



PARVATHAREDDY BABUL REDDY
VISVODAYA INSTITUTE OF TECHNOLOGY & SCIENCE
 (Affiliated to J.N.T.U.A, Approved by AICTE and Accredited by NAAC with 'A' Grade)
 KAVALI – 524201, S.P.S.R Nellore Dist., A.P. India. Ph: 08626-243930
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING



Regulation:R15		
COURSE CODE	NAME OF THE COURSE	K-LEVEL
I-I		
(15A52101)FUNCTIONAL ENGLISH		
C111.1	Practise conversational skills for effective communication in both social and academic contexts.	K3
C111.2	Apply the correct structure in written expressions required for their professional prospects.	K3
C111.3	Develop e-communication skills, listening skills and also writing skills required to prepare projects.	K3
C111.4	Take part in group discussions, writing reviews and develop critical thinking skills.	K4
C111.5	Develop communicative competence with emphasis on professional skills	K3
(15A54101)MATHEMATICS-I		
C112.1	Analyze the mathematical knowledge to solve differential equations in engineering applications.	K4
C112.2	Apply the linear D.E's Mechanical and Electrical Oscillatory circuits and Deflection of Beams	K3
C112.3	Apply multiple integration and curve tracing to solve the real time problems in engineering.	K3
C112.4	Apply Laplace Transformations to solve engineering problems related to Mathematics.	K3
C112.5	Convert the real time problems into vector calculus and then find its solution.	K2
(15A05101)COMPUTER PROGRAMMING		
C113.1	Illustrate basics of computers, concepts of algorithm, flowchart, programming terminology and apply various programming languages.	K3
C113.2	Apply selection, loop, branch control statements and arrays to solve different applications.	K3
C113.3	Examine pointers for implementing direct access of memory locations and the necessity of modularity in programming.	K4
C113.4	Solve various data base related problems by using non-homogeneous data structures.	K3
C113.5	Utilize the concepts and need of files in programming and implement file operations.	K3
(15A56101)ENGINEERING PHYSICS		
C114.1	Apply the basic fundamentals of physics and their applications in both scientific and technological systems.	K3
C114.2	Describe the properties of crystals along with Ultrasonic non destructive technique.	K2
C114.3	Analyze the physical properties of materials through Quantum mechanics along with band theory.	K4
C114.4	Apply the concepts of Semiconducting and magnetic materials to Engineering fields.	K3
C114.5	Discuss the importance of Superconducting and Nano materials in various fields.	K2
(15A03101)ENGINEERING DRAWING		
C115.1	Apply the geometrical constructions and classify the engineering /mathematical curves used in engineering.	K3
C115.2	Explain various kinds of scales and their practical usage and basics of orthographic projections.	K3
C115.3	Analyze the geometrical objects in two dimensional objects.	K4
C115.4	Analyze the visualization of geometrical solids in three dimensional through exercise in orthographic projections.	K4
C115.5	Analyze the detailed views of the isometric and orthographic views of different objects.	K4
(15A52102)ENGLISH LANGUAGE COMMUNICATION SKILLS LAB		
C116.1	Distinguish the speech sounds and acquire better pronunciation	K4
C116.2	Develop oral fluency and neutralize mother tongue influence.	K3
C116.3	Take part actively in the learning process and become expertise in Presentation Skills like Oral, Written and Group.	K4
C116.4	Apply language skills appropriately and effectively in interviews, group discussions and public speaking.	K3
C116.5	Take part in group activities with more confidence thereby enhancing the employability skills	K4
(15A56102)ENGINEERING PHYSICS LAB		
C117.1	Analyze the importance of Interference & Diffraction of light	K4
C117.2	Apply Lasers & Fiber optics to measure various parameters	K3
C117.3	Calculate the Energy gap of Semiconductor laser diode	K3
C117.4	Apply the applications of magnetic materials in day to day science	K3
(15A05102)CPMPUTER PROGRAMMING LAB		
C118.1	Demonstrate DOS and Linux Commands	K2
C118.2	Illustrate the syntax and semantics of C language for simple problem statements.	K2
C118.3	Develop the programs using arrays, strings operations	K3
C118.4	Write programs that perform operations using derived data types.	K3
C118.5	Develop C programming for a given application using file operations.	K3

