CODE	COURSE OUTCOMES	K.Level
	I - I SEM	
C111	**Linear Algebra and Calculus (20A54101)**	**K.Level**
C111.1	Develop the use of matrix algebra techniques that is needed by engineers for practical applications	K3
C111.2	Utilize mean value theorems to real life problems	K3
C111.3	Familiarize with functions of several variables which is useful in optimization	K3
C111.4	Students will also learn important tools of calculus in higher dimensions. Students will become familiar with 2-dimensional coordinate systems	K4
C111.5	Students will become familiar with 3- dimensional coordinate systems and also learn the utilization of special functions	K3
C112	**Applied Physics (20A56201T)**	**K.Level**
C112.1	Analyze the differences between the interference, diffraction and polarization with applications	K4
C112.2	Identify the importance of lasers and fiber optics in different engineering fields	K3
C112.3	Understands the response of dieletric & magnetic materials to the applied electric & magnetic fields	K2
C112.4	Analyze the physical properties of materials through quantum mechanics along with band theory	K4
C112.5	Elaborate the physical properties of semiconductors and superconductors	K2
C113	**Communicative English (20A52101T)**	**K.Level**
C113.1	Practise the basic listening, speaking, reading and writing skills in both academic and social contexts	K2
C113.2	Use effective strategies in structuring short talk, writing well-structured paragraphs	K2
C113.3	Develop summarizing and reporting skills with correct tense forms, appropriate structures, vocabulary and also report on informal discussions	K3
C113.4	Interpret graphic elements in academic contexts and use language appropriately for description of reading texts and construct dialogues for effective conversation.	K2
C113.5	Produce a well-organised essay without any grammatical errors and make formal oral presentations using effective strategies	K3
C114	**Fundamentals of Electrical Circuits (20A02101T)**	**K.Level**
C114.1	Apply Network reduction techniques and find the equivalent impedence for the given network	K4
C114.2	Develop the Cut Set and Tie-set Matrices for a given Circuit	K4
C114.3	Design RLC series,parallel circuit for specified frequency response	K3
C114.4	Apply the network theorems and solve the given networks	K4
C114.5	Determine the real power, reactive power, power factor for the given circuit	K3
C115	**Engineering Drawing (20A03101T)**	**K.Level**
C115.1	Discuss the geometrical constructions and classify the engineering /mathematical curves used in engineering applications	K2
C115.2	Gather good knowledge in various kinds of scales and their practical usage and also understand the basics of the orthographic projections.	K2
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
C116	**Engineering Graphics Lab (20A03101P)**	**K.Level**
C116.1	Know the basic commands and various tools used in AUTOCAD software	K2
C116.2	Analyze the visualization of geometrical solids in three dimensional through exercise in orthagraphic projections	K3
C116.3	Analyze the detailed views of the isometric and orthagraphic views of different objects	K2

CODE	COURSE OUTCOMES	K.Level
C117	**Applied Physics Lab (20A56201P)**	**K.Level**
C117.1	Analyze the importance of Interference & Diffraction of light	K4
C117.2	Use Lasers & Fiber optics to measure various parameters	K2
C117.3	Calculate the Energy gap of Semiconductor laser diode	K4
C117.4	Apply the applications of magnetic materials in day to day science	K4
C117.5	Apply the applications of magnetic materials in day to day science	K4
C118	**Communicative English Lab (20A52101P)**	**K.Level**
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	K2
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
C119	**Fundamentals of Electrical Circuits Lab (20A02101P)**	**K.Level**
C119.1	Apply Network reduction techniques and find the equivalent impedence for the given network	K3
C119.2	Apply various theorems and verify practically	K3
