Course Outcomes

Batch: 2024-28 **A.Y: 2024-25**

Course Outcomes (I Year- I Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Engineering Physics (23A0003T)		
C111.1	Analyze the intensity variation of light due to polarization, interference anddiffraction.	Analyze
C111.2	Familiarize with the basics of crystals and their structures.	Understand
C111.3	Summarize various types of polarization of dielectrics and classify the magnetic materials.	Understand
C111.4	Apply fundamentals of quantum mechanics to one dimensional motion of particles.	Apply
C111.5	Identify the type of semiconductor using Hall effect and explain Superconductivity.	Remember
Linear Algebra and Calculus (23A0001T)		
C112.1	Solving systems of linear equations that is needed by engineers for practical applications.	Apply
C112.2	Find the eigen values and eigen vectors to facilitate the calculation of matrix characteristics.	Apply
C112.3	Utilize mean value theorems to real life problems.	Understand
C112.4	Apply the technique of partial differentiation to find the Jacobian and the extreme values of functions of several variables.	Apply
C112.5	Apply the techniques of multiple integrals to find the areas and volumes.	Apply
Introduction to Programming (23A0501T)		
C113.1	Understand various programming paradigms and environment required for solving problems and also formulates an algorithm / flowchart for the problems.	Understand
C113.2	Understand the basic concepts of C programming language.	Understand
C113.3	Choose the best programming constructs for solving the given problem	Apply
C113.4	Formulate C programs to demonstrate the applications of derived data types such as arrays, strings.	Apply
C113.5	Distinguish between the concepts of structures, unions, user defined data types and also use the concepts of pointers	Analyze
C113.6	Solve a problem by dividing it into functions and also demonstrate the basic concepts of files.	Apply
Basic Electrical & Electronics Engineering (23A0201T)		
C114.1	Analyse simple electrical circuits with DC excitation, Network theorems and simple AC circuits consists of RL,RC and RLC elements	Analyze
C114.2	Explain construction and operation of AC and DC machines, measuring instruments	Understand
C114.3	Understand about different power generation mechanisms, Electricity billing concept and safety measures related to electrical operations	Understand
C114.4	Understand the characteristics of Semiconductor diodes, Zener diodes and BJT	Understand
C114.5	Understand the characteristics of rectifiers, amplifiers and Electronic Instrumentation	Understand
C114.6	Understand the number systems codes, Boolean algebra and logic gates, working mechanism of different combinational, sequential circuits.	Understand

Engineering Graphics (23A0301)		
C115.1	Explain the Principles of Engineering Graphics and sketch the various Curves used in Engineering Practice	Understand
C115.2	Construct the projections of points in different quadrants.	Understand
C115.3	Construct the projections of lines and planes in different orientations	Understand
C115.4	Construct the projections of solids in different orientations	Apply
C115.5	Construct the sectional views and development of lateral surface of simple solids in different orientations	Apply
C115.6	Construct the isometric and orthographic views and their conversions	Apply
Electrical & Electronics Engineering Workshop (23A0202P)		
C116.1	Experimentally verify the basic circuit theorems, KVL, KCL and Super Position theorem.	Analyze
C116.2	Draw the open circuit characteristics of DC shunt Generator circuits Experimentally.	Understand
C116.3	Apply the theoretical concepts to obtain calculations for the measurement of resistance, power and power factor and calculation of Electrical Energy for Domestic Premises.	Apply
C116.4	understand the characteristics of Different semiconductor devices like PN junction diode, Zener diode ,BJT by conducting Suitable Experiments.	Understand
C116.5	Experimentally verify the working of Half wave and Full wave Rectifier by using PN junction Diodes.	Analyze
	Understand the characteristics of various electronic devices andexplain the operation of a digital circuit.	Understand
IT Workshop (23A0503P)		
C117.1	Perform Hardware trouble shooting.	Apply
C117.2	Understand Hardware components and interdependencies.	Understand
C117.3	Safeguard computer systems from viruses/worms.	Understand
C117.4	Document/ Presentation preparation.	Apply
C117.5	Perform calculations using spreadsheets.	Apply
Engineering Physics Lab (23A0006P)		
C118.1	Operate optical instruments and measure the wavelength of Light sources.	Evaluate
C118.2	Estimate dielectric constant of capacitor and magnetic induction of current carrying coil	Apply
C118.3	Identify the type of semiconductor and calculate band gap of it.	Remember
C118.4	Evaluate Acceleration due to gravity and different modulus of materials.	Evaluate
C118.5	Measure the frequency of tuning fork and verify the laws in Sonometer.	Evaluate
Computer Programming Lab (23A0502P)		
C119.1	Identify various programming environments to implement programming concepts.	Understand
C119.2	Interpret the algorithms and flowcharts to the given problem.	Apply
C119.3	Apply decision-making and looping constructs for developing the C programs.	Apply
C119.4	Identify different data-structures such as arrays, strings, structures, unions and pointers for solving problems.	Apply
C119.5	Divide the problem into simpler tasks to provide solutions.	Apply
C119.6	Understand memory allocation techniques and use of files to deal with dynamic memory allocation problems.	Understand