I-II**(15A54201)MATHEMATICS-II**

C121.1	Apply the Laplace Transform to solve the ordinary of first and second order	K3
C121.2	Find the fourie series representation of a one variablefunction	K4
C121.3	Demonstate their understanding of the dirichlet conditions by using them to evaluate infinite series	K2
C121.4	Attain the knowledge od partial differential equation and aplying in Mechanical problems	K4
C121.5	Apply Fourier and Z-transformers to find the solutions for engineering poblems	K3

(15A52201)ENGLISH FOR PROFESSIONAL COMMUNICATION

C122.1	Take part effectively in group discussions and debates.	K4
C122.2	Develop writing skills required in various professional contexts.	K3
C122.3	Employ presentation skills and creative writing skills effectively.	K3
C122.4	Analyse a variety of technical writing formats and styles.	K4
C122.5	Develop a proper level of language competence for employability.	K3

(15A51101)ENGINEERING CHEMISTRY

C123.1	Analyze water samples and develop suitable water treatment methods to use water domestically and industrially.	K4
C123.2	Apply the knowledge of different polymers and their better usage in various fields of engineering.	K3
C123.3	Apply the knowledge of various electrochemical cells and corrosion fundamentals for the development of new batteries and also for prevention of corrosion.	K3
C123.4	Differentiate natural and derived fuels and also apply the knowledge for effective usage and conservation of fuels.	K4
C123.5	Apply the knowledge of different materials used in engineering and also develop advanced materials and new forms of carbon to use for various engineering applications.	K3

(15A01101)ENVIRONMENTAL STUDIES

C124.1	Comprehend the concepts of environment and its importance in our daily life and develop and apply	K2
C124.2	Categorize an ability to reflect on their personal impacts on biodiversity in global perspective.	K2
C124.3	Develop new innovative methods for controlling of environmental pollution which may affecte the	K3
C124.4	Analyze environmental issues related to society and find solutions for environmental problems.	K4
C124.5	Determine the effects of increasing human population as well as health associated problems and	K4

(15A02201)ELECTRICAL CIRCUITS-I

C125.1	Summarize the basic characteristics of R,L,C parameters and analysis of Network reduction techniques	K3
C125.2	Analyze the concepts of real power, reactive power, complex power, phase angle and phase difference	K3
C125.3	Analyze Series and parallel resonances, bandwidth, current locus diagrams	K3
C125.4	Analyze Network theorems and application	K3
C125.5	Computaional Analysis of two port network parameters	K4

(15A51102)ENGINEERING CHEMISTRY LAB

C126.1	Develop skills in determining the effects of hard water in water	K3
C126.2	Distinguish different types of titrations in the volumetric analysis	K4
C126.3	Apply Conductometry instrumental method in volumetric analysis to determine the concentration of a	K3
C126.4	Correlate the purity of water samples by doing D.O, Acidity and alkalinity estimations	K4
C126.5	Analyze the effect of temperature on viscosity by using Redwood viscometer	K4

(15A02202)ELECTRICAL CIRCUITS LAB

C127.1	Apply suitable theorems for circuit analysis and verify the results theoretically.	K2
C127.2	Determine experimentally the two port network parameters and verify the results theoretically.	K3
C127.3	Determine the active and reactive powers experimentally of a three phase balanced system.	K3
C127.4	Determine self inductance, mutual inductance and coefficient of coupling	K3
C127.5	Determine band width, Q-factor and verify with theoretical values.	K3

(15A99201)ENGINEERING AND ITWORKSHOP LAB

C128.1	Design the sheet metal objects by surface development and join the metals for obtaining desired shape.	K4
C128.2	Identify the internal parts of computer and its pheripheral	K2
C128.3	Demonstrate Assemble and disassemble a Personal Computer and prepare the computer ready to use.	K2
C128.4	Develope skills in installation of Linux and Windows XP OS and to connect network for information sl	K3
C128.5	Illustrate how to Access the Internet and Browse it to obtain the required information.sharing.	K2