C119.3	Analyze three phase blanaced and unbalanced circuits	K4
C119.4	Determination of Self, Mutual Inductances and Coefficient of Coupling	K5
	I - II SEM	
C121	**Differential Equations and Vector Calculus (20A54201)**	**K.Level**
C121.1	Solve the differential equations related to various engineering fields	K4
C121.2	Apply the linear D.E's in Mechanical and Electrical Oscillatory circuits	K3
C121.3	Identify solution methods for partial differential equations that model physical processes	K3
C121.4	Interpret the physical meaning of different operators such as gradient, curl and divergence	K4
C121.5	Estimate the work done against a field, circulation and flux using vector calculus	K2
C122	**Chemistry (20A51101T)**	**K.Level**
C122.1	Explain the salientfeatures of different theories along with their applications	K2
C122.2	Discuss about the modern engineering materials	K3
C122.3	Apply the knowledge of various electrodes and electrochemical cells and the development of new batteries.	K3
C122.4	Identify the different polymers and their usage in various fields of engineering.	K3
C122.5	Analyze the knowledge of different analytical techniques used in engineering and also development of new techniques.	K4
C123	**C-Programming & Data Structures (20A05201T)**	**K.Level**
C123.1	Develop the representation of Tress.	K3
C123.2	Identify the various Binary tree traversals	K3
C123.3	Illustrate different Graph traversals like BFS and DFS	K4
C123.4	Design the different sorting techniques	K3
C123.5	Apply programming to solve searching and sorting problems	K4
C124	**Electronic Devices & Circuits (20A04101T)**	**K.Level**
C124.1	Understand the basic concepts of semiconductors and analysis of simple diode circuits	K2
C124.2	Analyze various applications of diode circuits and special purpose diodes	K3
C124.3	Understand the principle of operation and V-I characteristics in various BJT & MOSFET	K2
C124.4	Design amplifier circuits using BJT and MOSFET	K4
C124.5	Describe on biasing circuits and small signal equivalent model of BJT and MOSFET	K2

CODE	COURSE OUTCOMES	K.Level
C125	**Engineering Workshop (20A03202)**	**K.Level**
C125.1	Apply wood working skills in real world applications.	K4
C125.2	Build different objects with metal sheets in real world applications.	K3
C125.3	Apply fitting operations in various applications.	K4
C125.4	Apply different types of basic electric circuit connections.	K4
C125.5	Use soldering and brazing techniques.	K4
C126	**IT Workshop (20A05202)**	**K.Level**
C126.1	Disassemble and Assemble a Personal Computer and prepare the computer ready to use	K3
C126.2	Prepare the Documents using Word processors and Prepare spread sheets for calculations	K3
C126.3	Prepare Slide presentations using the presentation tool	K3
C126.4	Interconnect two or more computers for information sharing	K4
C126.5	Access the Internet and Browse it to obtain the required information	K3
C127	**C-Programming & Data Structures Lab (20A05201P)**	**K.Level**
C127.1	Develop C programs using functions, arrays, structures and pointers.	K3
C127.2	Illustrate the concepts Stacks and Queues.	K4
C127.3	Design operations on Linked lists.	K4
C127.4	Apply various Binary tree traversal techniques.	K4
C127.5	Develop searching and sorting methods.	K4
C128	**Chemistry Lab (20A51101P)**	**K.Level**
C128.1	Determine the cell constant and conductance of solutions	K3
C128.2	Prepare advanced polymer Bakelite materials	K3
C128.3	Measure the strength of an acid present in secondary batteries	K3
C128.4	Analysethe IR of some organic compounds	K3
C129	**Electronic Devices & Circuits Lab (20A04101P)**	**K.Level**
C129.1	Compute the parameters of diodes and Transistors from the characteristics	K2
C129.2	Demonstrate the rectifier and voltage regulators circuits using diode	K2
C129.3	Analyze the characteristics of UJT and SCR	K4
C129.4	Design biasing circuit of BJT and FET	K3
C129.5	Analyze the effect of temperature on viscosity by using Redwood viscometer	K4
C1210	**Environmental Science (20A99201)**	**K.Level**
