BONAM VENKATA CHALAMAYYA INSTITUTE OF TECHNOLOGY & SCIENCE
Department of Electrical & Electronics Engineering
COURSE OUTCOMES
R20 REGULATION
I YEAR I SEMESTER

CO CODE	COURSE NAME:COMMUNICATIVE ENGLISH- (C111) COURSE OUTCOME	TAXONOMY LEVEL
C111.1	Classify and compare different things and cultures and behaviours of people from generation to generation	Understanding
C111.2	Select an inspiring personality and to achieve the new heights in personal and professional life	Applying
C111.3	Apply Science and Technology to transform the lives despite physical disabilities and to invent latest Engineering tools for the needs of the Society	Applying
C111.4	Classify and compare the status quos of female writers and women in the 17th century with respect to modern ear	Understanding
C111.5	Actively take part in protecting environment and the rights of the underprivileged despite challenges in personal and public life.	Analysing
C111.6	Develop the spirit of inquisitiveness in the areas of interest chosen and to offer insight into how to lead a successful life.	Applying
COURSE NAME:MATHEMATICS-I (C112)		
C112.1	Utilize mean value theorems to related to various engineering fields	Applying
C112.2	Solve the first order differential equations and able to apply physical problems	Applying
C112.3	Solve higher order linear differential equations with constant coefficients	Applying
C112.4	Apply the knowledge of differential equations for electrical circuits, harmonic motion	Applying
C112.5	Find the partial derivative of different orders, finding maxima and minima of function of two variable, three variables and functional dependence	Evaluating
C112.6	Apply double integration techniques in evaluating areas bounded by region and also learn important tools of calculus in higher dimensions like 2-dimensional and 3-dimensional coordinate systems	Applying
COURSE NAME:MATHEMATICS-II(C113)		
C113.1	Find Rank and Solve the linear system of equations by using different methods	Applying
C113.2	Find the inverse and power of a matrix by using Cayley Hamilton theorem. And also diagonalize	Applying
C113.3	Solve the algebraic and transcendental equations by different methods	Applying
C113.4	Solve the system of simultaneous equations using numerical methods	Applying
C113.5	Apply Newton's forward and back ward interpolation and Lagrange's formulae for equal and unequal intervals	Applying
C113.6	Find the Quadrature, the solutions of ordinary differential equations by different formula	Applying
COURSE NAME:PROGRAMMING FOR PROBLEM SOLVING USING C (C114)		
C114.1	Interpret and debug programs in C language, Demonstrate syntaxes, predefined functions in computer programming languages	Understanding
C114.2	Build C programs involving decision making statements, looping statements and understanding the control flow of the programs	Applying
C114.3	Examine Arrays and develop C programs using different types of arrays	Analyzing
C114.4	Design programs using enumerated data types, structures and unions	Creating
C114.5	Design programs using pointers and dynamic memory management functions	Creating
COURSE NAME: ENGINEERING DRAWING & DESIGN (C115)		
C115.1	To introduce the students to use drawing instruments and to draw polygons, Engg. Curves	Applying
C115.2	To introduce the students to use orthographic projections, projections of points & simple lines. To make the students draw the projections of the lines inclined to both the planes	Applying
C115.3	The objective is to make the students draw the projections of the plane inclined to both the planes	Applying

C115.4	The objective is to make the students draw the projections of the various types of solids in different positions inclined to one of the planes	Applying
C115.5	The objective is to represent the object in 3D view through isometric views. The student will be able to represent and convert the isometric view to orthographic view and vice versa	Applying

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COURSE NAME:ENGLISH COMMUNICATION SKILLS LABORATORY   (C116)

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C116.1	Develop the nuances of Pronunciation and make use of International Phonetic Alphabet in order to improve pronunciation while Speaking and Listening	Applying
C116.2	Divide the words properly into syllables and identify the word stress in di-syllabic, Poly-syllabic words	Analyzing
C116.3	Analyze and understand the stress in compound words, Stress Timed Rhythm and accent neutralizations while listening and speaking	Analyzing
C116.4	Classify the words into syllables and spell and stress them as per conventions	Applying
C116.5	Identify the context and specific information while reading and listening to various pieces of texts	Applying
C116.6	Make use of various types of key terms and structures for writing reports	Applying