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Department of Electronics and Communication Engineering

Course Outcomes

Batch: 2023-27 **A.Y: 2024-25**

Course Outcomes (II Year- I Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Probability and Complex Variables (23A0014T)		
C211.1	Understand the concepts of Probability, Random Variables and their characteristics	Understand
C211.2	Learn how to deal with multiple random variables, conditional probability, joint distribution and statistical independence	Apply
C211.3	Formulate and solve the engineering problems involving random variables	Apply
C211.4	Understand Cauchy-Riemann equations, analytic functions and various properties of analytic functions	Understand
C211.5	Understand Cauchy theorem, Cauchy integral formulas and apply these to evaluate complex contour integrals. Classify singularities and poles, residues	Apply
Universal Human Values (23A0021T)		
C212.1	Define the terms like natural acceptance, Happiness and Prosperity.	Remember
C212.2	Identify one's self and one's surroundings (family, society and nature).	Understand
C212.3	Apply what they have learnt to their own self in different day-to-day settings in real life.	Apply
C212.4	Relate human values with human relationship and human society.	Analyze
C212.5	Justify the need for universal human values and harmonious existence.	Evaluate
C212.6	Develop as socially and ecologically responsible Engineers.	Create
Signals, Systems and Sochastic Processes (23A0401T)		
C213.1	Understand the mathematical description and representation of continuous-time and discrete-time signals and systems.	Understand
C213.2	Understand the concepts of various transform techniques and Random Processes.	Understand
C213.3	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.	Apply
C213.4	Formulate and solve engineering problems involving random processes.	Apply
C213.5	Analyze the frequency spectra of various continuous-time signals using different transform methods.	Analyze
C213.6	Classify the systems based on their properties and determine the response of them.	Analyze
Electronic Devices and Circuits (23A0402T)		
C214.1	Describe the operation of semiconductor physics and characteristics of p-n junction diode with diode’s applications in electronic circuits	Understand
C214.2	Analyze the different types of diodes, operation and their characteristics	Analyze
C214.3	Describe various diode circuits for different applications such as rectifiers,	Understand

	clippers and clampers	
C214.4	Illustrate the various Configurations and Biasing circuits Using BJT	Analyze
C214.5	Analyze the DC bias circuitry of FET and MOSFET, understand the need to avoid the failure of electronic circuits due to thermal effects	Analyze
C214.6	Analyze the frequency response of single stage amplifiers using JFET & MOSFET at Low frequencies	Analyze
Digital Circuits Design (23A0403T)		
C215.1	understand binary number systems , properties of Boolean algebra and minimization of Boolean functions	Understand
C215.2	analyze combinational logic circuits and it's applications	Analyze
C215.3	understand verlog hardware description language and CAD tools	Understand
C215.4	analyze sequential logic circuits	Analyze
C215.5	Apply verilog programming language to combinational and sequential circuits design	Apply
C215.6	Understand the concept of FSM and various PLD devices	Understand
Electronic Devices and Circuits Lab (23A0404P)		
C216.1	Describe the use of RPS and CRO	Understand
C216.2	Recognize the characteristics and applications of basic electronic devices	Understand
C216.3	Observe the characteristics of electronic devices by plotting graphs	Understand
C216.4	Categorize the Characteristics of UJT, BJT, FET, and SCR	Analyze
C216.5	Design BJT, FET Amplifiers for Voltage Amplification	Create
C216.6	Simulation of all Electronic circuits in PSPICE /Multisim	Analyze
Digital Circuits & Signal Simulation Lab (23A0405P)		
C217.1	Verify the truth tables of various logic circuits	Understand
C217.2	Understand how to simulate different types of signals and system response	Understand
C217.3	Design sequential and combinational logic circuits and verify their functionality	Apply
C217.4	Analyze the response of different systems when they are excited by different signals and plot power spectral density of signals	Analyze
C217.5	Generate different random signals for the given specifications	Evaluate
Python Programming (23A0510)		
C218.1	Showcase adept command of Python syntax, deftly utilizing variables, data types, control structures, functions, modules, and exception handling to engineer robust and efficient code solutions	Analyze
C218.2	Apply Python programming concepts to solve a variety of computational problems	Apply
C218.3	Understand the principles of object-oriented programming (OOP) in Python, including classes, objects, inheritance, polymorphism, and encapsulation, and apply them to design and implement Python programs	Apply
C218.4	Proficient in using commonly used Python libraries and frameworks such as JSON, XML, NumPy, pandas	Understand
C218.5	Exhibit competence in implementing and manipulating fundamental data structures such as lists, tuples, sets, dictionaries	Apply