C1210.1	Comprehend the concepts of environment and its importance in our daily life and develop and apply various water conservation methods and conservation of other natural resources also.	K3
C1210.2	Categorize an ability to reflect on their personal impacts on biodiversity in global perspective.	K4
C1210.3	Develop new innovative methods for controlling of environmental pollution which may affecte the human health.	K4
C1210.4	Analyze environmental issues related to society and find solutions for environmental problems.	K3
C1210.5	Determine the effects of increasing human population as well as health associated problems and develop measures to be taken to protect human health.	K3
	II-I SEM	
C211	**Complex Variables and Transforms (20A54302)**	**K.Level**
C211.1	Understand functions of complex variables and its properties and analyticity of complex functions	K2
C211.2	Apply Cauchy's Integral theorem and Cauchy's integral formula.Evaluate improper integrals of complex functions using Residue theorem	K3
C211.3	Apply Laplace Transforms to Solve Differential Equations & Solve the Laplace Transforms of General functions using its properties .	K3
C211.4	Calculate Fourier Coefficients and identify the existance of Fourier Series of the given function.	K4
C211.5	Apply the properties of Fourier Transforms and also apply Z-Transforms to solve differential equations.	K3

CODE	COURSE OUTCOMES	K.Level
C212	**Signals & Systems (20A04301T)**	**K.Level**
C212.1	Understand the concepts of signals and systems and their classification	K2
C212.2	Analyze continuous time periodic and non periodic signals with Fourier series and fourier transform. Apply sampling theorem to convert continuous-time signals to discrete-time signals and reconstruct back,	K4
C212.3	Analyze the continuous time signals and systems using Laplace transforms.	K4
C212.4	Analyze the characteristics of linear systems in time and frequency domains	K4
C212.5	Analyze the discrete-time signals and systems using DTFT and Z-transformations respectively.	K4
C213	**Electrical Engineering (20A02303T)**	**K**
C213.1	Calculate and determine the transient response of R-L, R-C, R-L-C series circuits for DC& AC excitations	K3
C213.2	Explain resonant circuits and different types of filters	K3
C213.3	Write and calculate Z,Y,h and ABCD Parameters	K3
C213.4	Explain and write general equations for both DC Generators&DC Motors	K4
C213.5	Calculate the efficiency of a single phase transformer	K3
C214	**Analog Circuits (20A04302T)**	**K.Level**
C214.1	Analyze and Examine the Multi stage amplifiers and differential amplifiers	K3
C214.2	Analyze the frequency response of multistage and differential amplifier circuits using BJT & MOSFETs at low and high frequencies.	K4
C214.3	Analyze the various feedback Amplifiers & Oscillators.	K4
C214.4	Evaluate efficiency of different power amplifiers	K4
C214.5	Evaluate the performance of different tuned amplifiers and multivibrators	K4
C215	**Manageral Economics & Financial Analysis (20A52301)**	
C215.1	Analyze the consumer behaviour with regard to their product or services and measure demand of a particular product or services by applying various methods in given situation.	K4
C215.2	Apply the Concept of Production cost and revenues for effective business decisions.	K3
C215.3	Determine the price of a product or services in given market condition.	K3
C215.4	Evaluate the Capital Budgeting Techniques	K4
C215.5	Develop the Accounting statements and evaluat the financial performance of business equity.	K4
C216	**Simulation Lab (20A04301P)**	
C216.1	Understand how to simulate dfferent types of signals an system reponse.	K2
C216.2	Find the Fourier transform of a given signal and plot amplitude and phase characteristics.	K2
C216.3	Analyze the response of different sstems when they are excited by different signals ans plot power spectral density of signals	K4
C216.4	Generate simulate different random signals forthegiven specifications.	K3
C217	**Electrical Engineering Lab (20A02303P)**	**K.Level**
