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

Course Outcomes

Batch: 2021-25 **A.Y: 2021-22**

Course Outcomes (I Year- II Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Differential Equations and Vector Calculus (20A54201)		
C121.1	Solve the linear differential equations with constant coefficients	Understand
C121.2	Solve simultaneous linear differential equations and Formulate and solve the higher order differential equation by analyzing physical situations.	Understand
C121.3	Form the PDE and solve the first order linear partial differential equations	Understand
C121.4	Calcify the PDE and apply the technique of PDE to solve the One dimensional wave and Heat equations with initial & boundary conditions	Remember
C121.5	Find the gradient of scalar point functions, divergence and curl of vector point functions.	Remember
C121.6	Apply Green's, Stokes and Gauss's divergence theorems to evaluate double and triple integrals.	Apply
Chemistry (20A51101T)		
C122.1	Describe Planck's quantum theory, dual nature of matter, Schrodinger equation, molecular orbital Theory and molecular orbital energy level diagram of different molecules	Understand
C122.2	Explain Crystal field theory, splitting in octahedral and tetrahedral geometry and the magnetic behaviour, Oxidation state, coordination and colour of complexes.	Understand
C122.3	Explain the principle of Band diagrams of conductors, superconductor, semiconductors and insulator and nonmaterial	Understand
C122.4	Discuss the principles of electrochemistry in potentiometry, conductometry, battery and electrochemical sensors	Understand
C122.5	Explain polymerization and the preparation, properties, and applications of thermoplastics &thermosetting, elastomers, & conducting polymers	Understand
C122.6	Discuss the different applications of analytical instruments	Understand
C-Programming & Data Structures (20A05201T)		
C123.1	Interpret the basic concepts of C-programming language	Understand
C123.2	Develop programs using Functions, Pointers, Strings, Structures and Unions	Apply
C123.3	Make use of Stacks and Queues in real world problems	Apply
C123.4	Interpret various operations on different types of Linked lists	Understand
C123.5	Illustrate the concept of Trees and Graphs	Understand
C123.6	Demonstrate programs on Sorting and Searching	Apply
Electronic Devices & Circuits (20A04101T)		
C124.1	Recognize the transport phenomena of the charge carriers in a semiconductor	Understand
C124.2	Study the characteristics and operation of p-n junction diode	Understand
C124.3	Study the characteristics operation and applications of Special Diodes	Understand
C124.4	Illustrate diode circuits for different applications such as rectifiers, clippers and clampers	Analyze
C124.5	Design various biasing circuits for BJT and FET	Create
C124.6	Compare the performance of various semiconductor devices	Evaluate
Engineering Workshop (20A03202)		
C125.1	Apply wood working skills in real world applications.	Apply
C125.2	Build different parts with metal sheets in real world applications	Apply

C125.3	Apply fitting operations in various applications.	Apply
C125.4	Apply different types of basic electric circuit connections	Apply
C125.5	Demonstrate soldering and brazing	Apply
C125.6	Repair the punctured tire of bicycle.	Apply
IT Workshop (20A05202)		
C126.1	Disassemble and Assemble a Personal Computer and prepare the computer ready to use.	Apply
C126.2	Install different operating systems in a computer and utilize the features of operating system.	Apply
C126.3	Prepare the Documents using Word processors and LAteX, Prepare spread sheets for calculations using excel and prepare Slide presentations using presentation tool.	Create
C126.4	Install Antivirus software in a computer and use it to check for threats to the computer	Apply
C126.5	Interconnect two or more computers for information sharing.	Apply
C126.6	Access the Internet and Browse it to obtain the required information	Apply
C-Programming & Data Structures Lab (20A05201P)		
C127.1	Develop programs using the basic concepts of C-programming language	Apply
C127.2	Develop programs using Functions, Pointers, Strings, Structures and Unions	Apply
C127.3	Make use of Stacks and Queues in real world problems	Apply
C127.4	Develop programs involving various operations on Linked lists	Apply
C127.5	Develop programs using Trees and Graphs	Apply
C127.6	Demonstrate programs on Sorting and Searching	Apply
Chemistry Lab (20A51101P)		
C128.1	Determine the cell constant and conductance of solutions and the strength of an acid by conductometry	Understand
C128.2	Synthesize of advanced polymer materials	Understand
C128.3	Measure the strength of an acid present in secondary battery and Ferrous ion using volumetric analysis	Understand
C128.4	Determine the potentials and EMFs of solutions by Potentiometry	Understand
C128.5	Identify some organic and inorganic compounds by instrumental methods	Remember
C128.6	Synthesize of nano materials by simple methods	Understand
Electronic Devices & Circuits Lab (20A04101P)		
C129.1	Describe the use of RPS and CRO	Understand
C129.2	Recognize the characteristics and applications of basic electronic devices	Understand
C129.3	Observe the characteristics of electronic devices by plotting graphs	Understand
C129.4	Categorize the Characteristics of UJT, BJT, FET, and SCR	Analyze
C129.5	Design BJT, FET Amplifiers for Voltage Amplification	Create
C129.6	Simulation of all Electronic circuits in PSPICE /Multisim	Analyze
Environmental Science (20A99201)		
C1210.1	Recognize the knowledge about environment, natural resources and different techniques involved in its conservation.	Understand
C1210.2	Describe the information about different eco-systems and its functions.	Understand
C1210.3	Explain the different types of bio-diversity along with values and conservation methods.	Understand
C1210.4	Predict various environmental pollutions and able to design the environmental friendly process in engineering.	Apply
C1210.5	Apply the sustainable development concepts in life, society and industry.	Apply
C1210.6	Understand the impacts of population growth on environment and take suitable measures to protect the environment.	Understand

