



PARVATHAREDDY BABUL REDDY
VISVODAYA INSTITUTE OF TECHNOLOGY & SCIENCE
(Affiliated to J.N.T.U.A, Approved by AICTE and Accredited by NAAC)
KAVALI – 524201, S.P.S.R Nellore Dist., A.P. India. Ph: 08626-243930
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING



Regulation:R19

COURSE CODE	NAME OF THE COURSE	K-LEVEL
I B.TECH I-SEM		
(19A54101) ALGEBRA AND CALCULUS		
C111.1	Solve systems of linear equations, using technology to facilitate row reduction determine the rank, eigenvalues and eigenvectors, diagonal form and different factorizations of a matrix.	K3
C111.2	Analyze mean value theorems to the given function.	K4
C111.3	Utilize the technique of partial differentiation to find the Jacobian and the extreme values of functions of several variables.	K3
C111.4	Apply the techniques of multiple integrals to find the areas and volumes.	K3
C111.5	Calculate the values of improper integrals using Beta and Gamma functions.	K3
(19A56101T) APPLIED PHYSICS		
C112.1	Identify the wave properties of light and the interaction of energy with the matter	K3
C112.2	Apply electromagnetic wave propagation in different guided media	K2
C112.3	Asses the electromagnetic wave propagation and its power in different media	K4
C112.4	Calculate conductivity of semiconductors	K3
C112.5	Interpret the difference between normal conductor and superconductor	K2
(19A05101T) PROBLEM SOLVING & PROGRAMMING		
C113.1	Illustrate the working of computer , Solve complex problems using language independent notations.	K3
C113.2	Analyse the algorithms and apply algorithmic approach to solve the problem.	K4
C113.3	Select the control structure for solving the problems and also apply modular programmig concept.	K4
C113.4	Solve mathematical problems using C-Programming concepts.	K3
C113.5	Select and construct sorting algorithms based on type of data.	K4
(19A52101T) COMMUNICATIVE ENGLISH 1		
C114.1	Practise the basic listening, speaking, reading and writing skills in both academic and social contexts.	K3
C114.2	Apply effective strategies in structuring short talks, writing well-structured paragraphs, identifying basic grammatical errors and using cohesive devices for better reading comprehension	K3
C114.3	Develop summarizing and reporting skills with correct tense forms, appropriate structures, vocabulary and also report on informal discussions	K3
C114.4	Interpret graphic elements in academic contexts and use language appropriately for description of reading texts and construct dialogues for effective conversation.	K3
C114.5	Produce a well-organised essay without any grammatical errors and make formal oral presentations using effective strategies	K3
(19A02101) ELECTRICAL & ELECTRONIC ENGINEERING WORKSHOP		
C115.1	Demonstrate knowledge on different tools, abbreviations and symbols used in Electrical Engineering	K2
C115.2	Measure different electrical quantities using measuring instruments	K3
C115.3	Demonstrate how to trouble shoot the electrical equipments (like fan)	K4
C115.4	Demonstrate how to trouble shoot the electrical equipments (like grinder, motor)	K3
C115.5	Examine the wiring and earthing for residential houses	K2
(19A56101P) APPLIED PHYSICS LAB		
C116.1	Analyze the importance of Interference & Diffraction of light	K4
C116.2	Determine the numerical aperture of optical fiber to find its acceptance angle	K3
C116.3	Calculate the Energy gap of Semiconductor laser diode	K4
C116.4	Develop the magnetic field & study its properties.	K3
C116.5	Determine the self inductance of the coil using Anderson's bridge	K3