II-I		
(15A54301)MATHEMATICS-III		
C211.1	Analyze engineering problems using the concepts of Matrices.	K3
C211.2	Solve the algebraic and transcendental equations using various numerical methods.	K4
C211.3	Understand the concepts of interpolation.	K3
C211.4	Apply the concepts of curve fitting to find the equation of straight line, second degree curve ,	K3
C211.5	Use the techniques of Numerical solution of Ordinary Differential equation with boundary conditions.	K4
(15A02301)ELECTRICAL CIRCUITS-II		
C212.1	Analyze the transient response of R-L, R-C, R-L-C circuits for D.C. and A.C. excitation.	K3
C212.2	Solve the power consumed by the three phase balanced and unbalanced circuits.	K4
C212.3	Apply Fourier transforms to electrical circuits excited by non-sinusoidal sources.	K3
C212.4	Relate network topology for analyzing the circuit.	K3
C212.5	Demonstrate different types of filters to study their characteristics.	K4
(15A02302)ELECTRICAL MACHINES-I		
C213.1	Summarize the Electromagnetic fields in single and multi excited systems.	K3
C213.2	Describe the construction, operating principle of DC Generators.	K4
C213.3	Clarify the characteristics and applications of DC Generators.	K3
C213.4	Describe the characteristics and applications of DC Motors.	K3
C213.5	Illustrate the testing methods of DC Motors.	K4
(15A02303)CONTROL SYSTEM ENGINEERING		
C214.1	Analyze the transfer functions for Mechanical and Electrical systems	K3
C214.2	Discuss the Time-domain responses for first and second-order systems	K4
C214.3	Determine the stability analysis by using RH Criterion and Root Locus in a closed-loop control system	K3
C214.4	Summarize the frequency responses methods for stability in a closed or open loop control system	K3
C214.5	Outline the concepts of state, state variables and state model in a control system	K4
(15A04301)ELECTRONIC DEVICES AND CIRCUITS		
C215.1	Illustrate the operating principles of P-N Diode & special purpose electronic devices.	K3
C215.2	Demonstrate the working principle of rectifiers & filters	K4
C215.3	Interpret the working principle and characteristics of transistors.	K3
C215.4	Analyze the biasing techniques of BJT and FET	K3
C215.5	Analyze the BJT & FET amplifier circuits using small signal model.	K4
(15A05201)DATA STRUCTURES		
C216.1	Apply the knowledge of arrays and linked lists for various applications.	K3
C216.2	Apply the knowledge of stacks and queues for various applications.	K4
C216.3	Develop the tree and graph models of the given problem through tree and graph concepts	K3
C216.4	Analyze the sorting algorithms to evaluate the time & space complexities.	K3
C216.5	Analyze the searching algorithms to evaluate the time & space complexities.	K4
(15A02305)ELECTRIC CIRCUITS SIMULATION LABORATORY		
C217.1	Design the electrical circuit concepts by interpreting the simulation results.	K3
C217.2	Evaluate three phase active and reactive power of connected balanced loads using multisim software.	K4
C217.3	Analyze the RL, RC and RLC series circuits for a specified transient response using multisim	K4
(15A04305)ELECTRONIC DEVICES & CIRCUITS LABORATORY		
C217.1	Explain the characteristics and Applications of Diodes, BJT and FET under different configurations	K3
C217.2	Analyze the performance of various rectifiers with filters.	K4
C217.3	Analyze the performance of various amplifiers with BJT and FET.	K4

