DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Regulation-2017 UG

COURSE OUTCOME , CO-PO/PSO MAPPING, COURSE-PO/PSO MAPPING

	REGULATION – 2017	
	ELECTRONICS AND COMMUNICATION ENGINEERING	
	SEMESTER I	
S.NO	**COURSE OUTCOME**	**BT LEVEL**
	C101/HS8151/COMMUNICATIVE ENGLISH	
C101.1	To engage learners in meaningful language and activities to improve their LSRW skills	K2
C101.2	To enhance learners awareness of general rules of writing for specific audience.	K2
C101.3	To help learners understand the purpose audience contexts of different types of writing	K2
C101.4	To develop analytical thinking skills for problem solving in communication contexts	K3
C101.5	To demonstrate an understanding of job application and interview for internship and placement	K2
C101.6	To enable learners of Engineering and Technology to develop their basic communication skill in English	K2
	C102/MA8151/ENGINEERING MATHEMATICS I	
C102.1	Use the matrix algebra methods for solving practical problems.	K2
C102.2	Apply differential calculus tools in solving various application problems.	K3
C102.3	Able to use differential calculus ideas on several variable functions.	K2
C102.4	Apply different methods of integration in solving practical problems.	K3
C102.5	Apply multiple integral ideas in solving areas, volumes and other practical problems.	K3
C102.6	To apply the knowledge of Matrix methods and calculus of various application.	K2
	C103/PH8151/ENGINEERING PHYSICS	
C103.1	Gain knowledge in heat transfer mechanism in different materials for engineering applications	K2
C103.2	Gain knowledge on the ventilation and air conditioning of buildings	K2
C103.3	understand the concepts of sound absorption, noise insulation and lighting designs	K2
C103.4	Know about the processing and applications of composites, metallic glasses, shape memory alloys and ceramics	K2
C103.5	Get an awareness on natural disasters such as earth quake, cyclone, fire and safety measures	K2
C103.6	Gain knowledge on thermal , optical properties of various materials and the protection from natural disasters with safety measures	K2
	C104/CY8151/ENGINEERING CHEMISTRY	
C104.1	Understand the process of various water treatment and its remedial measure	K2
C104.2	Know about the various methods of preparation of nano materials	K2
C104.3	Gain the knowledge of phase rule and composites for material selection	K2

C104.4	Recommend suitable fuels for industries	K2
C104.5	Recognize various form of energy resources and its applications	K2
C104.6	Gain the various applications of nanomaterials in various field	K2

C105/GE8151/PROBLEM SOLVING AND PYTHON PROGRAMMING

C105.1	Demonstrate algorithm, flowchart for various programs	K2
C105.2	Do simple programs using python programming basics	K2
C105.3	Illustrate programs by using arrays and string functions	K2
C105.4	Develop simple programs using functions and pointers	K2
C105.5	Design mini projects with structures.	K2
C105.6	Develop applications using python Programming Language	K2

C106/GE8152/ENGINEERING GRAPHICS

C106.1	Construct engineering curves	K2
C106.2	Sketch all the views of engineering objects in free hand.	K2
C106.3	Draw the projection of points, lines and planes.	K2
C106.4	Draw the projection of solids in any orientation.	K2
C106.5	Develop the section and lateral surfaces of sectioned solids	K2
C106.6	Sketch the solids in perspective and isometric approaches	K2

C107/GE8161/PROBLEM SOLVING AND PYTHON

C107.1	Demonstrate algorithm, flowchart for various programs	K2
C107.2	Do simple programs using python programming basics	K2
C107.3	Illustrate programs by using arrays and string functions	K2
C107.4	Develop simple programs using functions and pointers	K2
C107.5	Design mini projects with structures.	K2
C107.6	Develop applications using python Programming Language	K2

C108/BS8161/PHYSICS AND CHEMISTRY LABORATORY

C108.1	The student will be able to analyze the physical principle involved in the various instruments.	K2
C108.2	The student will be able to relate the principle of instruments to new application.	K2
C108.3	The various experiments in the areas of elasticity and optics will nurture the students in all branches of Engineering.	K2

C108.4	The various experiments in the areas of mechanics and thermal physics will nurture the students in all branches of Engineering.	K2
C108.5	The students will be able to think innovatively	K2
C108.6	The students will be able improve the creative skills that are essential for engineering	K2
SEMESTER II		
C109/HS8251/TECHNICAL ENGLISH		
C109.1	To engage learners in meaningful language and activities to improve their LSRW skills	K2
C109.2	To enhance learners awareness of general rules of writing for specific audience.	K2
C109.3	To help learners understand the purpose audience contexts of different types of writing	K2
C109.4	To develop analytical thinking skills for problem solving in communication contexts	K2
C109.5	To demonstrate an understanding of job application and interview for internship and placement	K2
C109.6	To enable learners of Engineering and Technology to develop their basic communication skill in English	K2
C110/MA8251/ENGINEERING MATHEMATICS II		
C110.1	Apply the concept of testing of hypothesis for small and large samples in real life problems.	K2
C110.2	Apply the basic concepts of classifications of design of experiments in the field of agriculture.	K2
C110.3	Appreciate the numerical techniques of interpolation in various intervals and apply the numerical techniques of differentiation and integration for engineering problems.	K2
C110.4	Understand the knowledge of various techniques and methods for solving first and second order ordinary differential equations.	K2
C110.5	Solve the partial and ordinary differential equations with initial and bound condition by using certain techniques with engineering applications.	K2
C110.6	To apply the knowledge of classification of design experiments and various types differential equations.	K2
C111/PH8253/PHYSICS FOR ELECTRONICS ENGINEERING		
C111.1	Know basics of crystallography and its importance for varied materials properties	K2
C111.2	Gain knowledge on the electrical and magnetic properties of materials and their applications	K2
C111.3	Know about the semiconducting materials and their applications in semiconductor devices	K2
C111.4	Understand the optical properties of materials and working principles in display devices	K2

C111.5	Significance of nano structured materials and their uses in nanoelectronic devices.	K2
C111.6	Gain the knowledge of electrical, optical properties of materials and their applications in nano electronic devices	K2

C112/BE8254/BASIC ELECTRICAL AND INSTRUMENTATION		
C112.1	Fundamentals of semiconductor and basic theorems used in Electrical circuits	K2
C112.2	Design amplifier circuits under CB, CE, CC Configurations.	K2
C112.3	Design the Adders – Flip-Flops – Registers and Counters with logic gates.	K2
C112.4	Discuss the Principles of Amplitude and Frequency Modulations and various blocks Communication Systems	K2
C112.5	Demonstrate the working of Television systems, FAX machines and micro wave systems.	K2

C113/EC8251/CIRCUIT ANALYSIS		
C113.1	Develop the capacity to analyze electrical circuits, apply the circuit theorems in real time	K2
C113.2	Design and understand and evaluate the AC and DC circuits.	K2
C113.3	Practical implications of the fundamentals of Ohm's law, Kirchhoff's current and voltage laws	K2
C113.4	Accurate measurement of voltage, current, power and impedance of any circuit	K2
C113.5	DC analysis, Transient analysis and Frequency analysis of a given circuit depending on types of elements	K2
C113.6	Practical implementation of the fundamental electrical theorems and modeling of simple electrical systems	K2

C114/EC8252/ELECTRONIC DEVICES		
C114.1	Describe the principle and characteristics of semiconductor diode	K2
C114.2	Analyze various transistor configurations	K2
C114.3	Construct large signal modeling and small signal modeling of a transistor	K2
C114.4	Describe the principle of operation and characteristics of special Semiconductor diodes	K2
C114.5	Discuss the operation of various semiconductor photo devices and power electronic devices	K2
C114.6	Implement real time applications using electronic devices	K2

