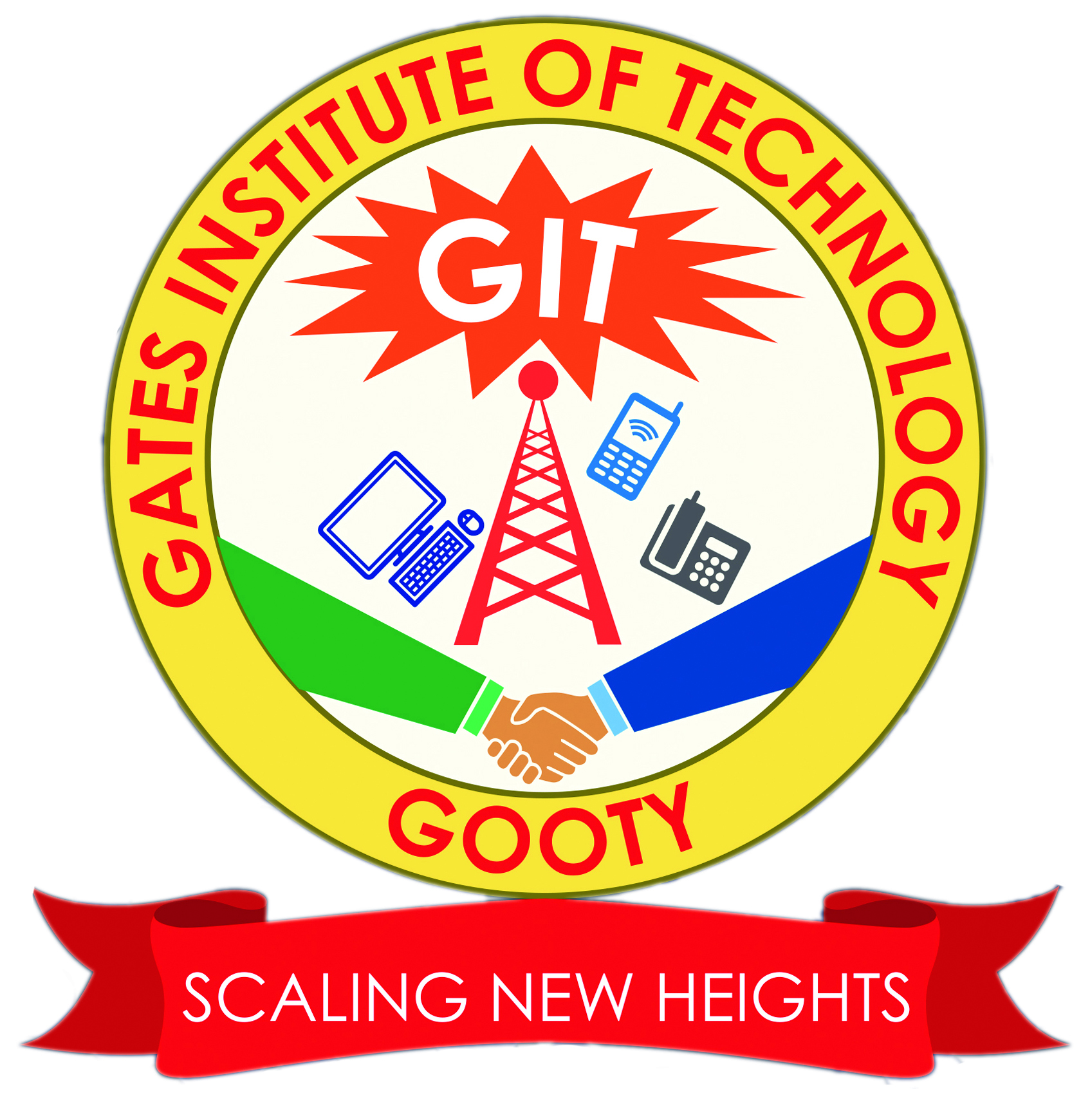
**GATES INSTITUTE OF TECHNOLOGY**

(Approved by A.I.C.T.E, New Delhi & Affiliated to JNTUA, Anantapuramu)

N.H-44, Gootyanantapuram (V), Peddavadugur (M), Anantapuramu (Dist), Gooty-515401.