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COURSE NAME: ELECTRICAL ENGINEERING WORKSHOP(C117)

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C117.1	Explain the limitations, tolerances, safety aspects of electrical systems and wiring	Understanding
C117.2	Make simple lighting and power circuits	Analyzing
C117.3	Measure current, voltage and power in a circuit	Understanding

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COURSE NAME: PROGRAMMING FOR PROBLEM SOLVING USING C LAB (C118)

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C118.1	Interpret and debug programs in C language, Demonstrate syntaxes, predefined functions and operators in computer programming languages	Understanding
C118.2	Demonstrate C programs involving decision making statements, iterative statements and understanding the control flow of the programs	Applying
C118.3	Classify Arrays, Strings and Develop C programs using String manipulation functions	Analyzing
C118.4	Design programs using pointers and dynamic memory management functions	Creating
C118.5	Construct functions, create files and develop programs using file handling functions	Creating

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I YEAR II SEMESTER

COURSE NAME: MATHEMATICS-III (C121)

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C121.1	Utilize the vector differential operators (Gradient, Divergence and Curl) and Estimate the work done against a field, circulation and flux using vector	Evaluating
C121.2	Solve the differential equations using Laplace transforms	Applying
C121.3	Find the Fourier series of periodic signals	Applying
C121.4	Find the Fourier Integral transformations	Applying
C121.5	Form the PDE and identify the solutions of linear and non linear PDE	Applying
C121.6	Identify the solution methods for 2nd order partial differential equations representing physical problems	Applying

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COURSE NAME: APPLIED PHYSICS (C122)

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C122.1	Explain the physical significance of optics and hence estimate the speed of light ,wave length ,refractive index by using interference	Understanding
C122.2	Explain the resolving power of various optical instruments like grating, teliscope and micro scope	Understanding
C122.3	Explain about polarized light and optical actvity using polarization and describe the construction and working of various lasers	Understanding
C122.4	Develope various engineering applications involving electro magnetic fields	Analyzing
C122.5	Apply the knowledge of basic quantum mechanics and summarize the importance of free electrons in determine the properties of metals	Applying
C122.6	Classify materials as metals, insulators, semiconductors and explain the properties of semiconductors with application to the hall effect	Analyzing

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COURSE NAME: DATA STRUCTURES THROUGH C (C123)

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C123.1	Distinguish Linear Data structures Develop all data structures like stacks, queues and their applications	Analyzing
C123.2	Apply advanced data structure strategies on various operations on linked lists	Applying
C123.3	Compare and contrast various basic concepts of Trees, Traversal methods and operations	Understanding
C123.4	Apply data structures for implementing graphs on different algorithms	Applying
C123.5	. Analyze the data using searching and sorting techniques	Analyzing

	COURSE NAME:ELECTRICAL CIRCUIT ANALYSIS-1(C124)	
C124.1	Apply the solution methods such as nodal analysis and mesh analysis	Applying
C124.2	Illustrate magnetic circuits concepts	Analyzing
C124.3	Apply ac circuits concepts to find various performance parameters of electrical network	Applying
C124.4	Understand the behavior of Steady state analysis of R, L and C circuits	Understanding
C124.5	Explain single phase circuit concepts to obtain locus diagrams and resonance	Understanding
C124.6	Evaluate various networks by using principles of network theorems	Evaluating

	COURSE NAME:BASIC CIVIL AND MECHANICAL ENGINEERING (C125)	
C125.1	Apply Shear force diagram & Bending moment diagram principles for Cantilever and Simply supported beams.	Applying
C125.2	Apply concepts of Rosette analysis for strain measurement	Applying
C125.3	Analyse the characteristics of common building materials.	Analysing
C125.4	Compare the working characteristics of internal Combustion engines	Analysing
C125.5	Compare the differences between boiler mountings and accessories	Analysing

	COURSE NAME:APPLIED PHYSICS LABORATORY(C126)	
C126.1	Explain of radius of curvature of a given plano convex lens by Newton's rings	Understanding
C126.2	Determination of wavelengths of different spectral lines in mercury spectrum using diffraction grating in normal incidence configuration	Applying
C126.3	Explain of numerical aperture and acceptance angle of an optical fiber	Understanding
C126.4	Determination of wavelength of Laser light using diffraction grating	Applying
C126.5	Estimation of Planck's constant using photo electric effect	Applying
C126.6	Classify materials as metals, insulators, or semiconductors, and Explain the quantified properties of semiconductors with application to the Hall effect	Analyzing

