GNANAMANI COLLEGE OF TECHNOLOGY			
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING			
COURSE OUTCOMES (REGULATION 2017)			
Year/Sem	**Course**	**Course Outcomes**	
I/I	**HS8151-Communicative English**	C101.1	Understand articles of a general kind in magazines and newspapers.
		C101.2	Take part effectively in informal conversations; introduce themselves and their friends and express opinions in English.
		C101.3	Develop conversations and short talks in English.
		C101.4	Create short essay of a general kind, personal letters and emails in English.
		C101.5	Classify the tenses forms for better understanding.
I/I	**MA8151-Engineering Mathematics-I**	C102.1	Summarize the Basic Explanation of limit function, continuity and derivatives.
		C102.2	Apply differentiation rules in Euler's theorem, Jacobians and total derivatives.
		C102.3	Solve integration of rational functions and irrational functions using the definite and indefinite integrals
		C102.4	Examine the change of order of integration in Cartesian and polar coordinates.
		C102.5	Solve the higher order linear differential equation with constant co efficient.
I/I	**PH8151- Engi**	C103.1	Outline the properties of materials and its applications.

		C103.2	Develop knowledge on concepts of waves and optical devices
		C103.3	Explain the thermal conductivity of materials
		C103.4	Utilize the basic concepts of quantum theory in electron microscopes.
		C103.5	Compare the structures of various crystals and explain its synthesis techniques
Year/Sem	**Course**	**Course Outcomes**	
I/I	**CY8151- Engineering Chemistry**	C104.1	Identify the hardness of water and suitable methods to soften.
		C104.2	Explain the concepts of adsorption, catalysis of various substances and its applications.
		C104.3	Illustrate the phase transitions of various component system and alloys.
		C104.4	Analyze the combustion mechanisms of various fuels.
		C104.5	Explain different energy sources and storage devices.
I/I	**GE8151- Problem Solving and Python Programming**	C105.1	Develop algorithmic solutions to simple computational problems.
		C105.2	Demonstrate programs using simple Python statements and expressions.
		C105.3	Develop the control flow and functions concept in Python for solving problems.
		C105.4	Apply the Python data structures in lists, tuples & dictionaries for representing compound data.

		C105.5	Construct the files, exception, modules and packages in Python for solving problems.
I/I	GE8151- Engineering Graphics	C106.1	Construct the conic sections, special curves and free hand sketching
		C106.2	Develop projection of points, lines and plane surfaces
		C106.3	Construct the projection of solids with various conditions
		C106.4	Design the section of solids and develop the surface
		C106.5	Construct isometric view and perspective view of solids
Year/Sem	**Course**	**Course Outcomes**	
I/I	GE8161- Problem Solving and Python Programming Laboratory	C107.1	Test and debug the simple python programs
		C107.2	Develop the python programs with conditionals and loopings
		C107.3	Develop the python programs step-wise by defining functions anf calling them
		C107.4	Build Python list, tuples, dictionaries for representing compound data
		C107.5	Build the data from/to files in python
I/I	BS8161- Physics and Chemistry	C108.1	Examine the rigidity and young's modulus of the materials.
		C108.2	Experiment with thermal conductivity of material.

		C108.3	Determine the compressibility of liquid and wavelength of a spectrum.
		C108.4	Analyze the water quality parameter.
		C108.5	Measure the pH and conductance of a given sample.
I/II	**HS8251-Technical English**	C109.1	Explain technical texts and illustrate area-specific texts effortlessly.
		C109.2	Illustrate charts in their area of specialization successfully.
		C109.3	Explain and describe process in varies formal and informal contexts.
		C109.4	Develop reports, winning job applications and analytical essay.
		C109.5	Build technical presentations and prepare minutes of a meeting effectively.
Year/Sem	**Course**	**Course Outcomes**	
I/II	**MA8251-Engineering Mathematics-II**	C110.1	Apply matrix algebra techniques for practical applications.
		C110.2	Explain the Gradient, divergence and curl of a vector point function and related identities.
		C110.3	Apply the line, surface and volume integrals in gauss, stokes and greens theorem.
		C110.4	Analyze the function and conformal mappings using complex integration.
		C110.5	Solve the differential equation with constant co-efficient using Laplace transform.

I/II	PH8253-Physics for Electronics Engineering	C111.1	Classify the materials based on classical and quondam electron theory.
		C111.2	Explain the basics of semiconductor physics and its applications.
		C111.3	List out the various magnetic and dielectric properties of materials.
		C111.4	Explain the function of optical materials in optoelectronics.
		C111.5	Identify the fundamental concept of quantum structures.
I/II	8254-Basic Electrical and Instrumentation Engineering	C112.1	Explain the operation and characteristics of DC generator, DC motor and its applications.
		C112.2	Discuss the working of transformers and its performance.
		C112.3	Outline the construction and working principles of three phase & single phase Induction Motor and Synchronous Motor.
		C112.4	Classify the static and dynamic characteristics of measurement instruments and analyze the various types of transducers
		C112.5	Explain the application of analog and digital instruments in measurements
Year/Sem	**Course**	**Course Outcomes**	
I/II	EC8251-Circuit Analysis	C113.1	Analyze different laws and topology of D.C and A.C circuits
		C113.2	Utilize the concept of network reduction and theorems for dc and ac circuits.
		C113.3	Demonstrate the depth concept of resonance and couples circuits.

		C113.4	Discuss about the transient response of resistor, inductor, capacitor circuits and its characterization.
		C113.5	Establish the concept and parameter of two port network.
I/II	**EC8252-Electronic Devices**	C114.1	Appreciate the significance of diode in different applications. Understand the V-I characteristics of diode.
		C114.2	Illustrate the characteristics of transistor. Understand the working of transistors.
		C114.3	Analyze the equivalence circuits of transistor
		C114.4	Summarize the characteristics of special semiconductor diode.
		C114.5	Explain the basic electronic devices such as PN junction diode, Bipolar and Field effect Transistors, Power control devices, LED, LCD and other Opto-electronic devices
I/II	**EC8261-Circuits and Devices Laboratory**	C115.1	Appreciate the significance of diode in different applications. Understand the V-I characteristics of diode.
		C115.2	Illustrate the characteristics of transistor. Understand the working of transistors.
		C115.3	Analyze the equivalence circuits of transistor
		C115.4	Summarize the characteristics of special semiconductor diode.
		C115.5	Explain the basic electronic devices such as PN junction diode, Bipolar and Field effect Transistors, Power control devices, LED, LCD and other Opto-electronic devices
Year/Sem	**Course**	**Course Outcomes**	
I/II	**GE8261- Engi**	C116.1	Use wiring circuits for residential house, fluorescent lamp and stair case.

		C116.2	Classify the electrical quantities of V, I & PF in RLC and energy with single phase energy meter.
		C116.3	Demonstrate the logic gates and electronic components.
		C116.4	Manipulate PCB with electronic components, devices and circuits for general
		C116.5	Perform HWR & FWR with ripple factor and clock signal generation.
II/III	**C201 - Linear Algebra and Partial Differential Equations**	C201.1	Explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied contexts.
		C201.2	Distinguish accurate and efficient use of advanced algebraic techniques.
		C201.3	Develop their mastery by solving non – trivial problems related to the concept and by proving simple theorems about the statements proven by the text.
		C201.4	Solve first, second order homogeneous and non homogeneous partial differential equations.
		C201.5	Determine Fourier series to solve one dimensional wave and one and two dimensional heat equations.
II/III	**C202 - Fundamentals of Data Structures in C**	C202.1	Explain the concept of Linear and Non-linear data structures operations using C
		C202.2	Build the appropriate linear/ non-linear data structures using functions, structures, pointers and unions
		C202.3	Apply the concepts for a linear data structures using Arrays and its expressions
		C202.4	Analyze the non-linear data structures using trees and its graphs
		C202.5	Construct the algorithms for searching the sorting techniques

Year/Sem	Course	Course Outcomes	
II/III	C230 - Electronic Circuits-I	C203.1	Construct the basic amplifiers using bias compensation technique.
		C203.2	Determine the hybrid parameters for different types of amplifier.
		C203.3	Analyze the various types of amplifiers.
		C203.4	Determine the frequency analysis of the amplifiers.
		C203.5	Evaluate the various type of filters and transistors.
II/III	C204 - Signals and Systems	C204.1	Classify the various types of continuous and discrete signals and systems.
		C204.2	Analyze continuous time signals using Fourier series, Laplace and Fourier transform
		C204.3	Design continuous time LTI systems using Fourier and Laplace transform.
		C204.4	Analyze discrete time signal using z-transform and DTFT.
		C204.5	Design discrete time LTI systems using z-transform and DTFT.
II/III	C205 - Digital Electronics	C205.1	Analyze the different methods used for simplification of Boolean expressions.
		C205.2	Develop the various types of combinational circuits
		C205.3	Design and implement the synchronous sequential circuits

		C205.4	Design and implement the asynchronous sequential circuits.
		C205.5	Classify the various types of memory devices.