C217.1	Determine the Z,Y,ABCD&Hybrid parameters experimentally	K3
C217.2	Sketch the various responses by using step&pulse inputs	K3
C217.3	Analyze the various characteristics of DC generators and DC motors in practice	K4
C217.4	Predetermine the efficiency and regulation of a 1-φ transformer experimentally	K4
C217.5	Determine the efficiency and regulation of a Swinburne's test on DC machine	K4
C218	**Analog Circuits Lab (20A04302P)**	**K.Level**
C218.1	Design and Analyze single and multistage amplifiers	K5
C218.2	Design and Analyze Feedback amplifiers	K5
C218.3	Design and Analyze Power amplifiers and frequency response of Tuned amplifiers	K5
C218.4	Design and Analyze sinsoidal and non- sinsoidal Oscillators	K5

CODE	COURSE OUTCOMES	K.Level
C219	**Application Development with python (20A5305)**	**K.Level**
C219.1	Identify the issues in software requirements secifications and enable to write SRS documents or software development prolems.	K2
C219.2	Explore the use of object oriented conepts to solve Real-life problms.	K3
C219.3	Design data base for any real-world problem.	K3
C219.4	Solve mathematical problems using Python programmng language.	K2
C2110	**Universal Human Values (20A5201)**	**K.Level**
C2110.1	Identify the significance and need of values in the society.	K2
C2110.2	Understand the meaning of Harmony in the Self the Co-exhistence of Self and Body.	K2
C2110.3	Understanding the value of harmonious relationships and explore their role in ensuring a harmonious society.	K2
C2110.4	Examine the harmony in nature and existence, and work outtheir mutually fulfilling participation in the nature.	K4
C2110.5	Distingush between ethical and unethical practices, and start working out the strategy to actualize a harmonious environment whereever they work.	K4
	II-II SEM	
C221	**Probability Theory and Stochastics Processes (20A54403)**	**K.Level**
C221.1	Understanding the concepts of Probability, Random Variables, Distribution & Density Functions, Conditional Distribution & Conditional Density Functions	K2
C221.2	Apply the knowledge to the sum of random variables, Central Limit Theorem in communication systems and evaluate single and multiple random variable concepts to expectation, variance and moments.	K3
C221.3	Apply the different operations to multiple random variables and solve the engineering problems involving random variables.	K3
C221.4	Analyze the time domain and spectral characteristics of random process.	K4
C221.5	Analyze the response of Linear system with random inputs and also compare different spectral band random process.	K4
C222	**Digital Logic Design (20A04303T)**	**K.Level**
C222.1	Understand the properties of Boolean Algebra,other logic operations and minimization of Boolean Functions using Karnaugh Map.	K3
C222.2	Make use of concepts to slove the problems related to the logic circuits.	K4
C222.3	Analyze the Combinational and Sequential Logic Circuits.	K4
C222.4	Develop Digital Circuits using HDL and Compare various Programmable Logic Devices.	K4
C222.5	Design various logic circuits using Boolean algebra,Combinational and Sequential Logic Circuits.	K3
C223	**Electromagnetic Waves and Transmission lines (20A04401)**	**K.Level**
C223.1	Explain the basics of vector analysis, coordinate systems, and electrostatic fields.	K2
C223.2	Apply Maxwell's equations in solving electromagnetic field equations.	K3
C223.3	Analyze electric and magnetic fields at the interface of diffrent media	K4
C223.4	Analyze the Reflection and Refraction of Plane Waves	K4
C223.5	Explain the concept of transmission lines and their applications.	K4
C224	**Communication Systems (20A04402T)**	**K.Level**
C224.1	Explain the basic concepts of Communication systems and also Analyze the Continuous Wave Modulation systems	K4
C224.2	Analyse the performance of anaolg communication system in the presence of noise and also apply the fundamentals concepts of sampling theorem along with different coding and modulation techniques in communication systems.	K4