Andhra Pradesh (State), Tel: 08552-200444, Website: [www.gatesit.ac.in](http://www.gatesit.ac.in)

Department of Electronics & Communication Engineering

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| **I-ISemester, R15** | | | | | |
| Course Code | Course Name | | | | Course Outcomes (COs) |
| 15A52102 | Functional English | | | | CO1: To enable students to develop LSRW skills and improve pronunciation. |
| CO2: To help students express themselves fluently and appropriately. |
| CO3: To develop the ability of silent reading and comprehension . |
| CO4: To equip them with the components of different forms of writing. |
| CO5: To develop narration /description , vocabulary & note making. |
| 15A54101 | Engineering Mathematics-I | | | | CO1:Solve differential equations of first order and its applications |
| CO2: Analyze second order differential equations and its applications |
| CO3: Discuss about maxima & minima of the given functions and radius of curvature |
| CO4: Evaluate multiple integrals and apply them to find areas & volumes. |
| CO5: Explain vectors and its applications. |
| 15A51101 | Engineering chemistry | | | | CO1:Experiment the usage of hard water domestically and industrially. |
| CO2: Explain the preparation and properties of polymers and their applications. |
| CO3: .Explain the corrosion effects on different materials and electrochemical cells. |
| CO4: Analyze of solid fuels, liquid fuels, gaseous fuels and flue gas analysis. |
| CO5: Apply the chemistry involved in chemistry of engineering materials. |
| 15A05101 | Computer programming | | | | CO1:Demonstrate computer hardware, software &classify operators in C language. |
| CO2: Solve different problems using selection statements and arrays of C. |
| CO3: Apply pointers and functions in C programming. |
| CO4:Utilize structures and recursion in C programming. |
| CO5: Make use of pointers in creating files. |
| 15A01101 | Environmental Sciences | | | | CO1:Understand the importance of environmental studies |
| CO2: Comprehended the concepts of an eco-system. |
| CO3: Identify the concepts of environmental pollution |
| CO4: Differentiate social issues and environment. |
| CO5: Familiarize human population and environment. |
| 15A52102 | ELCS lab | | | | CO1: Understand basics of communication in social and professional circles. |
| CO2: Become active participant in learning process. |
| CO3: Acquire proficiency in spoken English. |
| CO4: Speak with clarity and confidence there by enhance employability skills. |
| 15A51102 | Engineering chemistry Lab | | | | CO1: Students will learn the hygiene aspects of water would be in a position to design methods to produce potable water using modern technology. |
| CO2: Students will learn practical understanding of the redox reaction. |
| CO3: Students will learn about the viscosity of lubricants. |
| CO4: Students will learn conductivity of strong electrolytes. |
| CO5: Students will learn the preparation of thermo-setting plastics. |
| 15A05102 | Computer Programming lab | | | | CO1: Apply problem solving techniques to find solutions to problems |
| CO2: Able to undersatnd C language features effectively and implement solutions using C language |
| CO3: Improve logical skills and programming skills |
| **I-II Semester, R15** | | | | | |
| 15A52201 | English for professional communication | | | | CO1: Comprehend & identify the speeches of different backgrounds & dialects. |
| CO2: Express themselves fluently and appropriately in social & professional circles |
| CO3: Evolve the ability of silent reading & comprehension. |
| CO4: Equip with components of different forms of writing. |
| CO5: Communicate effectively & confidently thereby enhancing employability skills. |
| 15A54201 | Engineering mathematics -II | | | | CO1: Comprehend & identify the speeches of different backgrounds & dialects. |
| CO2: Express themselves fluently and appropriately in social & professional circl. |
| CO3: Evolve the ability of silent reading & comprehension. |
| CO4: Equip with components of different forms of writing. |
| CO5: Communicate effectively & confidently thereby enhancing employability skills. |
| 15A56101 | Engineering Physics | | | | CO1: 1. Utilize of optics, laser technology and fiber optics various disciplines and its applications(L3) |
| CO2: Apply the knowledge to analyze different types of crystal structure &defects found in crystal, understand the importance of ultrasonic’s(L3) |
| CO3: Explain the dual nature of matter, the electron behaviour & electrical conductivity in solids.(L3). |