(19A05101P) PROBLEM SOLVING & PROGRAMMING LAB		
C117.1	Illustrate Assemble and deassemble a Personal Computer and prepare the computer ready to use.	K4
C117.2	Illustrate the syntax and semantics of C language for simple problem statements.	K4
C117.3	Develop programs with arrays.	K3
C117.4	Develop programs that perform operations using linked list.	K3
C117.5	Construct programs by making use of command line arguments and storage classes.	K3
(19A52101P) COMMUNICATIVE ENGLISH I LAB		
C118.1	Analyze the English speech sounds, stress, rhythm, intonation and syllable division for better listening and speaking comprehension and neutralize mother tongue influence.	K4
C118.2	Make use of suitable strategies for reading comprehension and edit short texts by correcting common errors.	K3
C118.3	Build specific vocabulary for description and use them appropriately in different contexts / situations.	K3
C118.4	Construct short structured talks on general and specific topics using suitable discourse markers.	K3
C118.5	Develop a summary with clarity and precision.	K3
I B.TECH II-SEM		
(19A01201T) BASIC CIVIL & MECHANICAL ENGINEERING		
C121.1	Draw SFD and BMD for cantilever and Simply supported beams.	K2
C121.2	Understand the working principles of electrical resistors and capacitors.	K2
C121.3	Apply concepts of Rosetta analysis for strain measurements.	K3
C121.4	Describe working components of a steam power plant	K2
C121.5	Explain working of IC engines with combustion process	K2
(19A54201) DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS		
C122.1	Solve the differential equations related to various engineering fields	K3
C122.2	Apply the linear D.E's in Mechanical and Electrical Oscillatory circuits	K3
C122.3	Identify solution methods for partial differential equations that model physical processes	K3
C122.4	Interpret the physical meaning of different operators such as gradient, curl and divergence	K3
C122.5	Estimate the work done against a field, circulation and flux using vector calculus	K3
(19A51102T) CHEMISTRY		
C123.1	Explain the salient features of different theories along with their applications	K4
C123.2	Apply the knowledge of various electrodes and electrochemical cells and the development of new batteries	K3
C123.3	Identify the different polymers and their better usage in various fields of engineering	K3
C123.4	Analyze the knowledge of different analytical techniques used in engineering and also development of new techniques	K4
C123.5	Express the principle of supramolecular chemistry in applications of Molecular machines and Switches	K3
(19A05201T) DATA STRUCTURES		
C124.1	Analyse the given algorithm to find the time and space complexities and select appropriate sorting algorithms	K4
C124.2	Develop the applications using Stack, Queue and Linked list.	K3
C124.3	Explain the concept of trees and compare different tree structures.	K3
C124.4	Apply various graph traversal methods to applications and select appropriate hashing techniques	K3
C124.5	Apply the concepts and need of files in programming and implement file operations.	K3
(19A03101) ENGINEERING WORKSHOP		
C125.1	Apply wood working skills in real world applications	K3
C125.2	Build different parts with metal sheets in real world applications	K3
C125.3	Apply fitting operations in various applications	K3
C125.4	Apply different types of basic electric circuit connections	K3
C125.5	Demonstrate soldering and brazing	K2
(19A03102) ENGINEERING GRAPHICS LAB		
C126.1	Draw various curves applied in engineering.	K2
C126.2	Show projections of solids and sections graphically	K2
C126.3	Draw the development of surfaces of solids	K3
C126.4	Use computers as a drafting tool	K2
C126.5	Draw isometric and orthographic drawings using CAD packages	K3
(19A01201P) BASIC CIVIL & MECHANICAL ENGINEERING LAB		
C127.1	Explain different working cycles of engine.	K3
C127.2	Illustrate the working of refrigeration systems	K3
C127.3	Evaluate heat balance sheet of IC engine	K3