C224.3	Differentiate the basic principles of baseband and passband digital modulation schemes.	K4
C224.4	Employ the Geometric Representation of Signals in Signal Space.	K3
C224.5	Analyze the different modulation & demodulation for band pass data transmission and the Concepts of Information Theory	K4
C225	**Linear and Digital IC Applications (20A04403T)**	**K.Level**
C225.1	Explain the construction and characteristics of Operational Amplifier, IC's	K2
C225.2	Explain various linear & non-linear applications of Op-amp	K2
C225.3	Construct active filters using op amp & 555 Timer and PLL, VCO	K3
C225.4	Analyze data converter (ADC and DAC) Circuits using Op amps, Voltage Regulators	K4
C225.5	Discuss Combinational & sequential circuits using Digital Integrated circuits	K2

CODE	COURSE OUTCOMES	K.Level
C226	**Digital Logic Design Lab (20A04303P)**	**K.Level**
C226.1	Understand the pin configuration of various digital ICs.	K2
C226.2	Analyze & verify the truth tables of various logic circuits	K3
C226.3	Analyze the Combinational and Sequential Logic Circuits.	K3
C226.4	Design Combinational and Sequential Logic Circuits using VHDL.	K3
C227	**Communication Systems Lab (20A04402P)**	**K.Level**
C227.1	Examine different Analog, Pulse and Digital modulation techniques & Radio receiver characteristics.	K3
C227.2	Analyze different Analog and Digital modulation techniques.	K4
C227.3	Design and implement different modulation and demodulation techniques.	K5
C227.4	Analyze the performance of system by plotting graphs & Measure radio receiver characteristics.	K4
C227.5	Compare the experimental results with that of theoretical ones and infer the conclusions.	K4
C228	**Linear and Digital IC Applications Lab (20A04403P)**	**K.Level**
C228.1	Understand the pin configuration of each linear / digital IC and its functional diagram.	K2
C228.2	Analyze the circuit and verify the practical observations with the analyzed results.	K4
C228.3	Design the circuits for the given specifications using linear and digital ICs.	K6
C228.4	Conduct the experiment and obtain the expected results.	K3
C228.5	Illustrate different lab equipment with operation and their use.	K2
C229	**Soft Skills (20A5401)**	**K.Level**
C229.1	Interpret people at the emotional level through emotional intelligence	K2
C229.2	Apply critical thinking skills in problem solving	K3
C229.3	Analyse the needs of an organization for team building	K4
C229.4	Judge the situation and take necessary decisions as a leader	K5
C229.5	Develop social and work-life skills as well as personal and emotional well-being	K6
C2210	**Design Thinking for Innovation (20A99401)**	**K.Level**
C2210.1	Explain the fundamentals of Design Thinking and innovation	K3
C2210.2	Apply the design thinking techniques for solving problems in various sectors.	K3
C2210.3	Analyse to work in a multidisciplinary environment	K4
C2210.4	Evaluate the value of creativity	K6
C2210.5	Formulate specific problem statements of real time issues	K6
	III - I SEM	
C311	**Control Systems Engineering (20A04501)**	**K.Level**
C311.1	Apply mathematical models,signallow graph & Block diagram representation to determine Transer function control systems	K3
C311.2	Analyse the time domain response of first and second order systems.	K4
C311.3	Analyse control systems by applying routh- hurwitz and root locus techniques.	K4
C311.4	Apply bode plot, polar and nyquist plot concepts to analyze control systems in frequency domain.	K3
C311.5	Apply state space model for a given physical system and solve the state equations	K3
C312	**Digital Signal Processing (20A04502T)**	**K.Level**
C312.1	Formulate difference equations for the given discrete time systems	K3
C312.2	Apply FFT algorithms for determining the DFT of a given signal	K3
C312.3	Design digital filter IIR from the given specifications	K4
C312.4	Design digital filter FIR from the given specifications	K4
C312.5	Outline the concept of multirate DSP and applications of DSP	K3

CODE	COURSE OUTCOMES	K.Level
