzing)	Analyzing
C324.6	Apply Algorithm for solving problems like sorting, searching (Applying)	Creating
	COURSE NAME: OOPS THROUGH JAVA(C325)	
C325.1	Implement Object Oriented programming concept using basic syntaxes of control Structures, strings and function for developing skills of logic building activity.	Understanding
C325.2	Identify classes, objects, members of a class and the relationships among them needed for finding the solution to a specific problem	Applying

C325.3	Demonstrates how to achieve reusability using inheritance, interfaces and packages and describes faster application development can be achieved.	Understanding
C325.4	Make use of different exception handling mechanisms and concept of multithreading for robust faster and efficient application development.	Applying
C325.5	Identify and describe common abstract user interface components to design GUI in Java using Applet & AWT along with response to events	Creating
C325.6	Identify, Design & develop complex Graphical user interfaces using principal Java Swing classes based on MVC architecture	Applying
	COURSE NAME: POWER ELECTRONICS LAB(C326)	
C326.1	Able to Understand the Characteristics of Thyristor, MOSFET & IGBT.	Analysing
C326.2	Able to Design and development of a firing circuits for Thyristor and IGBT.	Evaluating
C326.3	Able to Investigate the performance of Single -Phase Half controlled and Full controlled	Evaluating
C326.4	Able to describe the performance of AC Voltage Regulator and square wave bridge inverter with R and RL Loads	Creating
C326.5	Able to Verify the voltage gains of Boost converter and buck converter in CCM & DCM operation.	Applying
	COURSE NAME: MICROPROCESSORS AND MICROCONTROLLERS LAB (C327)	
C327.1	Understand the fundamentals of assembly level programming of microprocessors microcontrollers knowledge	Understanding
C327.2	Apply the programming knowledge for arithmetic and logical operations in 8086	Applying
C327.3	Develop the programs for string manipulation programs Application	Applying
C327.4	Contrast how different I/O devices can be interfaced to processor And will explore several techniques of interfacing	Analyzing
C327.5	Apply the programming knowledge for understanding of communication standards in 8051	Applying
	COURSE NAME: DATA STRUCTURES LAB(C328)	
C328.1	Describe the basic concepts of data structures and algorithms. (Remembering).	Understanding
C328.2	Interpret arrays, stack, queue operations and applications (Understanding)	Analyzing
C328.3	Select the appropriate data structure choosing given problem (Applying)	Evaluating
C328.4	Solve problem involving trees (Applying)	Creating
C328.5	Analyze different paths algorithms related graphs. (Analyzing)	Analyzing
C328.6	Apply Algorithm for solving problems like sorting, searching (Applying)	Creating
	COURSE NAME: PROFESSIONAL ETHICS & HUMAN VALUES (C329)	
C329.1	Define the basic insights and inputs to the student on ethics, values,morals,	Remembering
C329.2	Explain the ethical responsibilities of engineers.	Understanding
C329.3	Demonstrate the knowledge on engineering as a social experimentation.	Understanding
C329.4	Create the awareness about safety,risk,risk benefit analysis.	Creating
C329.5	Develop knowledge about global issues and environmental ethics .	Creating

IV YEAR I SEMESTER

	COURSE NAME: UTILISATION OF ELECTRICAL ENERGY (C411)	
C411.1	selecting a suitable motor for electric drives with respect to loading conditions	Remembering
C411.2	Employ the most appropriate heating and welding techniques for industrial applications.	Remembering
C411.3	Distinguish the entities in the illumination systems and their units and measurement of illumination	Analyzing
C411.4	Design interior and exterior lighting systems and illumination levels for various purposes of light fittings.	Creating
C411.5	Distinguish the different schemes of traction and its main components.	Analyzing
C411.6	Evaluate energy consumption levels at various modes of operation.	Remembering
	COURSE NAME: LINEAR IC APPLICATIONS (C412)	
C412.1	Understand the basic operation &performance parameters of differential amplifiers	Applying
C412.2	Design circuits using operational amplifiers for various applications.	Understanding
C412.3	Design and Diagnose and trouble-shoot linear electronic circuits.	Applying
C412.4	Analyze and design amplifiers and active filters using Op-amp.	Analyzing
C412.5	Design circuits using 555 Timer IC & Analog Multiplier IC for various applications	Understanding
C412.6	Analyze and design Analog to Digital Ic and Digital to Analog Ics for various applications	Analyzing
	COURSE NAME: POWER SYSTEM OPERATION & CONTROL (C413)	
C413.1	Compute optimal scheduling of Generators.	Understanding