(19A51102P) CHEMISTRY LAB		
C128.1	Distinguish different types of titrations in the volumetric analysis	K4
C128.2	Determine the cell constant and conductance of solutions	K4
C128.3	Use conductometry instrumental method in volumetric analysis to determine the concentration of a given HCl Solution by titration against a standard NaOH Solution.	K3
C128.4	Apply potentiometry instrumental method in volumetric analysis to determine the strength of a given sample Solution by titration against a standard Solution.	K3
C128.5	Analyze the effect of Absorbance of given sample solution on concentration by using colorometry.	K4
(19A05201P) DATA STRUCTURES LAB		
C129.1	Develop Searching and Sorting algorithms using arrays	K3
C129.2	Illustrate different operations that can be performed on different data structures	K3
C129.3	Develop programs to model the working of Stack and Queue	K3
C129.4	Choose Single, Double and Circular linked list for solving the problem.	K4
C129.5	Organize data in the form of files	K4
II B.TECH I-SEM		
(19A54302) COMPLEX VARIABLES AND TRANSFORMS		
C211.1	Understand the analyticity of complex functions and conformal mappings.	K4
C211.2	Apply Cauchy's integral formula and Cauchy's integral theorem to evaluate improper integrals along contours.	K3
C211.3	Understand the usage of Laplace Transforms, Fourier Transforms and Z transforms.	K4
C211.4	Understand the usage of Laplace Transforms	K4
C211.5	Evaluate the Fourier series expansion of periodic functions.	K4
(19A02301T) BASIC ELECTRICAL CIRCUITS		
C212.1	Find the equivalent impedance by using network reduction techniques	K2
C212.2	Determine the current through any element and voltage across and power through any element	K4
C212.3	Determine the real power, reactive power, power factor etc	K4
C212.4	Apply network theorems to DC and AC circuits & able to calculate various parameters for a given network	K3
C212.5	Determine the Dual of the Network, develop the Cut Set and Tie-set Matrices for a given Circuit	K4
(19A02302T) POWER SYSTEM ARCHITECTURE		
C213.1	Remember and understand the concepts of conventional and nonconventional power generating concepts	K2
C213.2	Apply the economic aspects to the power generating systems	K3
C213.3	Analyse the transmission lines and obtain the transmission line parameters and constants	K4
C213.4	Modelling of transmission line and evaluation of constants	K4
C213.5	Design and Develop the schemes to improve the generation and capability of transmission line to meet the day to day power requirements	K4
(19A02303T) DC MACHINES & TRANSFORMERS		
C214.1	Understand the concepts of magnetic circuits	K2
C214.2	Understand the operation of DC machines	K2
C214.3	Analyse the differences in operation of different DC machine configurations	K4
C214.4	Analyse single phase and three phase transformers circuits	K4
C214.5	Analyse the tap changing of transformers	K4
(19A04306T) SEMICONDUCTOR DEVICES & CIRCUITS		
C215.1	List various types of semiconductor devices	K2
C215.2	Study the characteristics of various types of semiconductor devices	K2
C215.3	Apply the characteristics of semiconductor devices to develop engineering solutions	K3
C215.4	Analyse the simplified hybrid model of transistor in various configurations	K4
C215.5	Analyse functioning of various types of electronic devices and circuits	K4
(19A04304) DIGITAL ELECTRONICS AND LOGIC DESIGN		
C216.1	Understand various number systems, error detecting, correcting binary codes	K2
C216.2	Understand the concepts of logic families, combinational and sequential circuits	K2
C216.3	Apply Boolean laws, k-map and Q-M methods to minimize switching functions. Also describe the various performance	K3
C216.4	Design combinational and sequential logic circuits	K4
C216.5	Compare different types of Programmable logic devices and logic families	K2
(19A02303P) DC MACHINES & TRANSFORMERS LAB		
C217.1	Conduct and analyze load test on DC shunt generators	K4
C217.2	Understand and analyze magnetization characteristics of DC shunt generator	K2
C217.3	Understand and analyze speed control techniques	K2
C217.4	Understand and analyze the efficiency of DC machines	K2
C217.5	Understand to predetermine efficiency and regulation of single phase transformers	K2