| CO4: Analyze the semiconductors components characteristics &different magnetic material and apply the idea in solving problem in parents’ streams.(L4). |
| CO5: Experiment with the principle of superconductivity & synthesis of nanomaterial's and their uses in modern technology.(L3) |
| 15A04201 | Network Analysis | | | | CO1: Find the response in any element for the given circuit. |
| CO2: Analyze RL, RC & RLC Circuit responses to Pulse and Exponential signals. |
| CO3: Analyze forced responses of Sinusoidal functions. |
| CO4: Understand coupled circuits, resonance and two port networks. |
| CO5: Design filters for various electrical networks. |
| 15A03101 | Engineering Drawing | | | | CO1: Learning conventions of Drawing, which is a Universal Language of Engineers |
| CO2: Learning projections of points and scales |
| CO3: Analyze the projection of the lines and planes |
| CO4: Develop the solids and development of surfaces. |
| CO5: Understand the isometric and orthographic projection and Drawing 2D and 3D diagrams of various objects. |
| 15A56102 | Engineering physics lab | | | | CO1: An ability to compute basic properties In Optics, which includes the Interference, diffraction phenomena, and dispersive power of a prism, will be clearly visualized. |
| CO2: Understand the concept of error and its analysis.. |
| CO3: Electrical engineering student learn to measure the Magnetic field in between coils. |
| CO4: Apply the knowledge on characteristics of P-N junction diode (energy band gap) LASER diode. |
| CO5: Student will use oscilloscope and multimeter to construct a wide variety of Electrical circuits and measure the properties of those circuits |
| 15A04202 | Network Analysis  lab | | | | CO1:Analyze the circuit using  Kirchhoff’s laws. |
| CO2:Analyze the circuit using  Network simplification theorems. |
| CO3:Evaluate the Steady state response of electrical circuits . |
| CO4: Apply the knowledge of basic filter circuits. |
| CO5: Analyze the series resonant  and parallel resonant  circuit. |
| 15A99201 | Engineering & I.T. workshop | | | | CO1:Disassemble and Assemble a Personal Computer and prepare the computer ready to use. |
| CO2:Prepare the Documents using Word processors |
| CO3:.Prepare Slide presentations using the presentation tool |
| CO4: Interconnect two or more computers for information sharing |
| CO5: Access the Internet and Browse it to obtain the required information |
| CO6: Install single or dual operating systems on computer |
| **II-I Semester, R15** | | | | | |
| 15A54301 | Mathematics-III | | | | CO1:Explain the concepts of matrices and its applications |
| CO2:Solve algebraic & transcendental equations using appropriate numerical methods |
| CO3:Analyze a problem using different interpolation formulae |
| CO4:Construct various types of curves using different numerical techniques |
| CO5:Find numerical solutions of ordinary differential equations |
| 15A04301 | Electronics Devices and Circuits | | | | CO1: Illustrate semiconductor physics of the intrinsic and extrinsic semiconductors. |
| CO2: Explain the operating principles of Diodes, special purpose electronic devices. |
| CO3: Analyze the characteristics of BJT, FET, MOSFET. |
| CO4: Design and analyze the DC bias circuitry of BJT and FET. |
| CO5: Compare and analyze the small signal amplifier circuits  using BJT and FET. |
| 15A04302 | Switching Theory and Logic Design | | | | CO1: Apply knowledge of Number systems, codes and logic gates to  solve typical problems on mathematical logic applications |
| CO2: Minimize the given switching function in SOP and POS forms  using K-Maps. |
| CO3: Design different types of combinational logic circuits using  various logic gates |
| CO4: Analyze and design different types of Synchronous and  Asynchronous logic gates |
| CO5: Design PLDs and Computer Memories |
| 15A04303 | Signals and Systems | | | | CO1: Analyze the characteristics of continuous time and discrete time signals using the linear algebra concepts and Fourier analysis. |
| CO2: Determine the Continuous Time Fourier Transform for different types of signals and analyze the effects of sampling process. |
| CO3: Classify systems based on their properties and analyze the LTI systems using impulse response. |
| CO4: Apply Discrete Time Fourier Transform to analyze the discrete time signals and systems. |
| CO5: Apply the Laplace transform and Z transform for analyze of continuous time and discrete time signals and systems |
| 15A04304 | Probability Theory and Stochastic Processes | | | | CO1: Explain the Simple probabilities using an appropriate sample space. |