C313	**Microprocessors and Microcontrollers (20A04503T)**	**K.Level**
C313.1	Explain the concepts of 8086 microprocessors	K3
C313.2	Develop assembly language program for 8086 microprocessor	K4
C313.3	Describe the interfacing of 8086 with memory and peripherals	K3
C313.4	Explain the concepts of 8051 and assembly develop language program	K4
C313.5	Describe the interfacing of 8051 with various devices	K3
C314	**Computer Architecture & Organization (20A04504a)**	**K.Level**
C314.1	Explain the basics of instructions sets and their impact on processor design	K2
C314.2	Demonstrate an understanding of the design of the functional units of a digital computer system.	K3
C314.3	Distinguish differet data types and evaluate arithmetic operations with different algorithem	K3
C314.4	Design a system with Asycronous & Syncronous data transfer between Computer Registers & Memory unit	K4
C314.5	Design a pipeline for consistent execution of instructions with minimum hazards.	K4
C315	**Electric Vehicles (20A02505)**	**K.Level**
C315.1	Apply basic concepts of EV to design complete EV system	K3
C315.2	Understand and differentiate between conventional and latest trends in Electric Vehicles	K2
C315.3	Analyze various EV propulsion & EV dynamics.	K4
C315.4	Analysis of fuel cell technologies for EV and HEVs	K4
C315.5	Analysis of battery charging and control strategies used in electric vehicles.	K4
C316	**Digital Signal Processing Lab (20A04502P)**	**K.Level**
C316.1	Implement various DSP Algorithms using MATLAB software packages	K3
C316.2	Analyze and observe magnitude and phase characteristics (Frequency response characteristics) of digital IIR-Butterworth, Chebyshev filters	K4
C316.3	Analyze and observe magnitude and phase characteristics (Frequency response characteristics) of digital FIR filters using window technique	K4
C316.4	Design and Analyze Digital Filters using FDA Tool	K5
C317	**Microprocessors and Microcontrollers Lab (20A04503P)**	**K.Level**
C317.1	Formulate problems and implement algorithms using Assembly language.	K6
C317.2	Develop programs for different applications.	K3
C317.3	Interface peripheral devices with 8086 and 8051.	K4
C317.4	Use Assembly language programming approach for solving real world problems	K3
C318	**PCB Design and Prototype development (20A04509)**	**K.Level**
C318.1	Understand Single layer and Multilayer PCB	K2
C318.2	Create and fabricate a PCB	K6
C318.3	Evaluate and test a PCB	K5
C319	**Evaluation of Community Service Project (20A04510)**	**K.Level**
C319.1	Improves students' ability to apply what they have learned in "the real world"	K3
C319.2	Positive impact on academic outcomes such as demonstrated complexity of understanding, problem analysis, problem-solving, critical thinking, and cognitive development	K2
C319.3	Improved ability to understand complexity and ambiguity	K5
C319.4	Greater sense of personal efficacy, personal identity, compassion,spiritual growth, and moral development	K6
C319.5	Improved social responsibility and citizenship skills	K5

CODE	COURSE OUTCOMES	K.Level
	III - II SEM	
C321	**Antennas & Microwave Engineering (20A04601T)**	**K.Level**
C321.1	Learn about the antennas basics and wire antennas.	K2
C321.2	Gain knowledge on few types of antennas, their operation and applications.	K3
C321.3	Understand the uses of antenna arrays and analyze waveguides and resonators	K4
C321.4	Analyze various microwave components and understand the principles of different microwave sources. Measurements to assess antenna's performance.	K4
C321.5	Gain knowledge on microwave semiconductor devices and microwave measurement	K3
C322	**VLSI Design (20A04602T)**	**K.Level**
C322.1	Understand fabrication process of integrated circuits using MOS transistors, electrical properties of MOS & BICMOS devices to analyze the behaviour of inverters with various loads.	K3
C322.2	Undestand VLSI design flow , Apply the design Rules and draw layout of a given logic circuit and basic circuit concepts to MOS circuits.	K3