C413.2	Elaborate hydrothermal scheduling	Creating
C413.3	Discuss the unit commitment Problem	Remembering
C413.4	Distinguish the load frequency control for single area system with and without controllers	Applying
C413.5	Contrast the load frequency control for two area system with and without controllers	Evaluating
C413.6	Explore reactive power control in power systems and compensation of transmission lines	Creating
	COURSE NAME: SWITCH GEAR & PROTECTION (C414)	
C414.1	selecting a suitable motor for electric drives with respect to loading conditions	Understanding
C414.2	Employ the most appropriate heating and welding techniques for industrial applications.	Understanding
C414.3	Distinguish the entities in the illumination systems and their units and measurement of illumination.	Remembering
C414.4	Design interior and exterior lighting systems and illumination levels for various purposes of	Understanding
C414.5	Distinguish the different schemes of traction and its main components.	Understanding
C414.6	Evaluate energy consumption levels at various modes of operation..	Understanding
	COURSE NAME: INSTRUMENTATION (C415)	
C415.1	Knowing about various types of signals and representing them	Understanding
C415.2	learn knowledge about various kinds of transducers like mechanucal ,electrical, electro mechanical and optical transducers	Remembering
C415.3	measurement of non electrical quantites	Applying
C415.4	knowing about various kinds of digital volt meters	Remembering
C415.5	details knowing about oscilloscope and its applications	Understanding
C415.6	study various types of signal analyzers	Understanding
	COURSE NAME: ELECTRIC POWER QUALITY (C416)	
C416.1	Explain different types of power quality phenomena.	Understanding
C416.2	Analyze the harmonic sources, passive filters, active filters and standards	Creating
C416.3	Explain the principle of voltage regulation and power factor improvement methods	Understanding
C416.4	Analyze the harmonic sources, passive filters, active filters and standards	Analyzing
C416.5	Explain about the relationship between distributed generation and power quality.	Understanding
C416.6	Explain about power quality monitoring method, equipments and analyze the measured data	Analyzing
	COURSE NAME: ELECTRICAL SIMULATION LAB(C417)	
C417.1	To simulate integrator circuit, differentiator circuit, Boost converter, Buck converter, full convertor and PWM inverter.	Applying
C417.2	To simulate transmission line by incorporating line, load and transformer models.	Evaluting
C417.3	To perform transient analysis of RLC circuit and single machine connected to infinite bus(SMIB).	Evaluting
	COURSE NAME: POWER SYSTEMS & SIMULATION LAB(C418)	
C418.1	Apply software packages like MATLAB/Simulink and PSCAD for power systems	Applying
C418.2	Determine positive, negative and zero sequence systems and fault analysis	Understanding
C418.3	Determine the dielectric strength of transformer oil using HV testing kit and calibrate the Tong t	Applying
C418.4	Determine power flow solutions by using different methods.	Applying
C418.5	Analyze the performance of transmission lines.	Analyzing
C418.6	Analyze the different power system components under fault condition.	Analyzing
	IV YEAR II SEMESTER	
	COURSE NAME: DIGITAL CONTROL SYSTEMS (C421)	
C421.1	Explain digital control systems and their applications.	Understanding
C421.2	Analyze digital control systems in the z-domain and its properties.	Applying
C421.3	Explain the basic principles and modeling of digital control system in transfer function and state-space domain	Understanding
C421.4	Solve analysis techniques like Jury stability criteria and Routh stability criteria	Applying
C421.5	Explain the design procedure for controller for digital control system using root locus method, Bilinear transformation	Understanding
C421.6	Elaborate the fundamentals and design procedures of deadbeat controllers for digital control system	Creating
	COURSE NAME: HVDC TRANSMISSION (C422)	
C422.1	Understand the t of HVDC transmission systems.	Creating
C422.2	Analyze the HVDC Converters .	Understanding
C422.3	Understand the control of HVDC system and power control.	Understanding
C422.4	understand the Reactive Power control in HVDC.	Understanding

C422.5	Analyze the power flow in AC/DC systems.	Understanding
C422.6	Analyze the different faults and what typeof protection is needed.	Understanding
	COURSE NAME: ELECTRICAL DISTRIBUTION SYSTEMS (C423)	
C423.1	Differentiate the types of loads and their characteristics.	Understanding
C423.2	Analyse radial and loop type distribution feeders.	Creating
C423.3	Determine the voltage drop and power loss in a distribution system.	Applying
C423.4	Develop protection system and its co-ordination in distribution system.	Creating
C423.5	Analyse the best methods for power factor improvement and voltage control.	Applying
C423.6	Understand the effect of capacitance in voltage control of distribution system.	Analysing
	COURSE NAME: HIGH VOLTAGE ENGINEERING (C424)	
C424.1	Understand the Performance of High Voltages with regard to different configuration of electrode systems	Understanding
C424.2	Illustrate the theory of breakdown and withstand phenomena of all types of dielectric materials.	Remembering
C424.3	Employ the techniques of generation of AC,DC and Impulse Voltages	Understanding
C424.4	Apply Knowledge for measurement of High Voltage and High Current AC,DC and impulse	Applying
C424.5	Measure dielectric property of material used for HV equipment	Evaluating
C424.6	Test various equipments used in HV engineering	Analyzing
	COURSE NAME: SEMINAR (C425)	
C425.1	Student can able to identify and solve the issues related to electrical engineering by using engineering concepts	Applying
C425.2	Student should do the literature survey and recall the basics of the subjects in the area from recent journals and other sources	Evaluating
C425.3	Student can apply and simulate the result by using different softwares or possible extend that result as a prototype	Applying
C425.4	Students able to use conventional and latest technologies and apply the knowledge acquired and solve the problems in their project work.	Applying
C425.5	Student able to identify the future scope enhancement in their project and prepare a thesis or report in a required format and present their work to the panel.	Evaluating
	COURSE NAME: PROJECT (C426)	
C426.1.	Student can able to identify and solve the issues related to electrical engineering by using engineering concepts.	Applying
C426.2.	Student should do the literature survey and recall the basics of the subjects in the area from recent journals and other sources.	Evaluating
C426.3.	Student can apply and simulate the result by using different softwares or possible extend that result as a prototype.	Applying
C426.4.	Students able to use conventional and latest technologies and apply the knowledge acquired and solve the problems in their project work.	Applying
C426.5.	Compare the result of their work to improve the quality of work.	Evaluating
C426.6.	Student able to identify the future scope enhancement in their project and prepare a thesis or report in a required format and present their work to the panel.	Creating