(19A04306P) SEMICONDUCTOR DEVICES AND CIRCUITS LAB		
C218.1	Discuss about semiconductor physic for intrinsic and extrinsic semiconductors	K2
C218.2	Design and simulate self- biasCommon Emitter amplifier using PSPICE	K4
C218.3	Design half wave, full wave & bridge rectifiers with and without filters, using discrete components and calculate ripple f	K4
C218.4	Draw and study the characteristics of UJT	K2
C218.5	Draw and study the characteristics of Zener Diodeand study its application as Regulator	K2
(19A02301P) BASIC ELECTRICAL CIRCUITS LAB		
C219.1	Analyzing Network theorems for DC circuits	K4
C219.2	Analyzing Network theorems for AC circuits	K4
C219.3	Understand active, reactive power measurements in three phase balanced circuits	K2
C219.4	Analyze active, reactive power measurements in three phase balanced circuits	K4
C219.5	Understand and analyze active, reactive power measurements in three phase unbalanced circuits	K4
(19A99302) BIOLOGY FOR ENGINEERS		
C2110.1	Explain about cells and their structure and function. Different types of cells and basics for classification of living Organisms	K2
C2110.2	Explain about biomolecules, their structure and function and their role in the living organisms. How biomolecules are useful in Industry	K2
C2110.3	Briefly about human physiology	K2
C2110.4	Explain about genetic material, DNA, genes and RNA how they replicate, pass and preserve vital information in living Organisms	K2
C2110.5	Know about application of biological Principles in different technologies for the production of medicines and Pharmaceutical molecules through transgenic microbes, plants and animals	K3
II B.TECH II-SEM		
(19A54304)NUMERICAL METHODS AND PROBABILITY THEORY		
C221.1	Apply numerical methods to solve algebraic and transcendental equations	K3
C221.2	Derive interpolating polynomials using interpolation formulae	K3
C221.3	Solve differential and integral equations numerically	K3
C221.4	Apply Probability theory to find the chances of happening of events	K3
C221.5	Understand various probability distributions and calculate their statistical constants	K2
(19A02401T) ELECTRICAL CIRCUIT ANALYSIS		
C222.1	Apply numerical methods to solve algebraic and transcendental equations	K2
C222.2	Derive interpolating polynomials using interpolation formulae	K3
C222.3	Solve differential and integral equations numerically	K3
C222.4	Apply Probability theory to find the chances of happening of events	K4
C222.5	Understand various probability distributions and calculate their statistical constants	K4
(19A02402) ENGINEERING ELECTROMAGNETICS		
C223.1	Understand the concept of electrostatics	K2
C223.2	Distinguish behavior of conductor and insulator with electrical charges	K4
C223.3	Understand the fundamental laws related to Magneto Statics	K2
C223.4	Outline various magnetic potentials with electrical and magnetic parameters	K4
C223.5	Analyze the Concepts Maxwell's Equations in Different Forms.	K4
(19A02403) POWER ELECTRONICS		
C224.1	Understand the operation, characteristics and usage of basic Power Semiconductor Devices.	K4
C224.2	Analyze the different types of Rectifier circuits with different operating conditions	K4
C224.3	Understand DC-DC converters operation and analysis of their characteristics	K4
C224.4	Understand the construction and operation of voltage source inverters, Voltage Controllers and Cyclo Converters	K2
C224.5	Solve various numerical problems by using the related consepts	K3
(19A04405) ANALOG ELECTRONIC CIRCUITS		
C225.1	List various types of feedback amplifiers, oscillators and large signal amplifiers	K2
C225.2	Explain the operation of various electronic circuits and linear ICs	K2
C225.3	Apply various types of electronic circuits to solve engineering problems	K3
C225.4	Analyse various electronic circuits and regulated power supplies for proper understanding	K3
C225.5	Justify choice of transistor configuration in a cascade amplifier	K3