II-II		
(15A54402)MATHEMATICS-IV		
C221.1	Analyze the engineering problems through the methods of special functions.	K3
C221.2	Demonstrate the concepts of Bessel's functions and Legendre polynomials to solve various engineering	K4
C221.3	Apply the concepts of complex differentiation methods to solve various engineering problems.	K3
C221.4	Evaluate the various engineering problems through the knowledge of complex integration.	K3
C221.5	Evaluate the improper real integrals of various engineering applications through the concepts of res	K4
(15A52301)Managerial Economics and Financial Analysis		
C222.1	Summarize the role and responsibilities of a managerial economist in modern business scenario.	K3
C222.2	Apply the demand of a product by using demand forecasting methods.	K4
C222.3	Apply the Break Even Point (BEP) with the help of production and cost analysis.	K3
C222.4	Illustrate the learning's about competitive markets and business economic environment	K3
C222.5	Analyze the process of preparing financial statements to know financial position of the firm.	K4
(15A02401)ELECTRICAL MACINES-II		
C223.1	Describe the construction, operation, types and equivalent circuit of a single phase transformer.	K3
C223.2	Compute the Voltage regulation and Efficiency of a transformer.	K4
C223.3	Outline the load shared by each transformer when several transformers operate in parallel.	K3
C223.4	Illustrate the performance characteristics of a three phase Induction motor.	K3
C223.5	Summarize the different speed control methods used in three phase induction motors.	K4
(15A02402)ELECTRICAL POWER GENERATING SYSTEMS		
C224.1	Illustrate the concepts and operation thermal power station to generate power.	K3
C224.2	Describe the working principles of hydro and nuclear power plants to generate power	K4
C224.3	Summarize the concepts of Non-renewable energy sources for solar and wind power generation.	K3
C224.4	Illustrate the Bio gas, geo and Ocean thermal basic operating principles for power generation.	K3
C224.5	Analyze the various costing and tariff techniques for economic thermal power generation.	K4
(15A02403)ELECTROMAGNETIC FIELDS		
C225.1	Demonstrate the laws and the equations concerned with static electric fields for design of Electrostatic	K3
C225.2	Choose the behavior of conductors and dielectrics in electric fields for selecting suitable material for va	K3
C225.3	Analyze the equations concerned with static magnetic fields for the design of Magneto static models	K4
C225.4	Evaluate the inductance of various configurations to choose suitable inductor for applications.	K4
C225.5	Apply Maxwell's equations to solve the problems related to transmission lines & uniform plane wave p	K3
(15A04409)ANALOG ELECTRONIC CIRCUITS		
C226.1	Analyze the parameters of multi stage amplifiers using BJT and FET at low and high frequencies.	K4
C226.2	Illustrate the concept of negative feedback on amplifier characteristics.	K3
C226.3	Compare the condition for oscillations in different oscillators.	K2
C226.4	Compute the parameters of various large signal amplifiers.	K2
C226.5	Design various linear & non-linear circuits and analyze their response and generate various types of nor	K3
(15A02404)ELECTRICAL MACHINES LAB-I		
C227.1	Determine the magnetization and load characteristics of a DC shunt generator	K3
C227.2	Analyze the performance characteristics of different types of dc motors by conducting brake test.	K4
C227.3	Determine the efficiency of a dc shunt machine when running as a motor and as a generator by	K3
(15A02405)CONTROL SYSTEMS AND SIMULATION LABORATORY		
C228.1	Evaluate the characteristics of AC servomotors, DC servo motors, magnetic amplifier and synchros.	K4
C228.2	Determine the error obtained in control system with the effect of P, PI, PID controllers.	K3
C228.3	Calculate the stability of a Bode plot, Root locus, Nyquist of Linear time invariant systems using	K3
(15A02406)Comprehensive Online Examination- I		
C229.1	Summarize the fundamental engineering knowledge of science and engineering domain	K4
C229.2	Demonstrate the knowledge of basic science and engineering applications.	K3
C229.3	Analyze the critical problem solving ability of a given application.	K4

