



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, Affiliated to Anna University, Chennai, India)

Kaikkurichi, Pudukkottai – 622 303

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING REGULATION 2013 COURSE OUTCOMES (CO)

I SEMESTER

HS HS6151- TECHNICAL ENGLISH –I

Students will be able to

CO1	Apply the collaborative and social aspects of research and writing processes.
CO2	Comprehend that research and writing is a series of tasks, including accessing, retrieving, evaluating, analyzing and synthesizing appropriate data and information from sources that vary in content, format, structure and scope.
CO3	Use appropriate technologies to organize, present and communicate information to address a range of audiences, purposes and genres.
CO4	Design the multidisciplinary settings to manage projects as an individual, as a member or leader after taking the exercises like role-play, group discussion and making presentations.
CO5	Model the life-long learning methods suitable for all the environments committed to professional ethics and responsibilities after inculcating the habit of reading and writing.
CO6	Analyze and identify the root for effective managerial skills through different spoken discourse and excerpts.

MA6151- MATHEMATICS-I

Students will be able to

CO1	Describe a clear idea of matrix algebra pertaining eigen values and eigen vectors in addition dealing with quadratic forms.
CO2	Learn infinite series and their convergence and acquire the knowledge of with limitations.
CO3	Use infinite series approximations for solutions arising in mathematical modeling.
CO4	Explain and characterize phenomena which evolve around circle of curvature and envelope.
CO5	Extend the function of a one variable to several variables. Multivariable functions of real variables arise inevitable in engineering.
CO6	Expose to double and triple integration so that they can handle integrals of higher order which are applied in engineering field.

PH6151- ENGINEERING PHYSICS-I

Students will be able to

CO1	Classify the Bravais lattices and different types of crystal structures and growth technique.
CO2	Demonstrate the properties of elasticity and heat transfer through objects.
CO3	Explain black body radiation, properties of matter waves and Schrodinger wave equations.
CO4	Describe and analyzing the quantum nature of radiation and matter to solve the real time societal and technological problems.
CO5	Illustrate the acoustic requirements, production and application of ultrasonics.
CO6	Examine the characteristics of laser and optical fiber.



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CY6151- ENGINEERING CHEMISTRY-I

Students will be able to

CO1	Classify the polymers, different polymerization techniques and its uses.
CO2	Describe the laws of thermodynamics, various thermodynamics functions and their significance.
CO3	Explain the photo physical processes and the components of analytical instruments.
CO4	Illustrate the phase diagrams, alloys and heat treatment processes
CO5	Discuss the synthesis, characteristics and the applications of nano materials.
CO6	Create the knowledge of nonmaterial's and their applications in fields like medicinal, electrical, electronic, chemical, etc.

GE6151- COMPUTER PROGRAMMING

Students will be able to

CO1	Explain the basic organization of computers, the number systems and write the pseudo code for algorithms and flow chart.
CO2	Develop 'C' programming fundamentals, looping statements and solve problems.
CO3	Design 'C' programs for arrays and strings.
CO4	Use functions with pass by value and reference, pointers in programs.
CO5	Develop coding in 'C' for structures and unions with storage classes and pre-processor.
CO6	Design and execute C programs for simple applications.

GE6152- ENGINEERING GRAPHICS

Students will be able to

CO1	Construct the conic sections and special curves and outline their practical applications and sketch the orthographic views from pictorial views and models.
CO2	Apply the principles of orthographic projections of points in all quadrants, lines and planes in first quadrant.
CO3	Draw the projections of simple solids like prisms, pyramids, cylinder and cone and obtain the traces of plane figures.
CO4	Design the sectional views of solids like cube, prisms, pyramids, cylinders & cones and Development of its lateral surfaces.
CO5	Apply the principles of isometric projection and perspective projection of simple solids and truncated prisms, pyramids, cone and cylinders.
CO6	Build an as well as in engineering component using Paper drawing CAD.