(19A05304T) PYTHON PROGRAMMING		
C226.1	Apply the features of Python language in various real applications.	K3
C226.2	Select appropriate data structure of Python for solving a problem	K4
C226.3	Design object oriented programs using Python for solving real-world problems	K4
C226.4	Apply modularity to programs.	K3
C226.5	Illustrate the principle of inheritance	K2
(19A52301) UNIVERSAL HUMAN VALUES : UNDERSTANDING HARMONY		
C227.1	Understanding (or developing clarity) of the harmony in the human being, family, society and nature/existence	K2
C227.2	Development of commitment and courage to act	K3
C227.3	Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario	K2
C227.4	Develop appropriate technologies and management patterns for above production systems	K3
C227.5	Ability to identify the scope and characteristics of people friendly and eco-friendly production systems	K3
(19A02401P) ELECTRICAL CIRCUIT ANALYSIS LAB		
C228.1	Understand and experimentally verify various resonance phenomenon	K2
C228.2	Analyze various current locus diagrams	K4
C228.3	Apply and experimentally analyze two port network parameters	K3
C228.4	Simplify the various DC circuits using PSPICE software	K3
C228.5	Simplify the various AC circuits using PSPICE software	K3
(19A04406) ELECTRONIC CIRCUITS LAB		
C229.1	Analyze various amplifier circuits	K4
C229.2	Design multistage amplifiers	K4
C229.3	Design OPAMP based analog circuits	K4
C229.4	Understand working of logic gates	K2
C229.5	Design and implement Combinational and Sequential logic circuits	K4
(19A99301) ENVIRONMENTAL SCIENCE		
C2210.1	Grasp multidisciplinary nature of environmental studies and various renewable and nonrenewable resources.	K2
C2210.2	Understand flow and bio-geo- chemical cycles and ecological pyramids.	K4
C2210.3	Understand various causes of pollution and solid waste management and related preventive measures.	K4
C2210.4	About the rainwater harvesting, watershed management, ozone layer depletion and waste land reclamation.	K2
C2210.5	Casus of population explosion, value education and welfare programmes.	K2
III B.TECH I-SEM		
(19A02501T) AC MACHINES		
C311.1	Understand the basics of Induction machines and synchronous machines windings, construction, principle of working.	K2
C311.2	Analyze the phasor diagrams of induction and synchronous machines.	K4
C311.3	Analyze the parallel operation of alternators, synchronization and load division of synchronous generators.	K4
C311.4	Apply the concepts to determine V and inverted V curves and power circles of synchronous motor.	K3
C311.5	Analyze the various methods of starting in both induction and synchronous machines.	K4
(19A02502) CONTROL SYSTEMS		
C312.1	Understand the concepts of control systems classification, feedback effect, mathematical modelling, signal flow graph.	K2
C312.2	Analyze the concepts of time response analysis, error constants and controllers.	K2
C312.3	Apply the concepts time responses from Root locus for stability calculations.	K3
C312.4	Apply the concepts frequency responses from Bode, Nyquist, Polar plots for stability calculations	K3
C312.5	Understand the concept of state space analysis and understand the controllability and Observabilities.	K2
(19A52601T) ENGLISH LANGUAGE SKILLS		
C313.1	Understand the context, topic, and pieces of specific information from social or transactional dialogues spoken by native speakers of English	K4
C313.2	Apply grammatical structures to formulate sentences and correct word forms	K3
C313.3	Analyze discourse markers to speak clearly on a specific topic in informal discussions	K4
C313.4	Evaluate reading/listening texts and to write summaries based on global comprehension of these texts	K4
C313.5	Create a coherent paragraph interpreting a figure/graph/chart/table	K4