Year/Sem	Course	Course Outcomes	
II/III	C206 - Control Systems Engineering	C206.1	Analyze the transfer function of electromechanical system
		C206.2	Analyze the time response of the system
		C206.3	Analyze the performance of open loop and closed loop frequency response of the system
		C206.4	Explore the stability analysis to design the compensator
		C206.5	Apply the concept of state variable to analyze the state model
II/III	C207 - Fundamentals of Data Structures inC Laboratory	C207.1	Design and Implement the basic data structures using C
		C207.2	Apply linear and non-linear data structures in problem solving for string , pointers and dynamic memory allocations
		C207.3	Design and Implement functions and recursive functions for stack and queues in C
		C207.4	Design and Implement the tree traversals using C
		C207.5	Choose appropriate sorting algorithm for an application and implement it in a modularized way

II/III	**C208 - Analog and Digital Circuits Laboratory**	C208.1	Analyze the Ripple Factor and Efficiency of Rectifiers, Filters and Regulated Power Supplies.
		C208.2	Examine the Frequency Response of CE/CC/CB/CS, Darlington, Differential, Cascode and Cascade Amplifiers.
		C208.3	Design and Simulate BJT, JFET and MOSFET Amplifiers with various biasing methods using SPICE tool.
		C208.4	Design and Implement Combinational Logic circuits.
		C208.5	Design and Implement Synchronous and Asynchronous Counters.

Year/Sem	**Course**	**Course Outcomes**	
II/III	**C209 - Interpersonal Skills/Listening & Speaking**	C209.1	Listen and Respond to everyday topics with reasonable accuracy
		C209.2	Introduce themselves and their friends and Take part effectively in informal conversations in English.
		C209.3	Develop conversations and short talks in English.
		C209.4	Make effective presentations and Participate in GD.
		C209.5	Participate confidently and appropriately in conversations both formal and informal.
II/IV	**C210 - Probability and Random Processes**	C210.1	Identify the functions of Discrete & Continuous Random variables, Moments and Moment Generating Functions
		C210.2	Solve problems in Marginal and Conditional distributions using the concept of Correlation, Regressions and Transformation of two dimensional random variables.
		C210.3	Determine the process is either SSS or WSS and classify the TPM of Markov chain process.
		C210.4	Analyze the Autocorrelation and Cross correlation between two random variables and find the Power spectral Density and Cross Power Spectral Density

		C210.5	Solve the system transfer function and solution of auto correlation & cross correlation functions of LTI systems.
II/IV	**C211 - Electronic Circuits II**	C211 .1	Remembering the concept of feedback and compare various feedback amplifier.
		C211 .2	Analyze various Oscillators along with its frequency determination.
		C211 .3	Analyze the types of tuned amplifiers and its performance.
		C211 .4	Discuss various types of wave shaping circuits and multivibrators.
		C211 .5	Classify the types of power amplifiers and DC converters

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II/IV	**C212 - Communication Theory**	C212.1	Describe the various types of amplitude modulation systems such as DSBSC, SSB and VSB.
		C212.2	Discuss the various types of angle modulation system such as narrow and wide band FM circuits.
		C212.3	Apply the concepts of Random Process to the design of communication systems.
		C212.4	Classify the types of noise sources added in communication channel and to analyze the noise performance in AM and FM systems.
		C212.5	To understand the basic concepts of digital data and pulse communication.
II/IV	**C213 - Electromagnetic Fields**	C213.1	Understand the fundamentals of vector algebra, co-ordinate systems and theorems of electromagnetic fields.
		C213.2	Understand the electromagnetic laws, behavior of static electric fields and its applications.

		C213.3	Analyze the field potentials due to static magnetic fields and explain how materials affect magnetic fields.
		C213.4	Explain the relation between the fields under time varying situations and write Maxwell‘s equations in Integral, Differential and Phasor forms.
		C213.5	Explain plane waves propagation in lossy and lossless media.
II/IV	**C214 - Linear Integrated Circuits**	C214.1	Explain the performance characteristics of operational amplifier.
		C214.2	Design linear and non-linear applications of operational amplifiers.
		C214.3	Discuss the applications using analog multiplier and PLL.
		C214.4	Explain ADC and DAC using OP-AMP.
		C214.5	Generate Waveforms using OP-AMP circuits and Analyze special function IC’s.

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II/IV	**C215 - Environmental Science and Engineering**	C215 .1	Explain the various ecosystem and biodiversity.
		C215 .2	Outline the environmental pollution, related problems and control methods.
		C215 .3	Summarize the natural resources and the effects of its over-exploitation.
		C215 .4	Interpret social issues and sustainable development.

		C215 .5	Illustrate population, environmental health issues and application of Information Technology.
II/IV	**C216 - CircuitsDesign and Simulation Laboratory**	C216.1	Analyze various types of feedback amplifiers.
		C216.2	Design oscillators, tuned amplifiers, wave shaping circuits and multivibrators.
		C216.3	Design and stimulate the oscillators and tuned amplifiers using SPICE tool.
		C216.4	Design and stimulate the waveform shaping circuits and multivibrators using SPICE tool.
		C216.5	Analysis power amplifier using SPICE tool.
II/IV	**C217 - Linear Integrated Circuits Laboratory**	C217.1	Analyze the basics of linear integrated circuits and available ICs.
		C217.2	Design the oscillators, amplifiers and filters using operational amplifiers.
		C217.3	Analyze and implement the frequency multiplier using PLL.
		C217.4	Design DC power supply using ICs.
		C217.5	Analyze the performance of filters, Multivibrators, A/D converters and analog multiplier using SPICE.

Year/Sem	**Course**	**Course Outcomes**	
III/V	**C301 - Digit**	C301.1	Discuss about information theory and evaluate the Huffman and Shannon-fano encoding models.

		C301.2	Discuss about DPCM, DM, ADPCM and ADM techniques.
		C301.3	Explain the line coding and techniques for eliminating ISI in digital communication system.
		C301.4	Analyze the various pass band digital modulation techniques.
		C301.5	Apply error control coding techniques in digital communication system.
III/V	**C302 - Discrete-Time Signal Processing**	C302.1	Discuss about the Basic principles of discrete Fourier transform convolution and FFT algorithms.
		C302.2	Design and investigate IIR filters using various approximation techniques.
		C302.3	Design FIR filter using fourier series, windowing techniques and frequency sampling methods
		C302.4	Classify the finite word length effects by understanding the concepts of quantization
		C302.5	Discuss the architecture of Digital Signal Processors.
III/V	**C303 - Computer Architecture and Organization**	C303.1	Understand the basic structure, data representation, instruction formats and operation of digital computer.
		C303.2	Illustrate the fixed point and floating-point arithmetic for ALU operation.
		C303.3	Discuss about implementation schemes of data path unit, control unit and pipeline performance.
		C303.4	Explain the concept of various memories, interfacing and organization of multiple processors.
		C303.5	Discuss parallel processing technique and unconventional architectures.