C115/EC8261/CIRCUIT AND DEVICES LABORATORY		
C115.1	Identify the basic devices and its configurations	K2
C115.2	Analyze the resistive circuits with different sources	K2
C115.3	Obtain the resonance for different configurations of RLC	K2
C115.4	Explain the response of RLC circuit with different inputs	K2

C115.5	Understand the operation of basic solid state devices	K2
C115.6	Plot the response of wave shaping circuits	K2

C116/GE8261/ENGINEERING PRACTICES LABORATORY		
C116.1	Gets exposure regarding Joining operations in engineering materials.	K2
C116.2	Carry out the basic machining operations in engineering materials.	K2
C116.3	Carry out basic home electrical works and appliances	K2
C116.4	Measure the electrical quantities	K2
C116.5	Understand basic electronic components.	K2
C116.6	Integrate the components and gates using soldering practices.	K2

SEMESTER III		
C201 /MA8352/LINEAR ALGEBRA AND PARTIAL DIFFERENTIAL EQUATIONS		
C201.1	Analyze Partial Differential Equations in various methods.	K3
C201.2	Solving Fourier Series for different types of functions.	K3
C201.3	Computing the solutions of the heat equation and wave equation subject to boundary conditions	K2
C201.4	Computing the solutions of the Laplace equation subject to boundary conditions	K2
C201.5	Deduce the Gaussian function in Self reciprocal form using Fourier Transforms.	K3
C201.6	Formation of finite difference method in Z-transforms.	K2

C202/EC8393/FUNDAMENTALS OF DATA STRUCTURES IN C		
C202.1	Do simple programs using basic concepts of C.	K3
C202.2	Design programs with derived data type and files.	K3
C202.3	Solve the problem by applying linear data structures.	K3
C202.4	Finding solutions to various problems using FIFO& LIFO.	K2
C202.5	Sort and search the data by applying various algorithms.	K3
C202.6	Develop applications in C and Solve problems using various linear data structures algorithms.	K3

C203/EC8351/ELECTRONIC CIRCUITS- I		
C203.1	Acquire knowledge of Working principles, characteristics and applications of BJT and FET	K2
C203.2	Acquire knowledge of Frequency response characteristics of BJT and FET amplifiers	K2

C203.3	Analyze the performance of small signal BJT and FET amplifiers -single stage and multi stage amplifiers	K3
C203.4	Apply the knowledge gained in the design of Electronic circuits	K3
C203.5	Analyze Amplifier frequency response	K2
C203.6	Acquire knowledge Cascade, Cascade configurations	K2
C204/EC8352/SIGNALS AND SYSTEMS		
C204.1	Categorize the signals based on their properties.	K2
C204.2	Analyze the Continuous Time& Discrete Time systems.	K2
C204.3	Apply Laplace and Fourier Transform to Analyze Continuous Time signals.	K3
C204.4	Apply Laplace Transform and convolution integral to Analyze Continuous Time LTI systems.	K3
C204.5	Apply Discrete Time Fourier Transform and Z-transform to Analyze Discrete Time LTI signals.	K3
C204.6	Describe the mathematical modeling of DT systems.	K2
C205 / EC8392/DIGITAL ELECTRONICS		
C205.1	Apply the laws of Boolean algebra to simplify circuits and Boolean algebra expressions	K1
C205.2	analyze the different methods used for simplifications of Boolean expressions and digital logic families	K2
C205.3	Design and implement Combinational circuits.	K3
C205.4	Design and implement Sequential circuits	K3
C205.5	Study the various types of memory devices and understand the concept PLD's	K2
C205.6	Design and implement synchronous and asynchronous sequential circuits	K3
C206 /EC8391/CONTROL SYSTEMS ENGINEERING		
C206.1	Analyze various types of feedback amplifiers.	K2
C206.2	Design of oscillators, tuned amplifiers, wave-shaping circuits and multivibrators.	K3
C206.3	Demonstrate the feedback amplifiers using SPICE Tool.	K3
C206.4	Demonstrate the oscillators and tuned amplifiers using SPICE Tool.	K3
C206.5	Demonstrate the wave-shaping circuits and multivibrators using SPICE Tool.	K3
C206.6	Demonstrate the voltage and current time base circuits using SPICE Tool.	K3
C207/ EC8381/FUNDAMENTALS OF DATA STRUCTURES IN C LABORATORY		
C207.1	Do simple programs using basic concepts of C.	K2
C207.2	Design programs with derived data type and files.	K3

C207.3	Solve the problem by applying linear data structures.	K3
C207.4	Finding solutions to various problems using FIFO& LIFO.	K3
C207.5	Sort and search the data by applying various algorithms.	K2
C207.6	Develop applications in C and Solve problems using various linear data structures algorithms.	K3
C208 / EC8361/ANALOG AND DIGITAL CIRCUITS LABORATORY		
C208.1	Design and test BJT/JFET Amplifiers	K2
C208.2	Differentiate cascade and cascade amplifiers	K2
C208.3	Analyze the limitation in bandwidth of single stage and multistage amplifier	K3
C208.4	Simulate and analyze amplifiers circuits using pspice	K3
C208.5	Design and test the combinational digital logic circuits	K3
C208.6	Design and test the sequential digital logic circuits	K3
C209/HS8381/ INTERPERSONAL SKILLS / LISTENING & SPEAKING		
C209.1	Take international examination such as IELTS and TOEFL	K3
C209.2	Participate in Group Discussion.	K3
C209.3	Successfully answer questions in Interviews.	K3
C209.4	Make effective Presentations.	K2
C209.5	Participate confidently and appropriately in formal conversations	K2
C209.6	Participate confidently and appropriately in informal conversations	K2
SEMESTER IV		
C210 /MA8451/PROBABILITY AND RANDOM PROCESSES		
C210.1	Understand the fundamental knowledge of the concepts of probability and have knowledge of standard distributions which can describe real life phenomenon.	K2
C210.2	Understand the basic concepts of one and two dimensional random variables and apply in engineering applications.	K3
C210.3	Apply the concept random processes in engineering disciplines.	K3
C210.4	Understand and apply the concept of correlation and spectral densities.	K2
C210.5	To analyze the response of random inputs to linear time invariant systems.	K3
C210.6	Apply the concept of auto correlation and cross correlation of inputs.	K2
C211/EC8452/ELECTRONIC CIRCUITS II		
C211.1	Analyze the different types of Feedback Amplifier Circuits.	K2
C211.2	Design the different types of Oscillators for given specifications.	K3

C211.3	Analyze the performance of various Tuned Amplifiers.	K2
C211.4	Design the different types of Waves Shaping and Multivibrators.	K2
C211.5	Summarize the operation of Power Amplifiers.	K3
C211.6	Classify the types of DC Converters.	K2
C212/EC8491/COMMUNICATION THEORY		
C212.1	Can be able to design different types of AM system	K2
C212.2	Design angle modulated communication systems.	K3
C212.3	Apply the concepts of Random Process to design a Communication system	K3
C212.4	Analyze the noise performance of AM and FM systems	K3
C212.5	Able to understand various source coding technique	K2
C212.6	Could analyze the different types of receivers.	K2
C213 / EC8451/ELECTROMAGNETIC FIELDS		
C213.1	Analyze field potentials due to static electric fields	K3
C213.2	Explain how materials affect electric fields	K2
C213.3	Analyze field potentials due to static magnetic fields	K3
C213.4	Explain how materials affect magnetic fields.	K2
C213.5	Perform the relation between the fields under time varying Situations	K3
C213.6	Discuss the principles of propagation of uniform plane waves	K2
C214 /EC8453/LINEAR INTEGRATED CIRCUITS		
C214.1	Able to learn the basic building blocks of linear integrated circuits such as op-amps.	K2
C214.2	Design linear and non linear applications of operational amplifiers	K3
C214.3	Design applications using analog multiplier and PLL	K3
C214.4	Design ADC and DAC using operational amplifiers	K3
C214.5	Analyze special function ICs	K2
C214.6	Generate waveforms using operational amplifiers Circuits	K3
C215 / GE8291/ ENVIRONMENTAL SCIENCE AND ENGINEERING		
C215.1	Realize the importance of ecosystems and the importance of biodiversity.	K2
C215.2	Describe about Environmental pollution and their effects.	K2
C215.3	Design the techniques which require optimum use of natural resources in future.	K3

