



Course Outcomes

Batch: 2022-26

A.Y: 2022-23

Course Outcomes (I Year- II Sem)		
S. No	Course Outcomes Statement	Taxonomy
<b>Differential Equations and Vector Calculus (22A0002T)</b>		
C121.1	Solve the linear differential equations with constant coefficients by appropriate method.	Understand
C121.2	Apply a range of techniques to find solutions of standard partial differential equations	Apply
C121.3	Apply the method of separation of variables to find the solution of one-dimensional wave equations.	Apply
C121.4	Calculate gradient, divergence, curl of point functions and directional derivative of scalar point function.	Understand
C121.5	Apply Green's, Stokes and Divergence theorem in the evaluation of line, double and triple integrals.	Apply
<b>Chemistry (22A0006T)</b>		
C122.1	Apply the molecular orbital theory for Diatomic molecules to predict the structure and bonds	Apply
C122.2	Explain the breaking of orbital degeneracy in transition metal complexes due to the presence of ligands.	Understand
C122.3	Demonstrate the conductors, semiconductors and insulator by using band theory	Understand
C122.4	Describe the basic principles of different batteries , potentiometry, conductometry,	Understand
C122.5	understand the mechanism and applications of different polymers in electronic devices.	Understand
C122.6	Apply the electromagnetic radiation to the spectroscopy methods for the analysis of Different compounds	Apply
<b>Fundamentals of Electrical Circuits (22A0201T)</b>		
C123.1	Explain types of networks and Network Reduction Techniques	Understand
C123.2	Analyze Magnetic Circuits and Coupled circuits.	Analyze
C123.3	Analysis of electrical networks using graph theory and duality and dual networks	Analyze
C123.4	Analyze RLC circuits with AC Excitation	Analyze
C123.5	Analyze the power, voltage and current for different network configurations.	Analyze
C123.6	Apply theorems for finding the solutions of network problems	Apply
<b>Electronic Devices &amp; Circuits (22A0401T)</b>		
C124.1	Describe the principle of operation and characteristics of Semiconductor diodes, BJTs and MOSFETs	Understand
C124.2	Design the diode applications such as rectifiers, clippers and clampers.	Apply
C124.3	Design amplifiers using BJTs, and MOSFETs.	Apply
C124.4	Compare the Diodes, BJTs and MOSFETs by construction, operation and applications	Analyze
C124.5	Outline performance of biasing circuits of BJTs and MOSFETs	Analyze
C124.6	Solve the problems related to Semiconductor diodes, BJTs, and MOSFETs	Apply

<b>Chemistry Lab (22A0011P)</b>		
C125.1	Determine the cell constant and conductance of solutions and the strength of an acid by conductometry	Understand
C125.2	Synthesize of advanced polymer materials	Create
C125.3	Measure the strength of an acid present in secondary battery and Ferrous ion using volumetric analysis	Remember
C125.4	Identify the potentials and EMFs of solutions by Potentiometry	Apply
C125.5	Find some organic and inorganic compounds by instrumental methods	Remember
C125.6	Synthesize of nano materials by simple methods	Create
<b>Fundamentals of Electrical Circuits Lab (22A0202P)</b>		
C126.1	Analyze network parameters and types of networks	Analyze
C126.2	Analyze RLC circuits and coupled circuits	Analyze
C126.3	Analyze Resonance for different circuits.	Analyze
C126.4	Apply theorems for finding the solutions of network problems	Apply
C126.5	Apply Maximum power transfer theorems for finding the solutions of DC & AC Networks	Apply
C126.6	Analyze coupled circuits	Analyze
<b>Electronic Devices &amp; Circuits Lab (22A0402P)</b>		
C127.1	Understand the operation and characteristics of basic electronic devices	Apply
C127.2	Design the Diode applications like Rectifiers, Clippers and Clampers for the given specifications	Apply
C127.3	Analyze the Characteristics of Diodes, BJTs, MOSFET	Apply
C127.4	Design BJT based amplifiers for the given specifications	Apply
C127.5	Design MOSFET based amplifiers for the given specifications	Apply
C127.6	Simulate Diode, BJT and MOSFET applications in PSPICE /Multisim	Apply
<b>Electronics Workshop (22A0403P)</b>		
C128.1	Describe the electronic workshop tools	Remember
C128.2	Explain the electronic measuring instruments	Understand
C128.3	Identify the discrete electronic components and IC's	Remember
C128.4	Demonstrate and examine the electronic components and IC's	Apply
C128.5	Examine the signal in Cathode Ray Oscilloscope	Apply
C128.6	Describe the EDA Tool	Understand
<b>IT Workshop (22A0502P)</b>		
C129.1	Apply the Disassemble and Assemble a Personal Computer and prepare the computer ready to use	Apply
C129.2	Analyze the Documents using Word processors and Prepare spreadsheets for calculations using excel sheets	Analyze
C129.3	Analyze the Slide presentations using the presentation too	Analyze
C129.4	Illustrate the Interconnect of two or more computers for information sharing.	Apply
C129.5	Analyze the Access Internet and Browse it to obtain the required informaton.	Analyze
C129.6	illustrate the Latex and its installation and different IDEs	Apply