C322.3	Design gate level logic circuits and estimate parasitic of any logic circuits	K5
C322.4	Design of various VLSI sub systems and PLDs	K5
C322.5	Understand the concept of testing and adding extra hardware to improve testibility of system	K2
C323	**Communication Networks (20A04603T)**	**K.Level**
C323.1	Understand the basics of data communication, networking, internet and their importance.	K2
C323.2	Analyze the services and features of various protocol layers in data networks.	K4
C323.3	Differentiate wired and wireless computer networks	K4
C323.4	Analyse TCP/IP and their protocols.	K4
C323.5	Recognize the different internet devices and their functions.	K4
C324	**Embedded System Design (20A04604b)**	**K.Level**
C324.1	Explain the design process and classification of embedded systems	K3
C324.2	Discuss the hardware components of an embedded system	K3
C324.3	Describe various onboard, external and wireless communication interfaces	K3
C324.4	Discuss about the embedded firmware design and development	K3
C324.5	Illustrate different IPC mechanisms used in multitasking environment	K4
C325	**Introduction ot Robotics (20A03605)**	**K.Level**
C325.1	Explain fundamentals of Robots	K2
C325.2	Apply kinematics and differential motions and velocities	K3
C325.3	Demonstrate control of manipulators	K2
C325.4	Understand robot vision	K2
C325.5	Develop robot cell design and programming	K6
C326	**Antennas & Microwave Engineering Lab (20A04601P)**	**K.Level**
C326.1	Analyze the various parameters and characteristice of the various wave guide components	K4
C326.2	Analyze the working of the various tubes or sources for the transmission of the microwave	K4
C326.3	Measure signal parameters at microwave frequencies	K5
C326.4	Design and study of various antenas	K6
C326.5	Analyze the performance characteristics of antena	K4
C327	**VLSI Design Lab (20A04602P)**	**K.Level**
C327.1	Design and Analyse Logic gates, Universal gates, AOI & OAI in CMOS logic.	K5
C327.2	Analyse MOSFET Characteristics.	K4
C327.3	Design and Analyse various MOSFET Amplifiers.	K5
C327.4	Design the Layouts of Inverter and Universal gates and analyse their performance in CMOS logic.	K5

CODE	COURSE OUTCOMES	K.Level
C328	**Communication Networks Lab (20A04603P)**	**K.Level**
C328.1	Understand fundamental underlying principles of computer networking	K2
C328.2	Understand details and functionality of layered network architecture	K2
C328.3	Analyze the performance of various communication protocals	K4
C328.4	Compare routing algorithms.	K4
C328.5	Practice packet/file transmission between nodes	K2
C329	**RF System Design (20A04607)**	**K.Level**
C329.1	Verify the basic principles and design aspects involved in high frequency communication systems components	K1
C329.2	Conduct the experiments on different high frequency components to analyze and interpret data to produce meaningful conclusion and match with theoretical concepts.	K4
C329.3	Design and develop RF components using microstrip technology	K4
C329.4	Apply knowledge of basic RF Electronics for realizing any RF system.	K4
C3210	**Intellectual Property Rights & Patents (20A99601)**	**K.Level**
C3210.1	Distinguish and Explain various forms of IPRs.	K2
C3210.2	Identify criteria's to fit one's own intellectual work in particular form of IPRs.	K2
C3210.3	Apply statutory provisions to protect particular form of IPRs.	K3
C3210.4	Analyse rights and responsibilities of holder of Patent, Copyright, Trademark, Industrial Design etc.	K4
C3210.5	Identify procedure to protect different forms of IPRs national and international level.	K2
	IV-I SEM	
C411	**Satellite Communications (20A04701c)**	**K.Level**
C411.1	Develop Knowledge on the dynamics of the satellite	K3
C411.2	Understand the communication satellite Design	K2
C411.3	Understand how analog and digital technologies are used for satellite communication network	K2
C411.4	Compare the Design of satellite LInks.	K3
C411.5	Study the design of Earth station and tracking of the satellite	K2