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GE6161-COMPUTER PRACTICES LABORATORY

Students will be able to

CO1	Prepare data using MS-word & Excel to visualize graphs, charts in MS-Excel.
CO2	Outline the given problem using flowchart and to program using Switch case & Control structures.
CO3	Develop the code using decision making & looping statements.
CO4	Apply passing parameters using Arrays & Functions.
CO5	Use structure and Union for a given database and to bring out the importance of Unions over structure.
CO6	Design and implement C programs for simple applications.

GE6162- ENGINEERING PRACTICES LABORATORY

Students will be able to

CO1	Demonstrate wiring for a simple residential house, identify the ratings of various appliances like Fluorescent tube, incandescent lamp, etc.
CO2	Calculate the different Electrical quantities, measure the energy consumption using single phase energy meter.
CO3	Measure the resistance to earth of an electrical equipment, analyze AC signal parameters using CRO.
CO4	Verify the Truth tables of Logic gates AND, OR, EOR and NOT, generate clock signal using suitable gates.
CO5	Develop soldering in a PCB, measure ripple factor of Half Wave Rectifier and Full Wave Rectifier.
CO6	Provide exposure to the students with hands-on experience on various basic engineering practices in Civil and Mechanical Engineering.

GE6163-PHYSICS AND CHEMISTRY LABORATORY

Students will be able to

CO1	To apply the physics principles of Thermal physics and Properties of Matter to evaluate properties of materials.
CO2	Evaluate the wavelength of spectral lines using spectrometer, the wavelength of laser, particle size, acceptance angle of an optical fiber using semiconductor diode laser and the thickness of a thin wire through interference fringes using Air wedge apparatus.
CO3	Appraise the velocity of sound and compressibility of the liquid using ultrasonic interferometer and thermal conductivity for bad conductors using Lee's disc apparatus.
CO4	Determine the DO content in water sample by winkler's method and molecular weight of polymer by Ostwald viscometer.
CO5	Find the strength of an acid using pH meter and conductometer.
CO6	Estimate the amount of weak and strong acids in a mixture by conductometer



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COURSE OUTCOMES (CO)

SEMESTER II

HS6251- TECHNICAL ENGLISH-II

Students will be able to

CO1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using appropriate communicative strategies.
CO2	Define the impact of the professional engineering solution in societal and environmental contexts with the help of the basic grammar taught to communicate effectively and confidently.
CO3	Write cohesively and coherently and flawlessly avoiding grammatical errors, using a wide vocabulary range, organizing their ideas logically on a topic.
CO4	Read different genres of texts adopting various reading strategies.
CO5	Listen/view and comprehend different spoken discourses/excerpts in different accents.
CO6	Recognize, understand, and analyze the context within which language, information, and knowledge are produced, managed, organized, and disseminated.

PH6251- ENGINEERING PHYSICS-II

Students will be able to

CO1	Illustrate classical and quantum free electron theory and calculate carrier concentration in metals.
CO2	Describe the carrier concentration in semi conductors and identify the p-type and n-type semi conductor using hall effect.
CO3	Illustrate the special material properties such as magnetism.
CO4	Discuss the super conductivity.
CO5	Explain the dielectrics, types of polarization, losses and breakdown
CO6	Discuss the properties, preparation and applications of metallic alloys, SMA, nano materials, NLO, Bio-materials.

CY6251-ENGINEERING CHEMISTRY

Students will be able to

CO1	Explain the problems of using hard water in boilers and the methods of treatment of water for boiler use.
CO2	Design the electrochemical cells and to identify the types of corrosion and the methods of preventing.
CO3	Illustrate the methods of harnessing energy from non-conventional energy sources.
CO4	Classify various engineering materials and their importance.
CO5	Relate the significance of solid, liquid and gaseous fuels and to calculate the calorific values of fuels and the requirement of air for combustion in furnaces.
CO6	Analyze issues related to fuels and their synthesis and able to understand working of IC and diesel engines.



