

COURSE OUTCOMES

Regulation– 2017 - UG

YEAR/SEMESTER : I/I	
C101/HA8151- COMMUNICATIVE ENGLISH	
C101.1	Speak clearly, confidently, comprehensibly, and communicate with one or many listeners using appropriate communicative strategies.
C101.2	Write cohesively and coherently and flawlessly avoiding grammatical errors, using a wide vocabulary range, organizing their ideas logically on a topic.
C101.3	Read different genres of texts adopting various reading strategies.
C101.4	Listen/view and comprehend different spoken discourses/excepts in different accents.
C101.5	Gaining capacity, skills enabling the students to write personal letters, official letters and E-mails in English effectively. Enabling students to enhance their conversational skills in spoken and written forms.
C102/MA8151-ENGINEERING MATHEMATICS -I	
C102.1	Have basic knowledge and understanding in one field of materials, integral and differential calculus.
C102.2	Utilize methods of integration to compute volumes of objects with circular shaped aspects, and compute lengths of curves.
C102.3	Read and understand problem descriptions, then be able to formulate equations modelling the problem usually by applying geometric or physical principles.
C102.4	Use integration to compute problems important in physics and engineering.
C102.5	Find the area of plane curves and volume of solids using double and triple integrals.
C103/PH8151 - ENGINEERING PHYSICS	
C103.1	Have knowledge on the basics of physics related to properties of matter, optics, and acoustics.
C103.2	Apply these fundamental principles to solve practical problems related to materials used for engineering applications.
C103.3	Understand working principle of a LASER, components and working of different laser system and their engineering applications
C103.4	Understand the principle and working of particle detectors

C103.5	Examine the characteristics of laser and optical fiber.
C104/CY8151 ENGINEERING CHEMISTRY	
C104.1	Apply this knowledge to the analysis and design of batteries.
C104.2	Phase rule concept is used to know the heat treatment process of alloy.
C104.3	Know the properties of Lubricants.
C104.4	The knowledge gained on polymer chemistry, thermodynamics, Spectroscopy, phase rule and nano materials will provide a strong platform to understand the concepts on these subjects for further learning.
C104.5	Outline the synthesis, characteristics and the applications of nano materials.
C105/GE8151 PROBLEM SOLVING AND PYTHON PROGRAMMING	
C105.1	Develop algorithmic solutions to simple computational problems.
C105.2	Read, write, execute by hand simple Python programs.
C105.3	Structure simple Python programs for solving problems.
C105.4	Decompose a Python program into functions.
C105.5	Represent compound data using Python lists, tuples, dictionaries. Read and write data from/to files in Python Programs.
C106/GE8152-ENGINEERING GRAPHICS	
C106.1	Perform free hand sketching of basic geometrical constructions and multiple views of objects.
C106.2	Do orthographic projection of lines and plane surfaces.
C106.3	Draw projections and solids and development of surfaces.
C106.4	Prepare isometric and perspective sections of simple solids.
C106.5	Demonstrate computer aided drafting.
C107/GE8161-Problem Solving and Python Programming Laboratory	
C107.1	Write, test, and debug simple Python programs.
C107.2	Implement Python programs with conditionals and loops.
C107.3	Develop Python programs step-wise by defining functions and calling them.
C107.4	Use Python lists, tuples, dictionaries for representing compound data.

C107.5	Read and write data from/to files in Python.
C108/BS8161-Chemistry Laboratory	
C108.1	The students will be outfitted with hands-on knowledge in the quantitative chemical analysis of water quality related to parameters.
C108.2	To determine the amount of metal ions through volumetric and spectroscopic techniques
C108.3	To analyse and determine the composition of alloys
C108.4	To quantitatively analyse the impurities in solution by electroanalytical techniques
C109/BS8161 - PHYSICS AND CHEMISTRY LABORATORY	
C109.1	Apply principles of elasticity, optics and thermal properties for Engineering applications
C109.2	Determine the Modulus of elasticity of materials and Coefficient of Viscosity of liquids and to determine the Thermal Conductivity of bad conductor using Lee's disc method
C109.3	Measure the wavelength of prominent spectral lines of Mercury Spectrum and particle size of powder using diffraction phenomenon and thickness of thin materials using interference phenomenon, Determine the band gap energy of a semiconductor
C109.4	Calculate water quality parameters such as hardness, alkalinity of the given water sample, Estimate the amount of the given acids using conductometric titrations.
C109.5	Estimate the amount of the given acids using pH titrations, Determine the amount of iron content in the given substance using potentiometric titration, Determine the amount of chloride content in the given water sample.
SEMESTER -II	
C201/HS8251-TECHNICAL ENGLISH	
C201.1	Speak convincingly, express their opinions clearly, initiate a discussion, negotiate, and argue using appropriate communicative strategies.
C201.2	Write effectively and persuasively and produce different types of writing such as narration, description, exposition and argument as well as creative, critical, analytical and evaluative writing.
C201.3	Read different genres of texts, infer implied meanings and critically analyse and evaluate them for ideas as well as for method of presentation.
C201.4	Listen/view and comprehend different spoken excerpts critically and infer unspoken and implied meanings.
C201.5	Enhancing student's skills in report writing, job application, paragraph writing and other