III-I		
(15A02501) ELECTRICAL MEASUREMENTS		
C311.1	Describe the concepts and principles of Measuring Instruments to measure voltage and current. and voltmeters	K3
C311.2	Analyze the concepts and principles of AC and DC bridges to evaluate resistance, inductance and Capacitance for AC and DC Circuits.	K4
C311.3	Analyze the working principles of single and three phase wattmeters & energy meter to measure power and energy in circuits.	K4
C311.4	Demonstrate the operating principles of instrument transformers and potentiometer to measure unknown voltage, Current & Resistance in circuits	K4
C311.5	Analyze the magnetic measurement devices to measure flux in magnetic circuits.	K4
(15A04509) Linear & Digital IC Applications		
C312.1	Explain the applications of operational Amplifier	K3
C312.2	Explain the operation and applications of 555 timer ,PLL and Convertors	K3
C312.3	Design the active filters and Oscillators using operational amplifiers	K4
C312.4	Explain the operation of logic families	K3
C312.5	Explain the operation of Different digital Circuits	K3
(15A02502) ELECTRICAL POWER TRANSMISSION SYSTEMS		
C313.1	Compute the transmission line parameters using GMD and GMR.	K3
C313.2	Summarize the performance of short, medium and long transmission lines.	K4
C313.3	Describe the sag /corona of transmission lines and performance of line insulators	K3
C313.4	Analyze travelling waves on transmission lines	K4
C313.5	Analyze different types and characteristics of cables	K4
(15A02503) POWER ELECTRONICS		
C314.1	Apply basic semiconductor physics to properties of power devices to design more power electronic devices	K3
C314.2	Demonstrate the AC to DC power conversion and controlling of power converters to develop electronic consumer devices.	K4
C314.3	Illustrate theDC-to-DC power conversion, controlling and designing of power converters for automobiles	K3
C314.4	Demonstrate the DC to AC power conversion and controlling of power converters in designing of DC transmission lines	K4
C314.5	Apply the concept of AC-to-AC power conversion and controlling to domestic, industrial, and utility systems.	K3
(15A02504) ELECTRICAL MACHINES-III		
C315.1	Summarize the principle of operation, types and also the classification of windings in Synchronous Generator	K3
C315.2	Describe the regulation of synchronous generators using different methods.	K4
C315.3	Analyze the Parallel Opeartion and Performance characteristics of synchronous generators.	K4
C315.4	Summarize the principle of operation of synchronous motor, power factor improvement and its	K3
C315.5	Choose specific 1-phase motor and special motors for a given application.	K3
(15A02505) NETWORKS SIGNALS AND SYSTEMS		
C316.1	Discuss the Network elements , sources , Distributed and lumped-parameters in AC circuits	K3
C316.2	Compute short and open circuit parameters in a two port networks.	K4
C316.3	Describe the signals, Laplace transforms and Frequency response for AC circuits.	K3
C316.4	Summarize the basic Concepts of Graph theory, image impedance and iterative impedance for RLC two	K4
C316.5	Analyze the network functions Fourier transforms for electrical circuits .	K4
C317 (15A02506) ELECTRICAL MACHINES LABORATORY – II		
C317.1	Analyze the characteristics of transformers with different load.	K4
C317.2	Determine the efficiency of the single phase and three phase squirrel cage induction motor with no	K3
C317.3	Determine the voltage regulation of an synchronous generator.	K3
C318 (15A02507) ELECTRICAL MEASUREMENTS LABORATORY		
C318.1	Calibrate single phase Energy meter, Power Factor meter, Ammeter and Voltmeter.	K3
C318.2	Determine the values of Resistance, Inductance and Capacitance using Kelvin's , Anderson's and	K3
C318.3	Determine the values of Choke coil Parameters using 3 voltmeter and 3 Ammeter methods.	K3