| CO2: Define density and distribution functions. |
| CO3: Determine Mean, Variance and covariance functions for random processes. |
| CO4: Explain the temporal Characteristics of the random process. |
| CO5: Analyze linear system and apply temporal and spectral properties to LTI systems. |
| 15A02303 | Electrical Technology | | | | CO1: Describe the structure of D.C Generator. |
| CO2: Understand basic concept of D.C Motors |
| CO3: Understand the basic principles of transformers and its applications. |
| CO4: Describe the operation induction motors to real world problems and its applications. |
| CO5: Learn synchronous motors and its applications in real time. |
| 15A04305 | Electronics Devices and Circuits Lab | | | | CO1: Identify, Specify, Test the passive components as well as active devices |
| CO2: Plot V\_I characteristics of all semiconductor devices |
| CO3: Design the DC bias circuitry of BJT |
| CO4: Explain and implement the concept of the small signal amplifier |
| 15A02307 | Electrical Technology and Basic simulation Lab | | | | CO1: Analyze the signals, Understand Basic Operation on matrices, Apply Gibbs Phenomenon and Random process for stationary in the wide sense. |
| CO2: Analyze the analysis of Fourier Transform, Laplace Transform and Z-Transform |
| CO3: Provide an overview of signal transmission through linear systems convolution and auto correlation of signals, sampling, Filters and random process |
| CO4:Acquire hands on experience of conducting various tests on dc machines and obtaining their performance indices using standard analytical as well as graphical methods. |
| CO5:Acquire hands on experience of conducting various tests on transformers and obtaining their performance indices using standard analytical as well as graphical methods. |
| **II-II Semester, R15** | | | | | |
| 15A54402 | | | Mathematics-IV | | CO1: Explain the concepts of special functions. |
| CO2: Solve Bessel’s functions & apply its properties. |
| CO3: Identify and solve the problems using Bilinear transforms. |
| CO4: Evaluate complex integration. |
| CO5: Use residue theorem to evaluate improper integrals. |
| 15A04401 | | | Electronics Circuits Analysis | | CO1: Analyze and design feedback amplifiers, oscillator. |
| CO2: Analyze the frequency response of the amplifiers at low and  high frequencies. |
| CO3: Analyze the multistage amplifiers using FET, Differential amplifier using BJT. |
| CO4: compare and analyze the efficiencies of power amplifiers |
| CO5:Analyze and design the tuned amplifiers. |
| 15A04402 | | | Analog Communication Systems | | CO1: Explain blocks used for building communication systems. |
| CO2: Analyze the analog modulated and demodulated systems. |
| CO3: Compare noise performance of receivers. |
| CO4: Analyze the different characteristics of a receiver. |
| CO5: Demonstrate the fundamental Concepts of information and capacity. |
| 15A04403 | | | Electromagnetic Theory and Transmission Lines | | CO1: Explain the basic concept of electrostatics and magneto statics. |
| CO2: Apply Maxwell's equations to some important problems of electromagnetic. |
| CO3: Examine the time varying Maxwell's equations. |
| CO4: Explain the EM wave propagation for conducting and non conducting medium. |
| CO5: Determine the characteristics of lossy and lossless transmission lines. |
| 15A05201 | | | Data Structures | | CO1:Explain linked lists and its applications. |
| CO2: Apply stack and queues in the related applications. |
| CO3: Analyze trees and graphs. |
| CO4: Evaluate different sorting techniques. |
| CO5: CO5: Explain various searching methods. |
| 15A02303 | | | Control System Engineering | | CO1: Understand the basic of control systems.Evaluate the effective transfer function of a system from input to output using (i) block diagram reduction techniques (ii) Mason’s gain formula. |
| CO2: Determine the time -domain responses of first and Second-order systems for different test input signals, time domain specifications. |
| CO3: Understand the concept of Routh’s stability criterion and Root locus. |
| CO4: Determine the frequency response analysis of various systems. |
| CO5: Derive state space model of a given physical system and solve the state equation. |
| 15A04404 | | | Electronic Circuit Analysis Laboratory | | CO1: Design and calculate the voltage and current gains of the small signal amplifiers |
|  | | |  | | CO2: Design and calculate the voltage and current gains of the feedback and power amplifiers. |
|  | | |  | | CO3:Design and observe the oscillations produced by various oscillators |