C215.4	Understand that Environmental Pollution / problems cannot be solved by mere laws.	K2
C215.5	Explain importance of women and child education and HIV /AIDS.	K2
C215.6	Create awareness about the issues in population growth	K2
C216 /EC8461/CIRCUITS DESIGN AND SIMULATION LABORATORY	
C216.1	Analyze various types of feedback amplifiers.	K2
C216.2	Design of oscillators, tuned amplifiers, wave-shaping circuits and multivibrators.	K3
C216.3	Demonstrate the feedback amplifiers using SPICE Tool.	K3
C216.4	Demonstrate the oscillators and tuned amplifiers using SPICE Tool.	K3
C216.5	Demonstrate the wave-shaping circuits and multivibrators using SPICE Tool.	K3
C216.6	Demonstrate the voltage and current time base circuits using SPICE Tool.	K3
C217 /EC8462/LINEAR INTEGRATED CIRCUITS LABORATORY	
C217.1	Design amplifiers, oscillators, D-A converters using operational amplifiers.	K2
C217.2	Construct and design integrator and differentiator circuit using IC 741	K3
C217.3	Design filters using op-amp and performs an experiment on frequency response.	K3
C217.4	Analyze the working of PLL and describe its application as a frequency multiplier	K3
C217.5	Design DC power supply using ICs.	K3
C217.6	Analyze the performance of filters, multivibrators, A/D converter and analog multiplier using SPICE	K2
SEMESTERV	
C301 /EC8501/DIGITAL COMMUNICATION	
C301.1	Understanding The Principles Of Sampling & Quantization	K2
C301.2	Knowing about The Various Waveform Coding Schemes	K2
C301.3	Learn and analyze The Various Baseband Transmission Schemes	K2
C301.4	Analyzing Digital Modulation Schemes	K3
C301.5	Understanding The Various Band Pass Signaling Schemes	K3
C301.6	Remembering The Fundamentals Of Channel Coding	K1
C302 / EC8553/DISCRETE-TIME SIGNAL PROCESSING	
C302.1	Apply DFT and FFT for the analysis of digital signals & systems.	K3
C302.2	Design an analog to digital IIR filter and its realization.	K2

C302.3	Design of digital FIR filters using the windowing techniques and frequency sampling method to realize their structures.	K2
C302.4	Characterize finite Word length effect on filters.	K2
C302.5	Implement the Multirate Filters and Apply Adaptive Filters to equalization	K3
C302.6	An understanding of sampling conversion technique in signal processing and its applications.	K2
C303 / EC8552/COMPUTER ARCHITECTURE AND ORGANIZATION		
C303.1	Use various metrics to calculate the performance of a computer system.	K2
C303.2	Identify the addressing mode of instructions and to Determine which hardware blocks and control lines are used for specific instructions.	K2
C303.3	Demonstrate how to add and multiply integers and floating-point numbers using two's complement and IEEE floating point representation.	K3
C303.4	Analyze clock periods, performance, and instruction throughput of single-cycle, multi-cycle, and pipelined implementations of a simple instruction set.	K3
C303.5	Detect pipeline hazards and identify possible solutions to those hazards	K2
C303.6	Show how cache design parameters affect cache hit rate and to Map a virtual address into a physical address	K2
C304/EC8551/COMMUNICATION NETWORKS		
C304.1	Understands the concepts of network and link layer service.	K2
C304.2	Analyze the Media Access Control Protocols and different Internetworking.	K3
C304.3	Compare and contrast various types of routing techniques	K2
C304.4	Illustrate mechanism involved in transport layer.	K3
C304.5	Understands the concepts of routing problems	K2
C304.6	Summarize with different application layer protocols	K2
C305 /GE8077/TOTAL QUALITY MANAGEMENT		
C305.1	Describe the dimensional barrier regarding Quality.	K1
C305.2	Summarize the Total quality principles.	K2
C305.3	Demonstrate the tools utilization for quality improvement.	K2
C305.4	Discover the new decision of principle in real time projects.	K2
C305.5	Analyze the various types of techniques are used to measure quality.	K3
C305.6	Apply the various quality systems in implementation of Total quality management.	K3

	C306/OMD551/BASIC OF BIOMEDICAL INSTRUMENTATION	
C306.1	Analyze and evaluate the effect of different diagnostic and therapeutic methods, their risk potential, physical principles, opportunities and possibilities for different medical procedures.	K2
C306.2	Measure the various electrical signals from human system.	K3
C306.3	Examine biochemical and various physiological information.	K3
C306.4	Describe the working of units which will help to restore normal functioning.	K2
C306.5	Understand the position of biomedical instrumentation in modern Hospital care	K2
C306.6	Construct a system for telemedicine and electrical safety.	K2
	C307 / EC8562/DIGITAL SIGNAL PROCESSING LABORATORY	
C307.1	Demonstrate the simulation of DSP systems.	K2
C307.2	Demonstrate the abilities of digital signal processor based DSP systems implementation.	K2
C307.3	Analyze the finite word length effect on DSP systems.	K3
C307.4	Demonstrate the applications of FFT to DSP systems.	K3
C307.5	Analyze the MAC operation using various addressing modes on DSP systems.	K2
C307.6	Apply the adaptive filters for various applications of DSP systems.	K3
	C308 / EC8561/COMMUNICATION SYSTEMS LABORATORY	
C308.1	Simulate &validate the various functional modules of a communication system	K3
C308.2	Demonstrate their knowledge in base band signaling schemes through implementation of digital modulation schemes	K2
C308.3	Apply various channel coding schemes &demonstrate their capabilities towards the improvement of the noise performance of communication system	K2
C308.4	Simulation of Convolutional coding scheme	K3
C308.5	Simulation of ASK, FSK and BPSK detection schemes	K3
C308.6	Simulate end-to-end communication Link	K3
	C309/ EC8563/COMMUNICATION NETWORKS LABORATORY	
C309.1	Explain the components requirement of networks and link layer service	K2
C309.2	Classify the Media Access Control Protocols and different Internet working	K2
C309.3	Demonstrate various types of routing techniques	K3
C309.4	Outline the mechanisms involved in transport layer	K2
C309.5	Experiment with different application layer protocols	K3
C309.6	Analyze various routing algorithms	K2

	SEMESTER VI	
	C310 /EC8691/MICROPROCESSORS AND MICROCONTROLLERS	
C310.1	Understanding the Architecture of 8086 microprocessor	K2
C310.2	Realizing the design aspects of I/O and Memory Interfacing circuits.	K3
C310.3	Applying the knowledge about Interfacing of microprocessors with supporting chips.	K3
C310.4	Understanding the Architecture of 8051 microcontroller.	K2
C310.5	Apply and design a microcontroller based system	K3
C310.6	To learn Multiprocessor configurations, Introduction to advanced processors.	K3
	C311/EC8095/VLSI DESIGN	
C311.1	Recollect all concepts of digital building blocks using the MOS transistor.	K1
C311.2	Design combinational MOS circuits and power strategies.	K1
C311.3	Enumerate the various issues while designing combinational or sequential circuits and Timing systems.	K2
C311.4	Link simple logic circuit to a complex block of a processor	K3
C311.5	Implementing strategies and basic architecture of leading FPGA and design teps.	K2
C311.6	Familiarized with the steps of fabrication and verification of the layout of the circuit.	K2
	C312 /EC8652/WIRELESS COMMUNICATION	
C312.1	Explain the Characteristics of fading in wireless channels	K1
C312.2	Describe the fundamentals of Cellular Architecture	K2
C312.3	Use various signaling schemes for wireless communication channels	K2
C312.4	Compare the performance of channel using various propagation models	K2
C312.5	Analyze the various mitigation techniques to address fading and interference in multipath propagation.	K3
C312.6	Design MIMO Systems in fading and non fading channels	K2
	C313/ MG8591/PRINCIPLES OF MANAGEMENT	
C313.1	Identifies the global context for taking managerial organization.	K2
C313 .2	Predict the global opportunity that will impact the management of an organization.	K2
C313 .3	Prepare the management principles into management practices.	K2
C313 .4	Analyze the managerial problem with ethical practice standards.	K3