	forms of writing skills.
C202/MA8251-ENGINEERING MATHEMATICS – II	
C202.1	Develop the fundamentals and basic concepts in vector calculus, ODE, Laplace transform and complex functions.
C202.2	Solve problems related to engineering applications by using these techniques.
C202.3	To have an ability of mathematical modelling of systems using differential equations and ability to solve the differential equations.
C202.4	Use Green's theorem to evaluate line integrals along simple closed contours on the plane and use Stokes' theorem to give a physical interpretation of the curl of a vector field.
C202.5	Expand functions of two variables as Taylor's and Laurent's series and evaluate Contour integrals using Cauchy's formula.
C203/PH8253-Physics For Electronics Engineering	
C203.1	Knowledge on classical and quantum electron theories, and energy band structures
C203.2	Knowledge on basics of semiconductor physics and its applications in various devices
C203.3	Knowledge on magnetic and dielectric properties of materials
C203.4	Understanding on the functioning of optical materials for optoelectronics
C203.5	Understanding on the functioning of Nano electronic devices
C204/BE8254/BASIC ELECTRICAL AND INSTRUMENTATION ENGINEERING	
C204.1	Fundamentals of semiconductor and basic theorems used in Electrical circuits
C204.2	Design amplifier circuits under CB, CE, CC Configurations.
C204.3	Design the Adders – Flip-Flops – Registers and Counters with logic gates.
C204.4	Discuss the Principles of Amplitude and Frequency Modulations and various blocks communication Systems
C204.5	Demonstrate the working of Television systems, FAX machines and micro wave systems.
C205/C113 /EC8251/CIRCUIT ANALYSIS	
C205.1	Develop the capacity to analyze electrical circuits, apply the circuit theorems in real time
C205.2	Design and understand and evaluate the AC and DC circuits.
C205.3	Practical implications of the fundamentals of Ohm's law, Kirchhoff's current and voltage laws
C205.4	Accurate measurement of voltage, current, power and impedance of any circuit

C205.5	DC analysis, Transient analysis and Frequency analysis of a given circuit depending on types of elements
C205.6	Practical implementation of the fundamental electrical theorems and modeling of simple electrical systems
C206/C114/ EC8252/ELECTRONIC DEVICES	
C206.1	Describe the principle and characteristics of semiconductor diode
C206.2	Analyze various transistor configurations
C206.3	Construct large signal modeling and small signal modeling of a transistor
C206.4	Describe the principle of operation and characteristics of special Semiconductor diodes
C206.5	Discuss the operation of various semiconductor photo devices and power electronic devices
C207/ EC8261/CIRCUITS AND DEVICES LABORATORY	
C207.1	Identify the basic devices and its configurations
C207.2	Analyze the resistive circuits with different sources
C207.3	Obtain the resonance for different configurations of RLC
C207.4	Explain the response of RLC circuit with different inputs
C207.5	Understand the operation of basic solid state devices
C208 / GE8261/ ENGINEERING PRACTICES LABORATORY	
C208.1	Gets exposure regarding Joining operations in engineering materials.
C208.2	Carry out the basic machining operations in engineering materials.
C208.3	Carry out basic home electrical works and appliances
C208.4	Measure the electrical quantities
C208.5	Understand basic electronic components.
C208.6	Integrate the components and gates using soldering practices.