	COURSE NAME:BASIC CIVIL AND MECHANICAL ENGINEERING LABORATORY(C127)	
C127.1	Apply the Otto, diesel cycles for finding the performance of S.I and C.I engine.	Applying
C127.2	Illustrate the steam formation and its utilities through the standard steam data tables.	Understanding
C127.3	Examine the simple gas turbine fundamentals and methods to improve the efficiency of gas turbines.	Analysing
C127.4	Evaluate the performance characteristics of centrifugal and reciprocating pumps.	Evaluating
C127.5	compare the constructional features, operational details of various types of hydraulic turbines.	Understanding

	COURSE NAME: DATA STRUCTURES THROUGH C LAB(C128)	
C128.1	Be able to design and analyze stacks and Queues of the data structure	
C128.2	Capable to identity the appropriate Problems in linked lists	Applying
C128.3	To identity the appropriate Algorithms for Trees and Graphs in data structure	Applying
C128.4	Implementation of Searching and Sorting Techniques for Linear Data	Applying

	COURSE NAME: CONSTITUTION OF INDIA (C129)	
C129.1	Apply the knowledge on Directive principle of state policy	Applying
C129.2	Explain the role of President and Prime Minister, the structure of Supreme Court and High court	Understanding
C129.3	Anayze the role of Governor and Chief Minister	Analyzing
C129.4	Differentiate between structure and functions of state secretariat	Understanding
C129.5	Analyze the role of Mayor and elected representatives of Muncipalities	Analyzing
C129.6	Compareand Contrast the role of chief Election commissioner and commissionerate	Understanding

II YEAR I SEMESTER

	COURSE NAME: MATHEMATICS-IV (C211)	
C211.1	Apply Cauchy Riemann equations to complex functions in order to determine whether a given continuous function is analytic	Applying
C211.2	Find the differentiation and integration of complex functions used in engineering problems	Evaluating
C211.3	Make use of residue theorem to evaluate certain integrals	Applying
C211.4	Apply discrete and continuous probability distributions	Applying
C211.5	Design the components of classical hypothesis test	Creating
C211.6	Infer the statistical inferential methods based on small and large sampling tests.	Analyzing

	COURSE NAME:ELECTRONICS DEVICES & CIRCUITS (C212)	
C212.1	Understand the basic concepts of semiconductor physics	Understanding