Environmental Science (23A0025T)		
C219.1	Gain the knowledge about environment, natural resources and different techniques involved in its conservation.	Understand
C219.2	Get the information about different eco-systems and its functions	Understand
C219.3	Recognize the types of bio-diversity along with values and conservation methods.	Understand
C219.4	Gain the knowledge about various environmental pollutions and able to design the environmental friendly process in engineering	Understand
C219.5	Gain the knowledge about sustainable development concept and practice it in life, society and Industry.	Understand
C219.6	Understand the both impacts of population growth on environment and needed measures to protect the environment	Understand

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Course Outcomes

Batch: 2022-26 **A.Y: 2024-25**

Course Outcomes (III Year- I Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Digital System Design through Verilog (22A0420T)		
C311.1	Describe Verilog HDL Design Digital circuits	Understand
C311.2	Use Gate Level and Dataflow Modeling for Verilog HDL Design	Apply
C311.3	express behavior model of digital circuits	Understand
C311.4	Understand RTL models of digital circuits	Understand
C311.5	Synthesize RTL models to standard cell libraries and FPGAs	Create
C311.6	Implement RTL models on FPGAs and testing and verification	Evaluate
Control System Engineering (22A0215T)		
C312.1	Understand the concepts of control systems feedback effect, mathematical modelling, and time response	Understand
C312.2	Apply the concepts of Block diagram reduction, Signal flow graph method for obtaining mathematical and Root locus, Bode, Nyquist, Polar plots for stability calculations	Apply
C312.3	Apply the concept of controllability and observability and demonstrate the use of these techniques	Apply
C312.4	Analyze time response analysis, error constants, and stability characteristics of a given mathematical model using different methods	Analyze
C312.5	Design and develop different compensators, controllers and their performance evaluation for various conditions	Create
C312.6	Implement different compensators and controllers in solving various engineering applications	Evaluate
Antennas & Microwave Engineering (22A0421T)		
C313.1	Understand the generation of radiation and basic concepts of dipole and loop antennas.	Understand
C313.2	Analyze the practical antenna design characteristics to meet the requirements of modern wireless communication.	Analyze
C313.3	Understand the uses of antenna arrays and waveguides for propagation of EM wave.	Understand
C313.4	Analyze various microwave comonents and the principles of different microwave sources.	Analyze
C313.5	Gain knowlege of micro wave amplifiers and oscillators.	Understand
C313.6	Measure the different parameters of antennas and propagation of microwaves through waveguides.	Analyze
Data Communication Networks (22A0422T)		
C314.1	Understand the basics of data communication, networking, internet and their importance.	Understand
C314.2	Analyze the services and features of various protocol layers in data networks.	Analyze
C314.3	Differentiate wired and wireless computer networks	Understand
C314.4	Analyze TCP/IP and their protocols	Analyze

C314.5	Understand the flow control and congestion control algorithms	Understand
C314.6	Understand different internet devices and their functions.	Understand
Database Management Systems (22A0512T)		
C315.1	Understand the Basic Concepts of Database languages, Relational model, SQL	Understand
C315.2	Choose the specific Data models for large enterprise database design	Understand
C315.3	Analyze the data efficiently through SQL instructions	Analyze
C315.4	Apply Normal forms on database for eliminating the redundancy	Apply
C315.5	Demonstrate the Basic Concepts of transaction management techniques	Apply
C315.6	Apply concurrency control techniques for Database recovery	Apply
Design Thinking and Innovation (22A0526)		
C316.1	Define the concepts related to Design Thinking.	Remember
C316.2	Explian the fundamentals of Design Thinking and Innovation.	Understand
C316.3	Apply the Design Thinking techiques for solving in various sectors.	Apply
C316.4	Analyze to work in a multidisciplinary environment.	Analyse
C316.5	Evaluate the value of creativity.	Apply
C316.6	Formulate specific problem statements of real time issues.	Analyse
Soft Skills (22A0028P)		
C317.1	Memorize various elements of effective communicative skills	Remember
C317.2	Interpret people at the emotional level through emotional intelligence	Understand
C317.3	Apply critical thinking skills in problem solving	Apply
C317.4	Analyze the needs of an organization for team building	Analyse
C317.5	Judge the situation and take necessary decisions as a leader	Evaluate
C317.6	Develop social and work-life skills as well as personal and emotional well-being	Create
Digital System Design through Verilog Lab (22A0425P)		
C318.1	Understand HDL(Verilog) source code for the given problem/experiment	Understand
C318.2	Develop HDL(Verilog) source code for the given problem/experiment	Create
C318.3	Analyze the obtained results of the given experiment/problem	Analyze
C318.4	Simulate the given circuit with suitable simulator and verify the results	Analyze
C318.5	Understand how to use FPGA/CPLD hardware tools in the lab	Understand
C318.6	Design and implement the experiments using FPGA/CPLD hardware tools	Create
Antennas & Microwave Engineering Lab (22A0426P)		
C319.1	Analyze performance characteristics of Antennas	Analyze
C319.2	Understand the working, different microwave components and sources in a microwave bench	Understand
C319.3	Verify the characteristics of various microwave components using microwave bench setup	Evaluate
C319.4	Verify Theorems applicable for antennas	Evaluate
C319.5	Measure scattering parameters of microwave components	Evaluate
C319.6	Measure Attenuation and frequency of microwave	Evaluate