(19A02504) ELECTRICAL MACHINE DESIGN		
C314.1	Understand various design factors, types of windings, choice of machine, selection and ratings	K2
C314.2	Design DC machine based on specified rating	K4
C314.3	Design 1- ϕ transformer based on specified rating	K4
C314.4	Design 3- ϕ Induction machine based on specified rating	K4
C314.5	Design 3- ϕ Synchronous machine based on specified rating	K4
(19A02503b) DC Drives		
C315.1	Understand the basics of high speed DC Motor Drives	K2
C315.2	Understand the various characteristics of mechanical systems	K2
C315.3	Analyze the different modes of operation of converters and control strategies	K4
C315.4	Understand the basics of Chopper control and analysis	K2
C315.5	Analyse the digital control strategies of DC drives	K4
(19A03506a) INTRODUCTION TO HYBRID AND ELECTRIC VEHICLES		
C316.1	Explain the working of hybrid and electric vehicles	K2
C316.2	Choose a suitable drive scheme for developing an hybrid and electric vehicles depending on resources	K3
C316.3	Develop the electric propulsion unit and its control for application of electric vehicles	K3
C316.4	Choose proper energy storage systems for vehicle applications	K3
C316.5	Design and develop basic schemes of electric vehicles and hybrid electric vehicles	K3
(19A02501P) AC MACHINES LAB		
C317.1	Analyze different types of load tests for construction of a single phase induction motor	K4
C317.2	Predetermine regulation of a three-phase alternator by synchronous impedance method	K4
C317.3	Predetermine regulation of a three-phase alternator by m.m.f method	K4
C317.4	Predetermine the regulation of Alternator by Zero Power Factor method	K4
C317.5	Evaluate and analyze V and inverted V curves of 3 phase synchronous motor	K4
(19A52601P)ENGLISH LANGUAGE SKILLS LAB		
C318.1	Remember and understand the different aspects of the English language proficiency with emphasis on LSRW skills	K3
C318.2	Apply communication skills through various language learning activities	K2
C318.3	Analyze the English speech sounds, stress, rhythm, intonation and syllable division for better listening and speaking comprehension	K4
C318.4	Evaluate and exhibit acceptable etiquette essential in social and professional settings	K4
C318.5	Create awareness on mother tongue influence and neutralize it in order to improve fluency in spoken English	K4
(19A02506)POWER ELECTRONICS AND SIMULATION LAB		
C319.1	Understand and analyze various characteristics of power electronic devices with gate firing	K2
C319.2	Analyze the operation of single-phase half & fully-controlled converters with different types of loads	K4
C319.3	Analyze the operation of inverters with different types of loads	K4
C319.4	Analyze the operation of DC-DC converters, single-phase AC Voltage controllers, cyclo converters with different loads	K4
C319.5	Create and analyze various power electronic converters using PSPICE software	K4
19A02507 Socially Relevant Project		
C3110.1	Develops an increased sense of social responsibility – a global view of society and a heart for “giving back” and helping others.	K3
C3110.2	Provides an opportunity to apply academic learning to real-life events.	K3
C3110.3	Builds relationships and ‘social connectedness and exposes students to diversity and multiculturalism.	K4
C3110.4	Improves lifelong communication, interpersonal, and critical thinking skills.	K3
C3110.5	Helps students find their passions and interests.	K4
19A99601 MANDATORY COURSE: RESEARCH METHODOLOGY		
C3111.1	Understand basic concepts and its methodologies	K2
C3111.2	Demonstrate the knowledge of research processes	K4
C3111.3	Read, comprehend and explain research articles in their academic discipline	K2
C3111.4	Analyze various types of testing tools used in research	K4
C3111.5	Design a research paper without any ethical issues	K4

III B.TECH II-SEM**(19A04301) SIGNALS AND SYSTEMS**

C321.1	Understand the mathematical description and representation of continuous-time and discrete-time signals and systems	K2
C321.2	understand the concepts of various transform techniques	K2
C321.3	Apply sampling theorem to convert continuous-time signals to discrete-time signals and reconstruct back, different transform techniques to solve signals and system related problems.	K2
C321.4	Analyze the frequency spectra of various continuous-time and discrete-time signals using different transform methods.	K3
C321.5	Classify the systems based on their properties and determine the response of them	K4

(19A02601T) DIGITAL COMPUTE PLATFORMS

C322.1	Understand the basic architecture & pin diagram of 8086 microprocessor	K2
C322.2	Assembly language programming to perform a given task, Interrupt service routines for all interrupt types	K4
C322.3	Microprocessor and Microcontroller designing for various applications.	K4
C322.4	Write Assembly Language Programs for the Digital Signal Processors and use Interrupts for real-time control applications	K3
C322.5	Write Xilinx programming and understanding of Spartan FPGA board	K3

(19A02602) POWER SYSTEM ANALYSIS

C323.1	Formulation of the Z bus and Y bus of a given power system network	K3
C323.2	Analyse the symmetrical faults and unsymmetrical faults and done the fault calculations, analyse the stability of the system and improve the stability.	K4
C323.3	Develop accurate algorithms for different networks and determine load flow studies and zero, positive and negative sequence impedances to find fault calculations.	K3
C323.4	Design and select efficient Circuit Breakers to improve system stability. Implement them in resolving various day-to-day issues in a Power System.	K3
C323.5	Determine the transient stability by equal area criterion	K3

(19A02603d) DESIGN OF PHOTOVOLTAIC SYSTEMS

C324.1	Understand the basic concepts of PV cell	K2
C324.2	Understand the concepts of energy estimating and sizing	K3
C324.3	Design of MPPT algorithms.	K4
C324.4	Analyze PV system along with interfacing	K4
C324.5	Analyze PV system along with grid connection	K4