C212.2	Understand the formation of p-n junction and how it can be used as a p-n junction as Diodein different modes of operation	Understanding
C212.3	Know the construction, working principle of rectifiers with and without filters with Relevant expressions and necessary comparisons	Analyzing
C212.4	Understand the construction, principle of operation of transistors, BJT and FET with Their V-I characteristics in different configurations	Analyzing
C212.5	Know the need of transistor biasing, various biasing techniques for BJT and FET and Stabilization concepts with necessary expressions	Analyzing
C212.6	Perform the analysis of small signal low frequency transistor amplifier circuits using BJT and FET in different configurations	Analyzing
COURSE NAME: ELECTRICAL CIRCUIT ANALYSIS-II (C213)		
C213.1	Understand the concepts of balanced and unbalanced three-phase circuits	Applying
C213.2	Know the transient behavior of electrical networks with DC excitations	Applying
C213.3	Learn the transient behavior of electrical networks with AC excitations Using Differential Equations	Applying
C213.4	Learn the transient behavior of electrical networks with AC excitations Using Laplace Transforms	Applying
C213.5	Estimate various parameters of a two port network	Evaluating
C213.6	Understand the significance of filters in electrical networks	Understanding
COURSE NAME: DC MACHINES AND TRANSFORMERS(C214)		
C214.1	Assimilate the concepts of electromechanical energy conversion	Analyzing
C214.2	Mitigate the ill-effects of armature reaction and improve commutation in dc machines.	Applying
C214.3	Understand the torque production mechanism and control the speed of dc motors	Understanding
C214.4	Analyze the performance of single phase transformers	Analyzing
C214.5	Predetermine regulation, losses and efficiency of single phase transformers	Analyzing
C214.6	Parallel transformers, control voltages with tap changing methods and achieve three-phase to two-phase transformation	Understanding
COURSE NAME: ELECTRO MAGNETIC FIELDS(C215)		
C215.1	electric fields and potentials using Gauss law or solve Laplace's or Poisson'sequations for various electric charge distributions	Analyzing
C215.2	Calculate the capacitance and energy stored in dielectrics	Analyzing
C215.3	Calculate the magnetic field intensity due to current carrying conductor and understanding the application of Ampere's law	Evaluating
C215.4	Maxwell's second and third law	Analyzing
C215.5	Maxwell's second and third law	Evaluating
C215.6	Understand the concepts of displacement current and Poynting theorem and Poynting vector	Understanding
COURSE NAME:ELECTRICAL CIRCUITS LAB (C216)		
C216.1	Evaluate various networks by using principles of network theorems	Evaluating
C216.2	Apply ac circuits concepts to find various performance parameters of electrical network	Remembering
C216.3	Analyze magnetic circuits concepts	Analyzing
C216.4	Explain single phase circuit concepts to obtain locus diagrams and resonance	Understanding
C216.5	Find the parameters of a network based on input and Output excitation/response	Remembering
C216.6	Solve the three-phase circuits under unbalanced load condition	Applying
COURSE NAME:: DC MACHINES AND TRANSFORMERS LAB(C217)		
C217.1	Determine the magnetic characteristics of DC Shunt generator and understand the mechanism of self excitation	Evaluating
C217.2	Determine performance of DC machines	Evaluating
C217.3	Analyze the Speed Control of DC motor using armature control and field control methods	Analysing
C217.4	Predetermine the efficiency of transformers, DC shunt motor and assess their performance	Evaluating
C217.5	Analyze the conversion of three phase to two phase supply by using Scott connection of transformers	Analysing
C217.6	separation of losses of single phase transformer and DC shunt motor	Evaluating
COURSE NAME: ELECTRONICS DEVICES & CIRCUITS LAB (C218)		
C218.1	Explain about analog meters, digital meters, RPS, DMM and CRO	Understanding
C218.2	Utilize the voltage and current relationships of PN Diode and Zener diode	Applying