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COURSE OUTCOMES (CO)

EC6201- ELECTRONIC DEVICES

Students will be able to

CO1	Describe the principle and characteristics of semiconductor diode
CO2	Analyze various transistor configurations
CO3	Construct large signal modeling and small signal modeling of a transistor.
CO4	Describe the principle of operation and characteristics of special Semiconductor diodes
CO5	Discuss the operation of various semiconductor photo devices and power electronic devices
CO6	Implement real time applications using electronic devices

EE6201-CIRCUIT THEORY

Students will be able to

CO1	Apply Kirchoff's current and voltage law to simple circuits and Solve complex circuits using Mesh & Nodal Methods.
CO2	Apply Network theorems to solve simple and complex linear circuits.
CO3	Solve the Series and Parallel resonance circuit and analyze the performance of single & double tuned circuits.
CO4	Develop the Transient response of RLC circuits using Laplace Transform.
CO5	Explain the characteristics of two port networks.
CO6	Discuss three phase balanced and unbalanced star, delta network.

GE6262-PHYSICS AND CHEMISTRY LABORATORY

Students will be able to

CO1	Appraise the Young's modulus of the beam by uniform and non uniform bending method, the moment of inertia and Rigidity Modulus for thin wire using Torsion Pendulum.
CO2	Use Poiseuille's method for determining the coefficient of viscosity of the liquid
CO3	Estimate the refractive index of spectral lines for determining the dispersive power of a prism circuit.
CO4	Determine the type, amount of alkalinity, hardness in a given water sample.
CO5	Evaluate the amount of copper using EDTA method.
CO6	Appraise the Young's modulus of the beam by uniform and non uniform bending method, the moment of inertia and Rigidity Modulus for thin wire using Torsion Pendulum.



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COURSE OUTCOMES (CO)

EC6211-CIRCUIT AND DEVICES LABORATORY

Students will be able to

CO1	Construct the different types of feedback amplifier
CO2	Design RC & LC oscillator circuits for the given specifications
CO3	Construct the wave shaping circuits
CO4	Design different types of Multivibrators
CO5	Simulate electronic circuits using SPICE.
CO6	Determine the frequency response of tuned amplifiers.

EE6352- ELECTRICAL ENGINEERING AND INSTRUMENTATION

Students will be able to

CO1	Apply knowledge on Constructional details, principle of operation performance of D.C Machines
CO2	Improve knowledge on Constructional details and working principle of transformers
CO3	Impart knowledge in Constructional details, principle of operation and performance of induction machines
CO4	Impart knowledge in Constructional details, principle of operation and performance of synchronous machines
CO5	Analyze about the basic measurement and instrumentation based devices.
CO6	Impart knowledge in the relevance of digital instruments in measurements.

III SEMESTER

MA6351-TRANSFORMS AND PARTIAL DIFFERENTIAL EQUATIONS

Students will be able to

CO1	Solve Linear Partial differential equations of first and second order
CO2	Associate the concepts of Fourier series expansion for even and odd functions
CO3	Apply the concepts of Fourier series in solving boundary value problems.
CO4	Discuss the Fourier transform; Fourier Sine and Cosine transform techniques.
CO5	Describe the concepts of Z-Transform techniques for discrete time systems
CO6	Apply transforms techniques in modeling physical processes like Heat Conduction, Communications systems and Electromagnetic Theory.



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COURSE OUTCOMES (CO)

EC6302 -DIGITAL ELECTRONICS

Students will be able to

CO1	Analyze different methods used for simplification of Boolean expressions.
CO2	Design and implement Combinational circuits
CO3	Explain and implement sequential circuit
CO4	Write simple HDL codes for the circuits
CO6	Evaluate and implement synchronous and asynchronous sequential circuits.

EC6303 -SIGNALS AND SYSTEMS

Students will be able to

CO1	Able to describe the mathematical operations of signals
CO2	Analyze the Continuous time signals using Transforms
CO3	Examine the Continuous time LTI systems using Transforms
CO4	Illustrate the effect of aliasing through Baseband sampling theorem
CO5	Analyze the Discrete time signals using Transforms
CO6	Demonstrate the Discrete time LTI systems using Transforms.