C313 .5	Breakdown the managerial task executed in the variety of circumstances.	K2
C313 .6	Identify the most effective Action to take in the specific situation of addressing issues.	K2
	C314 /EC8651/TRANSMISSION LINES AND RF SYSTEMS	
C314.1	Explain the characteristics of transmission lines and its losses	K1
C314.2	Write about the standing wave ratio and input impedance in high frequency transmission lines	K2
C314.3	Analyze impedance matching by stubs using smith charts	K3
C314.4	Analyze the characteristics of TE and TM waves	K3
C314.5	Design a RF transceiver system for wireless communication	K2
C314.6	Explain the characteristics of transmission lines and its losses	K1
	C315 / EC8004/WIRELESS NETWORKS	
C315.1	Conversant with the latest 3G/4G networks and its architecture	K2
C315.2	Design and implement wireless network environment for any application using latest wireless protocols and standards	K2
C315.3	Ability to select the suitable network depending on the availability and requirement	K1
C315.4	Implement different type of applications for smart phones and mobile devices with latest network strategies	K2
C315.5	Analyze the latest wireless protocols for the problems associated with Wireless Networks.	K3
C315.6	Interpret the latest 4G networks and its architecture.	K2
	C316 /EC8681/MICROPROCESSORS AND MICROCONTROLLERS LABORATORY	
C316.1	Understanding the Architecture of 8086 microprocessor	K2
C316.2	Realizing the design aspects of I/O and Memory Interfacing circuits.	K2
C316.3	Applying the knowledge about Interfacing of microprocessors with supporting chips.	K3
C316.4	Understanding the Architecture of 8051 microcontroller.	K2
C316.5	Apply and design a microcontroller based system	K3
C316.1	Analyze and learn Multiprocessor configurations, Introduction to advanced processors.	K2

	C317 /EC8661/VLSI DESIGN LABORATORY	
C317.1	Recollect all concepts of device characteristics of MOS and basic of Digital Electronics.	K1
C317.2	Construct various types of digital circuits in different logic styles.	K3
C317.3	Enumerate the various issues which has to be taken care off while design a combinational or sequential circuits	K3
C317.4	They can easily link simple logic circuit to complier block of a processor	K3
C317.5	Implementing strategies and basic architecture of leading FPGA and design steps.	K3
C317.6	Familiarize with the steps of fabrication and verification of layout of the circuit.	K1
	C318 /EC8611/TECHNICAL SEMINAR	
C318.1	Enrich the communication skills of the student technical topics of interest	K2
C318.2	Familiarize the preparation of content of technical writing	K2
C318.3	Enrich the presentations skills of the student technical topics of interest	K3
C318.4	Participate confidently and appropriately in conversations both formal and informal	K3
C318.5	Participate in technical group discussion.	K3
C318.6	Participate in technical quiz programs	K3
	C319 /HS8581/PROFESSIONAL COMMUNICATION	
C319.1	Take international examination such as IELTS and TOEFL	K3
C319.2	Participate in Group Discussion.	K3
C319.3	Successfully answer questions in Interviews.	K2
C319.4	Make effective Presentations.	K2
C319.5	Participate confidently and appropriately in conversations both formal and informal	K3
C319.6	Take international examination such as IELTS and TOEFL	K2
	SEMESTER VII	
	C401/EC8701/ANTENNAS AND MICROWAVE ENGINEERING	
C401.1	Apply the basic principles and evaluate antenna parameters and link power budgets	K2
C401.2	Design and assess the performance of various antennas	K3
C401.3	Design a microwave system given the application specifications	K3

C401.4	Explain about the working principle of various microwave tubes and the limitation of conventional tubes.	K3
C401.5	Design a microwave system and various antennas	K3
C401.6	Measure and analyze microwave signal and parameters.	
C402/EC8751/OPTICAL COMMUNICATION		
C402.1	Realize basic elements in optical fibers, different modes and configurations.	K1
C402.2	Analyze the transmission characteristics associated with dispersion and polarization techniques.	K3
C402.3	Design optical sources and detectors with their use in optical communication system.	K3
C402.4	Construct fiber optic receiver systems, measurements and coupling techniques.	K3
C402.5	Design optical communication systems and its networks.	K1
C402.6	Analyze Optical power measurement-attenuation measurement-dispersion measurement	K2
C403 / EC8791/EMBEDDED AND REAL TIME SYSTEMS		
C403.1	Describe the architecture and programming of ARM processor	K2
C403.2	Outline the concepts of embedded systems	K2
C403.3	Explain the basic concepts of real time operating system design	K2
C403.4	Differentiate between the general purpose operating system and the real time operating system	K2
C403.5	Explain the concept of design methodologies techniques for embedded system.	K3
C403.6	Model real-time applications using embedded-system concepts	K3
C404 / EC8702/AD HOC AND WIRELESS SENSOR NETWORKS		
C404.1	Know the basics of Ad hoc networks and Wireless Sensor Networks	K2
C404.2	Apply this knowledge to identify the suitable routing algorithm based on the network and user requirement	K3
C404.3	Apply the knowledge to identify appropriate physical and MAC layer protocols	K3
C404.4	Understand the transport layer and security issues possible in Ad hoc and sensor networks	K2
C404.5	Be familiar with the OS used in Wireless Sensor Networks and build basic modules	K2
C404.6	Apply Layer wise attacks in wireless sensor networks	K3
C405 /EC8092/ADVANCED WIRELESS COMMUNICATION		
C404.1	Discuss the cellular system design and technical challenges.	K2
C404.2	Analyze the Mobile radio propagation, fading, diversity concepts and the channel modeling.	K2

C404.3	Analyze the design parameters, link design, smart antenna, beam forming and MIMO systems.	K3
C404.4	Analyze Multiuser Systems, CDMA, WCDMA network planning and OFDM Concepts.	K3
C404.5	Summarize the principles and applications of wireless systems and standards	K2
C404.6	Appreciate the various methods for improving the data rate of wireless communication system	K2
C406/ OIC751/TRANSDUCER ENGINEERING		
C406.1	Concept behind working of measurement systems and different types of sensors and transducers	K1
C406.2	Sensor to measure various physical parameters used in Industry and normal measurement applications	K2
C406.3	Sensor to measure various physical parameters used in Industry and normal measurement applications	K1
C406.4	Working principle of resistive, inductive and capacitive transducers and their applications	K3
C406.5	Understanding of thermocouples, piezoelectric and pyro-electric transducers and their applications	K2
C406.6	Understanding of acoustic, optical sensors and other sensors and their applications.	K2
C407 /EC8711/EMBEDDED LABORATORY		
C407.1	Write programs in ARM for a specific Application	K3
C407.2	Interface memory and Write programs related to memory operations	K3
C407.3	Interface A/D and D/A convertors with ARM system	K3
C407.4	Analyze the performance of interrupt	K2
C407.5	Write programs for interfacing keyboard, display and motor	K3
C407.6	Formulate a mini project using embedded system	K3
C408 / EC8761/ADVANCED COMMUNICATION LABORATORY		
C408.1	Analyze the performance of simple optical link by measurement of losses and	K2
C408.2	Analyzing the mode characteristics of fiber	K2
C408.3	Analyze the Eye Pattern, Pulse broadening of optical fiber and the impact on BER	K2
C408.4	Estimate the Wireless Channel Characteristics	K3
C408.5	Analyze the performance of Wireless Communication System	K3
C408.6	Understand the intricacies in Microwave System design	K2