C218.3	Construct andDevelop efficiency and % regulations of Halfwave and Fullwave rectifiers with and without filters	Applying
C218.4	Identifyand comparethe characteristics of BJT, FET, SCR and UJT in different configurations	Applying
C218.5	Construct the different amplifier circuits for BJT and FET	Applying
<td colspan="3" align="center">**COURSE NAME: SKILL ORIENTED COURSE :Design of Electrical Circuits using Engineering Software Tools(C219)**</td>		
C219.1	Write the MATLAB programs to simulate the electrical circuit problems	Applying
C219.2	Simulate various circuits for electrical parameters	Applying
C219.3	Simulate various electrical circuits using Mesh and Nodal Analysis	Applying
C219.4	Simulate various theorems	Applying
C219.5	Simulate RLC series and parallel resonance	Applying
C219.6	Simulate magnetic circuits for determination of self and mutual inductances	Applying
<td colspan="3" align="center">**COURSE NAME: PROFESSIONAL ETHICS & HUMAN VALUES(C2110)**</td>		
C2110.1	Define the basic insights and inputs to the student on ethics, values, morals.	Remembering
C2110.2	Illustrate maintain ethical conduct and discharge their professional duties.	Understanding
C2110.3	Explain the concepts of engineering ethics.	Understanding
C2110.4	Analyze engineers responsibilities towards safety and risk.	Analysing
C2110.5	Find out the engineers duties and rights.	Remembering
C2110.6	Identify various ethical issues at global level.	Applying
<td colspan="3" align="center">**II YEAR II SEMESTER**</td>		
<td colspan="3" align="center">**COURSE NAME: PYTHON PROGRAMMING (C221)**</td>		
C221.1	Explain about Python programming language syntax, semantics and the Run time environment	Understanding
C221.2	Elaborate about universal computer programming concepts like data types,Containers	Analysing
C221.3	Explain about the general computer programming concepts like conditional Execution, loops	Understanding
C221.4	Explain about the general computer programming concepts like functions and Lists	Understanding
C221.5	Analyze general coding techniques and object-oriented programming	Analysing
C221.6	Analyze coding tasks related to the fundamental notions and techniques used in object- oriented programming	Analysing
<td colspan="3" align="center">**COURSE NAME: DIGITAL ELECTRONICS (C222)**</td>		
C222.1	Classify different number systems and apply to generate various codes	Applying
C222.2	Apply the concept of Boolean algebra in minimization of switching functions	Applying
C222.3	Analyse different types of combinational logic circuits.	Analysing
C222.4	Distinguish among PAL,PLA and PROM	Analysing
C222.5	apply knowledge of flip-flops in designing of Registers and counters	Applying
C222.6	Produce innovative designs by modifying the traditional design techniques.	Designing
<td colspan="3" align="center">**COURSE NAME:POWER SYSTEMS-1 (C223)**</td>		
C223.1	Demonstrate the general layout, major equipment's and auxiliaries in thermal power Station	Understanding
C223.2	Explain the general layout, major equipment's and different types of reactors in nuclear Power station	Understanding
C223.3	Explain the general layout, major components of air and gas insulated substations	Understanding
C223.4	Compare the air and gas insulated substations	Understanding
C223.5	Identify the single core and three core cables with different insulating materials	Applying
C223.6	Analyse the different economic factors of power generation and Calculation of tariff for different customers	Analysing
<td colspan="3" align="center">**COURSE NAME: INDUCTION AND SYNCHRONUS MACHINES (C224)**</td>		
C224.1	Understand the principle of operation and performance of 3-phase induction motor	Understanding
C224.2	Quantify the performance of induction motor and induction generator in terms of torque and slip, Analyze the torque producing mechanism of a three phase induction motor	Applying
C224.3	Analyze the starting methods of 3-phase induction motors	Analysing
C224.4	Analyze the Emf generation, and torque producing mechanism of single phase IM	Analysing

C224.5	Understand the principle of operation ,and solve theregulation of alternators in different methods	Applying
C224.6	Understand the operation, and analyze the performance and starting methods of synchronous motors	Analysing

COURSE NAME: MANAGERIAL ECONONIMICS & FINANCIAL ANALYSIS (C225)

C225.1	Explain the fundamental concepts of managerial economics	Understanding
C225.2	Analyze various cost concepts	Analysing
C225.3	Classify various pricing strategies and market structures	Understanding
C225.4	Identify various forms of business organization	Applying
C225.5	Analyze fundamental concepts of accounting and financial statements	Analysing
C225.6	Evaluate various alternative investment proposals to make a better capital budgeting	Evaluating

COURSE NAME:PYTHON PROGRAMMING LAB (C226)

C226.1	write the, test and debug simple python programs	Applying
C226.2	Implement python programs with conditionals and loops	Applying
C226.3	Develop python programs step-wise by defining functions and calling them	Applying
C226.4	Use python list, tuples, dictionaries for represting compound data	Applying
C226.5	Read and write data from/to files in python	Applying

COURSE NAME: INDUCTION AND SYNCHRONUS MACHINES LABORATORY(C227)

C227.1	Obtain the performance of three phase induction motor by conducting brake test	Applying
C227.2	Compute the Equivalent Circuit parameters of three phase & single phase Induction Motors	Applying
C227.3	Obtain the control of speed of three phase inductionmotor	Applying
C227.4	4 Predetermine the regulation of three–phase alternator by variousmethods	Applying
C227.5	5Determine the X d / X q ratio of alternator and asses the performance of three–phase synchronousmotor	Applying
C227.6	6 Evaluate the power factor improvement of single phase induction motor	Analysing

COURSE NAME: DIGITAL ELECTRONICS LAB(C228)

C228.1	Learn the basics of gates, filp-flops and counters	Remembering
C228.2	Construct basic combinational circuits and verify their functionalities	Analysing
C228.3	Apply the design procedures to design basic sequential circuits	Applying
C228.4	To understand the basic digital circuits and to verify their operation	Understanding
C228.5	Apply Boolean laws to simplify the digital circuits	Applying