| 15A04405 | | | Analog Communication System Laboratory | | CO1: Analyze the practical aspects of various analog modulation schemes. |
| CO2: Learn the several aspects of various Pulse analog modulation schemes |
| CO3:Evaluate the various measures that improve receiver performance. |
| 15A54402 | | | Mathematics-IV | | CO1: Explain the concepts of special functions. |
| CO2: Solve Bessel’s functions & apply its properties. |
| CO3: Identify and solve the problems using Bilinear transforms. |
| CO4: Evaluate complex integration. |
| CO5: Use residue theorem to evaluate improper integrals. |
| **III-I Semester, R15** | | | | | |
| 15A05402 | | | Computer Organization | | CO1: Understand the functional units, bus structure in computer system. |
| CO2: Identify addressing modes and instruction set. |
| CO3: Design the hardwired and micro-programmed control units. |
| CO4: Understand pipelined execution and instruction scheduling. |
| CO5:Analyse the multi processor system and array processors. |
| 15A04501 | | | Antennas and Wave Propagation | | CO1: : Explain the basic principle of different types of antennas. |
| CO2: Analyze the different types of antennas of various frequencies. |
| CO3: Design some practical antennas such as yagiuda , horn antenna. |
| CO4: Determine the radiation pattern, gain of antennas with aid of the measurement setups. |
| CO5: Explain different modes of wave propagation. |
| 15A04502 | | | Digital Communication Systems | | CO1: Demonstrate digital pulse modulation techniques. |
| CO2: Apply line coding and pulse shaping techniques for data transmission. |
| CO3: Demonstrate knowledge about inter symbol interference. |
| CO4: Analyze digital modulation schemes. |
| CO5: Apply channel coding techniques for data transmission. |
| 15A04503 | | | Linear Integrated Circuits and Applications | | CO1:Compare the characteristics of various differential amplifier configurations |
| CO2: Summariuze the basic building blocks of linear integrated circuits and its characteristics. |
| CO3: Analyze and design the linear, non-linear and applications of operational amplifiers. |
| CO4: Understand the specialized applications of operational amplifiers. |
| CO5: Classify and compare the advantages among ADCs and DACs. |
| 15A04504 | | | Digital System Design | | CO1: Designing CMOS logic families, Bipolar families,& TTL families |
| CO2:using computer aided design tools to model, simulate, verify ,analyze,& synthesize complex digital logic circuits |
| CO3:designing and prototype with standard cell technology and programmable logics efficiently |
| CO4:efficiently designing any digital system using basic structure IC’s |
| CO5:programming sequential logic designing circuits, understand their working, evaluate their results |
| 15A04506 | | | MEMS & Microsystems | | CO1: Explain the MEMS materials. |
| CO2: Classify the design technology for MEMS. |
| CO3: Illustrate the design concepts of MEMS Micro sensors. |
| CO4: Illustrate the design concepts of MEMS Accelerometer. |
| CO5: Explain the concepts of Carbon Nanotubes and Bio-MEMS. |
| 15A04507 | | | IC Applications Laboratory | | CO1: Understand the application of negative feedback in designing amplifiers |
| CO2: Understand the advantages and disadvantages of using integrators and differentiators |
| CO3: Design a Square and Triangular wave generator/oscillator,PLL using a general purpose OP-Amp and a comparator |
| CO4: Design a high-efficient DC-DC, Low Dropout regulator converter using a general purpose OP-Amp and a comparator |
| 15A04508 | | | Digital Communication Systems Laboratory | | CO1:experiencing real time behaviourof different digital modulation schemes. |
| CO2:understanding basic theories of digital communication systems in practical and design them. |
| CO3: Analyze digital modulation techniques by using MATLAB tools. |
| 15A99501 | | | Audit course – Social Values & Ethics | | CO 1:Develop awareness on ethics, human values & obligations related to Self, Family, Society and State.  . |
| CO 2 :Know the role of youth in NCC,NSS, RTI, Human Rights etc. |
| CO 3:As a social experimentalist they can ensure less hazards & can find out engineering solutions from the ethical platform. |
| CO 4:Students can understand the gender sensitization, gender equality, decline sex ratio, domestic violence. |
| CO 5: Understand the benefits of physical exercises sports, yoga. |
| **III-II Semester, R15** | | | | | |
| 15A52301 | | Managerial Economics and Financial  Analysis | | CO1: Explain the scope of managerial economics and types of elasticity of demand and measurements of elasticity of demand. | |