# GEETHANJALI INSTITUTE OF SCIENCE & TECHNOLOGY

Department of Electronics and Communication Engineering

## Course Outcomes

Batch: 2021-25

A.Y: 2022-23

Course Outcomes (II Year- II Sem)		
S. No	Course Outcomes Statement	Taxonomy
<b>Probability Theory &amp; Stochastic Processes (20A54403)</b>		
C221.1	Understanding the concepts of Probability, Random Variables, Random Processes and their characteristics	Understand
C221.2	Learn how to deal with multiple random variables, conditional probability, joint distribution and statistical independence.	Apply
C221.3	Formulate and solve the engineering problems involving random variables	Apply
C221.4	Formulate and solve the engineering problems involving random processes.	Apply
C221.5	Analyze various probability density functions of random variables.	Evaluate
C221.6	Derive the response of linear system for Gaussian noise and random signals as inputs.	Understand
<b>Digital Logic Design (20A04303T)</b>		
C222.1	Understand the properties of Boolean algebra, other logic operations, and minimization of Boolean functions	Understand
C222.2	Analyze the concepts of minimization of Boolean functions using karnaugh map	Analyze
C222.3	Analyze the Combinational logic circuits	Analyze
C222.4	Analyze the Sequential logic circuits	Analyze
C222.5	Realization of FSM and PLDs	Understand
C222.6	Develop digital circuits using HDL and verilog	Analyze
<b>EM Waves and Transmission Lines (20A04401)</b>		
C223.1	Describe vector algebra, coordinate systems ,fundamentals of electrostatic fields, electric field intensity duo to point, line, sheet and volume charges	Understand
C223.2	Calculate magnetic field intensity using Biot-Savart's law and Ampere's law	Apply
C223.3	Derive Maxwell's equations for time varying fields.	Apply
C223.4	Analyze electric and magnetic fields in single and double media. Analyze boundary conditions of EM fields for dielectric-dielectric, dielectric-conductor, propagation of EM field in good conductor & dielectric.	Analyse
C223.5	Describe the propagation of EM waves that incident obliquely and normally on a perfect dielectric and conductor.	Understand
C223.6	Analyze the concept of transmission lines & their applications.	Analyse
<b>Communication Systems (20A04402T)</b>		
C224.1	Explain various modulation and demodulation techniques in communication systems	Understand
C224.2	Describe different types of noise and predict it effect on various analog communication systems.	Analyze
C224.3	Explain various pulse modulation schemes – PAM, PCM, Delta Modulation, DPCM	Understand
C224.4	Describe baseband pulse transmission system	Understand
C224.5	Analyze the probability of error in Digital Pass band Transmission systems.	Analyze
C224.6	Compare the performance of the different digital modulation techniques- BPSK, QPSK, BFSK and M-array system	Analyze
<b>Linear and Digital IC Applications (20A04403T)</b>		
C225.1	Explain the Classification, building blocks and characteristics of linear integrated circuits.	Understand