COURSE OUTCOMES (SEM III – VIII) _ Regulation– 2017 – UG

YEAR/SEMESTER : II/III	
C301/ MA8352- LINEAR ALGEBRA AND PARTIAL DIFFERENTIAL EQUATIONS	
C301.1	Explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied contexts.
C301.2	Demonstrate accurate and efficient use of advanced algebraic techniques

C301.3	Demonstrate their mastery by solving non - trivial problems related to the concepts and by proving simple theorems about the statements proven by the text.
C301.4	Solve various types of partial differential equations.
C301.5	Solve engineering problems using Fourier series.
C302/ EC8393- FUNDAMENTALS OF DATA STRUCTURES IN C	
C302.1	Develop the programs in C using basic constructs.
C302.2	Develop the programs in C using function, pointers, structures and unions.
C302.3	Suggest and Implement appropriate linear data structure operations for any given data set in C.
C302.4	Suggest and Implement appropriate non-linear data structure operations for a given application in C.
C302.5	Appropriately choose the sorting algorithms and also apply hashing concepts for a given problem.
C303/ EC8351- ELECTRONIC CIRCUITS- I	
C303.1	Design the various biasing circuits of BJT, JFET and MOSFET.
C303.2	Analyze the small signal equivalent and design BJT amplifier circuits.
C303.3	Analyze the small signal equivalent and design JFET and MOSFET amplifier circuits.
C303.4	Plot the frequency response of all amplifiers.
C303.5	Design the regulated power supply, troubleshoot and analyze the faults in power supplies.
C304/ EC8352 - SIGNALS AND SYSTEMS	
C304.1	Analyze the various properties of signals and systems.
C304.2	Apply Laplace transform and Fourier transform in signal analysis
C304.3	Analyse linear time invariant continuous time systems using Laplace and Fourier Transforms
C304.4	Analyze discrete time signals using Z transform and DTFT.
C304.5	Interpret the linear time invariant discrete time systems using Z transform and DTFT.
C305/ EC8392 - DIGITAL ELECTRONICS	
C305.1	Apply the concepts of digital electronics in the present contemporary world.

C305.2	Design and implement various combinational digital circuits using logic gates.
C305.3	Analysis and design synchronous sequential circuits.
C305.4	Design and implement asynchronous sequential circuits.
C305.5	Apply the concepts of memory devices and programmable logic devices in Integrated Circuits
C306/ EC8391 - CONTROL SYSTEMS ENGINEERING	
C306.1	Perform modeling of control system using various techniques.
C306.2	Obtain the time response and steady state error of control systems.
C306.3	Design various compensators and to analyse the frequency response of the system using various plots.
C306.4	Determine the stability of control systems.
C306.5	Analyze and obtain state space model using state variables
C307/ EC8381 - FUNDAMENTALS OF DATA STRUCTURES IN C LABORATORY	
C307.1	Develop C programs for simple applications making use of basic constructs.
C307.2	Apply basic data structures for a given problem using C.
C307.3	Implement linear and non-linear data structures using C.
C307.4	Implement functions and recursive functions in C.
C207.5	Choose appropriate searching, sorting and hashing algorithm for an application and implement it in a modularized way.
C308/ EC8361 - ANALOG AND DIGITAL CIRCUITS LABORATORY	
C308.1	Plot the frequency response of CE, CB, CC & CS amplifiers.
C308.2	Measure CMRR in differential amplifier.
C308.3	Analyse the limitation in bandwidth of single stage and multistage amplifiers.
C308.4	Simulate the amplifiers using SPICE tool.
C308.5	Design and implement combinational and sequential logic circuits.
C309/ HS8381 - INTERPERSONAL SKILLS /LISTENING	
C309.1	Speak effectively on various academic topics and respond to questions.
C309.2	Converse effectively with the use of conversation starters and discourse markers.
C309.3	Listen and respond to various academic dialogues and discussions.