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Course Outcomes

Batch: 2020-24 **A.Y: 2021-22**

Course Outcomes (II Year- II Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Probability Theory & Stochastic Processes (20A54403)		
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
Digital Logic Design (20A04303T)		
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
EM Waves and Transmission Lines (20A04401)		
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
Communication Systems (20A04402T)		
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
Linear and Digital IC Applications (20A04403T)		
C225.1	Explain the Classification, building blocks and characteristics of linear integrated	Understand

	circuits.	
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
Soft Skills (20A52401)		
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
Digital Logic Design Lab (20A04303P)		
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
Communication Systems Lab (20A04402P)		
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
Linear and Digital IC Applications Lab (20A04403P)		
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: 2019-23 **A.Y: 2021-22**

Course Outcomes (III Year- II Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Microprocessors and Microcontrollers (19A04601T)		
C321.1	Explain the Architecture, Register sets and Memory organization of 8085 & 8086 Microprocessors.	Understand
C321.2	Discus the the Instruction set, Addressing modes and Assembler directives of 8086 Microprocessor.	Understand
C321.3	Demonstrate memory and I/O interfacing with various peripheral devices with 8086 Microprocessor.	Understand
C321.4	Explain the Architecture and features of 8051 Microcontroller and Interfacing of I/O peripherals.	Understand
C321.5	Discuss the Architecture, Addressing modes and Instruction set of ARM Cortex M0+ processor.	Understand
C321.6	Design Various Programs of 8086 Microprocessor & 8051 Microcontroller	Apply
Digital Signal Processing (19A04602T)		
C322.1	Understand the basic concepts of IIR and FIR filters.	Remember
C322.2	Learn DSP building blocks to achieve high speed in DSP processor, DSP TMS320C54XX architecture and instructions.	Understand
C322.3	Compute the fast Fourier transforms and find the relationship with other transforms.	Analyze
C322.4	Design of FIR and IIR digital filters. Realization of digital filter structures.	Create
C322.5	Compare FIR and IIR filters.	Analyze
C322.6	Develop a real-time signal processing algorithms and implement the applications in DSP processors.	Apply
Digital System Design Through VHDL (19A04603)		
C323.1	Describe the architecture of FPGA devices and tools used in digital design.	Understand
C323.2	Explain the programming concepts using VHDL design styles.	Understand
C323.3	Illustrate the digital design using VHDL data types and operators.	Apply
C323.4	Analyze basic digital circuits and data storage elements using combinatio logic.	Analyze
C323.5	Analyze digital circuits using sequential logic and design structural models.	Analyze
C323.6	Explain digital CPU and Develop VHDL models for advanced digital applications.	Create
Data Science (19A05604b)		
C324.1	Interpret the basic concepts and key connectors of Data Science	Understand
C324.2	Interpret the basic concepts of Python and visualize the data using Python	Understand
C324.3	Explore the mathematical concepts required for Data Science	Understand
C324.4	Apply Classification algorithms and Regression methods to solve real world problems	Apply
C324.5	Apply Clustering algorithms and Natural Language Processing to real world problems	Apply