C225.2	Discuss the various applications of linear and Non- linear OP-AMP.	Understand
C225.3	Solve the application based problems using Active Filters, Timer and Phase Locked Loops.	Apply
C225.4	Analyze various applications based circuits of Voltage Regulator and Converters.	Analyze
C225.5	Design the circuits using CMOS logic.	Create
C225.6	Design of various Combinational and Sequential Circuits.	Create
<b>Soft Skills (20A52401)</b>		
C226.1	Memorize various elements of effective communicative skills.	Remember
C226.2	Interpret people at the emotional level through emotional intelligence.	Understand
C226.3	Apply critical thinking skills in problem solving.	Apply
C226.4	Analyze the needs of an organization for team building.	Analyze
C226.5	Judge the situation and take necessary decisions as a leader.	Evaluate
C226.6	Develop social and work-life skills as well as personal and emotional well-being.	Create
<b>Digital Logic Design Lab (20A04303P)</b>		
C227.1	Understand the properties of Boolean algebra, other logic operations, and minimization of Boolean functions	Understand
C227.2	Analyze the concepts of minimization of Boolean functions using karnaugh map	Analyze
C227.3	Analyze the Combinational logic circuits	Analyze
C227.4	Analyze the Sequential logic circuits	Analyze
C227.5	Realization of FSM and PLDs	Understand
C227.6	Develop digital circuits using HDL and verilog	Analyze
<b>Communication Systems Lab (20A04402P)</b>		
C228.1	Explain the usage of equipment/components used to conduct the experiments in analog and Digital modulation techniques.	Understand
C228.2	Demonstrate the experiment about various modulation and demodulation schemes to find the important metrics of the communication system experimentally.	Understand
C228.3	Analyze the performance of analog modulation scheme to find the important metrics of the system theoretically.	Analyze
C228.4	Analyze the performance of digital modulation scheme to find the important metrics of the system theoretically.	Analyze
C228.5	Draw the relevant graphs between important metrics of the system from the observed measurements.	Apply
C228.6	Compare the experimental results with that of theoretical ones and infer the conclusions.	Analyze
<b>Linear and Digital IC Applications Lab (20A04403P)</b>		
C229.1	Explain the Classification, building blocks and characteristics of linear integrated circuits.	Understand
C229.2	Discuss the various applications of linear and Non- linear OP-AMP.	Understand
C229.3	Solve the application based problems using Active Filters, Timer and Phase Locked Loops.	Apply
C229.4	Analyze various applications based circuits of Voltage Regulator and Converters.	Analyze
C229.5	Design the circuits using CMOS logic.	Create
C229.6	Design of various Combinational and Sequential Circuits.	Create



Course Outcomes

Batch: 2020-24

A.Y: 2022-23

Course Outcomes (III Year- II Sem)		
S. No	Course Outcomes Statement	Taxonomy
<b>Antennas &amp; Microwave Engineering (20A04601T)</b>		
C321.1	Learn about the antenna's basics and wire antennas.	Remember
C321.2	Gain knowledge on few types of antennas, their operation and applications.	Analyse
C321.3	Understand the uses of antenna arrays and analyze waveguides and resonators	Understand
C321.4	Analyze various microwave components	Analyse
C321.5	Understand the principles of different microwave sources..	Understand
C321.6	Gain knowledge on microwave semiconductor devices and microwave measurements.	Analyse
<b>VLSI Design (20A04602T)</b>		
C322.1	Describe Electrical Properties of MOS and BiCMOS Circuits	Remember
C322.2	Determine Lambda( $\lambda$ )-based design rules for wires, contacts and Transistors	Apply
C322.3	Calculate Driving large Capacitive Loads, Wiring Capacitances for CMOS	Apply
C322.4	Design & develop for Full-custom and Semi-custom devices	Create
C322.5	Describe testing combinational logic –testing sequential logic	Understand
C322.6	Analyze practical design for test guide lines – scan design techniques	Analyse
<b>Communication Networks (20A04603T)</b>		
C323.1	Understand the basics of data communication, networking, internet and their importance.	Understand
C323.2	Analyse the services and features of various protocol layers in data networks.	Analyse
C323.3	Differentiate wired and wireless computer networks	Understand
C323.4	Analyse TCP/IP and their protocols.	Analysis
C323.5	Recognize the different internet devices and their functions.	Understand
C323.6	Student shall understand the principles and operations behind various application layer protocols like HTTP, SMTP, FTP.	Understand
<b>Embedded System Design (20A04604b)</b>		
C324.1	Describe the History of embedded systems, Classification of embedded systems based on generation and complexity, Purpose of embedded systems.	Understand
C324.2	Describe Core of the embedded system-general purpose and domain specific processors, ASICs, PLDs, COTs, I/O components.	Understand
C324.3	Describe the Onboard communication interfaces-I2C, SPI, CAN, parallel interface; External communication interfaces-RS232 and RS485, USB, infrared, Bluetooth, Wi-Fi, ZigBee, GPRS, GSM.	Understand
C324.4	Describe the Embedded firmware design approaches-super loop based approach, operating system based approach	Understand