C309.4	Participate confidently and appropriately in informal and formal conversations and group discussions
C309.5	Use a range of presentation tools like PPT, Videos, and Charts etc. to make an engaging presentation.
YEAR/SEMESTER : II/IV	
C401/ MA8451- PROBABILITY AND RANDOM PROCESSES	
C401.1	Use the fundamental knowledge of the concepts of probability and standard Distributions which can describe real life phenomenon.
C401.2	Apply the basic concepts of one and two dimensional random variables in engineering applications.
C401.3	Apply the concept random processes in engineering disciplines.
C401.4	Apply the concept of correlation and spectral densities.
C401.5	Analyze the response of random inputs to linear time invariant systems.
C402/ EC8452-Electronic Circuits II	
C402.1	Analyze the concepts of Feedback Amplifiers in various applications
C402.2	Design different types of Oscillator at different frequencies.
C402.3	Analyze the performance of Tuned amplifiers
C402.4	Design Pulse circuits and Multi-vibrators
C402.5	Apply the various design techniques to analyze Power Amplifiers and DC Convertors
C403/ EC8491- COMMUNICATION THEORY	
C403.1	Analyze the various modulation techniques used for communication.
C403.2	Elaborate the angle modulation and demodulation techniques.
C403.3	Apply the concepts of Random Process.
C403.4	Analyze the noise performance of AM and FM systems.
C403.5	Design applications using the various types of sampling and quantization
C404/ EC8451- ELECTROMAGNETIC FIELDS	
C404.1	Apply the basic mathematical concepts of vector analysis.
C404.2	Describe the laws associated to static electric field and the properties of conductors and dielectrics.

C404.3	Analyze the field potentials due to static magnetic fields and explain how materials affect electric and magnetic fields.
C404.4	Analyze the relation between the fields under time varying situations and apply Maxwell's equations to electric and magnetic fields.
C404.5	Explain electromagnetic wave propagation in lossy and in lossless media.
C405/ EC8453- LINEAR INTEGRATED CIRCUITS	
C405.1	Design linear and non-linear applications of op-amps.
C405.2	Design applications using Analog multipliers and PLL.
C405.3	Design ADC and DAC using op-amps.
C405.4	Design waveform Generators using op-amps.
C405.5	Analyze special function ICs.
C406/ GE8291- ENVIRONMENTAL SCIENCE AND ENGINEERING	
C406.1	Summarize the importance of environment, biodiversity, ecosystem and how to solve environmental related problems.
C406.2	Describe the causes, effect and control measures of air pollution, water pollution, soil pollution, noise pollution, radioactive pollution and thermal pollution with their relevant case studies.
C406.3	Discuss the various renewable and non-renewable resources and energy conservation processes.
C406.4	Explain the social issues and solutions for sustainable environment with relevant Acts and case studies.
C406.5	Review the impact of human population in the environment and its remedial measures.
C407/ EC8461- CIRCUITS DESIGN AND SIMULATION LABORATORY	
C407.1	Differentiate feedback amplifiers with oscillators
C407.2	Calculate the frequency response & the output impedance for various types of feedback amplifiers
C407.3	Design different types of RC, LC oscillators and tuned amplifiers.
C407.4	Analyze the various types of wave-shaping circuits and multi-vibrators.
C407.5	Simulate oscillators, tuned amplifiers and power amplifiers using SPICE tool
C408/ EC8462- LINEAR INTEGRATED CIRCUITS LABORATORY	

C408.1	Analyze the basics of linear integrated circuits and available ICs.
C408.2	Design the oscillators, amplifiers and filters using operational amplifiers.
C408.3	Analyze and implement the frequency multiplier using PLL.
C408.4	Design DC power supply using ICs.
C408.5	Analyze the performance of filters, Multivibrators, A/D converters and analog multiplier using SPICE.
YEAR/SEMESTER : III/V	
C501/ EC8501- DIGITAL COMMUNICATION	
C501.1	Design applications using the various source coding techniques.
C501.2	Interpret the various waveform coding schemes and their representation.
C501.3	Analyze the various baseband transmission schemes.
C501.4	Develop applications using the various band pass signaling schemes.
C501.5	Apply the basic concepts of channel coding techniques
C502/ EC8553- DISCRETE-TIME SIGNAL PROCESSING	
C502.1	Apply DFT for the analysis of digital signals & systems.
C502.2	Design Infinite Impulse response (IIR) digital filters.
C502.3	Design Finite Impulse response (FIR) digital filters.
C502.4	Analyze the finite Word length effects in digital filters.
C502.5	Explain the functionalities and architecture of DSP processors.
C503/ EC8552 - COMPUTER ARCHITECTURE AND ORGANIZATION	
C503.1	Analyze the performance of the computer system and understand the different instructions formats in MIPS architecture.
C503.2	Illustrate the internals of arithmetic and logic units for fixed point and floating point operations.
C503.3	Describe the purposes of data path and control path, pipeline for execution of instructions and its hazards.
C503.4	Explain the various memory organizations with its performances, internal communications methodologies for I/O devices.
C503.5	Interpret the various parallel processing architectures, principles and their challenges.