Year/Sem	Course	Course Outcomes	
III/V	C304 - Communication Networks	C304.1	Illustrate the division of network functionalities into layers.
		C304.2	Choose the required functionality at each layer for given application
		C304.3	Apply the different routing techniques in networks
		C304.4	Identify solution for each functionality at each layer
		C304.5	Compare the flow of information from one node to another node in the network
III/V	C305 - Medical Electronics	C305.1	Discuss the terminologies of electro –physiology and its recording.
		C305.2	Determine the measurement techniques of bio-chemical and non-electrical parameters.
		C305.3	Categorize the various types of assist devices.
		C305.4	Explain the various diathermy and bio telemetry techniques
		C305.5	Outline current trends in medical instrumentation.
III/V	C306 - Renewable Energy	C306.1	Explain the physics of solar radiation
		C306.2	Discuss the classification of solar energy collectors and methodologies of storing solar energy.
		C306.3	Illustrate the concepts of solar energy utilization in a useful way and applications of solar energy.

		C306.4	Describe the concepts in wind energy and biomass with its economic aspects.
		C306.5	Analyze in capturing and applying other forms of energy sources like geothermal, Wave, Tidal, OTEC, mini-hydel energies

Year/Sem	Course	Course Outcomes	
III/V	C307 - Digital Signal Processing Laboratory	C307.1	**Experiment with** sequence generation, correlation, convolution and spectrum analysis using DFT
		C307.2	**Design** FIR and IIR filters with known specifications
		C307.3	**Apply** adaptive filtering in equalization for various applications of DSP
		C307.4	**Demonstrate** DSP processors and explain its operation and addressing modes.
		C307.5	**Build** FIR and IIR filters and analyze finite word length effects on DSP processors.
III/V	C308 - Communication Systems Laboratory	C308.1	Design and verify the sampling and TDM circuits
		C308.2	Design and verify the AM, FM and its demodulation circuits.
		C308.3	Analyze the working of PCM, DM, ADM and demodulation circuits.
		C308.4	Compile band pass digital signaling schemes through simulation of FSK, PSK, QPSK and QAM techniques.
		C308.5	Compile the line coding and error coding schemes to improve the performance of communication systems through simulations.

III/V	**C309 - Communication Networks Laboratory**	C309.1	Develop the Communication l between two desktop computers
		C309.2	Develop simple applications and sockets using TCP & UDP
		C309.3	Develop the various protocols.
		C309.4	Compare the performances of various routing algorithms
		C309.5	Analyze various Routing protocols using NS2 simulations tools
III/VI	**C310-Microprocessors and Microcontrollers**	C310.1	Outline basics of 8086 and execute programs based on 8086 microprocessors.
		C310.2	Develop Memory Interfacing circuits.
		C310.3	Experiment with I/O interface circuits based on 8086 microprocessors.
		C310.4	Summarize the basics of 8051 and execute programs based on 8051 microcontrollers.
		C310.5	Construct a system based on 8051 microcontrollers.
III/VI	**C311-VLSI Design**	C311.1	Realize the concepts of digital building blocks using MOS transistor.
		C311.2	Design combinational MOS circuits and power strategies.
		C311.3	Design and construct Sequential Circuits and Timing systems.
		C311.4	Design arithmetic building blocks and memory subsystems.

		C311.5	Apply and implement FPGA design flow and testing.
III/VI	**C312-Wireless Communication**	C312.1	Able to analyse various characteristics of communication channels.
		C312.2	Able analyse and select multiple access techniques for cellular networks.
		C312.3	Understand the various digital modulation schemes.
		C312.4	Compare multipath mitigation techniques and analyze their performance.
		C312.5	Design and implement MIMO system with transmits/receive diversity.
III/VI	**C313-Principles of Management**	C313.1	Understanding of Managerial functions like planning, organizing, staffing, leading & controlling and have same basic knowledge on international aspect of management
		C313.2	Understanding of Planning
		C313.3	Understanding of organizing.
		C313.4	Understanding of Directing
		C313.5	Understanding of controlling.
III/VI	**C314-Transmission Lines and**	C314.1	Explain the characteristics of transmission lines and its losses
		C314.2	Analyze different parameters and constraints in high frequency transmission of information.
		C314.3	Analyze impedance matching by stubs using smith charts.

		C314.4	Analyze the characteristics of TE and TM waves
		C314.5	Design a RF transceiver system for wireless communication
III/VI	**C315-Wireless Networks**	C315.1	Analyze different standards used for Wireless LAN.
		C315.2	Apply the concepts of Network Layer protocols used for Mobile Applications.
		C315.3	Apply the suitable network depending on the availability and requirement.
		C315.4	Implement different type of applications for smart phones and mobile devices with latest network strategies.
		C315.5	Converse with the latest 3G/4G and WiMAX networks and its architecture.
III/VI	**C316-Microprocessors and Microcontrollers Laboratory**	C316.1	Write ALP programmes for arithmetic operation, logical operations and data movement using 8086 microprocessor instructions.
		C316.2	Implement ALP programmes for code conversion, decimal arithmetic and matrix operations using 8086 instructions.
		C316.3	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.
		C316.4	Design 8086/8051 based systems using peripherals and interfaces.
		C316.5	Calculate outputs for arithmetic operation, logical operation, square of a number and cube of a number using 8051 microcontroller/MASAM software.
III/VI	**C317-VLSI Design**	C317.1	Write HDL code for basic as well as advanced digital integrated circuits.
		C317.2	Synthesize, Place and Route the digital circuits

		C317.3	Import the logic modules in to FPGA boards.
		C317.4	Design, Simulate and Extract the layouts of the digital circuits using EDA platforms.
		C317.5	Design and Simulate the analog circuits using EDA platforms.
III/VI	**C318-Technical Seminar**	C318.1	Explain the significance of learning recent advancement in electronics and communication engineering discipline.
		C318.2	Review and prepare the State-of-art technologies in the present technological developments.
		C318.3	Organize the presentation using the concepts of ordering and determining the central, main and supporting ideas.
		C318.4	Present any topic in any recent advancement with good communicative skill infront of peers and faculty members.
		C318.5	Perform well in placement recruitment drive with good technical skills and communication skills.
III/VI	**C319-Professional Communication**	C319.1	Make effective presentations
		C319.2	Participate confidently in Group Discussions.
		C319.3	Attend job interviews and be successful in them.
		C319.4	Develop adequate Soft Skills required for the workplace
		C319.5	Develop their confidence and able to attend interviews successfully
IV/VII	**C401 - Ante**	C401.1	Explain the fundamentals of antennas and wave propagation.

		C401.2	Write about the radiation of Microstrip and Reflector antennas.
		C401.3	Analyze the -importance of frequency independent antennas.
		C401.4	Analyze various antenna arrays and smart antennas.
		C401.5	Understand and design the microwave amplifier, filters and mixer circuits.
IV/VII	**C402-Optical Communication**	C402.1	Realize basic elements in optical fibers, different modes and configurations.
		C402.2	Analyze the transmission characteristics associated with dispersion and polarization techniques.
		C402.3	Design optical sources and detectors with their use in optical communication system.
		C402.4	Construct fiber optic receiver systems, measurements and coupling techniques.
		C402.5	Design optical communication systems and its networks.
IV/VII	**C403-Embedded and Real Time Systems**	C403.1	Outline the concepts of embedded systems
		C403.2	Describe the architecture and programming of ARM processor
		C403.3	Describe the models and compoents of embedded program
		C403.4	Explain the basic concepts of real time operating system design
		C403.5	Model real-time applications using embedded-system concepts

IV/VII	**C404-Ad hoc and Wireless Sensor Networks**	C404.1	Apply this knowledge to identify the suitable routing algorithm based on the network and user requirement
		C404.2	
		C404.3	Be familiar with Wireless Sensor Networks and build basic modules
		C404.4	Apply the knowledge to identify appropriate physical and MAC layer protocols
		C404.5	Understand the transport layer and security issues possible in Ad hoc and sensor networks.
IV/VII	**C405-Advanced Wireless Comminication**	C405.1	Discuss the cellular system design and technical challenges.
		C405.2	Analyze the Mobile radio propagation, fading, diversity concepts and the channel modeling.
		C405.3	Analyze the design parameters, link design, smart antenna, beam forming and MIMO systems.
		C405.4	Analyze Multiuser Systems, CDMA, WCDMA network planning and OFDM Concepts
		C405.5	Summarize the principles and applications of wireless systems and standards
IV/VII	**C406-Transducer Engineering**	C406.1	Acquire the knowledge on how physical quantities are measured and how they are converted to electrical or other forms.
		C406.2	Understand knowledge in resistance, transducers.
		C406.3	Cultivate the knowledge of inductance and capacitance transducers.
		C406.4	Learning the characteristics of Transducers.