SEMESTER VIII		
C409 / EC8093/DIGITAL IMAGE PROCESSING		
C409.1	Know and understand the basics and fundamentals of digital image processing, such as digitization, sampling, quantization, and 2D transforms.	K2
C409.2	Operate on images using the techniques of smoothing, sharpening, and enhancement.	K3
C409.3	Understand the restoration concepts and filtering techniques.	K2
C409.4	Learn the basics of segmentation, feature extraction, compression, and recognition methods for color models.	K2
C409.5	Use various coding techniques for image compression.	K3
C409.6	Analyze various image descriptors and features of image representation techniques.	K2
C410 / EC8094/SATELLITE COMMUNICATION		
C410.1	Analyze the satellite orbits	K2
C410.2	Analyze the earth segment	K2
C410.3	Analyze the satellite Link design	K2
C410.4	Design various satellite applications	K3
C410.5	Analyze the space segment	K2
C411 /EC8811/PROJECT WORK		
C411.1	Demonstrate profound technical knowledge of the project.	K3
C411.2	Identify a real world problem, review literature and suggest its solution.	K3
C411.3	Demonstrate solutions to complex engineering problems utilizing a systems approach	K3
C411.4	Provide solutions to meet the specified needs of the society.	K3
C411.5	Create a system and validate its conformance	K3
C411.6	Perform data analysis, interpret and provide valid conclusions.	K3

Sl. No.	CO-PO MAPPING													
C101/HS8151/COMMUNICATIVE ENGLISH														
C101.1	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C101.2	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C101.3	3	3	3	-	-	-	-	-	-	-	-	-	3	2
C101.4	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C101.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C101.6	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C102/MA8151/ENGINEERING MATHEMATICS I														
C102.1	3	2	2	-	2	-	-	-	-	-	-	-	3	3
C102.2	3	2	2	-	-	-	-	-	-	-	-	-	2	3
C102.3	3	2	2	-	2	-	-	-	-	-	-	-	3	2
C102.4	3	2	2	-	2	-	-	-	-	-	-	-	2	2
C102.5	3	2	2	-	-	-	-	-	-	2	-	-	3	2
C102.6	3	2	2	2	2	2	2	-	-	2	-	2	2	2
C103/PH8151/ENGINEERING PHYSICS														
C103.1	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C103.2	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C103.3	3	3	3	-	-	-	-	-	-	-	-	-	3	2
C103.4	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C103.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C103.6	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C104/CY8151/ENGINEERING CHEMISTRY														
C104.1	2	2	2	2	2	-	2	-	2	-	-	2	-	2
C104.2	2	2	2	2	2	-	-	-	2	-	-	2	-	2
C104.3	2	2	2	2	2	2	2	-	2	-	-	2	-	2
C104.4	2	2	2	2	2	2	2	-	2	-	-	2	-	2
C104.5	2	2	2	2	2	2	2	2	2	-	-	2	-	2
C104.6	2	2	2	2	2	2	2	-	2	-	2	2	-	2
C105/GE8151/PROBLEM SOLVING AND PYTHON PROGRAMMING														
C105.1	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C105.2	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C105.3	3	3	3	-	-	-	-	-	-	-	-	-	3	2
C105.4	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C105.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C105.6	3	3	3	2	-		-	-	-	-	-	-	2	2

C106/GE8152/ENGINEERING GRAPHICS

C106.1	3	3	3	-	-	-	-	-	-	-	-	3	3
C106.2	3	3	3	-	-	-	-	-	-	-	-	2	3
C106.3	3	3	3	-	-	-	-	-	-	-	-	3	2
C106.4	3	3	3	2	-	-	-	-	-	-	-	2	2
C106.5	3	3	3	2	-	-	-	-	-	-	-	3	2
C106.6	3	3	3	2	-	-	-	-	-	-	-	2	2

C107/GE8161/PROBLEM SOLVING AND PYTHON

C107.1	3	3	3	-	-	-	-	-	-	-	-	3	3
C107.2	3	3	3	-	-	-	-	-	-	-	-	2	3
C107.3	3	3	3	-	-	-	-	-	-	-	-	3	2
C107.4	3	3	3	2	-	-	-	-	-	-	-	2	2
C107.5	3	3	3	2	-	-	-	-	-	-	-	3	2
C107.6	3	3	3	2	-	-	-	-	-	-	-	2	2

C108/BS8161/PHYSICS AND CHEMISTRY LABORATORY

C108.1	3	2	2	2	-	2	-	-	-	2	-	2	2	2
C108.2	3	3	2	2	-	2	-	-	-	2	-	2	2	2
C108.3	3	2	3	2	-	2	-	-	-	2	-	2	2	2
C108.4	3	2	2	2	-	2	-	-	-	2	-	2	2	2
C108.5	3	2	3	2	-	2	-	-	-	2	-	2	2	2
C108.6	3	2	2	2	-	2	-	-	-	2	-	2	2	2

C109/HS8251/TECHNICAL ENGLISH

C109.1	3	3	3	-	-	-	-	-	-	-	-	3	3
C109.2	3	3	3	-	-	-	-	-	-	-	-	2	3
C109.3	3	3	3	-	-	-	-	-	-	-	-	3	2
C109.4	3	3	3	2	-	-	-	-	-	-	-	2	2
C109.5	3	3	3	2	-	-	-	-	-	-	-	3	2
C109.6	3	3	3	2	-	-	-	-	-	-	-	2	2

C110/MA8251/ENGINEERING MATHEMATICS II

C110.1	3	2	3	-	-	-	-	-	-	2	-	-	3	2
C110.2	3	2	3	2	2	-	-	-	-	2	-	-	2	2
C110.3	3	2	3	-	2	-	-	-	-	-	-	-	2	2
C110.4	3	2	3	2	2	-	-	-	-	2	-	-	2	2
C110.5	3	2	3	2	2	-	-	-	-	2	2	-	2	2
C110.6	3	2	3	-	2	-	-	2	-	-	2	2	-	2

C111/PH8253/PHYSICS FOR ELECTRONICS ENGINEERING														
C111.1	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C111.2	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C111.3	3	3	3	-	-	-	-	-	-	-	-	-	3	2
C111.4	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C111.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C111.6	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C112/BE8254/BASIC ELECTRICAL AND INSTRUMENTATION														
C112.1	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C112.2	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C112.3	3	3	3	-	-	-	-	-	-	-	-	-	3	2
C112.4	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C112.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C112.6	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C113/EC8251/CIRCUIT ANALYSIS														
C113.1	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C113.2	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C113.3	3	3	3	-	-	-	-	-	-	-	-	-	3	2
C113.4	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C113.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C113.6	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C114/EC8252/ELECTRONIC DEVICES														
C114.1	3	3	3	2	2	-	-	-	-	-	-	2	3	3
C114.2	3	3	3	3	3	-	-	-	-	-	-	2	2	3
C114.3	3	3	2	3	2	-	-	-	-	-	-	2	3	2
C114.4	3	2	2	2	2	-	-	-	-	-	-	2	2	2
C114.5	3	2	2	2	3	-	-	-	-	-	-	2	3	2
C114.6	3	3	3	3	3	-	-	-	-	-	-	2	2	2
C115/EC8261/CIRCUIT AND DEVICES LABORATORY														
C115.1	2	-	2	2	3	-	2	2	3	2	3	2	2	-
C115.2	2	-	2	3	3	-	2	2	2	2	3	2	2	-
C115.3	2	-	2	2	2	-	2	2	2	2	3	2	2	-
C115.4	2	-	2	2	3	-	2	2	3	2	3	2	2	-
C115.5	2	-	2	3	3	-	2	2	2	2	3	2	2	-
C115.6	2	-	2	2	2	-	2	2	2	2	3	2	2	-