C504/ EC8551- COMMUNICATION NETWORKS	
C504.1	Describe the concepts of the network fundamentals and different layers.
C504.2	Identify the components required to build different types of networks and internet working protocols.
C504.3	Apply the concept of various protocols in routing and multicasting.
C504.4	Explain the flow of information from one node to another in the networks.
C504.5	Analyze the operations of various application layer protocols such as WWW, HTTP, and DNS.
C505/ EC6504- MEDICAL ELECTRONICS	
C505.1	Explain about the physiological parameters and recording methods
C505.2	Analyze the bio-chemicals and various physiological information
C505.3	Describe various assist devices used in hospitals.
C505.4	Explain the equipment used for physical medicine and the various recently developed diagnostic and therapeutic techniques.
C505.5	Apply the concepts of medical Instrumentation in recent technology (Radio pill, Telemedicine, Endo microscopy unit).
C506/ ORO551- RENEWABLE ENERGY RESOURCES	
C506.1	Explain the physics of solar radiation
C506.2	Discuss the classification of solar energy collectors and methodologies of storing solar energy.
C506.3	Illustrate the concepts of solar energy utilization in a useful way and applications of solar energy.
C506.4	Describe the concepts in wind energy and biomass with its economic aspects.
C506.5	Analyze in capturing and applying other forms of energy sources like geothermal, Wave, Tidal, OTEC, mini-hydel energies
C507/ EC8562- DIGITAL SIGNAL PROCESSING LABORATORY	
C507.1	Generate various signals using MATLAB and DSP processor
C507.2	Implement Linear and circular convolution programs and Frequency Analysis using DFT in MATLAB
C507.3	Implement Auto correlation and Cross Correlation using MATLAB

C507.4	Design FIR and IIR Filters using MATLAB and DSP Processor
C507.5	Analyze the architecture of a DSP Processor and to implement Up-sampling and Down-sampling operation in DSP Processor
C508/ EC8561 - COMMUNICATION SYSTEMS LABORATORY	
C508.1	Analyze the effects of sampling and TDM
C508.2	Design AM & FM modulation and demodulation
C508.3	Implement Pulse Code Modulation and Delta Modulation
C508.4	Implement the signal constellations of Digital Modulation schemes
C508.5	Implement various Error control coding schemes
C509/ EC8563 - COMMUNICATION NETWORKS LABORATORY	
C509.1	Perform client-server communication between two desktop computers using Socket Programming
C509.2	Implement the different protocols.
C509.3	Simulate various network topologies like Star, Bus and Ring.
C509.4	Implement and compare the different routing algorithms.
C509.5	Simulate the algorithms with the help of Network Simulator tool.
YEAR/SEMESTER : III/VI	
C601/ EC8691- MICROPROCESSORS AND MICROCONTROLLERS	
C601.1	Describe the architecture of microprocessor 8086 and execute programs based on 8086 microprocessor.
C601.2	Explain about design aspects of I/O and Memory Interfacing circuits.
C601.3	Interface 8086 microprocessors with supporting chips.
C601.4	Describe the architecture of microcontroller 8051.
C601.5	Implement 8051 microcontroller based systems.
C602/ EC8095- VLSI DESIGN	
C602.1	Realize the concepts of digital building blocks using MOS transistor.
C602.2	Design combinational MOS circuits and power strategies.

C602.3	Design and construct Sequential Circuits and Timing systems.
C602.4	Design arithmetic building blocks and memory subsystems.
C602.5	Apply and implement FPGA design flow and testing.
C603/ EC8652 - WIRELESS COMMUNICATION	
C603.1	Elaborate the characteristics of a wireless channel and evolve the system design specifications
C603.2	Apply the various cellular concepts like frequency reuse, channel assignments, Hand-off strategies etc., in mobile communication.
C603.3	Analyze the performance of various digital signaling schemes of fading channels.
C603.4	Apply the multipath mitigation techniques based on the application.
C603.5	Implement the concept of transmit/receive diversity in MIMO systems.
C604/ MG8591 - PRINCIPLES OF MANAGEMENT	
C604.1	Discuss the evolution of management, functions and roles of managers.
C604.2	Explain the different types of planning process and tools used for planning.
C604.3	Elaborate different organization structures and functions of human resources manager.
C604.4	Interpret the concepts in motivation techniques, leadership and communication processes
C604.5	Describe the control techniques and the role of technology in management.
C605/ EC8651- TRANSMISSION LINES AND RF SYSTEMS	
C605.1	Analyze the various types of transmission lines and the losses associated.
C605.2	Analyze different parameters and constraints in high frequency transmission of information.
C605.3	Analyze impedance matching by stubs using smith charts.
C605.4	Analyze the characteristics of TE and TM waves in Guided systems.
C605.5	Design a RF transceiver system for wireless communication.
C606/ EC8004- WIRELESS NETWORKS	
C606.1	Analyze different standards used for Wireless LAN.