EC6301- OBJECT ORIENTED PROGRAMMING AND DATA STRUCTURES

Students will be able to

CO1	Learn the familiarity with algorithms
CO2	Analyze the performance of algorithms
CO3	Describe to implement 2d array operations
CO4	Implement the stack and queue using arrays
CO5	Familiar with programming in C++
CO6	Explain the Implementation of quick sort and binary tree



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COURSE OUTCOMES (CO)

EC6304- ELECTRONIC CIRCUITS- I

Students will be able to

CO1	Discuss transistor bias stability and various type of biasing BJT,FET, MOSFET and calculate the stability factor, design various types of BJT,FET
CO2	Describe mid band analysis of small signal amplifier-single stage and multistage
CO3	Plot the frequency response of amplifiers-BJT,FET
CO4	Able to know various types of power amplifiers and hence find its efficiency.
CO5	Represent the features of power supplies and rectifiers, voltage regulator, power control using SCR.
CO6	Able to understand AGC Using FET understand AGC Using FET

EC6311- ANALOG AND DIGITAL CIRCUITS LABORATORY

Students will be able to

CO1	Determine the frequency response of single stage amplifiers
CO2	Determine the frequency response of cascade and cascade amplifiers.
CO3	Implement amplifier circuits using Spice simulation software.
CO4	Implement various counters using Flip-flops.
CO5	Realize shift registers using Flip-flops
CO6	Exhibit Ethical principles in Engineering practices

EC6312 -OOPS AND DATA STRUCTURES LABORATORY

Students will be able to

CO1	Implementation of two dimensional array operations.
CO2	Implementation of stack and queue using array
CO3	Demonstrate familiarity with major algorithms and data structures.
CO4	Apply good programming design methods for program development
CO5	Apply the different data structures for implementing solutions to practical problems
CO6	Implementation of quick sort and binary tree



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COURSE OUTCOMES (CO)

SEMESTER-IV

MA6451- PROBABILITY AND RANDOM PROCESSES

Students will be able to

CO1	Explain the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon
CO2	Explain the basic concepts of one and two dimensional random variables and apply in engineering applications
CO3	Apply the concept random processes in engineering disciplines.
CO4	Explain and apply the concept of correlation and spectral densities.
CO5	Find correlation regression for two dimensional random variable
CO6	Able to analyze the response of random inputs to linear time invariant systems.

EC6401- ELECTRONIC CIRCUITS II

Students will be able to

CO1	Able to understand the advantages and method of analysis of feedback amplifiers
CO2	Able to understand analysis and design of LC and RC Oscillators
CO3	Able to understand various types of tuned amplifiers
CO4	Analysis integrator, Differentiator, Clippers , Clampers and multivibrators
CO5	Learn various types of blocking Oscillators and time base circuits
CO6	Learn current and voltage time base generator

EC6402 -COMMUNICATION THEORY

Students will be able to

CO1	Describe the concepts of amplitude modulation system
CO2	Summarize the concepts of angle modulation system
CO3	Solve communication engineering problems by applying the concepts of random process.
CO4	Compare the noise performance of AM and FM systems
CO5	Analyze the principles of Sampling and quantization
CO6	Design the PCM systems



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COURSE OUTCOMES (CO)

EC6403- ELECTROMAGNETIC FIELDS

Students will be able to

CO1	Apply vector calculus to electric-magnetic fields in different engineering situations.
CO2	Compute electric field and potential for different configurations.
CO3	Describe the behavior of dielectric and magnetic materials.
CO4	Solve problems requiring estimation of magnetic field quantities based on Amperes and Biot-Savart law
CO5	Examine the coupling between electric and magnetic fields through Maxwell's equations
CO6	Describe wave propagation in lossless and in lossy media

EC6404- LINEAR INTEGRATED CIRCUITS

Students will be able to

CO1	Describe the characteristics of operational amplifiers.
CO2	Design the various linear and non-linear applications of op-amp.
CO3	Apply the multiplier IC's and PLL in various applications
CO4	Compare the specifications of ADC and DAC.
CO5	Design oscillators and voltage regulators
CO6	Infer the applications of special function IC's.