C116/GE8261/ENGINEERING PRACTICES LABORATORY														
C116.1	3	-	-	-	-	-	-	-	-	-	-	-	3	-
C116.2	3	3	3	-	-	-	-	2	-	-	-	-	3	3
C116.3	3	3	3	-	-	-	-	2	-	-	-	-	3	3
C116.4	3	2	3	-	-	-	-	2	-	-	-	-	3	2
C116.5	3	2	3	-	-	-	-	2	-	-	-	-	3	2
C116.6	3	2	3	2	-	-	-	2	-	-	-	-	3	2
C201/MA8352- LINEAR ALGEBRA AND PARTIAL DIFFERENTIAL EQUATIONS														
C201.1	3	2	2	2	-	-	2	-	-	3	-	2	3	3
C201.2	2	3	2	2	-	-	-	-	-	-	-	-	2	3
C201.3	3	2	2	2	-	-	-	-	-	2	-	-	3	2
C201.4	3	2	3	2	2	2	-	-	2	2	-	-	2	2
C201.5	3	3	2	2	2	-	2	-	-	-	-	2	3	2
C201.6	3	2	2	2	2	2	2	-	2	-	2	2	3	2
C202/EC8393- FUNDAMENTALS OF DATE STRUCTURES IN C														
C202.1	3	2	2	2	-	-	-	-	-	2	2	2	-	-
C202.2	3	2	2	2	2	-	-	-	-	2	2	2	2	3
C202.3	3	2	2	2	-	-	-	-	-	2	2	2	-	2
C202.4	3	2	2	2	-	-	-	-	-	2	2	2	2	3
C202.5	3	2	2	2	2	-	-	-	-	2	2	2	2	2
C202.6	3	2	2	2	3	-	-	-	-	2	2	2	2	2
C203/EC8351- ELECTRONIC CIRCUITS- I														
C203.1	3	3	3	2	2	-	-	-	-	-	-	2	3	3
C203.2	3	2	2	2	2	-	-	-	-	-	-	-	2	2
C203.3	3	2	3	2	2	-	-	-	-	-	-	2	2	2
C203.4	3	3	3	2	2	-	-	-	-	-	-	-	3	3
C203.5	3	2	2	2	2	-	-	-	-	-	-	-	2	2
C203.6	3	3	3	2	2	-	-	-	-	-	-	2	2	2

C204/EC8352- SIGNALS AND SYSTEMS														
C204.1	3	3	2	2	-	-	-	-	-	-	-	-	3	3
C204.2	3	3	3	2	-	-	-	-	-	-	-	-	2	3
C204.3	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C204.4	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C204.5	3	3	2	2	2	-	-	-	-	-	-	-	3	2
C204.6	3	3	2	2	2	-	-	-	-	2	-	-	2	2
C205/EC8392- DIGITAL ELECTRONICS														
C205.1	3	3	3	2	2	-	-	-	-	-	-	2	3	3
C205.2	3	3	3	3	3	-	-	-	-	-	-	2	2	3
C205.3	3	3	2	3	2	-	-	-	-	-	-	2	3	2
C205.4	3	2	2	2	2	-	-	-	-	-	-	2	2	2
C205.5	3	2	2	2	3	-	-	-	-	-	-	2	3	2
C205.6	3	3	3	3	3	-	-	-	-	-	-	2	2	2
C206/EC8391- CONTROL SYSTEMS ENGINEERING														
C206.1	3	-	2	-	-	-	-	-		-	2	2	3	3
C206.2	3	-	2	-	-	-	-	-	2	-	2	2	2	2
C206.3	3	2	2	2	-	-	2	-	2	-	2	2	2	3
C206.4	3	2	2	2	-	-	2	-	2	-	2	2	3	2
C206.5	3	-	2	2	-	-	2	-	2	-	2	2	2	3
C206.6	3	-	2	2	-	2	2	-	2	-	2	2	3	2
C207/EC8381- FUNDAMENTALS OF DATA STRUCTURES IN C LABORATORY														
C207.1	3	2	2	3	2	-	-	-	-	-	2	2	2	2
C207.2	3	2	2	3	2	-	-	-	-	-	2	2	3	2
C207.3	3	2	2	2	-	-	-	-	-	-	2	-	2	2

C207.4	3	2	2	2	2	-	-	-	-	-	-	2	2	2
C207.5	3	2	2	2	-	-	-	-	-	-	2	2	3	2
C207.6	3	2	2	3	3	-	-	-	-	-	2	-	2	2
C208/EC8361- ANALOG AND DIGITAL CIRCUITS LABORATORY														
C208.1	3	3	-	-	-	2	-	-	-	-	2	2	2	2
C208.2	3	3	-	-	-	2	-	-	-	-	2	2	2	2
C208.3	3	2	-	-	-	2	-	-	-	-	2	2	2	2
C208.4	3	2	-	-	-	2	-	-	-	-	2	2	2	2
C208.5	3	2	-	-	-	2	-	-	-	-	2	2	2	2
C208.6	3	2	-	-	-	2	-	-	-	-	2	2	2	2
C209/HS8381- INTERPERSONAL SKILLS/LISTENING &SPEAKING														
C209.1	2	2	2	-	2	-	2	-	-	-	1	-	2	3
C209.2	2	-	2	-	2	-	2	-	-	-	1	-	2	2
C209.3	-	-	2	2	2	-	-	-	-	2	1	-	2	2
C209.4	-	2	2	-	2	-	2	-	-	2	-	-	2	2
C209.5	1	2	-	-	2	1	-	-	-	2	-	-	2	2
C209.6	-	2	-	-	2	-	2	-	-	2	2	-	2	3
C210/MA8451- PROBABILITY AND RANDOM PROCESSES														
C210.1	3	3	2	2	-	-	-	-	-	-	-	-	3	3
C210.2	3	3	3	2	-	-	-	-	-	-	-	-	2	3
C210.3	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C210.4	3	3	2	2	-	-	-	-	-	-	-	-	2	2
C210.5	3	3	3	2	-		-	-	-	-	-	-	3	2
C210.6	3	3	3	2	-		-	-	-	-	-	-	3	2

C211/EC8452- ELECTRONIC CIRCUITS II													
C211.1	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C211.2	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C211.3	3	3	3	-	-	-	-	-	-	-	-	-	3	2
C211.4	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C211.5	3	3	3	2	-	-	-	-	-	-	-	-	3	2
C211.6	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C212/EC8491- COMMUNICATION THEORY													
C212.1	2	1	-	-	-	-	-	-	-	-	-	-	3	3
C212.2	2	1	-	-	-	-	-	-	-	-	-	-	2	3
C212.3	3	2	2	2	-	-	-	-	-	-	-	-	3	2
C212.4	3	2	2	2	-	-	-	-	-	-	-	-	2	2
C212.5	2	1	-	-	-	-	-	-	-	-	-	-	3	2
C212.6	3	2	2	2	-	-	-	-	-	-	-	-	2	2
C213/EC8451- ELECTROMAGNETIC FIELDS													
C213.1	3	2	2	-	2	-	-	-	-	-	-	2	3	2
C213.2	3	2	2	-	2	-	-	-	-	-	-	2	2	3
C213.3	3	2	2	-	2	-	-	-	-	-	-	2	3	2
C213.4	3	2	2	-	2	-	-	-	-	-	-	2	2	2
C213.5	3	2	2	-	2		-	-	-	-	-	2	2	2
C213.6	3	2	2	-	2		-	-	-	-	-	2	2	2
C214/EC8453- LINEAR INTEGRATED CIRCUITS													
C214.1	3	3	2	2	2	-	-	-	-	-	-	3	3	3
C214.2	3	3	3	3	3	-	-	-	-	-	-	3	2	3