C319	(15A99501) SOCIAL VALUES & ETHICS	
C319.1	Develop the capability of shaping themselves in the society & develop the roles and responsibility of	K3
C319.2	Explain the features of constitution of India	K3
C319.3	Contribute to the development of the society around them and organization they work	K2
C319.4	Develop themselves into professionals & follow professional ethics	K3
III-II		
(15A52601) MANAGEMENT SCIENCE		
C321.1	Demonstrate the meaning of Management	K3
C321.2	Describe the various operations in a manufacturing concern	K3
C321.3	Illustrate the importance of human resources for an organization.	K4
C321.4	Identify the strategy formulation and implementation in the management.	K3
C321.5	Summarizing the contemporary developments in the management.	K3
(15A02601) POWER SEMICONDUCTOR DRIVES		
C322.1	Choose the phase-controlled rectifier fed DC motor drives based on their applications and operation	K3
C322.2	Demonstrate the operation of multi quadrant DC drives	K3
C322.3	Differentiate chopper fed DC motor drives based on their applications	K2
C322.4	Apply the speed control methods for AC-AC & DC-AC converters fed to Induction motors with closed	K3
C322.5	Analyze the speed control methods of AC-AC converters fed to Synchronous motors with closed	K3
(15A02602) POWER SYSTEM PROTECTION		
C323.1	Illustrate the operation of electromagnetic, Static and Microprocessor based relays for sensing the fault	K3
C323.2	Summarize the various protection methods for generators and transformers.	K3
C323.3	Interpret the protective schemes for feeders & lines	K2
C323.4	Demonstrate the concepts and principle of Circuit Breakers for power system protection.	K3
C323.5	Describe the generation and protection of over voltages in power systems .	K3
(15A04601) MICROPROCESSORS & MICROCONTROLLERS		
C324.1	Interpret the working principles of 8086 micro processor	K3
C324.2	Analyze the Instruction formats and addressing modes of 8086 processor.	K4
C324.3	Demonstrate the features, architecture & addressing modes and instruction set of MSP 430	K3
C324.4	Analyze the modes of MSP 430.	K4
C324.5	Illustrate the principles of serial communication interfaces used with MSP 430.	K3
(15A02603) POWER SYSTEM ANALYSIS		
C325.1	Construct Z bus and Y bus matrix for the given power system network.	K2
C325.2	Demonstrate Short circuit analysis of a power system.	K3
C325.3	Interpret Power Flow solutions using Gauss Seidel Method for given power system network	K2
C325.4	Illustrate Power Flow solutions using Newton Rapson & Fast Decoupled Methods for given power syst	K3
C325.5	Classify types of stabilities and its improvements of a given power system.	K2
(15A02605) Programmable Logic Controller & Its Applications		
C326.1	studying PLC basic archetecture and opration	K2
C326.2	Understanding PLC logic oprations	K3
C326.3	Design control circuits for various applications	K3
C326.4	Implement Ladder logic for various Industrial applications	K3
C326.5	Program a PLC for a given application	K2
(15A04607) Microprocessors & Microcontrollers Laboratory		
C327.1	Apply the arithmetic operation, logical operations and sorting using 8086.	K2
C327.2	Determine peripheral interfacing for the peripherals 8259, 8279, 8255 and 8251 using 8086 Trainer kit	K3
C327.3	Write a programme for peripheral interfacing using 8051 Trainer Kit.	K2
(15A02607) Power Electronics & Simulation Laboratory		
C328.1	Determine the turn on – turn off characteristics of various power electronic devices.	K3
C328.2	Sketch the characteristics of voltage controllers ,converters and inverters with R and RL loads	K2
C328.3	Analyze the performance characteristics of SCR, single phase ac voltage controller, DC Jones	K4
(15A52602) Advanced English Language Communication Skills (AELCS) Laboratory		
C329.1	Identify on the production and practice of English sounds for effective use	K2
C329.2	Recognize the effectiveness of Listening for interpreting specific information.	K2
C329.3	Evaluate various channels for honing up of presentation skills	K4
C329.4	Select learner friendly modes for effective communication in various context	K2
C329.5	Demonstrate the fluency of speaking with clarity and confidence	K3