| CO2: Understand the production and cost concepts - normal cost, variable cost and total cost. | |
| CO3: Explain about markets and new economic environment. | |
| CO4: Explain the importance of double entry book system in different types of business and the concept of financial accounting with solutions. | |
| CO5: Explain the importance of Capital and capital budgeting techniques for taking long term decisions in investments. | |
| 15A04601 | | Microprocessors & Microcontrollers | | CO1: Illustrate the Concepts of 8086 microprocessor. | |
| CO2: Develop 8086 Assembly level language programs. | |
| CO3:Explain the architecture of Advanced MSP430 microcontrollers. | |
| CO4: Summarize the peripherals of MSP430 Microcontroller. | |
| CO5: Categorize the Serial Communication Protocols. | |
| 15A04602 | | Electronic Measurements and  Instrumentation | | CO1: Understand the basic characteristics and principles of meters | |
| CO2: Analyze and measure the voltages, currents and frequency of a signal using meters. | |
| CO3: Understand and analyze the principles and functions of signal generators. | |
| CO4: Understand the measurements and parameters of bridge. | |
| CO5: Understand the measurements using sensors &amp; transducers | |
| 15A04603 | | Digital Signal Processing | | CO1: Classify the discrete time signals and systems. | |
| CO2: Develop Fast Fourier Transform (FFT) algorithms for faster computation of Discrete Fourier Transform. | |
| CO3: Design the structures for the realization of discrete time systems. | |
| CO4: Design the Digital IIR and FIR filters for the given specifications. | |
| CO5: Explain the fundamentals of multirate digital signal processing. | |
| 15A04604 | | VLSI Design | | CO1:Explain about Fabrication process of ICs | |
| CO2:Develop VLSI circuits as per specifications given. | |
| CO3:Analyze the design of Arithmetic / logic building Blocks at all levels of Design/Fabrication. | |
| CO4:Build circuits through various design styles (Semi- Custom, Full Custom) | |
| CO5:Understand the VHDL Synthesis and Test & Test ability | |
| 15A04605 | | MATLAB Programming | | CO1:understand the MATLAB desktop,command window and the graph window | |
| CO2:Perform simple and complex calculations using MATLAB | |
| CO3:Carry out numerical computations and analyses | |
| CO4:ensure that one can competently use the MATLAB programming environment | |
| CO5:understand the tools that are essential in solving engineering problems | |
| 15A04607 | | Microprocessors & Microcontrollers  Laboratory | | CO1: Execute 8086 assembly language programs for arithmetic,logical and string operations using MASM. | |
| CO2:Organize an algorithm, the flow diagram, source code and perform the compilation of MSP430 microcontroller embedded C programs using CC studio. | |
| CO3:Experiment the Embedded C code logic with the necessary hardware connected to MSP430 microcontroller using CC studio. | |
| 15A04608 | | Digital Signal Processing Laboratory | | CO1:Find the response of a Linear time invariant discrete time system. | |
| CO2:Analyze the frequency spectrum of a discrete time signal. | |
| CO3:Determine the spectrum of a real world signal using Fast Fourier Transform algorithm | |
| CO4:Implement DSP algorithms using both fixed and floating point processors. | |
| 15A52602 | | Advanced English Language Communication Skills (AELCS) Laboratory (Audit Course) | | CO1:Understand basics of communication in social and professional circles. | |
| CO2:Become active participant in learning process | |
| CO3:Acquire proficiency in spoken English. | |
| CO4.Speak with clarity and confidence there by enhance employability skills. | |
| **IV-I Semester, R15** | | | | | |
| 15A04701 | | Optical Fiber Communication | | CO1:Understand basic fundamental theory of fiber optics. | |
| CO2: Discuss the channel impairments like attenuation, scattering losses, bending losses and dispersion. | |
| CO3: Demonstrate basic mechanism of light generation. | |
| CO4: Analyze the detection of light. | |
| CO5:Design architectures of optical fiber communication systems. | |
| 5A04702 | | Embedded Systems | | CO1: Explain the concepts of an embedded system | |
| CO2: Explain the architecture of TM4C Microntrollers | |
| CO3: Illustrate the design concepts of an embedded system | |
| CO4: Summarize the peripherals of TM4C Microcontrollers | |
| CO5:Categorize the embedded Communication Protocols. | |
| 15A04703 | | Microwave Engineering | | CO1: Analyze completely the rectangular waveguides, their mode characteristics, and design waveguides for solving practical microwave transmission line problems. | |