COURSE NAME: SKILL ORIENTED COURSE:IoT Applications of Electrical Engineering Lab (C229)

C229.1	Apply various technologies of Internet of Things to real time applications	Applying
C229.2	Apply various communication technologies used in the Internet of Things	Applying
C229.3	Connect the devices using web and internet in the IoT environment	Applying
C229.4	Implement IoT to study Smart Home, Smart city, etc	Applying

III YEAR I SEMESTER

COURSE NAME: POWER SYSTEMS-II (C311)

C311.1	Evaluate parameters of transmission lines for different circuit configurations	Evaluating
C311.2	Determine the performance of short, medium and long transmission lines	Evaluating
C311.3	. Outline the performance of long transmission lines	Understanding
C311.4	Analyze the effect of travelling waves on transmission lines	Analysing
C311.5	Analyze the various voltage control methods and effect of corona	Analysing
C311.6	Evaluate sag/tension of transmission lines and performance of line insulators	Evaluating

COURSE NAME:POWER ELECTRONICS (C312)

C312.1	Express the characteristics of various power semiconductor devices and to design the firing and protecting circuits for power semiconductor devices	Designing
C312.2	Analyze AC to DC converters for different loads and to perform their harmonic analysis	Analysing
C312.3	Study the operation of three phase full converters for different loads	Analysing
C312.4	Design a suitable single phase AC to ACregulator and cyclo-converter	Creating
C312.5	Develop and study the operation of various DC to DC Converters	Creating

C312.6	Analyze the working of DC to AC converters and evaluate the PWM techniques for voltage cont	Evaluating

COURSE NAME: CONTROL SYSTEMS (C313)

C313.1	Derive the transfer function of physical systems and determination of overall transfer functionusing block diagram algebra and signal flow graphs	Creating
C313.2	Determine time response specifications of second order systems and absolute and relative stabilityof LTI systems using Routh's stability criterion and root locus method	Analysing
C313.3	Analyze the stability of LTI systems using frequency response methods	Evaluating
C313.4	Design Lag, Lead, Lag-Lead compensators	Analysing
C313.5	Design Lag, Lead, Lag-Lead compensators to improve system performance using Bode diagrams	Evaluating
C313.6	physical systems as state models and determine the response. Understand the conceptsof controllability and observability	Creating

COURSE NAME: BASICS OF SIGNALS AND SYSTEMS (C314)

C314.1	Represent and classify signals and Systems	Analysing
C314.2	Understand linear time invariant systems	Understanding
C314.3	3 Apply the concepts of Fourier series representations to analyze continuous and discrete time periodic signals	Applying&Analysing
C314.4	Apply the Fourier transform representation for continuous time & discrete time signals	Applying
C314.5	Apply the Fourier transform representation for periodic signals	Applying
C314.6	Apply the concepts of Laplace transform and z-Transform to the analysis and description of LTI continuous and discrete-time systems	Applying&Analysing

COURSE NAME: UTILIZATION OF ELECTRICAL ENERGY (C3152)

C3152.1	Identify various illumination methods produced by different illuminating sources	Applying
C3152.2	Select a suitable motor for electric drives and industrial applications	Applying
C3152.3	Choose most appropriate Electric heating method for suitable applications	Applying
C3152.4	Choose most appropriate Electric welding techniques for suitable applications	Applying
C3152.5	Distinguish various traction system and determine the tractive effort and specific energyconsumption	Analysing
C3152.6	Justify the necessity and usage of different energy storage schemes for different applications and comparisons	Evaluating

COURSE NAME: CONTROL SYSTEMS LAB(C316)

C316.1	Analyze the performance and working Magnetic amplifier, D.C and A.C. servo motors and synchro's	Analysing
C316.2	Design P, PI, PD and PID controllers,lag, lead and lag–lead compensators	Analysing
C316.3	Test the controllability and observability	Evaluating

COURSE NAME: POWER ELECTRONICS LABORATORY(C317)

C317.1	Understand the Characteristics of Thyristor, MOSFET &IGBT	Understanding
C317.2	Design and development of a firing circuits for Thyristor and IGBT	Creating
C317.3	Investigate the performance of Single -Phase Half controlled and Full controlled converter with R and RL load	Evaluating
C317.4	Describe the performance of AC Voltage Regulator and square wave bridge inverter with R and RL Loads	Understanding
C317.5	Able to Verify the voltage gains of Boost converter and buck converter in CCM & DCM operation	Evaluating