C606.2	Apply the concepts of Network Layer protocols used for Mobile Applications.
C606.3	Apply the suitable network depending on the availability and requirement.
C606.4	Implement different type of applications for smart phones and mobile devices with latest network strategies.
C606.5	Converse with the latest 3G/4G and Wi-MAX networks and its architecture.
C607/ EC8681- MICROPROCESSORS AND MICROCONTROLLERS LABORATORY	
C607.1	Write ALP programmes for arithmetic operation, logical operations and data movement using 8086 microprocessor instructions.
C607.2	Implement ALP programmes for code conversion, decimal arithmetic and matrix operations using 8086 instructions.
C607.3	Generate result for floating point operations, string manipulations, sorting, Searching, Password checking, Print RAM size, System Date, Counters and Time Delay using 8086 microprocessor and MASM software.
C607.4	Design 8086/8051 based systems using peripherals and interfaces.
C607.5	Calculate outputs for arithmetic operation, logical operation, square of a number and cube of a number using 8051 microcontroller/MASAM software.
C608/ EC8661- VLSI DESIGN LABORATORY	
C608.1	Write HDL code for basic as well as advanced digital integrated circuits.
C608.2	Synthesize, Place and Route the digital circuits
C608.3	Import the logic modules in to FPGA boards.
C608.4	Design, Simulate and Extract the layouts of the digital circuits using EDA platforms.
C608.5	Design and Simulate the analog circuits using EDA platforms.
C609/ EC8611- TECHNICAL SEMINAR	
C609.1	Explain the significance of learning recent advancement in electrical and electronics engineering discipline.
C609.2	Review and prepare the State-of-art technologies in the present technological developments.
C609.3	Organize the presentation using the concepts of ordering and determining the central, main and supporting ideas.
C609.4	Present any topic in any recent advancement with good communicative skill in front of

	peers and faculty members.
C609.5	Perform well in placement recruitment drive with good technical skills and communication skills.
C610/ HS8581- PROFESSIONAL COMMUNICATION	
C610.1	Exhibit soft skills and awareness of different cultures in varied contexts.
C610.2	Make effective presentations.
C610.3	Participate confidently in Group Discussions.
C610.4	Attend job interviews and be successful in them.
C610.5	Set short-term and long-term career goals.
YEAR/SEMESTER : IV/VII	
C701/ EC8701- ANTENNAS AND MICROWAVE ENGINEERING	
C701.1	Analyze the basic antenna parameters and link power budget
C701.2	Describe the design and radiation mechanism of various types of antennas.
C701.3	Explain about the various kinds of antenna arrays.
C701.4	Explain the basic concept of various microwave devices
C701.5	Design a microwave system for the given application.
C702/ EC8751- OPTICAL COMMUNICATION	
C702.1	Apply the fundamental concept of optical fiber modes and their configurations.
C702.2	Analyze the various signal degradation factors associated with optical fiber.
C702.3	Explain the Various optical sources and optical detectors and their use in the optical communication system.
C702.4	Apply the techniques required to measure the optical fiber systems based on the applications.
C702.5	Analyze the Digital Transmission and its associated parameters on system performance
C703/ EC8791- Embedded and Real Time Systems	
C703.1	Explain the fundamental concepts of designing and the computing required for Embedded Systems.