		C406.5	Understand knowledge on various types of transducers
IV/VII	**C407-Embedded Laboratory**	C407.1	Write programs in ARM for a specific Application
		C407.2	Interface memory with ARM processor and write a program related to memory operations.
		C407.3	Interface A/D and D/A convertors with ARM system.
		C407.4	Analyze the performance of interrupt
		C407.5	Write programs for interfacing keyboard, display, motor and sensor.
IV/VII	**C408-Advanced Communication Laboratory**	C408.1	Understand the working principle of optical sources, detector, fibers and microwave components.
		C408.2	Develop understanding of simple optical communication link
		C408.3	Understand the measurement of BER and Pulse broadening in optical fiber.
		C408.4	Understand and capture an experimental approach to digital wireless communication.
		C408.5	Understand actual communication waveforms that will be sent and received across wireless channel.
IV/VIII	**C409-Digital Image Processing**	C409.1	Know and understand the basics and fundamentals of digital image processing, such as digitization, sampling, quantization, and 2D-transforms.
		C409.2	Operate on images using the techniques of smoothing, sharpening and enhancement.
		C409.3	Understand the restoration concepts and filtering techniques.

		C409.4	Learn the basics of segmentation, features extraction, compression and recognition methods for color models.
		C409.5	Use various coding techniques for image compression.
IV/VIII	**C410-Satellite Communication**	C410.1	Analyze the satellite orbits
		C410.2	Analyze the earth segment and space segment ·
		C410.3	Analyze the satellite Link design
		C410.4	Analyze different access and coding schemes
		C410.5	Design various satellite applications
IV/VIII	**C411-Project Work**	C411.1	Demonstrate profound technical knowledge of the project
		C411.2	Identify a real world problem, review literature and suggest its solution.
		C411.3	Demonstrate solutions to complex engineering problems utilizing a systems approach
		C411.4	Provide solutions to meet the specified needs of the society
		C411.5	Create a system and validate its conformance

CO PO MAPPING (REGULATION 2017)																
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
I/I	**HS8151-Communicative English**	C101.1	-	-	-	-	-	-	-	-	-	3	-	3	-	-
		C101.2	-	-	-	-	-	-	-	-	3	3	-	3	-	-
		C101.3	-	-	-	-	-	-	-	-	-	3	-	2	-	-
		C101.4	-	-	-	-	-	-	-	-	-	3	-	2	-	-
		C101.5	-	-	-	-	-	-	-	-	-	3	-	3	-	-
		C101	-	-	-	-	-	-	-	-	3.00	3.00	-	2.60	-	-
I/I	**MA8151-Engineering Mathematics-I**	C102.1	3	3	3	-	-	-	-	-	-	-	-	3	-	3
		C102.2	3	3	3	-	-	-	-	-	-	-	-	3	-	3
		C102.3	3	3	3	-	-	-	-	-	-	-	-	3	-	3
		C102.4	3	3	3	-	-	-	-	-	-	-	-	3	-	3
		C102.5	3	3	3	-	-	-	-	-	-	-	-	3	-	3
		C102	3.00	3.00	3.00	-	-	-	-	-	-	-	-	3.00	-	3.00
I/I	**PH8151-Engineering**	C103.1	3	3	2	-	-	-	-	-	-	-	-	2	-	-
		C103.2	3	3	2	-	-	-	-	-	-	-	-	2	-	-

		C103.3	3	3	2	-	-	-	-	-	-	-	-	2	-	-
		C103.4	3	3	2	-	-	-	-	-	-	-	-	3	-	-
		C103.5	3	3	2	-	-	-	-	-	-	-	-	3	-	-
		C103	3.00	3.00	2.00	-	-	-	-	-	-	-	-	2.40	-	-
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
I/I	**CY8151- Engineering Chemistry**	C104.1	3	3	2	-	3	-	-	2	-	-	-	2	-	-
		C104.2	3	3	-	-	-	-	-	-	-	-	-	2	-	-
		C104.3	3	2	-	-	2	-	-	-	-	-	-	2	-	-
		C104.4	3	3	-	-	-	-	-	-	-	-	-	2	-	-
		C104.5	3	-	-	-	-	-	-	2	-	-	-	2	-	-
		C104	3.00	2.75	2.00	-	2.50	-	-	2.00	-	-	-	2.00	-	-
I/I	**GE8151- Problem Solving and Python Programming**	C105.1	3	2	-	-	-	-	-	-	-	-	-	-	-	-
		C105.2	3	2	-	2	-	-	-	-	-	-	-	-	-	-
		C105.3	3	2	-	1	-	-	-	-	-	-	-	-	-	-
		C105.4	3	2	-	1	1	-	1	-	-	-	-	-	-	-
		C105.5	3	2	-	2	1	-	1	-	1	-	-	1	-	-

		C105	3.00	2.00	-	1.50	1.00	-	1.00	-	1.00	-	-	1.00	-	-
I/I	**GE8151- Engineering Graphics**	C106.1	3	3	3	-	-	-	-	3	-	3	-	3	-	-
		C106.2	3	3	3	-	-	-	-	3	-	3	-	3	-	-
		C106.3	3	3	3	-	-	-	-	3	-	3	-	3	-	-
		C106.4	3	3	3	-	-	-	-	3	-	3	-	3	-	-
		C106.5	3	3	3	-	-	-	-	3	-	3	-	3	-	-
		C106	3.00	3.00	3.00	-	-	-	-	3.00	-	3.00	-	3.00	-	-
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
I/I	**GE8161- Problem Solving and Python Programming Laboratory**	C107.1	3	3	3	-	3	1	-	3	3	3	-	1	2	2
		C107.2	3	3	3	-	3	1	-	2	2	3	-	2	2	2
		C107.3	3	3	3	-	3	1	-	2	3	1	-	3	1	2
		C107.4	3	2	3	-	2	1	-	3	3	2	-	3	1	-
		C107.5	3	2	2	1	2	1	-	3	2	3	-	2	3	-
		C107	3.00	2.60	2.80	1.00	2.60	1.00	-	2.60	2.60	2.40	-	2.20	1.80	2.00
I/I	**BS8161- Physics and**	C108.1	3	3	-	-	-	-	-	2	3	-	-	2	-	-
		C108.2	3	3	-	-	-	-	-	2	3	-	-	2	-	-

		C108.3	3	3	-	-	-	-	-	2	3	-	-	2	-	-
		C108.4	3	3	-	-	-	2	-	2	3	-	-	2	-	-
		C108.5	3	3	-	-	-	2	-	2	3	-	-	2	-	-
		C108	3.00	3.00	-	-	-	2.00	-	2.00	3.00	-	-	2.00	-	-
I/II	**HS8251-Technical English**	C109.1	-	-	-	-	-	-	-	-	-	3	-	2	-	2
		C109.2	-	-	-	2	-	-	-	-	2	3	-	2	-	2
		C109.3	-	-	-	-	-	-	-	-	-	3	-	2	-	2
		C109.4	-	-	-	-	-	-	-	-	-	3	-	2	-	2
		C109.5	-	-	-	-	-	-	-	-	-	3	-	2	-	2
		C109	-	-	-	2.00	-	-	-	-	2.00	3.00	-	2.00	-	2.00
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
I/II	**MA8251-Engineering Mathematics-II**	C110.1	3	3	3	2	-	-	-	-	-	-	-	3	3	3
		C110.2	3	3	2	2	-	-	-	-	-	-	-	3	3	3
		C110.3	3	3	2	2	-	-	-	-	-	-	-	3	3	3
		C110.4	3	2	2	3	-	-	-	-	-	-	-	3	3	3
		C110.5	3	3	3	3	-	-	-	-	-	-	-	3	3	3