C324.6	Interpret the concepts of SQL and Map reduce	Understand
Managerial Economics and Financial Analysis (19A52602b)		
C325.1	Explain the role and responsibilities of a managerial economist in modern business scenario.	Understand
C325.2	Apply the demand of a product by using demand forecasting methods.	Apply
C325.3	Calculate the Break Even Point (BEP) with the help of production and cost analysis.	Apply
C325.4	Explain their learnings about competitive markets and business economic environment.	Understand
C325.5	Apply the process of selection of investment alternatives using different appraisal methods	Apply
C325.6	Examine the process of preparing financial statements to know financial position of the firm.	Analyze
Principles and Techniques of Modern Radar Systems (19A04605e)		
C326.1	Explain Range Performance using false alarm time by integration of radar pulses with radar range equation.	Understand
C326.2	Explain CW -FM Radar – Block Diagram with Non-zero IF Receiver and bandwidth requirements.	Understand
C326.3	Analyze the Frequency measurement, tracking & Angular resolution with tracking radar.	Analyze
C326.4	Describe Pulse Compression &Synthetic Aperture Processing.	Remember
C326.5	Understand Ground Penetrating Radar for close sensing and Radar Tomography.	Understand
C326.6	Discuss Radar Tomography and Radar based Microwave Imaging & Emerging.	Understand
Digital Signal Processing Lab (19A04602P)		
C327.1	Demonstrate DSP and its applications using MATLAB software	Understand
C327.2	Examine the frequency response of discrete-time LTI systems	Apply
C327.3	Design of IIR, FIR digital filters for the given specifications also observes the frequency response.	Evaluate
C327.4	Learn the architecture details of floating point DSPs.	Apply
C327.5	Implement DSP algorithms in software using CCS with DSP floating point Processor.	Understand
C327.6	Analyze the basic signals and also find the discrete Fourier transform (DFT) for discrete-time signals/sequences.	Apply
Microprocessors and Microcontrollers Lab (19A04601P)		
C328.1	Design and implement programs on 8086 microprocessor	Understand
C328.2	To provide solid foundation on interfacing the external devices to the processor according to the user requirements	Apply
C328.3	Design and implement 8051 microcontroller based systems	Evaluate
C328.4	To Understand the concepts related to I/O and memory interfacing	Apply
C328.5	To learn about interfacing stepper motor working and its interfacing	Understand
C328.6	To learn about generation of waveforms using microcontroller	Apply
C329.6	Outline environment conservation, enrichment and sustainability	Analyze

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Course Outcomes

Batch: 2018-22 **A.Y: 2021-22**

Course Outcomes (IV Year- II Sem)		
S. No	**Course Outcomes Statement**	**Taxonomy**
Low Power VLSI Circuits & Systems (15A04802)		
C421.1	Explain the structure, fluid model and Electrical characteristics of MOS transistors.	Understand
C421.2	Explain the concepts of MOS Inverters and MOS Combinational Circuits.	Understand
C421.3	Summarize the power Dissipation and voltage scaling techniques in digital circuits.	Understand
C421.4	Analyse the system level and circuit level approaches for low power VLSI.	Analyse
C421.5	Describe the approaches to minimize the leakage power for VLSI system.	Understand
C421.1	Explain the structure, fluid model and Electrical characteristics of MOS transistors.	Understand
RF Integrated Circuits (15A04804)		
C422.1	Describe RF communication system components, Basic architecture and operational aspects	Understand
C422.2	Describe MOS device physics and technical specifications associated with RFIC design	Understand
C422.3	Describe various kinds of RF noise types, LNA and mixer designs in RF communication with examples	Understand
C422.4	Design various classes of RF power amplifiers, PLL and filters used in RF integrated circuits.	Create
C422.5	Describe the frequency synthesis & frequency division methods, various radio architectures used in RF communication with examples.	Understand
C422.6	Describe advanced RF applications & the state of art in Radio frequency integrated circuit designs	Understand
Comprehension Viva (15A04805)		
C423.1	Recite the fundamentals of Engineering Mathematics, Applied Physics and Engineering Chemistry.	Understand
C423.2	Explain the operation of Diodes, BJTs, FETs, Combinational and sequential circuits used in electronic circuits.	Understand
C423.3	Describe the characteristics of Signals, operations on signals and systems.	Understand
C423.4	Summarize the transmission of analog and digital signals through different media.	Understand
C423.5	Interpret the programming of 8086, 8051 and MSP 430 processors and digital processing of signals and image.	Understand
C423.6	Describe the MOS fabrication, embedded system design and data communication using networks.	Understand
Technical Seminar (15A04806)		
C424.1	Define the various existing technological developments currently in use.	Understand
C424.2	Select the specialized topic of the existing or proposed technology.	Analyse
C424.3	Summarize the information gathered from various resources.	Understand
C424.4	Prepare a technical report on the selected specialized topic.	Create
C424.5	Explain the topic using appropriate presentation tools.	Understand
C424.6	Show the interpersonal, professional and work with team skills.	Apply
Project Work (15A04807)		
C425.1	Identify the problem of social relevance to be solved.	Understand
C425.2	Summarize the existing technology, its merits and demerits used to solve the problem.	Understand
C425.3	Design the appropriate solution using the sophisticated hardware and/or software.	Create
C425.4	Compare the results of the proposed solution with the existing solution.	Analyse
C425.5	Demonstrate the project along with the complete documentation report of the project.	Understand
C425.6	Show the interpersonal, professional and work with team skills.	Apply