| CO2:Distinguish between the different types of waveguide and ferrite components, explain their functioning and select proper components for engineering applications. | |
| CO3: Analyze the characteristics of microwave tubes. | |
| CO4: Analyze the characteristics of cross field tubes and understand the operation of microwave solid state devices. | |
| CO5: Apply the properties of s-parameters to waveguide components and evaluate the various microwave parameters using microwave bench setup. | |
| 15A04704 | | Data Communications and Networking | | CO1: Discuss standards and functionalities of key networking models. | |
| CO2: Describe the switching techniques and design issues of physical  layer. | |
| CO3: Describe the functionalities and design issues of the data link layer. | |
| CO4: Illustrate the protocol functionalities and design issues of  network layer. | |
| CO5: Demonstrate protocols used in Transport layer. | |
| 15A04705 | | Radar Systems | | CO1: Understand the basic concepts of Radar system | |
| CO2: Analyze the CW Radar and FMCW Radar system for the measurement of speed and distance. | |
| CO3: Apply the techniques to remove the clutter using MTI Radar and Pulse Doppler Radar. | |
| CO4: Discriminate different Radar subsystems in both Transmitter and Receiver sections. | |
| CO5: Design the different tracking mechanisms and estimate the matched filter response. | |
| 15A04709 | | Cellular & Mobile Communication | | CO1: Explain impairments due to multipath fading channel. | |
| CO2: Analyze the fundamental techniques to overcome the different fading effects. | |
| CO3: Compare Co-channel and Non Co-channel interferences. | |
| CO4: Demonstrate cell coverage for signal and traffic, diversity techniques and mobile antennas. | |
| CO5: Explain the frequency management, channel assignment and types of handoff. | |
| 15A04711 | | Microwave and Optical Communication  Laboratory | | CO1: Learn the characteristics of Reflex Klystron and Gunn Diode, Directional Coupler and measure VSWR, Attenuation, frequency, wavelength and impedance of microwaves | |
| CO2:Analyze the scattering parameters used to characterize devices and system behaviour | |
| CO3: Learn the characteristics of LED, laser diode and measure the data rate for Digital Optical link, losses for Analog Optical link, Numerical Aperture, Radiation pattern of Antennas and Intensity modulation of Laser output through an optical fiber. | |
| 15A04712 | | VLSI & Embedded Systems Laboratory | | CO1:Design and draw the internal structure of the various digital  ICs | |
| CO2:Develop VHDL /Verilog source code , perform simulation  and obtain the results using synthesizer | |
| CO3:Learn and understand how to configure the TM4C processor  and interfacing the various hardware peripherals | |
| **IV-II Semester, R15** | | | | | |
| 15A04802 | | Low Power VLSI Circuits & Systems | | CO1: Understand the importance of low power circuits and concepts of MOS Transistors Impact Ionization and Hot Electron Effects. | |
| CO2 Implement Low power design approaches for system level and circuit level measures. | |
| CO3: Design low power adders, multipliers and memories for efficient design of systems. | |
| CO4: Analyze the finite state machine model. | |
| CO5: Create low power VLSI Circuits using Low power VLSI. | |
| 15A04803 | | Pattern Recognition & Applications | | CO1: Explain the fundamentals of pattern recognition techniques. | |
| CO2:Analyze classification problems probabilistically and estimate classifier performance. | |
| CO3: Demonstrate the principles of Bayesian parameter estimation. | |
| CO4: Apply maximum likelihood parameter estimation such as density models and HMM. | |
| CO5:Construct the neural network approach to pattern recognition & their applications. | |
| 15A04806 | | Technical Seminar | | CO1:Demonstrate factual knowledge like fundamental principles and theories | |
| CO2: Develop critical thinking and specific skill about topics of current intellectual importance. | |
| CO3:Improve both technical report writing and presentation skills. | |
| 15A04807 | | Project Work | | CO1: Choose an effective project making implementation of technical and engineering knowledge gained from courses with the awareness of technology on the society and ethical responsibilities. | |
| CO2: Identify the modern tools required for the optimum implementation of the project. | |
| CO3: Demonstrate team work ability and communication skills. | |
| CO4: Prepare the final project report with improvements. | |