C412	**Radar Engineering (20A04702c)**	**K.Level**
C412.1	Analyze the RADAR range equation	K4
C412.2	Summarize the principle of CW, FM-CW RADAR and describe its use in FM-CW altimeter.	K2
C412.3	Show the importance of delay line canceller in MTI and Pulse Dopller RADAR & its performance parameters.	K2
C412.4	Discriminate different tracking RADARS	K4
C412.5	Determine the importance of Matched Filter in RADAR receivers & analyse different beam formers & RADAR displays.	K4
C413	**Cellular & Mobile Communications (20A04703c)**	**K.Level**
C413.1	Know about cell coverage for signal and traffic, diversity techniques and mobile antennas by the use of Engineering Mathematics	K2
C413.2	Explain impairments due to multipath fading channel, fundamental techniques to overcome different fading effects, frequency management, Channel assignment and types of handoff	K3
C413.3	Apply concepts to solve problems on mobile antennas and cellular systems	K4
C413.4	Analyze Co-channel and Non Co-channel interferences, different Hand-offs and dropped call rates	K4
C413.5	Evaluate performance of dropped call rate and false alarm rate	K4
C414	**Management Science (20A52701b)**	**K.Level**
C414.1	Apply the concepts and principles of mamnagement in real life industry and students can be able to design and develop organization chart and structure for an enterprise.	K4
C414.2	Apply operations management techniques in real life industry.	K4
C414.3	Apply the concepts of HRM in recreuiment, selection, training and development.	K4
C414.4	Develop PERT/CPM charts for projects of an enterprise and estimate time & cost of a project and to develop Mission, Objectives, Goals and Strategies for an enterprise in dynamic environment.	K3
C414.5	Understand and apply modern management techniques wherever possible.	K2

CODE	COURSE OUTCOMES	K.Level
C415	**Web Technologies (20A05704a)**	**K.Level**
C415.1	Analyze a web page and identify its elements and attributes.	K4
C415.2	Create web pages using XHTML and Cascading Styles sheets.	K5
C415.3	Build dynamic web pages	K5
C415.4	Build web applications using PHP.	K5
C415.5	Programming through PERL and Ruby, client-side scripts using AJAX	K3
C416	**Renewable Energy Systems (20A02705)**	**K.Level**
C416.1	Explains about measurement of solar radiation	K2
C416.2	Explains about grid connected PV systems	K3
C416.3	Analyze the concept of VAWT and HAWT systems	K4
C416.4	Analyze the concept of producing Geothermal energies	K4
C416.5	Analyze the operation of tidal,wave,bio mass energy	K4
C417	**Industrial IoT & Automation (20A04707)**	**K.Level**
C417.1	Analyze various protocols for IoT	K4
C417.2	Design a PoC of an IoT system using Raspberry Pi/Arduino.	K3
C417.3	Apply data analytics and use cloud offerings related to IoT.	K3
C417.4	Analyze applications of IoT in real time scenario	K4
C417.5	Analyze applications of IoT in real time Applications	K4
C418	**Evaluation of Industry Internship (20A04708)**	**K.Level**
C418.1	Develop knowledge and skills in a particular field or industry	K3
C418.2	Explore different roles to see what students might want to pursue after graduation	K3
C418.3	Analyse work places and what challenges they face on a daily basis	K4
C418.4	Apply the concepts and strategies of academic study in a real work environment	K3
C418.5	Develop soft skills and building character	K3
	IV-II SEM	
C421	**Full Internship & Project work (20A04801)**	**K.Level**
C421.1	Identify skills and capabilities that intersect effectively with the needs of industry.	K2
C421.2	Apply the theoretical concepts to solve industrial problems with teamwork and multidisciplinary approach.	K3
C421.3	Demonstrate and apply research skills to complete a project	K3
C421.4	Identify problems, formulate literature survey and analyze engineering problems.	K2
C421.5	Form a team for carrying the project and perform documentation effectively.	K4
C421.6	Design system component that acquire the needs for public health and safety, and cultural, societal, and environmental considerations.	K6