		C110	3.00	2.80	2.40	2.40	-	-	-	-	-	-	-	3.00	3.00	3.00
I/II	PH8253-Physics for Electronics Engineering	C111.1	3	3	-	-	-	-	-	-	-	-	-	3	3	-
		C111.2	3	2	-	1	-	-	-	-	-	-	-	3	3	-
		C111.3	3	3	-	1	-	-	-	-	-	-	-	3	3	-
		C111.4	3	3	-	2	-	-	-	-	-	-	-	3	3	-
		C111.5	3	3	-	1	-	-	-	-	-	-	-	3	3	-
		C111	3.00	2.80	-	1.25	-	-	-	-	-	-	-	3.00	3.00	-
I/II	8254-Basic Electrical and Instrumentation Engineering	C112.1	3	3	3	2	-	-	-	-	-	-	-	3	2	2
		C112.2	3	3	3	2	-	-	-	-	-	-	-	3	2	2
		C112.3	3	3	3	2	-	-	-	-	-	-	-	3	2	2
		C112.4	3	3	3	2	-	-	-	-	-	-	-	3	2	2
		C112.5	3	3	3	2	-	-	-	-	-	-	-	3	2	2
		C112	3.00	3.00	3.00	2.00	-	-	-	-	-	-	-	3.00	2.00	2.00
Year/Sem	Course	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
I/II	EC8251-Circuit Analysis	C113.1	3	3	3	3	2	-	-	-	-	-	-	2	3	3
		C113.2	2	3	2	3	3	-	-	-	-	-	-	3	3	2

		C113.3	3	3	3	3	3	-	-	-	-	-	-	3	3	3
		C113.4	3	3	2	3	2	-	-	-	-	-	-	3	2	3
		C113.5	3	3	2	2	3	-	-	-	-	-	-	3	3	2
		C113	2.80	3.00	2.40	2.80	2.60	-	-	-	-	-	-	2.80	2.80	2.60
I/II	**EC8252-Electronic Devices**	C114.1	3	3	3	3	2	3	-	-	-	-	3	2	3	3
		C114.2	2	3	2	3	3	3	-	-	-	-	2	3	3	2
		C114.3	3	3	3	3	3	3	-	-	-	-	2	3	3	3
		C114.4	3	3	2	3	2	3	-	-	-	-	3	3	2	3
		C114.5	3	3	2	2	3	2	-	-	-	-	3	3	3	2
		C114	2.80	3.00	2.40	2.80	2.60	2.80	-	-	-	-	2.60	2.80	2.80	2.60
I/II	**EC8261-Circuits and Devices Laboratory**	C115.1	3	2	3	3	2	3	-	-	3	-	3	2	3	3
		C115.2	2	3	2	3	3	3	-	-	3	-	2	3	3	2
		C115.3	3	2	3	3	2	3	-	-	3	-	2	3	3	3
		C115.4	3	3	2	3	2	3	-	-	3	-	3	2	2	3
		C115.5	3	3	2	2	3	2	-	-	3	-	3	3	3	2
		C115	2.80	2.60	2.40	2.80	2.40	2.80	-	-	3.00	-	2.60	2.60	2.80	2.60
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2

I/II	GE8261-Engineering Practices Laboratory	C116.1	2	2	2	2	-	-	-	3	-	2	2	3	2	2
		C116.2	2	2	2	3	-	-	-	3	-	-	2	3	2	3
		C116.3	2	1	2	3	2	2	-	2	-	-	2	3	3	3
		C116.4	2	3	3	2	2	-	-	2	-	-	3	3	3	3
		C116.5	2	3	3	2	-	-	-	2	-	-	3	3	3	2
		C116	2.00	2.20	2.40	2.40	2.00	2.00	-	2.40	-	2.00	2.40	3.00	2.60	2.60
II/III	C201 - Linear Algebra and Partial Differential Equations	C201.1	3	3	2	3	-	-	-	-	-	-	-	-	3	3
		C201.2	3	3	2	2	-	-	-	-	-	-	-	-	3	3
		C201.3	3	2	3	2	-	-	-	-	-	-	-	-	3	3
		C201.4	3	3	3	2	-	-	-	-	-	-	-	-	3	3
		C201.5	2	2	-	2	-	-	-	-	-	-	-	-	3	3
		C201	2.80	2.60	2.50	2.20	-	-	-	-	-	-	-	-	-	-
II/III	C202 - Fundamentals of Data Structures in	C202.1	3	3	2	2	-	-	-	-	-	-	3	2	-	-
		C202.2	3	2	2	3	-	-	-	-	-	-	2	3	-	-
		C202.3	3	3	3	3	-	-	-	-	-	-	2	3	-	-
		C202.4	3	3	3	2	-	-	-	-	-	-	3	2	-	-

		C202.5	3	3	3	2	-	-	-	-	-	-	2	2	-	-
		C202	3.00	2.80	2.60	2.40	-	-	-	-	-	-	2.40	2.40	-	-
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
II/III	**C230 - Electronic Circuits-I**	C203.1	3	2	3	2	-	-	-	-	-	-	-	-	3	3
		C203.2	3	3	3	3	-	-	-	-	-	-	-	-	2	2
		C203.3	2	3	2	3	-	-	-	-	-	-	-	-	3	3
		C203.4	2	2	3	2	-	-	-	-	-	-	-	-	3	3
		C203.5	2	3	2	3	-	-	-	-	-	-	-	-	3	3
		C203	2.40	2.60	2.60	2.60	-	-	-	-	-	-	-	-	3.00	3.00
II/III	**C204 - Signals and Systems**	C204.1	3	2	3	2	-	-	-	-	-	-	2	3	3	3
		C204.2	3	3	3	2	-	-	-	-	-	-	2	3	3	3
		C204.3	3	3	3	3	-	-	-	-	-	-	2	3	3	3
		C204.4	3	3	3	3	-	-	-	-	-	-	2	3	3	3
		C204.5	3	3	3	3	-	-	-	-	-	-	2	3	3	3
		C204	3.00	2.80	3.00	2.60	-	-	-	-	-	-	2.00	3.00	3.00	3.00
II/III	**C20 5 - Digi**	C205.1	2	2	3	2	-		-	-	-	-	-	-	2	2

		C205.2	2	3	3	3	-	-	-	-	-	-	3	3	3	3
		C205.3	3	2	3	3	-	-	-	-	-	-	3	3	3	2
		C205.4	3	3	3	2	-	-	-	-	-	-	-	2	3	3
		C205.5	3	3	3	3	-	-	-	-	-	-	3	3	3	3
		C205	2.60	2.60	3.00	2.60	-	-	-	-	-	-	3.00	2.75	2.80	2.60
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
II/III	**C206 - Control Systems Engineering**	C206.1	3	3	3	2	-	-	-	-	-	-	2	2	2	2
		C206.2	3	3	2	2	-	-	-	-	-	-	2	2	3	2
		C206.3	3	3	3	2	-	-	-	-	-	-	3	3	3	2
		C206.4	3	3	2	3	-	-	-	-	-	-	3	3	3	2
		C206.5	3	3	3	2	-	-	-	-	-	-	2	3	3	2
		C206	3.00	3.00	2.60	2.20	-	-	-	-	-	-	2.40	2.60	2.80	2.00
II/III	**C207 - Fundamentals of Data Structures**	C207.1	3	3	3	3	3	-	-	-	-	-	2	3	-	-
		C207.2	3	3	3	2	3	-	-	-	-	-	2	3	2	-
		C207.3	3	3	2	2	2	-	-	-	-	-	2	2	3	-
		C207.4	3	3	2	2	3	-	-	-	-	-	2	2	2	-