EC6405- CONTROL SYSTEM ENGINEERING

Students will be able to

CO1	Model a control system by its transfer function.
CO2	Describe methods to determine time response of a control system.
CO3	Describe methods to determine frequency response of a control system.
CO4	Design Compensation techniques to stabilize control system.
CO5	Test the stability of a control system.
CO6	Perform state variable analysis for control systems.



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COURSE OUTCOMES (CO)

EC6411- CIRCUIT AND SIMULATION INTEGRATED LABORATORY

Students will be able to

CO1	Construct the different types of feedback amplifiers.
CO2	Implement RC & LC oscillator circuits for the given specifications.
CO3	Construct the wave shaping circuits
CO4	Implement the different types of Multivibrators
CO5	Simulate electronic circuits using SPICE
CO6	Determine the frequency response of tuned amplifiers

EC6412- LINEAR INTEGRATED CIRCUITS LABORATORY

Students will be able to

CO1	Verify the operation of circuits using various Analog IC's.
CO2	Discuss the working of various function generating circuits using discrete elements and SPICE software.
CO3	Design Instrumentation amplifier using OP AMP and Frequency Multiplier PLL
CO4	Verify working of Multi vibrators using Analog IC's
CO5	Build first and second order practical active filters using Analog IC's
CO6	Test A/D and D/A convertors, Multipliers and Modulators using SPICE software.

EC6461- ELECTRICAL ENGINEERING AND CONTROL SYSTEM LABORATORY

Students will be able to

CO1	Model a control system by its transfer function.
CO2	Describe methods to determine time and frequency response of a control system.
CO3	Describe methods to determine frequency response of a control system
CO4	Design Compensation techniques to stabilize control system.
CO5	Perform state variable analysis for control systems
CO6	Model a control system by its transfer function



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COURSE OUTCOMES (CO)

V SEMESTER

EC6501- DIGITAL COMMUNICATION

Students will be able to

CO1	Describe the concepts of sampling and quantization
CO2	Compare the various source coding techniques
CO3	Describe the baseband transmission schemes
CO4	Illustrate the different modulation schemes and equalization techniques
CO5	Examine the PSD and BER of various modulation schemes
CO6	Design different error control codes

EC6502- PRINCIPLES OF DIGITAL SIGNAL PROCESSING

Students will be able to

CO1	Compute DFT for a given sequence
CO2	Compare the Discrete Fourier Transform (DFT) and Fast Fourier transform (FFT).
CO3	Design IIR digital filters.
CO4	Realize FIR digital filters for various specifications.
CO5	Illustrate various types of finite word length effects.
CO6	Summarize the architecture, addressing modes and instruction sets of DSP processors.

EC6503- TRANSMISSION LINES AND WAVE GUIDES

Students will be able to

CO1	Discuss the various types of propagation of signals using transmission lines
CO2	Examine signal propagation at Radio Frequencies
CO3	Explain impedance transformation and matching techniques using smith chart.
CO4	Derive various types of passive filters and active RF components.
CO5	Explain radio propagation in guided systems.
CO6	Analyze cavity resonator.