COURSE NAME:SOFT SKILLS: EMPLOYABILITY SKILLS (C318)

C318.1	Demonstrate effective presentation and interview skillsto excel in their path	Understanding
C318.2	Show positive personality traits , best etiquette and manners in both personal and professional life	Understanding
C318.3	Identifyand apply time management techniques to attain effectiveness in their career	Applying
C318.4	Developstrong leadershipand decision making capabilities to choose right direction in corporate scenario	Applying
C318.5	Build balanced emotional intelligence for effective handlingof stress and conflicts at work	Applying

COURSE NAME: ENVIRONMENTAL SCIENCE(C319)

C319.1	Explain the eco system and it's function in the environment	Understanding
C319.2	Aware the importance of natural resources and it's conversation	Understanding
C319.3	Analyse the diversity of life on earth and it's importance	Analysing

C319.4	Execute different programmes in eco friendly way	Applying
C319.5	Describe the different laws to protect our environment	Analysing
C319.6	6 Conduct Research in safe and Responsible manners communicating the environmental subject more effectively	Applying

COURSE NAME: SUMMER INTERSHIP 2 MONTHS(C3110)		
C3110.1	Explore career alternatives prior to graduation	Creating
C3110.2	Integrate theory and practice	Anaysing
C3110.3	Assess interests and abilities in their field of study	Applying
C3110.4	Learn to appreciate work and its function in the economy	Remembering
C3110.5	Develop work habits and attitudes necessary for job success	Creating
C3110.6	6 Develop communication, interpersonal and other critical skills in the job interview process	Creating
C3110.7	Build a record of work experience	Applying
C3110.8	Acquire employment contacts leading directly to a full-time job following graduation from college	Applying

III YEAR II SEMESTER

COURSE NAME :MICROPROCESSORS AND MICROCONTROLLRS (C322)		
C321.1	understand the Architecture, Pin diagram, Minimum mode, maximum mode, System timing diagrams and interrupts of 8086 Microprocessor	Understanding
C321.2	Design and Develop various assembly language programs by using the addressing modes and the Instruction set.	Applying
C321.3	Develop the memory interfacing problems and interfacing Intel 8255 programmable peripheral interface, Interfacing switches and LEDS, Interfacing seven segment displays	Applying
C321.4	Analyze the 8251 USART architecture and interfacing, Intel 8237a DMA controller, stepper motor, A/D and D/A converters, Need for 8259 programmable interrupt controllers.	Analysing
C321.5	Illustrate the 8051 architecture, SFRs and various interfacing modules of 8051 Microcontroller and also Develop sample programs using ALP.	Applying
C321.6	Summarize ARM Architecture, ARM Processors Families, ARM Cortex-M3 Processor Functional Description, functions and interfaces, Programmers Models, ARM Cortext-M3	Understanding

COURSE NAME :ELECTRICAL MEASUREMENTS AND INSTRUMENTATION (C322)		
C322.1	Explain the construction and working of various types of analog instruments	Understanding
C322.2	Describe the construction and working of wattmeter and power factor meters	Understanding
C322.3	How to measure resistance - inductance and capacitance	Applying
C322.4	Know the construction and working various bridges for the measurement inductance and capacitance	Analysing
C322.5	Explain the operational concepts of various transducers	Understanding
C322.6	Explain construction and operation digital meters	Understanding

COURSE NAME: POWER SYSTEM ANALYSIS (C323)		
C323.1	Develop impedance diagram for a power system network and calculate per unit quantities	Applying
C323.2	Apply the load flow solution to a power system using different methods	Applying
C323.3	Develop Zbus for a power system networks	Applying
C323.4	Analyze the effect of symmetrical faults	Analysing
C323.5	Analyse the sequence components for power system Components and analyze its effects of unsymmetrical faults	Analysing
C323.6	Analyse the stability concepts of a power system	Analysing