C703.2	Describe the architecture and programming of ARM processor.
C703.3	Apply the programming concepts in embedded system.
C703.4	Analyze the techniques required for creating Real Time Embedded Systems.
C703.5	Apply the concepts of scheduling in Real Time Operating System and creating the model for Real Time applications.
C704/ EC8702 - AD HOC AND WIRELESS SENSOR NETWORKS	
C704.1	Explain the Basics of Adhoc networks and Wireless Sensor Networks
C704.2	Apply suitable routing algorithm based on network and user requirement
C704.3	Identify appropriate physical and MAC Layer protocols
C704.4	Describe the transport layer and security issues possible in wireless sensor networks
C704.5	Apply sensor network platforms and tools for various applications.
C705/ EC8092 - ADVANCED WIRELESS COMMUNICATION	
C705.1	Understand basic principles of capacity of wireless channels.
C705.2	Acquire knowledge about various propagation methods.
C705.3	Understand and apply schemes for space time block codes.
C705.4	Understand and apply various methods for space time trellis codes.
C705.5	Understand basic concepts of layered space time codes.
C706/ OIE751- ROBOTICS	
C706.1	Explain the concepts of industrial robots, classification, specifications and coordinate systems. Also summarize the need and application of robots indifferent sectors.
C706.2	Illustrate the different types of robot drive systems as well as robot end effectors.
C706.3	Apply the different sensors and image processing techniques in robotics to improve the ability of robots.
C706.4	Develop robotic programs for different tasks and familiarize with the kinematics motions of robot.
C706.5	Examine the implementation of robots in various industrial sectors and interpolate the economic analysis of robots.
C707/ EC8711- EMBEDDED LABORATORY	
C707.1	Write programs in ARM for a specific Application.

C707.2	Interface memory with ARM processor and write a program related to memory operations.
C707.3	Interface A/D and D/A convertors with ARM system.
C707.4	Analyze the performance of interrupt.
C707.5	Write programs for interfacing keyboard, display, motor and sensor.
C708/ EC8761- ADVANCED COMMUNICATION LABORATORY	
C708.1	Analyze the performance of simple optical link by measurement of losses
C708.2	Analyze the mode characteristics of fiber, eye pattern and the impact on BER
C708.3	Estimate the wireless channel characteristics and analyze the performance of wireless communication system
C708.4	Understand the intricacies in microwave system design and analyze the characteristics of Directional Couplers, Isolators, Circulators
C708.5	Understand the characteristics of Gunn diode and Microwave IC filter
YEAR/SEMESTER : IV/VIII	
C801/ GE8076- PROFESSIONAL ETHICS IN ENGINEERING	
C801.1	Apply ethics, morals and human values in society
C801.2	Explain about engineering ethics
C801.3	Describe the responsibilities of engineers as experimenters
C801.4	Analyze the safety, risks, risk benefit analysis and rights of an engineer
C801.5	Discuss the importance of the global issues, moral leadership and code of conduct
C802/ CS8086- SOFT COMPUTING	
C802.1	Develop intelligent systems leveraging the paradigm of soft computing techniques.
C802.2	Implement, evaluate and compare solutions by various soft computing approaches for finding the optimal solutions.
C802.3	Recognize the feasibility of applying a soft computing methodology for a particular problem
C802.4	Design the methodology to solve optimization problems using fuzzy logic, genetic algorithms and neural networks.
C802.5	Design hybrid system to revise the principles of soft computing in various applications
C803/ EC8811- PROJECT WORK	

C803.1	Apply the fundamental knowledge and skills, which are acquired within the technical area, to a given problem
C803.2	<ul style="list-style-type: none"> • Identify and summarize an appropriate list of literature review, analyze previous researchers' work and relate them to the project • Within given constraints, even with limited information, the students will be able to independently analyze and discuss complex inquiries/problems and handle larger problems on the advanced level within the technical area.
C803.3	Design engineering solutions to complex problems in a systematic approach. Identify and apply appropriate parameters, assumptions and design criteria in consideration of health and safety (example: the use of codes of practice), ethics, economics, environment, sustainability
C803.4	Apply research and conduct experiments, as well as to analyze and interpret data that yield the results and answer important applicable research questions.
C803.5	Utilize technology tools for communication, collaboration, information management, and decision support.
C803.6	Demonstrate the knowledge, skills and attitudes of a professional engineer.
C803.7	Interact with team members in a professional manner, respecting differences, to ensure a collaborative project environment.
C803.8	Demonstrate a strong working knowledge of ethics and professional responsibility.
C803.9	Document and present one's own work, for a given target group, with strict requirements on structure, format, and language usage.
C803.10	Present the project outlining the approach and expected results using good oral and written presentation skills.
C803.11	Demonstrate effective organizational leadership and change skills for managing projects and project teams
C803.12	Recognize the need for life-long learning by undergoing the project work.