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COURSE OUTCOMES (CO)

GE6351- ENVIRONMENTAL SCIENCE AND ENGINEERING

Students will be able to

CO1	Summarize the values, threats, conservation of biodiversity and ecosystems
CO2	Identify various pollution control methods and waste management
CO3	Associate the effects of Natural resource exploitation on environment
CO4	Classify the various environmental laws & regulation for environmental sustainability
CO5	Explain the effect of Human population on environment
CO6	Discuss scientific, technological, economic and social solutions to environmental problems

EC6504- MICROPROCESSOR AND MICROCONTROLLER

Students will be able to

CO1	Explain the architecture and instruction set of Microprocessor
CO2	Discuss about System Bus Structure for Multiprocessor Configuration
CO3	Infer the functions of various interfacing IC'.
CO4	Explain the architectures and instruction set of Microcontroller
CO5	Illustrate the functions of various interfacing devices with Microcontroller
CO6	Build an assembly language program for interfacing

EC6511- DIGITAL SIGNAL PROCESSING LABORATORY

Students will be able to

CO1	Plot the different types of signals
CO2	Analyze frequency response for the given system
CO3	Implement MultiMate filters in DSP
CO4	Apply adaptive filters in various applications of DSP
CO5	Implement DSP systems using DSP processor.
CO6	Develop DSP based systems for real-time applications



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COURSE OUTCOMES (CO)

EC6512- COMMUNICATION SYSTEMS LABORATORY

Students will be able to

CO1	Design different types of analog and digital modulation Schemes
CO2	Implement sampling theorem and Time Division Multiplexing
CO3	Implement Line Coding Schemes
CO4	Simulate Various modulation Schemes using Mat lab.
CO5	Investigate the performance of Communication systems
CO6	Simulate Error Control Coding Schemes in Communication System

EC6513- MICROPROCESSOR AND MICROCONTROLLER LABORATORY

Students will be able to

CO1	Write and execute ALP Program using Microprocessor
CO2	Interface different I/Os with microprocessor
CO3	Generate waveforms using Microprocessors
CO4	Execute Programs in 8051 Microcontroller
CO5	Develop a program to communicate Microprocessor with Personal Computer
CO6	Use a combination of hardware and software to solve a real time problem

VI SEMESTER

MG6851- PRINCIPLES OF MANAGEMENT

Students will be able to

CO1	Summarize the evolution of management thoughts and various challenges of managerial activities in a global
CO3	Explain the types of Planning and Decision making at various levels management in the Organizations.
CO4	Discuss various types of Organization structure.
CO5	List out the steps in Staffing process and stages in Career development.
CO6	Explain the elements in Direction.



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COURSE OUTCOMES (CO)

CS6303- COMPUTER ARCHITECTURE

Students will be able to

CO1	Identify and describe the major components of computer system
CO2	Distinguish various multiplication and division algorithms
CO3	Interpret and apply various addressing modes
CO4	Analyze pipelined control units and various types of hazards in the instructions
CO5	Compare properties of shared memory and distributed multiprocessor systems and cache coherency protocols.
CO6	Analyze the performance of memory using performance equation in a digital computer

CS6551- COMPUTER NETWORKS

Students will be able to

CO1	Describe the Internet architecture and link layer services
CO2	Compare various media access and internetworking protocols
CO3	Apply various routing protocols and algorithms for a given network along with IP addresses
CO4	Demonstrate the flow of information from one process to another process in the network
CO5	Summarize the various Application requirements
CO6	Discuss the various application layer protocols

EC6601- VLSI DESIGN

Students will be able to

CO1	Analyze the basic concepts of linear and Non-linear behaviour of MOS transistors.
CO2	Realize the various logic gates and functions using different logic families.
CO3	Design of memory elements in sequential circuits.
CO4	Describe the concepts of sequential circuits with different clocking schemes.
CO5	Analyze the critical path delay of various arithmetic building blocks.
CO6	Differentiate between Full custom and Semi-custom IC design.