C324.5	Describe the Operating system basics, types of operating systems, tasks, process and threads, multiprocessing and multitasking, task scheduling	Understand
C324.6	Describe the Task Synchronization: Task Communication /Synchronization Issues, Task Synchronization Techniques	Understand
<b>Principles of Operating Systems (20A05605a)</b>		
C325.1	Describe the fundamental organization of a computer systems	Understand
C325.2	Explain about Operating systems functions	Understand
C325.3	Differentiate between process and thread and classify scheduling algorithm	Understand
C325.4	Determine Synchronization and deadlock problems	Apply
C325.5	Describe about various memory management schemes	Understand
C325.6	Explain file systems concepts and I/O management	Understand
<b>Antennas &amp; Microwave Engineering Lab (20A04601P)</b>		
C326.1	Understand the working, different microwave components and sources in a microwave bench	Understand
C326.2	Verify the characteristics of various microwave components using microwave bench setup	Create
C326.3	Understand the Radiation pattern of different Antennas	Understand
C326.4	Verify the bandwidth and power of various Antennas	Create
C326.5	Design and study of various antennas	Create
C326.6	Analyze performance characteristics of Antennas	Analyse
<b>VLSID Lab (20A04602P)</b>		
C327.1	Understand how to use Microwind software tools in the lab.	Understand
C327.2	Sketch the different circuits by using CMOS and perform AC, DC analysis.	Apply
C327.3	Apply Verilog source code for the given problem/experiment, and simulate the given circuit with suitable simulator and verify the results.	Evaluate
C327.4	Analyze the CMOS inverter, MOS amplifiers and differential amplifier results of the given experiment/problem.	Apply
C327.5	Assess the characteristics of NMOS and PMOS transistors and find the parametric sweep.	Understand
C327.6	Design and verify the experiments in 180nm technology also draw the layout diagrams.	Apply
<b>Communication Networks Lab (20A04603P)</b>		
C328.1	Identify and use various networking components Understand different transmission media and design cables for establishing a network	Understand
C328.2	Implement any topology using network devices	Create
C328.3	Analyze performance of various communication protocols.	Analyze
C328.4	Understand the TCP/IP configuration for Windows and Linux	Understand
C328.5	Compare routing algorithms	Analyze
C328.6	Learn the major software and hardware technologies used on computer networks	Analyze



Course Outcomes

Batch: 2019-23

A.Y: 2022-23

Course Outcomes (IV Year- II Sem)		
S. No	Course Outcomes Statement	Taxonomy
<b>Advanced 3G and 4G Wireless Mobile Communications (19A04801a)</b>		
C421.1	Describe Introduction to 3G and 4G standards, Tele traffic Theory, Large Scale Path Loss.	Understand, Apply
C421.2	Determine eSmall Scale Fading and Multipath, Diversity Techniques	Apply
C421.3	Describe Code Division Multiple Access: Introduction to CDMA, spread spectrum and LFSR	Understand, Apply
C421.4	Multiple Input Multiple Output Systems, Orthogonal Frequency Division Multiplexing.	Analyze
C421.5	Describe the Orthogonal Frequency Division Multiplexing	Understand
C421.1	MIMO-OFDM,3G and 4G Standards, WCDMA, LTE/ LTE Advanced and WiMAX.	Understand, Apply and Analyze
<b>Disaster Management (19A01802a)</b>		
C422.1	To know about the natural hazards and its management	Understand
C422.2	To know about the fire hazards and solid waste management	Understand
C422.3	To know about the regulations of building codes and land use planning related to risk and vulnerability	Understand
C422.4	To know about the technological aspects of disaster management	Understand
C422.5	To understand about the factors for disaster reduction	Understand
C422.6	To impart the education related to risk reduction in schools and communities	Understand
<b>Project (19A04803)</b>		
C423.1	Identify the problem of social relevance to be solved.	Understand
C423.2	Summarize the existing technology, its merits and demerits used to solve the problem.	Analyze
C423.3	Design the appropriate solution using the sophisticated hardware or software.	Create
C423.4	Compare the results of the proposed solution with the existing solution.	Evaluate
C423.5	Demonstrate the project along with the complete documentation report of the project.	Evaluate
C423.6	Show the interpersonal, professional and work with team skills.	Apply