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Course Outcomes

Batch: 2021-25 **A.Y: 2024-25**

Course Outcomes (IV Year- I Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Introduction to Internet of Things (20A04701b)		
C411.1	Explain the concepts of Internet of Things	Understand
C411.2	Explain the required hardware and software components of Internet of Things.	Understand
C411.3	Analyze basic communication protocols of IOT	Analyze
C411.4	Explain the requirement of various types of sensors and Actuators of Internet of Things.	Understand
C411.5	Understand IOT applications in different domain and able to analyze their performances	Understand
C411.6	Analyze Home automation and industrial automation projects using IOT	Create
Digital Image Processing(20A04702b)		
C412.1	Compare different methods for image acquisition, storage and representation in digital devices and computers.	Understand
C412.2	Determine the role of image transforms in representing, highlighting, and modifying image features.	Apply
C412.3	Interpret the mathematical principles in digital image enhancement and apply them in spatial domain and frequency domain	Understand
C412.4	Understand various methods for segmenting image and identifying image components	Understand
C412.5	Summarize different reshaping operations on the image.	Understand
C412.6	Apply image representation techniques that enable encoding and decoding images. Describe the architecture, hardware details and memory organization of 8051 microcontroller.	Apply
Cellular & Mobile Communications(20A04703c)		
C413.1	Know about cell coverage for signal and traffic, diversity techniques and mobile antennas by the use of Engineering Mathematics	Understand
C413.2	Explain impairments due to multipath fading channel, fundamental techniques to overcome different fading effects, frequency management, Channel assignment and types of handoff	Understand
C413.3	Apply concepts to solve problems on mobile antennas and cellular systems	Apply
C413.4	Analyze Co-channel and Non Co-channel interferences, different Hand-offs and dropped call rates	Analyse
C413.5	Evaluate performance of dropped call rate and false alarm rate	Evaluate
C413.6	Compare different handoffs	Analyse
Management Science(20A52701b2)		
C414.1	Discuss the basic concepts of management in modern contexts.	Analyse
C414.2	Analyse the organization chart & structure for an enterprise.	Evaluate
C414.3	Demonstrate production and marketing aspects.	Remember

C414.4	Apply Managerial and operative functions of HRM	Apply
C414.5	Formulate strategies for successful completion of the project	Apply
C414.6	Understand modern management techniques	Evaluate
Cost Effective Housing Techniques (20A01704)		
C415.1	Interpret about the housing scenario and housing financial systems of urban poor	Understand
C415.2	Recite the different innovative cost effective construction techniques	Remember
C415.3	Restate the alternative building materials for low cost housing	Remember
C415.4	Illustrate the traditional practices of rural housing	Apply
C415.5	Paraphrase the repair and restore action of Natural disaster non engineered buildings	Understand
C415.6	Explore knowledge on low cost infrastructure services	Apply
Cyber Security(20A05705a)		
C416.1	Classify the cyber crimes and understand the Indian ITA 2000	Understand
C416.2	Analyse the vulnerabilities in any computing system and find the solutions	Analyse
C416.3	Predict the security threats of the future	Apply
C416.4	Investigate the protection mechanisms	Apply
C416.5	Design security solutions for organizations	Create
C416.6	Design security solutions for Social media marketing	Create
Industrial IoT & Automation (20A04707)		
C417.1	Choose the sensors and actuators for an IoT application	Understand
C417.2	Select protocols for a specific IoT application	Remember
C417.3	Utilize the cloud platform and APIs for IoT application	Analyse
C417.4	Experiment with embedded boards for creating IoT prototypes	Analyse
C417.5	Design a solution for a given IoT application	Understand
C417.6	Simulation of PLC to understand the process control concept	Understand