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COURSE OUTCOMES (CO)

EC6602- ANTENNA AND WAVE PROPAGATION

Students will be able to

CO1	Illustrate the radiation characteristics of antennas
CO2	Determine the field components of aperture and slot antennas
CO3	Distinguish the radiation pattern of end fire and broad side arrays
CO4	Illustrate the principles of special antennas
CO5	Explain the various antenna measurement techniques
CO6	Discuss the characteristics of radio-wave propagation with respect to atmospheric layers

EC6001- MEDICAL ELECTRONICS

Students will be able to

CO1	Discuss the characteristics of the bioelectric signals
CO2	Describe the measurement techniques for various non-electrical parameters.
CO3	Illustrate the working of human assist devices
CO4	Discuss the operation of diathermy equipment.
CO5	Describe the principle of Bio -Telemetry.
CO6	Explain the recent trends in diagnosis & Therapy

EC6611- COMPUTER NETWORKS LABORATORY

Students will be able to

CO1	Build connection between desktop computers using Network topologies
CO2	Demonstrate Flow control and Error control Techniques
CO3	Develop Programs for client-server applications using sockets
CO4	Implement various routing algorithms for the given network
CO5	Implement Encryption/Decryption algorithm and various Error Detecting/Correcting codes
CO6	Apply CSMA CD/CA protocols and various Congestion Control Algorithms for given networks using simulation tool.



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EC6612- VLSI DESIGN LABORATORY

Students will be able to

CO1	Develop the HDL code for basic as well as advanced digital Integrated circuits
CO2	Import the logic modules into FPGA Boards.
CO3	Perform the Synthesization, Place and Route the digital IPs..
CO4	Design, Simulate and Extract the layouts of Analog IC Blocks using EDA tools
CO5	Simulate the modern chip manufacturing software tools.
CO6	Execute and Extract the layouts of basic modules using EDA tool.

GE6674- COMMUNICATION AND SOFT SOFT SKILLS LABORATORY BASED

Students will be able to

CO1	Get rid of stage fear and answer the questions arise from the audience.
CO2	Communicate confidently and fluently.
CO3	Comprehend and prepare reports efficiently.
CO4	Successfully answer the questions in Interview
CO5	Take International Examination such as IELTS and TOFEL
CO6	Make Presentations and participate in Group Discussions

VII SEMESTER

EC6701- RF AND MICROWAVE ENGINEERING

Students will be able to

CO1	Analyze the S Parameters of two port networks.
CO2	Design impedance matching networks for RF amplifiers.
CO3	Analyze the S-parameters of passive microwave devices.
CO4	Describe the working principle of active microwave components.
CO5	Compare the efficiency of microwave amplifiers and oscillators.
CO6	Describe microwave signal measurement techniques.



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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

REGULATION 2013

COURSE OUTCOMES (CO)

EC6702- OPTICAL COMMUNICATION AND NETWORKS

Students will be able to

CO1	Describe the basic principles of optical fiber communication
CO2	Summarize the different kind of signal degradation factors in optical fiber communication
CO3	Discuss the Characteristics of various fiber optical sources and detectors
CO4	Explain the various optical parameter measurement techniques
CO5	Compare the performance of optical networks based on Link Power budget and Rise Time budget
CO6	Compare the performance of various optical networks

EC6703- EMBEDDED AND REAL TIME SYSTEMS

Students will be able to

CO1	Explain the different embedded system technologies.
CO2	Describe the architecture and programming of ARM processor
CO3	Develop and analyze software modules for embedded system
CO4	Differentiate between the general purpose operating system and the real time operating system.
CO5	Apply system design flow to develop embedded systems
CO6	Implement real-time applications using embedded-system concepts

EC6004- SATELLITE COMMUNICATION

Students will be able to

CO1	Analyze the satellite orbit
CO2	Analyze the Earth and Space segment
CO3	Solve signal to noise ratio of earth segment
CO4	Comparison of multiple access
CO5	Analyze various methods of satellite access
CO6	Design various satellite application



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COURSE OUTCOMES (CO)

EC6011- ELECTRO MAGNETIC INTERFERENCE AND COMPATIBILITY

Students will be able to

CO1	Describe the electromagnetic interference environment and coupling Principles, different sources of EMI and mitigation technique
CO2	Explain the basic issues of interference compatibility and Analyze different EMI coupling principles and its impact
CO3	Apply coupling methods for different EM problems and Calculate the effects of shielding and grounding in a circuit environment
CO4	Describe the electronic systems that function without error or problem related to electromagnetic compatibility
CO5	Describe the characteristics of EMI filters and components and
CO6	Explain various test methods and instruments of EMI