(15A02608) Comprehensive Online Examination - II		
C3210.1	Acquire fundamental engineering knowledge	K2
C3210.2	Demonstrate the ability to navigate skills and online learning	K3
C3210.3	Apply the concept of problem solving ability in competitive exams	K3
IV-I		
(15A02701) ELECTRICAL DISTRIBUTION SYSTEMS		
C411.1	Describe the concepts of load modeling and characteristics of distribution system.	K3
C411.2	Classify the concepts and configurations of distribution system to evaluate voltage drop and power loss in distribution systems.	K3
C411.3	Summarize the principles and configurations of distribution substation for supplying power to the consumers.	K3
C411.4	Analyze the various power factor correction techniques to improvement power factor in a distribution system.	K4
C411.5	Demonstrate the concepts of SCADA for implementation of automated distribution system.	K4
(15A04603) DIGITAL SIGNAL PROCESSING		
C412.1	Compute the time response and frequency response of Discrete Fourier Transforms.	K3
C412.2	Analyze the concepts of Fast Fourier Transform Algorithms.	K4
C412.3	Demonstrate the principles of realization techniques of FIR&IIR filters.	K4
C412.4	Design the FIR filters and IIR filters.	K3
C412.5	Illustrate the concepts of Multi rate Digital Signal Processing.	K4
(15A02702) POWER SYSTEM OPERATION AND CONTROL		
C413.1	Illustrate the Economic Operations of a power system for optimization of power generation cost.	K3
C413.2	Demonstrate the mathematical models of turbines and governors.	K4
C413.3	Design the load frequency control of a power system for controlling real power generation.	K3
C413.4	Interpret the reactive power control for power system.	K3
C413.5	Describe the concepts of Deregulation and Restructuring for a power system.	K3
(15A02703) UTILIZATION OF ELECTRICAL ENERGY		
C414.1	Summarize the concepts of illumination laws and types of lamps used in lighting system.	K3
C414.2	Apply the types of electric heating and welding methods for industry applications.	K3
C414.3	Choose the wheel arrangement, Riding qualities and characteristics of traction motor used in electric tra	K3
C414.4	Describe the speed time curves, tractive effort and specific energy Consumption of traction system.	K3
C414.5	Analyze the economic aspects of utilizing electrical energy for consumers.	K4
(15A02706) Energy Auditing & Demand Side Management		
C415.1	Summarize the energy consumption and energy auditing for power system.	K3
C415.2	Demonstrate the motor energy audit and power factor improvement methods in power system.	K4
C415.3	Illustrate the energy efficient techniques for good lighting system and energy Measuring Instruments.	K3
C415.4	Describe the concepts and techniques of demand side management for power system.	K3
C415.5	Analyze the economic analysis and cost effective tests of DSM programs for effective demand side mar	K4
(15A02709) POWER QUALITY		
C416.1	Address power quality issues to ensure meeting of standards	K3
C416.2	Apply the concepts of compensation for sags and swells using voltage regulating devices	K3
C416.3	Assess harmonic distortion and its mitigation.	K4
C416.4	Explain the power measurement data according to standards	K3
C416.5	Apply the concepts of power quality enhancement using custom power devices	K3
(15A04608) DIGITAL SIGNAL PROCESSING LABORATORY		
C417.1	Analyze discrete time signals & systems using MATLAB	K4
C417.2	Design IIR & FIR filters, DSP based real time processing systems to meet desired needs of the society	K3
C417.3	Implement DSP algorithms using digital signal processors.	K3

(15A02710) POWER SYSTEMS & SIMULATION LABPRATORY		
C418.1	Calculate the sequence impedances, sub-transient reactance, symmetrical and unsymmetrical faults of	K3
C418.2	Develop a MATLAB program for formation of Ybus, Zbus and Gauss seidel ,Fast decoupled load	K4
C418.3	Determine the parameters of equivalent circuit of three winding transformer.	K4
IV-II		
(15A02801) INSTRUMENTATION		
C421.1	Analyze the concepts of signals and errors for measuring devices.	K3
C421.2	Differentiate among the types of data transmission techniques	K4
C421.3	Differentiate among the types of data modulation techniques	K3
C421.4	Apply digital techniques to measure voltage, frequency and speed	K3
C421.5	Choose suitable transducers for the measurement of non-electrical quantities	K4
(15A02804) HVDC TRANSMISSION		
C422.1	Describe the concepts of HVDC Transmission System	K3
C422.2	Analyze the different types of converters in a HVDC Transmission System	K4
C422.3	Illustrate the control concepts of HVDC converters	K3
C422.4	Discuss the Power flow analysis in AC and DC Transmission systems	K3
C422.5	Classify the Converter faults, Harmonics and Protection of HVDC Transmission system	K4
(15A02806) Comprehensive Viva Voce		
C423.1	Evaluate the subject performance of student	K4
C423.2	Recognise the knowledge level of student	K4
C423.3	Illustrate the overall knowledge in the relevant field of Engineering acquired over 4 years of study in	K3
(15A02807) TECHNICAL SEMINAR		
C424.1	Survey in research oriented field and develop the literature documentation.	K4
C424.2	Develop the competency skills in the field of engineering interdisciplinary approaches for better	K4
C424.3	Develop the life long learning skills on the recent trends & technologies to Communicate effectively	K4
(15A02808) PROJECT WORK		
C425.1	Identify the research problem and efficient tools for designing project modules thorough literature	K3
C425.2	Develop executable project modules after considering the requirements specified in the design phase.	K4
C425.3	Demonstrate the completed project work with the project report.	K4

Head of the Department