(19A03604b) OPTIMIZATION TECHNIQUES THROUGH MATLAB

C325.1	Understand how to classify an optimization problem	K4
C325.2	Apply optimization methods to engineering problems	K3
C325.3	Create optimization algorithms	K4
C325.4	Compare different genetic algorithms	K3
C325.5	Solve multivariable optimization problems	K4

(19A52602b) MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS

C326.1	Understand the fundamentals of Economics viz., Demand, Production, cost, revenue and markets.	K2
C326.2	Apply concepts of production, cost and revenues for effective business decisions	K3
C326.3	Analyze how to invest their capital and maximize returns	K4
C326.4	Evaluate the capital budgeting techniques	K4
C326.5	Create the accounting statements and evaluate the financial performance of business entity	K4

(19A02605) CONTROL SYSTEMS & SIMULATION LAB

C327.1	Knowledge of feedback control and transfer function of DC servo motor.	K3
C327.2	Model the systems and able to design the controllers and compensators.	K4
C327.3	Knowledge about the effect of poles and zeros location on transient and steady state behaviour of second order systems	K3
C327.4	Knowledge about the effect of poles and zeros location on transient and steady state behaviour of second order systems using MATLAB	K3
C327.5	Determine the performance and time domain specifications of first and second order systems.	K3

(19A02601P)DIGITAL COMPUTE PLATFORMS LAB		
C328.1	Develop an assembly language programming on 8086 Microprocessors	K4
C328.2	Interfacing of various devices with 8086	K4
C328.3	Develop MASAM Programming	K4
C328.4	Interfacing 8051 Microcontroller with its peripheral devices	K4
C328.5	Interfacing matrix or keyboard to 8051	K4
(19A02606)Socially relevant project		
C329.1	Estimate the communication skills standard of the student	K4
C329.2	Describe the vocabulary, speaking and presentation skills of the student.	K4
C329.3	Test the technical knowledge of the student	K4
C329.4	Outline the presentation and body language of the student	K2
C329.5	Construct the person in such way that, to meet corporate needs and demands in society	K4
(19A99501)CONSTITUTION OF INDIA		
C3210.1	Understand historical background of the constitution making and its importance for building a democratic India	K2
C3210.2	Understand the functioning of three wings of the government i.e., executive, legislative and judiciary	K2
C3210.3	Understand the value of the fundamental rights and duties for becoming good citizen of India	K2
C3210.4	Analyze the decentralization of power between central, state and local self- government	K4
C3210.5	Apply the knowledge in strengthening of the constitutional institutions like CAG, Election Commission and UPSC for sustaining democracy	K3
(19A02607)Comprehensive online examination		
C3211.1	enhance the accessibility of the exams	K3
C3211.2	Time and Cost Efficiency	K2
C3211.3	Secure the Examination and to maintain Integrity	K3
C3211.4	Real-time Analytics and Performance Tracking	K3
C3211.5	Create Exam a Flexible and Adaptable	K4
IV B.TECH I-SEM		
(19A02701)MEASUREMENTS & SENSORS		
C411.1	Understand the working of various instruments and equipments used for the measurement of various electrical engineering parameters	K2
C411.2	Analyze and solve the varieties of problems and issues coming up in the vast field of electrical measurements	K4
C411.3	Analyse the different operation of extension range ammeters and voltmeters	K4
C411.4	Analyze the DC and AC bridge for measurement of parameters and different characteristics of periodic and aperiodic signals using CRO	K4
C411.5	Design and development of various voltage and current measuring meters and the varieties of issues coming up in the field of electrical measurements	K3
(19A02702) POWER SYSTEM PROTECTION		
C412.1	Distinguish between the principles of operation of electromagnetic relays, static relays and microprocessor based relays	K3
C412.2	Determine the unprotected percentage of generator winding under fault occurrence	K2
C412.3	Design the protection system for transformers	K3
C412.4	Identify various types of the relays in protecting feeders, lines and bus bars	K3
C412.5	Demonstrate the protection of a power system from over voltages	K2
(19A02703a) POWER SYSTEM OPERATION AND CONTROL		
C413.1	Understand to deal with problems in Power System as Power System Engineer	K2
C413.2	Understand to deal with AGC problems in Power System	K2
C413.3	Understand to deal the problems in hydro electric and hydro thermal problems	K2
C413.4	Understand the complexity of reactive power control problems and to deal with them	K2
C413.5	Understand the necessity of deregulation aspects and demand side management problems in the modern power system en	K2