EC6016- OPTO ELECTRONIC DEVICES

Students will be able to

CO1	Analyze design of optoelectronic integrated circuits .
CO2	Describe the basics of opto devices and circuits
CO3	Develop and analyze optoelectronics detective devices
CO4	Observe basics of solid state physics
CO5	Apply system design method to analyze
CO6	Develop basic display device

EC6711- EMBEDDED LABORATORY

Students will be able to

CO1	Summarize about ARM Tiva Launch-pad TM4C123
CO2	Experiment with A/D and D/A convertors using ARM system
CO3	Implement communication protocols with ARM
CO4	Compare the interrupt performance of ARM and FPGA
CO5	Develop C programs for interfacing keyboard, display, motor and sensor.
CO6	Demonstrate a mini project using embedded system



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COURSE OUTCOMES (CO)

EC6712- OPTICAL AND MICROWAVE LABORATORY

Students will be able to

CO1	Illustrate the characteristics of microwave components
CO2	Analyze the performance of simple optical link by measurement of losses and Analyzing the mode characteristics of fiber
CO3	Analyze the Eye Pattern, Pulse broadening of optical fiber and the impact on BER
CO4	Examine the Wireless Channel Characteristics and the performance of Wireless Communication System
CO5	Calculate different losses in fiber optic cables
CO6	Determine modes and acceptance angle of fiber optic cables

VIII SEMESTER

EC6801- WIRELESS COMMUNICATION

Students will be able to

CO1	Explain the Characteristics of fading in wireless channels
CO2	Describe the fundamentals of Cellular Architecture
CO3	Use various signaling schemes for wireless communication channels
CO4	Compare the performance of channel using various propagation models
CO5	Analyze the various mitigation techniques to address fading and interference in multipath propagation.
CO6	Design MIMO Systems in fading and non fading channels

EC6802- WIRELESS NETWORKS

Students will be able to

CO1	Explain WIMAX and Wireless LAN protocols and standards.
CO2	Describe IP and routing strategies.
CO3	Infer the TCP enhancements for wireless protocols.
CO4	Explain Wireless WAN architectures, protocols and its features.
CO5	Analyze the latest wireless protocols for the problems associated with Wireless Networks.
CO6	Interpret the latest 4G networks and its architecture.



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COURSE OUTCOMES (CO)

EC6018- MULTIMEDIA COMPRESSION AND COMMUNICATION

Students will be able to

CO1	Discuss the concepts of Error control coding
CO2	Learn the concepts of encoding and decoding and digital data streams.
CO3	Explain the methods for the generation of these codes And decoding techniques
CO4	Explain the detailed concepts of compression and decompression techniques
CO5	Discuss the concepts of multimedia compression communication
CO6	Explain the concepts of multimedia networking and Vo IP Technology

GE6757- TOTAL QUALITY MANAGEMENT

Students will be able to

CO1	Discuss various dimensions of product and service quality
CO2	Apply the TQM principles for quality improvement in organization
CO3	Distinguish various TQM tools and techniques used in Manufacturing and Service sectors
CO4	Use QFD tool to design and develop a new product as per customer requirements.
CO5	Explain various ISO Standards and Quality systems practiced in various sector
CO6	Summarize the basic concepts in total quality management relevant to manufacturing and service Sectors

EC6811- PROJECT WORK

Students will be able to

CO1	Demonstrate profound technical knowledge of the project.
CO2	Identify a real world problem, review literature and suggest its solution.
CO3	Demonstrate solutions to complex engineering problems utilizing a systems approach
CO4	Provide solutions to meet the specified needs of the society.
CO5	Perform multi-disciplinary task as an individual and / or team member to manage the project/task.
CO6	Perform data analysis, interpret and provide valid conclusions and Interpret the findings with appropriate technological / research field