		C207.5	3	3	3	3	2	-	-	-	-	-	2	3	1	-
		C207	3.00	3.00	2.60	2.40	2.60	-	-	-	-	-	2.00	2.60	2	-
II/III	**C208 - Analog and Digital Circuits Laboratory**	C208.1	3	3	3	3	2	-	-	-	-	2	2	2	3	3
		C208.2	3	3	3	3	2	-	-	-	-	2	2	3	3	3
		C208.3	3	3	3	3	3	-	-	-	-	2	2	3	3	3
		C208.4	3	3	3	3	3	-	-	-	-	2	2	3	3	2
		C208.5	3	3	3	3	3	-	-	-	-	2	2	3	3	2
		C208	3.00	3.00	3.00	3.00	2.60	-	-	-	-	2.00	2.00	2.80	3.00	2.60
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
II/III	**C209 - Interpersonal Skills/Listening & Speaking**	C209.1	-	-	-	-	-	-	-	-	2	3	-	2	-	-
		C209.2	-	-	-	-	-	-	-	-	2	3	-	2	-	-
		C209.3	-	-	-	-	-	-	-	-	2	3	-	2	-	-
		C209.4	-	-	-	-	-	-	-	-	2	3	-	2	-	-
		C209.5	-	-	-	-	-	-	-	-	2	3	-	2	-	-
		C209	-	-	-	-	-	-	-	-	2.00	3.00	-	2.00	-	-
II/IV	**C210 - Pro**	C210.1	2	-	3	-	-	-	-	-	-	-	-	3	3	3

		C210.2	-	3	-	2	-	-	-	-	-	-	-	3	2	2
		C210.3	3	-	2	-	-	-	-	-	-	-	2	2	3	3
		C210.4	-	3	-	3	-	-	-	-	-	-	-	2	2	2
		C210.5	3	-	2	-	-	-	-	-	-	-	-	-	3	3
		C210	2.67	3.00	2.33	2.50	-	-	-	-	-	-	2.00	2.50	2.60	2.60
II/IV	**C211 - Electronic Circuits II**	C211 .1	3	2	2	2	-	-	-	-	-	-	-	3	3	2
		C211 .2	3	2	2	2	-	-	-	-	-	-	-	3	3	2
		C211 .3	3	2	2	2	-	-	-	-	-	-	-	3	3	2
		C211 .4	3	3	2	2	-	-	-	-	-	-	-	3	3	2
		C211 .5	3	2	2	2	-	-	-	-	-	-	-	3	3	2
		C211	3.00	2.20	2.00	2.00	-	-	-	-	-	-	-	3.00	3.00	2.00
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
II/IV	**C212 - Communication Theory**	C212.1	3	3	2	2	-	-	-	-	-	-	-	-	3	3
		C212.2	3	3	2	2	-	-	-	-	-	-	-	-	3	2
		C212.3	3	2	3	3	-	-	-	-	-	-	-	-	3	2
		C212.4	3	3	2	3	-	-	-	-	-	-	-	-	2	2

		C212.5	3	2	3	3	-	-	-	-	-	-	-	-	3	2
		C212	3.00	2.60	2.40	2.60	-	-	-	-	-	-	-	-	2.80	2.20
II/IV	**C213 - Electromagnetic Fields**	C213.1	3	2	3	-	-	-	-	-	-	-	2	2	3	3
		C213.2	3	2	2	-	-	-	-	-	-	-	2	2	3	2
		C213.3	3	3	2	-	-	-	-	-	-	-	2	2	3	3
		C213.4	3	2	2	-	-	-	-	-	-	-	2	3	2	2
		C213.5	2	2	3	-	-	-	-	-	-	-	2	3	3	3
		C213	2.80	2.20	2.40	-	-	-	-	-	-	-	2.00	2.4	2.80	2.60
II/IV	**C214 - Linear Integrated Circuits**	C214.1	3	2	3	2	-	-	-	-	-	-	-	-	3	3
		C214.2	3	3	2	2	-	-	-	-	-	-	-	-	3	2
		C214.3	3	3	2	2	-	-	-	-	-	-	-	-	3	3
		C214.4	3	3	3	3	-	-	-	-	-	-	2	2	3	2
		C214.5	3	3	3	3	-	-	-	-	-	-	3	3	3	3
		C214	3.00	2.80	2.60	3	-	-	-	-	-	-	2.50	2.50	3.00	2.60
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
II/IV	**C215 - Envi**	C215 .1	2	2	3	3	3	-	-	-	-	-	-	-	3	3

		C215 .2	2	3	2	2	3	-	-	-	-	-	-	-	2	2
		C215 .3	2	2	3	3	3	-	-	-	-	-	-	-	3	3
		C215 .4	3	2	2	2	2	-	-	-	-	-	-	-	3	3
		C215 .5	2	3	2	2	3	-	-	-	-	-	-	-	2	2
		C215	2.20	2.40	2.40	2.40	2.80	-	-	-	-	-	-	-	2.60	2.60
II/IV	**C216 - CircuitsDesign and Simulation Laboratory**	C216.1	2	3	3	2	2	-	-	-	-	-	2	2	2	2
		C216.2	2	3	3	2	2	-	-	-	-	-	2	2	3	3
		C216.3	2	3	3	2	3	-	-	-	-	-	2	3	3	3
		C216.4	2	3	3	3	3	-	-	-	-	-	2	3	3	3
		C216.5	3	3	3	3	3	-	-	-	-	-	2	3	3	2
		C216	2.2	3.00	3.00	2.4	2.60	-	-	-	-	-	2.00	2.60	2.80	2.60
II/IV	**C217 - Linear Integrated Circuits Laboratory**	C217.1	3	2	3	2	3	-	-	-	-	-	2	3	3	3
		C217.2	3	2	3	3	3	-	-	-	-	-	2	3	3	3
		C217.3	3	3	3	2	3	-	-	-	-	-	2	3	3	3
		C217.4	3	3	3	3	3	-	-	-	-	-	3	3	2	3
		C217.5	3	2	3	3	3	-	-	-	-	-	3	3	3	3
		C217	3.00	2.4	3.00	2.6	3.00	-	-	-	-	-	2.4	3.00	2.80	2.00

Year/Sem	Course	CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
III/V	C301 - Digital Communication	C301.1	3	2	3	2	-	-	-	-	-	-	-	3	2	3
		C301.2	2	2	2	2	-	-	-	-	-	-	-	2	3	3
		C301.3	3	2	2	2	-	-	-	-	-	-	-	3	2	3
		C301.4	2	3	3	3	-	-	-	-	-	-	-	3	3	3
		C301.5	2	2	3	2	-	-	-	-	-	-	-	3	3	3
		C301	2.40	2.20	2.60	2.20	-	-	-	-	-	-	-	2.80	2.60	3.00
III/V	C302 - Discrete-Time Signal Processing	C302.1	3	2	2	2	2	-	-	-	-	-	-	3	3	3
		C302.2	3	3	3	3	2	-	-	-	-	-	3	3	3	3
		C302.3	3	3	3	3	2	-	-	-	-	-	3	3	3	3
		C302.4	3	2	2	2	2	-	-	-	-	-	-	3	3	3
		C302.5	2	3	3	2	2	-	-	-	-	-	3	3	3	3
		C302	2.80	2.60	2.60	2.40	2.00	-	-	-	-	-	3.00	3.00	3.00	3.00
III/V	C303 - Computer Architecture	C303.1	3	3	2	3	-	-	-	-	-	-	2	3	3	2
		C303.2	3	3	2	2	-	-	-	-	-	-	3	3	3	3
		C303.3	3	3	3	2	-	-	-	-	-	-	2	3	3	3

