GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY
Department of Electronics and Communication Engineering

Course Outcomes

Batch: 2022-26 **A.Y: 2022-23**

Course Outcomes (I Year- I Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Linear Algebra and Calculus (22A0001T)		
C111.1	Solve the system of linear equations to find the eigen values and eigenvectors	Apply
C111.2	Explain the mean value theorems to analyze the behavior of functions and translate the given function as a series of Taylor's and Maclaurin's with remainders.	Understand
C111.3	Apply the technique of partial differentiation to find the Jacobian and the extreme values of functions of several variables.	Apply
C111.4	Apply the techniques of multiple integrals to find the areas and volumes.	Apply
C111.5	Calculate the values of improper integrals using Beta and Gamma functions.	Understand
Applied Physics (22A0001T)		
C112.1	Describe the importance of Interference, Diffraction and Polarization in the Engineering	Understand
C112.2	Demonstrate the properties of lasers and fiber optics to various applications in science	Understand
C112.3	Explain the fundamental concepts and theory related to Dielectric and Magnetic Materials	Remember
C112.4	Illustrate the functioning of Semiconductors in Electronic Devices	Understand
C112.5	Discuss the principles and theory related to Superconductors and explore their properties	Understand
C112.6	Explain the Electromagnetic wave propagation and its power in Non-conducting medium	Understand
Communicative English (22A0013T)		
C113.1	The Learner will able to speak and write grammatically accurate sentences through applications of principles of English grammar	Apply
C113.2	The Learner acquires the ability to understand the academic text from multiple dimensions employing ethical and logical reasoning based on accurate comprehension	Understand
C113.3	The Learner gains evaluation potential by employing standard reading strategies to grasp the core essence and spirit of the text.	Evaluate
C113.4	The Learner will gain mastery on writing skills through the application of relevant guidelines.	Analyze
C113.5	The Learner imbibes spoken skills through consistent practice of functions English Expressions.	Apply
C Programming & Data Structures (22A0518T)		
C114.1	Interpret the basic concepts of C-programming language	Understand
C114.2	Develop programs using Functions, Pointers, Strings, Structures and Unions	Apply
C114.3	Interpret the basic concept of Data Structures and perform operations on different types of Linked lists	Understand
C114.4	Interpret the concept of Stack and Queue and make use of them in real world problems	Apply
C114.5	Illustrate the concept of Trees and Graphs	Understand
C114.6	Demonstrate programs on Sorting and Searching	Apply

Engineering Drawing (22A0302T)		
C115.1	Explain the principles of Engineering Graphics and sketch the various curves used.	Understand
C115.2	Draw the Projections of points in different Quadrants.	Understand
C115.3	Draw the projections of lines and planes in auxiliary planes.	Understand
C115.4	Draw the projections of solids in different orientations.	Apply
C115.5	Draw the sectional views of simple solids in different orientations.	Apply
C115.6	Draw the sectional development of simple solids in different orientations.	Apply
Communicative English Lab (22A0014P)		
C116.1	Analyze the English speech sounds, stress, and intonation for better Listening practice.	Analyze
C116.2	Apply communication skills through various language learning activities.	Apply
C116.3	Evaluate and examine technical comprehensions passages from different dimensions.	Evaluate
C116.4	Application of writing skills through design and preparation of professional Resume & Email.	Apply
C116.5	Build the ability of using language effectively to face interviews and public speaking.	Apply
Applied Physics Lab (22A0008P)		
C117.1	Determine the radius of a curvature and / or thickness of thin wire using microscope with the help of interference concept	Apply
C117.2	Evaluate the wavelength of various colors of grating and also dispersive power of prism by spectrometer using the principle of diffraction	Analyze
C117.3	Evaluate wavelength of light source and particle size with He-Ne laser using the principle of diffraction Estimate the numerical aperture of a given optical fiber and hence to find its acceptance angle	Apply
C117.4	Estimate the dielectric constant of a given material	Analyze
C117.5	Examine the hysteresis loss of the magnetic material by B- H curve and Estimate the magnetic field of a circular coil carrying current along the axis	Apply
C117.6	Measure the type of conductivity ,hall voltage and hall coefficient of a given semiconductor using hall effect and also measure the energy band gap of a given semiconductor material	Analyze
C Programming & Data Structures Lab(22A0519P)		
C118.1	Develop programs using the basic concepts of C-programming language	Apply
C118.2	Develop programs using Functions, Pointers, Strings, Structures and Unions	Apply
C118.3	Make use of Stacks and Queues in real world problems	Apply
C118.4	Develop programs involving various operations on Linked lists	Apply
C118.5	Develop programs using Trees and graphs	Apply
C118.6	Demonstrate programs on Sorting and Searching	Apply

GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY
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Course Outcomes

Batch: 2021-25 **A.Y: 2022-23**

Course Outcomes (II Year- I Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Complex Variable and Transforms (20A54302)		
C211.1	Find the analytic functions using C-R equations, the image using conformal mapping and bi-linear transformation.	Apply
C211.2	Use Cauchy's theorem, Cauchy's integral formula and Cauchy's residues theorem to evaluate complex integrations and expansion of complex functions using Taylor's and Laurent's series.	Apply
C211.3	Define Laplace and inverse Laplace transforms of various functions and solve ordinary differential equations using Laplace transform.	Apply
C211.4	Determine Fourier series of periodic functions in a given interval and Parseval's formula- Complex form of Fourier series.	Apply
C211.5	Find the Fourier Transform of certain functions.	Understand
C211.6	Solve the difference equations using Z-Transforms.	Apply
Signals and Systems (20A04301T)		
C212.1	Describe the mathematical representation and description of continuous-time and discrete time signals and systems.	Understand
C212.2	Discuss the mathematical representation of continuous and discrete time signals using Fourier series.	Understand
C212.3	Illustrate the spectral characteristics of continuous-time aperiodic signals using Fourier Transform.	Apply
C212.4	Demonstrate the Continuous-time signals and systems using Laplace transforms.	Apply
C212.5	Analyze the filter characteristics and physical realization of LTIsystem.	Analyze
C212.6	Outline the discrete-time signals and systems using DTFT and Z- transforms.	Analyze
Electrical Engineering (20A02303T)		
C213.1	Able to acquire knowledge about how to determine the transient response of R-L, R-C, R-L-C series circuits for D.C and A.C excitations.	Apply
C213.2	Able to solve the problems on R L C circuits for different excitations using different approaches.	Apply
C213.3	Analyze the complex circuits of R L C circuits	Analyze
C213.4	Able to solve the problems the e.m.f. generated on DC Generator	Apply
C213.5	Able to acquire knowledge about how to determine the efficiency and regulation of single phase transformer.	Apply
C213.6	Able to acquire knowledge about how to determine the efficiency and regulation synchronous machine.	Apply
Analog Circuits (20A04302T)		
C214.1	Understand the characteristics of differential amplifiers, feedback and power amplifiers.	Understand
C214.2	Examine the frequency response of multistage and differential amplifier circuits using BJT & MOSFETs at low and high frequencies.	Apply
C214.3	Investigate different feedback and power amplifier circuits based on the application	Apply
C214.4	Derive the expressions for frequency of oscillation and condition for oscillation of RC and LC oscillator circuits	Create
C214.5	Evaluate the performance of different tuned amplifiers and multivibrators	Evaluate

C214.6	Design analog circuits for the given specifications and application	Create
Managerial Economics & Financial Analysis (20A52301)		
C215.1	Explain the role and responsibilities of a managerial economist in modern business scenario.	Understand
C215.2	Predict the demand of a product by using demand forecasting methods.	Apply
C215.3	Calculate the Break Even Point (BEP) with the help of production and cost analysis.	Apply
C215.4	Explain about competitive market structures and business economic environment.	Understand
C215.5	Intrepet the financial statements to know financial position of the firm.	Apply
C215.6	Discuss the sources of capital and allocation of funds for business undertaking.	Understand
Simulation Lab (20A04301P)		
C216.1	Explain to simulate the signals and sequences.	Understand
C216.2	Compute the Fourier transform of a given signal and plot its magnitude and phase spectrum.	Understand
C216.3	Illustrate Sampling theorem,	Apply
C216.4	Interpret the Filter characteristics.	Apply
C216.5	Calculate the parameters of a Complex Gaussian noise.	Analyze
C216.6	Examine to plot the pole-zero diagram in S-plane/Z-plane of given signal/sequence.	Analyze
Analog Circuits Lab (20A04302P)		
C217.1	Know about the usage of equipment/components/software tools used to conduct the experiments in analog circuits	Understand
C217.2	Conduct the experiment based on the knowledge acquired in the theory about various analog circuits using BJT/MOSFET	Understand
C217.3	Analyze the given analog circuit to find required important metrics of it theoretically	Analyze
C217.4	Draw the relevant graphs between important metrics of the system from the observed measurements.	Understand
C217.5	Compare the experimental results with that of theoretical ones and infer the conclusions	Evaluate
C217.6	Design the circuit for the given specifications	Create
Universal Human Values (20A52201)		
C218.1	Understand the need, concept and content of value-education individual's life and modifies their aspiration for happiness & prosperity.	Understand
C218.2	Comprehend the term self-exploration and its application for self-evaluation and development.	Understand
C218.3	Reconstruct the concepts about different values and discriminate between them.	Understand
C218.4	Understand the concept of co-existence & evaluate the program to ensure self regulation.	Understand
C218.5	Identify the holistic perception of harmony at level of self, family, society, nature.	Understand
C218.6	Apply professional ethics in their future profession & contribute for making a value based society	Remember