C214.3	3	2	3	2	3	-	-	-	-	-	-	2	2	3
C214.4	3	3	2	2	2	-	-	-	-	-	-	2	2	2
C214.5	3	3	2	2	3	-	-	-	-	-	-	3	3	3
C214.6	3	2	2	2	3	-	-	-	-	-	-	3	2	2
C215/GE8291- ENVIRONMENTAL SCIENCE AND ENGINEERING														
C215.1	3	2	2	-	-	-	-	-	-	-	-	-	3	3
C215.2	2	2	2	-	-	-	-	-	-	-	-	-	2	3
C215.3	2	2	2	-	-	-	-	-	-	-	-	-	2	2
C215.4	3	3	3	-	-	-	-	-	-	-	-	-	2	2
C215.5	2	3	3	-	-	-	-	-	-	-	-	-	3	3
C215.6	2	2	2	-	-	-	-	-	-	-	-	-	3	2
C216/EC8461- CIRCUITS DESIGN AND SIMULATION LABORATORY														
C216.1	3	3	3	-	2	2	-	2	2	-	-	2	2	2
C216.2	3	2	3	-	2	-	-	-	-	-	-	3	2	2
C216.3	3	2	2	-	2	-	-	-	-	2	-	2	2	2
C216.4	3	3	2	-	3	-	2	-	-	-	-	3	2	2
C216.5	3	3	3	2	2	-	-	-	-	-	2	2	2	2
C216.6	2	2	3	-	3	-	-	2	-	-	-	2	2	2
C217/EC8462- LINEAR INTEGRATED CIRCUITS LABORATORY														
C217.1	3	2	2	2	-	2	-	-	-	2	-	2	2	2
C217.2	3	3	2	2	-	2	-	-	-	2	-	2	2	2
C217.3	3	2	3	2	-	2	-	-	-	2	-	2	2	2
C217.4	3	2	2	2	-	2	-	-	-	2	-	2	2	2
C217.5	3	2	3	2	-	2	-	-	-	2	-	2	2	2
C217.6	3	2	2	2	-	2	-	-	-	2	-	2	2	2

C301 /EC8501/DIGITAL COMMUNICATION

C301.1	3	3	2	2	2	-	-	-	-	-	-	3	3	2
C301.2	3	3	3	3	3	-	-	-	-	-	-	3	2	2
C301.3	3	2	3	2	3	-	-	-	-	-	-	2	2	2
C301.4	3	3	2	2	2	-	-	-	-	-	-	2	2	2
C301.5	3	3	2	2	3	-	-	-	-	-	-	3	2	2
C301.6	3	2	2	2	3	-	-	-	-	-	-	3	2	2

C302 / EC8553/DISCRETE-TIME SIGNAL PROCESSING

C302.1	3	2	2	-	-	-	-	-	-	-	-	-	3	3
C302.2	2	2	2	-	-	-	-	-	-	-	-	-	2	3
C302.3	2	2	2	-	-	-	-	-	-	-	-	-	2	2
C302.4	3	3	3	-	-	-	-	-	-	-	-	-	2	2
C302.5	2	3	3	-	-		-	-	-	-	-	-	3	3
C302.6	2	2	2	-	-		-	-	-	-	-	-	3	2

C303 / EC8552/COMPUTER ARCHITECTURE AND ORGANIZATION

C303.1	3	2	2	2	-	-	-	-	-	2	2	2	2	2
C303.2	3	2	2	2	-	-	-	-	-	2	2	2	3	2
C303.3	3	2	2	2	-	-	-	-	-	2	2	2	2	2
C303.4	3	2	2	2	-	-	-	-	-	2	2	2	2	3
C303.5	3	2	2	2	-	-	-	-	-	2	2	2	3	2
C303.6	3	2	2	2	-	-	-	-	-	2	2	2	2	2

C304/EC8551/COMMUNICATION NETWORKS

C304.1	3	3	3	-	-	-	-	-	-	-	-	-	2	2
C304.2	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C304.3	3	3	3	2	-	-	-	-	-	-	-	-	2	3
C304.4	3	3	3	2	-	-	-	-	-	-	-	-	3	3

C304.5	3	3	3	2	-	-	-	-	-	-	-	-	3	3
C304.6	3	3	3	2	-	-	-	-	-	-	-	-	3	3
C305 /GE8077/TOTAL QUALITY MANAGEMENT														
C305.1	3	3	3	2	-	-	-	-	-	-	-	2	2	2
C305.2	3	2	3	2	-	-	-	-	-	-	-	2	2	2
C305.3	2	3	2	2	-	-	-	-	-	-	-	2	2	2
C305.4	2	2	2	2	-	-	-	-	-	-	-	2	2	2
C305.5	3	3	2	2	-	-	-	-	-	-	-	2	2	2
C305.6	2	2	2	2	-	-	-	-	-	-	-	2	2	2
C306/OMD551/BASIC OF BIOMEDICAL INSTRUMENTATION														
C306.1	3	2	2	2	-	-	-	-	-	2	2	2	3	2
C306.2	3	2	2	2	-	-	-	-	-	2	2	2	2	2
C306.3	3	2	2	2	-	-	-	-	-	2	2	2	2	2
C306.4	3	2	2	2	-	-	-	-	-	2	2	2	2	2
C306.5	3	2	2	2	-		-	-	-	2	2	2	2	2
C306.6	3	2	2	2	-		-	-	-	2	2	2	2	2
C307 / EC8562/DIGITAL SIGNAL PROCESSING LABORATORY														
C307.1	3	3	3	-	2	2	-	2	2	-	-	2	2	2
C307.2	3	2	3	-	2	-	-	-	-	-	-	3	2	2
C307.3	3	2	2	-	2	-	-	-	-	2	-	2	2	2
C307.4	3	3	2	-	3	-	2	-	-	-	-	3	2	2
C307.5	3	3	3	2	2	-	-	-	-	-	2	2	2	2
C307.6	2	2	3	-	3	-	-	2	-	-	-	2	2	2
C308 / EC8561/COMMUNICATION SYSTEMS LABORATORY														
C308.1	3	2	3	-	-	-	-	-	3	2	2	2	2	2
C308.2	3	2	2	-	-	-	-	-	3	2	2	3	2	2

C308.3	3	3	2	-	-	-	-	-	3	2	2	3	2	2
C308.4	3	2	2	-	-	-	-	-	3	2	2	2	2	2
C308.5	3	3	2	-	-	-	-	-	3	2	2	3	2	2
C308.6	3	2	2	-	-	-	-	-	3	2	2	2	2	2
C309/ EC8563/COMMUNICATION NETWORKS LABORATORY														
C309.1	3	3	3	2	-	-	-	2	-	-	3	2	2	2
C309.2	3	2	3	2	-	-	-	2	-	-	2	2	2	2
C309.3	3	2	2	2	-	-	-	2	-	-	2	2	2	2
C309.4	3	3	2	2	-	-	-	2	-	-	2	2	2	2
C309.5	3	3	3	2	-	-	-	2	-	-	2	2	2	2
C309.6	3	3	3	2	-	-	-	2	-	-	2	2	2	2
C310 /EC8691/MICROPROCESSORS AND MICROCONTROLLERS														
C310.1	3	3	2	2	-	-	-	-	-	-	-	2	3	2
C310.2	3	3	3	-	-	-	-	-	-	-	-	2	2	3
C310.3	3	3	3	-	-	-	-	-	-	-	-	2	2	2
C310.4	3	3	2	2	-	-	-	-	-	-	-	2	3	3
C310.5	3	3	3	-	-	-	-	-	-	-	-	2	3	3
C310.6	3	3	3	2	-	-	-	-	-	-	-	2	2	3
C311/EC8095/VLSI DESIGN														
C311.1	3	3	3	2	2	-	-	-	-	-	3	-	3	2
C311.2	3	2	3	2	2	-	-	-	-	-	2	-	2	3
C311.3	3	2	2	2	2	-	-	-	-	-	2	-	2	2
C311.4	3	3	2	2	3	-	-	-	-	-	2	-	3	2
C311.5	3	3	3	2	2	-	-	-	-	-	2	-	2	3
C311.6	2	2	3	2	3	-	-	-	-	-	2	-	2	3