(19A04704a)INTRODUCTION TO MICROCONTROLLERS & APPLICATIONS		
C414.1	Understand the importance of Microcontroller and Acquire the knowledge of Architecture of 8051 Microcontroller	K2
C414.2	Apply and Interface simple switches, simple LEDs, ADC 0804, LCD and Stepper Motor to using 8051 I/O ports	K3
C414.3	Develop the 8051 Assembly level programs using 8051 instruction set	K4
C414.4	Design the Interrupt system, operation of Timers/Counters and Serial port of 8051	K4
C414.5	Analyze interface required memory of RAM & ROM	K4
(19A52701b) MANAGEMENT SCIENCE		
C415.1	Understand the concepts & principles of management and designs of organization in a practical worldDefine management concepts	K1
C415.2	Apply the knowledge of Work-study principles & Quality Control techniques in industry	K2
C415.3	Analyze the concepts of HRM in Recruitment, Selection and Training & Development.	K4
C415.4	Evaluate PERT/CPM Techniques for projects of an enterprise and estimate time & cost of project & to analyze the business through SWOT.	K4
C415.5	Create Modern technology in management science.	K2
(19A02705) POWER SYSTEMS & SIMULATION LAB		
C416.1	Experimental determination of sequence impedance and sub transient reactance's of synchronous machine	K3
C416.2	Analyze the LG, LL, LLG, LLLG faults of three phase alternator by conducting suitable experiments	K4
C416.3	Development of MATLAB program for formation of Y and Z buses.	K3
C416.4	Development of MATLAB programs for Gauss-Seidel and Fast Decouple Load Flow studies.	K3
C416.5	Development of SIMULINK model for single area load frequency problem.	K3
(19A02706) MEASUREMENTS LAB		
C417.1	Calibrate various electrical measuring/recording instruments.	K3
C417.2	Accurately determine the values of inductance and capacitance using a.c bridges	K4
C417.3	Accurately determine the values of very low resistances	K4
C417.4	Measure reactive power in 3-phase circuit using single wattmeter	K4
C417.5	Determine ratio error and phase angle error of CT	K4
(19A02707) Industrial Training/Skill Development/Research Project		
C418.1	Participate in the projects in industries during his or her industrial training.	K3
C418.2	Describe use of advanced tools and techniques encountered during industrial training and visit.	K4
C418.3	Interact with industrial personnel and follow engineering practices and discipline prescribed in industry.	K4
C418.4	Develop awareness about general workplace behavior and build interpersonal and team skills.	K4
C418.5	Prepare professional work reports and presentations.	K4
IV B.TECH II-SEM		
(19A04604b)Electrical Distribution Systems and Automation		
C421.1	Compute the various factors associated with power distribution.	K4
C421.2	Make voltage drop calculations in given distribution networks.	K3
C421.3	Learn principles of substation maintenance.	K3
C421.4	Compute power factor improvement for a given system and load.	K4
C421.5	Understand implementation of SCADA for distribution automation.	K3
(19A03802a)ENERGY CONSERVATION AND MANAGEMENT		
C422.1	Explain energy utilization and energy auditing methods	K2
C422.2	Analyze electrical systems performance of electric motors and lighting systems.	K4
C422.3	Examine energy conservation methods in thermal systems	K4
C422.4	Estimate efficiency of major utilities such as fans, pumps, compressed air systems, hvac and d.g. Sets.	K4
C422.5	Elaborate principles of energy management, programs, energy demand and energy pricing	K4
(19A02803)Project Work		
C423.1	Demonstrate a sound technical knowledge of their selected project topic	K2
C423.2	Identification of problem, formulation and solution	K2
C423.3	Assess the engineering project	K4
C423.4	Design engineering solutions to the complex problems utilising a systems approach	K4
C423.5	Demonstrate the knowledge, skills and attitudes of a professional engineer.	K2

Head of the Department