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Batch: 2020-24 **A.Y: 2022-23**

Course Outcomes (III Year- I Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Control Systems Engineering (20A04501)		
C311.1	Determine the transfer function for a given system using block diagram and signal flow graph methods	Apply
C311.2	Formulate Mathematical Model for physical systems and control systems concepts	Evaluate
C311.3	Compute the time response of systems and steady state errors	Evaluate
C311.4	Determine the absolute and relative stability of a system using RH Criterion and root loci concepts	Apply
C311.5	Design closed-loop control system to satisfy dynamic performance specifications using frequency response	Analyse
C311.6	Describe the state variable representation of physical system and solve the state equation	Understand
Digital Signal Processing (20A04502T)		
C312.1	Understand the basic concepts of discrete-time signals and systems, classify systems based on their properties.	Understand
C312.2	Determine the frequency response for the given LTI systems using difference equations and also plot its pole-zero.	Apply
C312.3	Analyze discrete-time signals and systems using discrete time Fourier transform (DFT) and Fast Fourier transform (FFT).	Analyze
C312.4	Design and implement digital filters (FIR & IIR) for the given specifications	Design
C312.5	Compare the digital filters and also realize the various filters for different structures in discrete-time systems	Evaluate
C312.6	Understand and develop the sampling rate conversion techniques, find the quantization errors in digital signal processing.	Understand
Microprocessors and Microcontrollers (20A04503T)		
C313.1	Explain the Architecture, Register sets and Memory organization of 8086 Microprocessors.	Understand
C313.2	Understand the Instruction set, Addressing modes and Assembler directives of 8086 Microprocessor	Apply
C313.3	Demonstrate memory and I/O interfacing with various peripheral devices with 8086 Microprocessor	Analyze
C313.4	Explain the Architecture and features of 8051 Microcontroller.	Design
C313.5	Explain the Interfacing of I/O peripherals of 8051 Microcontroller.	Evaluate
C313.6	Develop Various Programs of 8086 Microprocessor & 8051 Microcontroller.	Understand
Computer Architecture & Organization (20A04504a)		
C314.1	Understand the basics of instructions sets and their impact on processor design.	Understand
C314.2	Understand the Instruction set, Addressing modes and Assembler directives of 8086 Microprocessor.	Apply
C314.3	Evaluate performance in designing and constructing a computer processor	Evaluate

	including memory.	
C314.4	Design a pipeline for consistent execution of instructions with minimum hazards.	Apply
C314.5	Understanding various representations of numbers stored in digital computers.	Understand
C314.6	Applying various Arithmetic operations with examples using algorithms	Apply
Java Programming (20A05505a)		
C315.1	Understand the syntax, semantics of Java Programming Language and apply object-oriented programming principles to real world problems	Understand
C315.2	Apply code reusability through inheritance, packages and interfaces	Apply
C315.3	Develop User defined Exceptions in real world problems	Apply
C315.4	Develop applications by using parallel streams for better performance.	Remember
C315.5	Use multithreading and collection framework for real world problems	Apply
C315.6	Build GUI using applets, swings and access the database using JDBC	Apply
Digital Signal Processing Lab (20A04502P)		
C316.1	Demonstrate DSP and its applications using MATLAB software	Understand
C316.2	Examine the frequency response of discrete-time LTI systems	Apply
C316.3	Designs of IIR, FIR digital filters for the given specifications also observe the frequency response.	Evaluate
C316.4	Learn the architecture details of floating point DSPs.	Apply
C316.5	Implement DSP algorithms in software using CCS with DSP floating point Processor.	Understand
C316.6	Analyze the basic signals and also find the discrete Fourier transform (DFT) for discrete-time signals/sequences.	Apply
Microprocessors and Microcontrollers Lab (20A04503P)		
C317.1	Design and implement programs on 8086 microprocessor	Understand
C317.2	To provide solid foundation on interfacing the external devices to the processor according to the user requirements	Apply
C317.3	Design and implement 8051 microcontroller based systems	Evaluate
C317.4	To Understand the concepts related to I/O and memory interfacing	Apply
C317.5	To learn about interfacing stepper motor working and its interfacing	Understand
C317.6	To learn about generation of waveforms using microcontroller	Apply
PCB Design and Prototype development (20A04509)		
C318.1	Demonstrate the performance of PCB Design and Prototype Development.	Apply
C318.2	Analyze the Fundamentals of basic electronics: Component identification, Component symbols & their footprints	Analyze
C318.3	Calculate the PCB layers, Design rule checking, Track width selection, Component selection, Routing and completion of the design.	Apply
C318.4	Describe the various Types of PCB, Classes of PCB Design Terminology in PCB Design	Understand
C318.5	Analyze the various PCB Design Flow, Placement and routing, Steps involved in layout design, Artwork generation Methods - manual and CAD.	Create
C318.6	Evaluate General design factors for digital and analogue circuits, Layout and Artwork making for Single-side, double-side and Multilayer Boards, Design for manufacturability, Design-specification standards	Evaluate

GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY
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Course Outcomes

Batch: 2019-23 **A.Y: 2022-23**

Course Outcomes (IV Year- I Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Microwave And Optical Communications (19A04701T)		
C411.1	Understand the wave propagation in waveguides, principle of operation of optical sources, detectors, and microwave active and passive devices.	Understand
C411.2	Apply the boundary conditions of the waveguides to solve for field expressions in waveguides	Apply
C411.3	Derive the field expressions for different modes of the waveguides, and Scattering matrix for passive microwave devices	Evaluate
C411.4	Differentiate Linear bean tubes and crossed field tubes in terms of operation and performance	Apply
C411.5	Remember various types of fibers, modes, configurations and signal degradations.	Evaluate
C411.6	Analyze signal degradation in optical fibers and compare the performance of various optical sources and detectors.	Understand
VLSI Design (19A04702T)		
C412.1	Explain the CMOS fabrication flow and Basic Electrical Properties of CMOS Circuits	Understand
C412.2	Apply the design Rules to draw the Stick diagrams and layout of a given CMOS circuits	Apply
C412.3	Estimate the sheet resistance, square capacitance and propagation delays in CMOS• circuits and Scaling of MOS Circuits	Understand
C412.4	Analyze the behavior of amplifier circuits with various loads	Analyze
C412.5	Analyze the behavior of static and dynamic logic circuits	Analyze
C412.6	Analyze the various test generation methods for static and dynamic CMOS circuits	Analyze
Embedded Systems (19A04703c)		
C413.1	Explain the Basic concepts of Embedded systems.	Understand
C413.2	Explain the role of firmware, and other system components to design the quality embedded system.	Understand
C413.3	Explain the interfacing of various communication and I/O devices to an embedded system	Understand
C413.4	Differentiate ISRs & device driver functions	Understand
C413.5	Explain the mechanism to create multiple tasks and IPC functions to enable communication of signals, semaphores and messages from ISRs.	Understand
C413.6	Build RTOS based embedded system using Keil RTX embed platform	Create
Cyber Security (19A05704b)		
C414.1	Illustrate the broad set of technical, social & political aspects of Cyber Security and security management methods to maintain security protection	Analyse
C414.2	Assess the vulnerabilities and threats posed by criminals, terrorist and	Evaluate

	nation states to national infrastructure.	
C414.3	Identify the nature of secure software development and operating systems	Remember
C414.4	Demonstrate the role security management in cyber security defense	Apply
C414.5	Modify the legal and social issues at play in developing solutions.	Apply
C414.6	Elaborate on the Emerging topics.	Evaluate
Management Science (19A52701b)		
C415.1	Discuss the basic concepts of management in modern contexts.	Analyse
C415.2	Analyse the organization chart & structure for an enterprise.	Evaluate
C415.3	Demonstrate production and marketing aspects.	Remember
C415.4	Apply Managerial and operative functions of HRM	Apply
C415.5	Formulate strategies for successful completion of the project	Apply
C415.6	Understand modern management techniques	Evaluate
Microwave & Optical Communications Lab (19A04701P)		
C416.1	Identify and demonstrate the working of various microwave components.	Understand
C416.2	Describe the characteristics of directional couplers	Apply
C416.3	Determine the losses of optical fiber links	Analyze
C416.4	Analyze the characteristics of reflex klystron by conducting experiments and measuring various parameters	Analyze
C416.5	verify the negative characteristics of Gunn diode oscillator	Understand
C416.6	determine the numerical aperture of given optical fiber	Understand
VLSI Laboratory (19A04702P)		
C417.1	Explain the develop of HDL source code for the given problem/experiment	Understand
C417.2	Analyze the obtained results of the given experiment/problem	Analyze
C417.3	Simulate the given circuit with suitable simulator and verify the results	Understand
C417.4	Explain how to use FPGA/CPLD hardware tools in the lab	Understand
C417.5	Design and implement the experiments using FPGA/CPLD hardware tools	Create
C417.1	Analyze the design summary of hardware used for the given experiments using FPGA/CPLD	Analyze