		C303.4	3	2	3	3	-	-	-	-	-	-	3	3	3	3
		C303.5	3	3	2	2	-	-	-	-	-	-	2	3	3	2
		C303	3.00	2.80	2.40	2.40	-	-	-	-	-	-	2.40	3.00	3.00	2.60
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
III/V	**C304 - Communication Networks**	C304.1	3	3	-	-	-	2	2	3	-	-	-	3	3	2
		C304.2	3	3	2	-	-	3	2	2	-	-	-	2	2	2
		C304.3	3	3	-	-	-	3	2	3	-	-	-	2	2	3
		C304.4	3	2	-	-	-	3	2	2	-	-	-	3	2	2
		C304.5	3	2	2	-	-	2	2	3	-	-	-	2	3	2
		C304	3.00	2.60	2.00	-	-	2.60	2.00	2.60	-	-	-	2.20	2.40	2.20
III/V	**C305 - Medical Electronics**	C305.1	3	-	-	-	3	-	-	-	-	-	-	3	3	3
		C305.2	-	-	3	2	-	-	-	-	-	-	-	3	3	3
		C305.3	-	2	3	3	3	-	-	-	-	-	-	3	2	2
		C305.4	2	-	-	-	3	-	-	-	-	-	-	3	3	3
		C305.5	-	2	3	3	-	-	-	-	-	-	-	3	2	2
		C305	2.50	2.00	3.00	2.67	3.00	-	-	-	-	-	-	3.00	2.60	2.60

III/V	C306 - Renewable Energy Resources	C306.1	-	-	3	3	-	-	-	-	-	-	2	3	3	2
		C306.2	-	-	3	3	-	-	-	-	-	-	-	3	3	3
		C306.3	-	-	3	3	-	-	-	-	-	-	-	3	2	3
		C306.4	-	-	-	3	3	-	-	-	-	-	2	3	3	2
		C306.5	-	-	-	3	3	-	-	-	-	-	2	3	3	2
		C306	-	-	3.00	3.00	3.00	-	-	-	-	-	2.00	3.00	2.80	2.40
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
III/V	C307 - Digital Signal Processing Laboratory	C307.1	3	2	2	3	2	-	-	-	-	-	-	3	3	3
		C307.2	2	2	2	3	2	-	-	-	-	-	-	3	2	3
		C307.3	3	3	3	3	3	-	-	-	-	-	3	3	3	3
		C307.4	3	2	2	3	3	-	-	-	-	-	-	3	3	3
		C307.5	2	2	2	3	3	-	-	-	-	-	-	3	3	2
		C307	2.60	2.20	2.20	3.00	2.60	-	-	-	-	-	3.00	3.00	2.80	2.80
III/V	C308 - Communication Systems	C308.1	2	3	3	3	3	-	-	-	-	-	-	3	3	3
		C308.2	2	3	3	2	2	-	-	-	-	-	-	3	3	3
		C308.3	2	3	3	2	3	-	-	-	-	-	-	3	3	3

		C308.4	3	2	3	3	3	-	-	-	-	-	-	3	3	3
		C308.5	3	3	3	3	3	-	-	-	-	-	-	3	3	3
		C308	2.40	2.8	3	2.6	2.80	-	-	-	-	-	-	3.00	3.00	3.00
III/V	**C309 - Communication Networks Laboratory**	C309.1	2	3	3	2	3	-	-	-	-	-	-	2	2	2
		C309.2	2	3	3	2	3	-	-	-	-	-	-	3	2	3
		C309.3	3	2	3	2	3	-	-	-	-	-	-	2	3	3
		C309.4	3	2	3	3	3	-	-	-	-	-	-	3	2	2
		C309.5	2	2	3	2	2	-	-	-	-	-	-	3	3	2
		C309	2.40	2.40	3.00	2.20	2.80	-	-	-	-	-	-	2.60	2.40	2.40
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
III/VI	**C310 - Microprocessors And Microcontrollers**	**C310.1**	3	3	3	3	3	-	-	-	-	-	3	3	3	3
		C310.2	3	3	3	3	3	-	-	-	-	-	3	3	3	3
		C310.3	3	3	3	3	3	-	-	-	-	-	3	3	3	3
		C310.4	3	3	3	3	3	-	-	-	-	-	3	3	3	3
		C310.5	3	3	3	3	3	-	-	-	-	-	3	3	3	3
		C310	3.00	3.00	3.00	3.00	3.00	-	-	-	-	-	3.00	3.00	3.00	3.00

III/VI	C311-Vlsi Design	C311.1	3	3	2	2	-	-	-	-	-	-	3	3	3	3
		C311.2	3	2	3	3	-	-	-	-	-	-	2	3	3	3
		C311.3	3	2	3	3	-	-	-	-	-	-	3	3	3	3
		C311.4	3	2	3	2	-	-	-	-	-	-	3	3	3	3
		C311.5	2	3	2	2	-	-	-	-	-	-	2	3	3	3
		C311	2.80	2.40	2.60	2.40	-	-	-	-	-	-	2.60	3.00	3.00	3.00
III/VI	C312 - Wireless Communication	C312.1	3	2	3	3	-	-	-	-	-	-	-	3	3	3
		C312.2	3	2	3	3	-	-	-	-	-	-	-	3	3	3
		C312.3	3	2	3	3	-	-	-	-	-	-	2	3	3	3
		C312.4	3	2	3	3	-	-	-	-	-	-	2	3	3	3
		C312.5	3	3	3	2	-	-	-	-	-	-	2	3	3	3
		C312	3.00	2.20	3.00	-	-	-	-	-	-	-	2.00	3.00	3.00	3.00
Year/Sem	Course	CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
III/VI	C313 - Principle Of Management	C313.1	-	-	-	-	-	3	3	3	3	3	3	3	-	-
		C313.2	-	-	-	-	-	3	3	3	3	3	3	3	-	-
		C313.3	-	-	-	-	-	3	2	2	3	3	2	3	-	-

		C313.4	-	-	-	-	-	3	3	3	3	2	3	3	-	-
		C313.5	-	-	-	-	-	3	3	3	2	3	2	3	-	-
		C313	-	-	-	-	-	3	2.80	2.80	2.80	2.80	2.6	3.00	-	-
III/VI	**C314 - Transmission Lines And RF Systems**	**C314.1**	3	3	3	3	-	-	-	-	-	-	2	3	3	2
		C314.2	3	3	2	2	-	-	-	-	-	-	3	3	3	3
		C314.3	3	3	3	2	-	-	-	-	-	-	2	3	3	3
		C314.4	3	3	3	2	-	-	-	-	-	-	2	3	3	3
		C314.5	3	2	3	2	-	-	-	-	-	-	3	2	3	3
		C314	3.00	2.80	2.80	2.20	-	-	-	-	-	-	2.40	2.80	3.00	2.80
III/VI	**C315 - Wireless Networks**	**C315.1**	2	3	3	2	-	-	-	-	-	-	-	3	3	3
		C315.2	2	2	3	2	-	-	-	-	-	-	-	3	3	3
		C315.3	2	2	2	3	-	-	-	-	-	-	-	3	3	3
		C315.4	2	2	2	2	-	-	-	-	-	-	-	3	3	3
		C315.5	2	2	3	3	-	-	-	-	-	-	-	3	3	3
		C315	2.00	2.20	2.60	2.40	-	-	-	-	-	-	-	3.00	3.00	3.00
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2

III/VI	C316 - Microprocessors And Microcontrollers Laboratory	C316.1	3	2	2	3	3	-	-	-	-	-	2	3	3	3
		C316.2	2	2	2	3	3	-	-	-	-	-	2	3	3	3
		C316.3	3	3	3	3	2	-	-	-	-	-	3	3	3	3
		C316.4	3	3	2	3	3	-	-	-	-	-	2	3	3	3
		C316.5	2	2	2	3	3	-	-	-	-	-	2	3	3	3
		C316	2.60	2.40	2.20	3.00	2.80	-	-	-	-	-	2.20	3.00	3.00	3.00
III/VI	C317 - Vlsi Design Laboratory	C317.1	3	3	3	3	3	-	-	-	-	-	2	3	3	3
		C317.2	2	2	3	3	3	-	-	-	-	-	3	3	3	3
		C317.3	3	3	3	2	3	-	-	-	-	-	2	3	2	3
		C317.4	2	2	3	3	2	-	-	-	-	-	3	3	3	3
		C317.5	3	3	2	3	3	-	-	-	-	-	3	3	3	3
		C317	2.60	2.60	2.80	2.80	2.80	-	-	-	-	-	2.60	3.00	2.80	3.00
III/VI	C318 - Technical Seminar	C318.1	2	2	2	-	-	-	-	3	2	3	2	2	3	2
		C318.2	2	2	2	-	-	-	-	3	2	3	2	2	3	2
		C318.3	2	3	2	-	-	-	-	3	2	3	2	2	3	2
		C318.4	2	2	2	-	-	-	-	3	2	3	2	2	3	2
		C318.5	2	2	2	-	-	-	-	3	2	3	2	2	3	2