COURSE NAME: SWITCH GEAR & PROTECTION (C324)		
C324.1	Illustrate the principles of arc interruption for application to high voltage circuit breakers of air	Analysing
C324.2	Analyse the working principle and operation of different types of electromagnetic protective relays.	Analysing
C324.3	Acquire knowledge of protective schemes for generator and transformers for different fault conditions.	Evaluating
C324.4	Acquire knowledge of protective schemes for transformers for different fault conditions.	Evaluating
C324.5	Classify various types of protective schemes used for feeders and bus bar protection and Types of static relays.	Analysing
C324.6	Analyse the operation of different types of over voltages protective schemes required for insulation co–ordination and types of neutral grounding.	Analysing

COURSE NAME: Open Elective –II BASIC ELECTRONICS (C325)		

C325.1	Understand the formation of p-n junction and how it can be used as a p-n junction as diode in different modes of operation and Know the construction, working principle of rectifiers with and without filters with relevant expressions and necessary comparisons	Understanding
C325.2	Know the construction and working principle of various Special-Purpose Diodes with its Characteristics and applications	Analysing
C325.3	Understand the construction and principle of operation of NPN and PNP transistors	Analysing
C325.4	Understand the construction and principle of operation of transistors under different configurations with their input and output characteristics and know about how the transistor act as an amplifier and switch	Analysing
C325.5	Understand the construction and principle of operation of FET and MOSFET with Their output, transfer characteristics and parameters	Analysing
C325.6	Understand the construction and principle of operation of various 4 layered devices and Optical based devices with their characteristics.	Analysing
COURSE NAME: ELECTRICAL MEASUREMENTS AND INSTRUMENTATION LAB (C326)		
C326.1	Distinguish the working of different types of electrical measuring instruments for measuring voltage and current	Understanding
C326.2	Choose right type of instrument for measuring power and energy	Understanding
C326.3	Calibrate ammeter, voltmeter and Wattmeter by using potentiometer	Evaluating
C326.4	Balance the bridges to find out unknown values	Applying
C326.5	Use of ballistic galvanometer and flux meter for magnetic measurements	Analysing
C326.6	Identify the use of digital meters in electrical measuring systems	Applying
COURSE NAME: MICROPROCESSORS AND MICROCONTROLLRS LAB(C327)		
C327.1	Explain Find how different instructions are affected before and after execution	Understanding
C327.2	Experiment with various 8086 ALP microprocessor programs like arithmetic operations, sorting	Applying
C327.3	Demonstrate various interfacing modules of 8255PPI, ADC, DAC Keyboard/Display and generates different waveforms using ALPs with 8086 microprocessor	Applying
C327.4	Experiment with various assembly language programs of 8051 microcontroller using Kiel µ Vision software	Applying
C327.5	Construct various interfacing modules using ALPs of 8051 microcontroller that operates LED di	Applying
C327.6	Experiment with various programs On ARM CORTEX M3 using ARM Kiel MDK software	Applying
COURSE NAME:POWER SYSTEM AND SIMULATION LAB (C328)		
C328.1	Estimate the sequence impedances of 3-phase Transformer and Alternators	Applying
C328.2	Evaluate the performance of transmission lines	Evaluating
C328.3	Analyze and simulate power flow methods in power systems	Analysing
C328.4	Analyze and simulate the performance of PI controller for load frequency control	Analysing
C328.5	Analyze and simulate stability studies of power systems	Analysing
COURSE NAME:SKILL ADVANCED COURSE MACHINE LEARNING WITH PYTHON (C329)		
C329.1	Illustrate and comprehend the basics of Machine Learning with Python	Understanding
C329.2	Demonstrate the algorithms of Supervised Learning and be able to differentiate linear and logistic regressions	Understanding
C329.3	Demonstrate the algorithms of Unsupervised Learning and be able to understand the clustering algorithms	Understanding
C329.4	Evaluate the concepts of binning, pipeline Interfaces with examples	Evaluating
C329.5	Apply the sentiment analysis for various case studies	Applying
COURSE NAME:RESEARCH METHODOLOGY (C3210)		
C3210.1	Understand objectives and characteristics of a research problem	Understanding
C3210.2	Analyze research related information and to follow research ethics	Analysing
C3210.3	Understand the types of intellectual property rights	Understanding
C3210.4	Learn about the scope of IPR	Remembering
C3210.5	Understand the new developments in IPR	Understanding