		C318	2.00	2.20	2.00	-	-	-	-	3.00	2.00	3.00	2	2	3.00	2.00
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
IV/VI	**C319 - Professional Communication**	**C319.1**	-	-	-	-	-	-	-	2	3	3	3	3	-	-
		C319.2	-	-	-	-	-	-	-	2	3	3	3	3	-	-
		C319.3	-	-	-	-	-	-	-	2	3	3	3	3	-	-
		C319.4	-	-	-	-	-	-	-	2	3	3	3	3	-	-
		C319.5	-	-	-	-	-	-	-	2	3	3	3	3	-	-
		C319	0	0	0	0	0	0	0	2	3.00	3.00	3.00	3.00	0	0
IV/VII	**C401 - Antennas And Microwave Engineering**	**C401.1**	3	3	2	2	-	-	-	-	-	-	2	3	3	3
		C401.2	3	2	3	2	-	-	-	-	-	-	2	3	3	3
		C401.3	3	2	2	3	-	-	-	-	-	-	2	3	3	3
		C401.4	3	2	3	3	-	-	-	-	-	-	3	3	3	3
		C401.5	3	2	3	3	-	-	-	-	-	-	3	3	3	3
		C401	3.00	2.20	2.60	2.60	-	-	-	-	-	-	-	3.00	3.00	3.00
IV/VII	**C402- Optical Commun**	**C402.1**	3	3	3	2	-	-	-	-	-	-	-	3	3	2
		C402.2	3	3	3	2	-	-	-	-	-	-	-	3	3	3

		C402.3	3	2	2	3	-	-	-	-	-	-	2	3	3	2
		C402.4	3	3	3	3	-	-	-	-	-	-	-	3	3	3
		C402.5	3	2	2	3	-	-	-	-	-	-	2	3	3	2
		C402	3.00	2.60	2.60	2.60	-	-	-	-	-	-	-	3.00	3.00	2.40
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
IV/VII	**C403-Embedded And Real Time Systems**	**C403.1**	3	2	2	2	-	-	-	-	-	-	-	3	3	2
		C403.2	3	3	2	2	-	-	-	-	-	-	-	3	3	2
		C403.3	3	2	2	3	-	-	-	-	-	-	-	3	3	3
		C403.4	3	3	3	3	-	-	-	-	-	-	-	3	3	3
		C403.5	3	3	3	3	-	-	-	-	-	-	-	2	3	3
		C403	3.00	2.60	2.40	2.60	-	-	-	-	-	-	-	2.80	3.00	2.60
IV/VII	**C404-Adhoc And Wireless Sensor Networks**	**C404.1**	3	2	3	2	-	-	-	-	-	-	2	2	2	3
		C404.2	3	3	3	3	-	-	-	-	-	-	2	3	3	3
		C404.3	3	3	3	3	-	-	-	-	-	-	2	3	3	3
		C404.4	3	3	3	3	-	-	-	-	-	-	3	3	3	3
		C404.5	3	3	3	3	-	-	-	-	-	-	3	3	3	3

		C404	3.00	2.80	3.00	2.80	-	-	-	-	-	-	3.00	2.80	2.80	3.00
IV/VII	**C405-Advanced Wireless Communication**	**C405.1**	3	2	2	3	-	-	-	-	-	-	-	3	3	3
		C405.2	3	2	3	3	-	-	-	-	-	-	-	3	3	3
		C405.3	3	2	2	3	-	-	-	-	-	-	2	3	3	3
		C405.4	3	3	3	3	-	-	-	-	-	-	2	3	3	2
		C405.5	3	3	3	3	-	-	-	-	-	-	2	3	3	3
		C405	3.00	2.40	2.60	3.00	-	-	-	-	-	-	2.00	3.00	3.00	2.80
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
IV/VII	**C406-Transducer Engineering**	**C406.1**	3	2	2	2	-	-	-	-	-	-	-	-	2	2
		C406.2	3	2	2	2	-	-	-	-	-	-	-	-	2	2
		C406.3	2	2	2	2	-	-	-	-	-	-	-	-	2	2
		C406.4	2	2	2	3	-	-	-	-	-	-	-	-	2	2
		C406.5	3	2	2	3	-	-	-	-	-	-	-	-	2	2
		C406	2.60	2.00	2.00	2.4	-	-	-	-	-	-	-	-	2.00	2.00
IV/VII	**C407-Embedded**	**C407.1**	3	2	2	3	2	-	-	-	-	-	3	2	3	2
		C407.2	3	2	2	3	2	-	-	-	-	-	3	2	3	2

		C407.3	3	3	2	3	3	-	-	-	-	-	3	2	2	3
		C407.4	3	3	2	3	3	-	-	-	-	-	3	3	3	3
		C407.5	3	2	2	3	3	-	-	-	-	-	3	2	2	3
		C407	3.00	2.40	2.00	3.00	2.60	-	-	-	-	-	3.00	2.20	2.60	2.60
IV/VII	**C408-Advanced Communication Laboratory**	**C408.1**	3	3	3	3	2	-	-	-	-	-	-	3	3	3
		C408.2	3	3	3	3	2	-	-	-	-	-	-	3	3	3
		C408.3	3	3	3	3	3	-	-	-	-	-	-	3	3	3
		C408.4	3	3	3	3	2	-	-	-	-	-	-	3	3	3
		C408.5	3	3	3	3	3	-	-	-	-	-	-	3	3	3
		C408	3.00	3.00	3.00	3.00	2.40	-	-	-	-	-	-	3.00	3.00	3.00
Year/Sem	**Course**	**CO/PO**	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
IV/VII	**C409-Digital Image Processing**	**C409.1**	2	2	2	3	-	-	-	-	-	-	-	3	3	3
		C409.2	2	2	3	2	-	-	-	-	-	-	-	3	3	3
		C409.3	3	2	3	2	-	-	-	-	-	-	-	3	3	3
		C409.4	3	3	2	3	-	-	-	-	-	-	-	3	3	3
		C409.5	3	3	3	3	-	-	-	-	-	-	-	3	3	3

		C409	2.60	2.40	2.60	2.6	-	-	-	-	-	-	-	3.00	3.00	3.00
IV/VIII	**C410 - Satellite Communication**	**C410.1**	3	2	2	2	-	-	-	-	-	-	-	3	3	3
		C410.2	3	2	2	2	-	-	-	-	-	-	-	3	3	3
		C410.3	3	3	2	3	-	-	-	-	-	-	-	3	3	3
		C410.4	3	3	3	3	-	-	-	-	-	-	-	3	3	3
		C410.5	3	3	3	3	-	-	-	-	-	-	-	3	3	3
		C410	3.00	2.60	2.40	2.60	-	-	-	-	-	-	-	3.00	3.00	3.00
IV/VIII	**C411-Project Work**	**C411.1**	3	3	3	3	3	2	2	2	3	3	2	3	3	3
		C411.2	3	3	3	2	3	2	2	3	3	3	3	3	3	3
		C411.3	3	2	3	2	3	3	3	3	2	2	3	2	3	3
		C411.4	3	2	3	3	3	3	2	2	2	3	3	3	3	3
		C411.5	3	2	3	3	2	2	2	3	3	2	3	3	3	3
		C411	3.00	2.40	3.00	2.60	2.80	2.40	2.2	2.6	2.6	2.6	2.8	2.8	3.00	3.00