C312 /EC8652/WIRELESS COMMUNICATION

C312.1	3	3	2	-	-	-	-	-	-	-	-	-	2	2
C312.2	3	2	3	-	-	-	-	-	-	-	-	-	2	2
C312.3	2	2	2	-	-	-	-	-	-	-	-	-	1	2
C312.4	2	2	2	2	-	-	-	-	-	-	-	-	2	2
C312.5	2	2	2	2	-	-	-	-	-	-	-	-	1	2
C312.6	2	2	2	2	-	-	-	-	-	-	-	-	2	2

C313/ MG8591/PRINCIPLES OF MANAGEMENT

C313.1	2	-	-	-	-	2	2	-	2	3	-	2	3	2
C313.2	2	-	-	-	-	2	2	-	2	3	-	2	2	3
C313.3	3	-	-	-	-	3	2	-	2	3	-	2	3	3
C313.4	3	-	-	-	-	3	2	-	2	3	-	2	3	2
C313.5	2	-	-	-	-	2	3	-	2	3	-	2	3	2
C313.6	2	-	-	-	-	2	3	-	2	3	-	2	2	3

C314 /EC8651/TRANSMISSION LINES AND RF SYSTEMS

C314.1	3	2	2	2	-	-	-	-	-	2	2	2	3	3
C314.2	3	2	2	2	-	-	-	-	-	2	2	2	2	3
C314.3	3	2	2	2	-	-	-	-	-	2	2	2	3	2
C314.4	3	2	2	2	-	-	-	-	-	2	2	2	2	2
C314.5	3	2	2	2	-	-	-	-	-	2	2	2	3	2
C314.6	3	2	2	2	-	-	-	-	-	2	2	2	2	2

C315 / EC8004/WIRELESS NETWORKS

C315.1	3	1	1	1	1	-	-	-	-	-	-	-	1	2
C315.2	3	2	2	2	1	-	-	-	-	-	-	-	1	3
C315.3	3	1	1	1	1	-	-	-	-	-	-	-	2	2

C315.4	3	1	1	1	1	-	-	-	-		-	-	1	2
C315.5	2	2	2	2	1	-	-	-	-	-	-	-	1	3
C315.6	2	1	1	1	1		-	-	-	-	-	-	2	2

C316 /EC8681/MICROPROCESSORS AND MICROCONTROLLERS LABORATORY

C316.1	3	3	3	2	2	-	-	-	-	-	3	-	2	2
C316.2	3	2	3	2	2	-	-	-	-	-	2	-	2	2
C316.3	3	2	2	2	2	-	-	-	-	-	2	-	2	2
C316.4	3	3	2	2	3	-	-	-	-	-	2	-	2	2
C316.5	3	3	3	2	2	-	-	-	-	-	2	-	2	2
C316.6	2	2	3	2	3	-	-	-	-	-	2	-	2	2

C317 /EC8661/VLSI DESIGN LABORATORY

C317.1	3	3	2	2	2	-	-	-	-	-	-	3	2	2
C317.2	3	3	3	3	3	-	-	-	-	-	-	3	2	2
C317.3	3	2	3	2	3	-	-	-	-	-	-	2	2	2
C317.4	3	3	2	2	2	-	-	-	-	-	-	2	2	2
C317.5	3	3	2	2	3	-	-	-	-	-	-	3	2	2
C317.6	3	2	2	2	3	-	-	-	-	-	-	3	2	2

C318 /EC8611/TECHNICAL SEMINAR

C318.1	3	3	2	2	3	-	-	-	-	-	-	-	2	2
C318.2	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C318.3	3	3	2	2	3	-	-	-	-	-	-	-	2	2
C318.4	3	3	2	2	3	-	-	-	-	-	-	-	2	3
C318.5	3	3	2	2	3	-	-	-	-	-	-	-	3	2
C318.6	3	3	2	2	3	-	-	-	-	-	-	-	2	2

C319 /HS8581/PROFESSIONAL COMMUNICATION													
C319.1	3	2	3	-	-	-	-	-	3	2	2	2	2	2
C319.2	3	2	2	-	-	-	-	-	3	2	2	3	3	2
C319.3	3	3	2	-	-	-	-	-	3	2	2	3	2	2
C319.4	3	2	2	-	-	-	-	-	3	2	2	2	2	3
C319.5	3	3	2	-	-	-	-	-	3	2	2	3	3	2
C319.6	3	2	2	-	-	-	-	-	3	2	2	2	2	2
C401/EC8701/ANTENNAS AND MICROWAVE ENGINEERING													
C401.1	3	3	3	-	-	-	-	-	-	-	-	-	3	3
C401.2	3	3	3	-	-	-	-	-	-	-	-	-	2	3
C401.3	3	3	3	-	-	-	-	-	-	-	-	-	3	2
C401.4	3	3	3	2	-	-	-	-	-	-	-	-	2	2
C401.5	3	3	3	2	-		-	-	-	-	-	-	3	2
C401.6	3	3	3	2	-		-	-	-	-	-	-	2	2
C402/EC8751/OPTICAL COMMUNICATION													
C402.1	3	2	2	2	-	2	-	-	-	2	-	2	2	3
C402.2	3	3	2	2	-	2	-	-	-	2	-	2	2	2
C402.3	3	2	3	2	-	2	-	-	-	2	-	2	3	2
C402.4	3	2	2	2	-	2	-	-	-	2	-	2	3	2
C402.5	3	2	3	2	-	2	-	-	-	2	-	2	2	2
C402.6	3	2	2	2	-	2	-	-	-	2	-	2	2	2
C403 / EC8791/EMBEDDED AND REAL TIME SYSTEMS													
C403.1	3	2	2	-	2	-	-	-	-	2	2	3	3	-
C403.2	3	2	2	-	2	-	-	-	-	2	2	3	3	-
C403.3	3	2	2	-	2	-	-	-	-	2	2	3	3	2

C403.4	3	2	2	-	2	-	-	-	-	2	2	3	-	2
C403.5	3	2	2	-	2	-	-	-	-	2	2	3	-	2
C403.6	3	2	2	-	2	-	-	-	-	2	2	3	-	2
C404 /EC8702 / ADHOC AND WIRELESS SENCOR NETWORK														
C404.1	2	2	-	-	-	2	2	-	-	-	-	2	3	3
C404.2	2	3	-	-	-	2	2	2	-	-	-	2	2	3
C404.3	2	3	-	-	-	2	2	2	-	-	2	2	3	2
C404.4	2	3	2	-	-	2	2	2	-	-	2	2	2	2
C404.5	2	3	2	-	-	2	2	3	-	-	2	2	3	2
C404.6	2	3	-	-	-	2	2	2	-	-	2	2	2	2
C405/EC8092/ADVANCED WIRELESS COMMUNICATION														
C405.1	3	3	2	-	2	2	2	2	-	2	2	2	3	3
C405.2	3	2	3	-	2	2	2	2	-	2	2	2	2	3
C405.3	2	2	2	-	2	2	2	2	-	2	2	2	3	2
C405.4	2	2	2	2	2	2	2	2	-	2	2	2	2	3
C405.5	2	2	2	2	2	2	2	2	-	2	2	2	3	2
C405.6	2	2	2	2	2	2	2	3	-	2	2	2	2	2
C406/OIC751/TRANSDUCER ENGINEERING														
C406.1	3	3	3	2	2	2	-	2	2	2	3	-	3	2
C406.2	3	2	3	2	2	-	-	-	-	3	2	2	2	3
C406.3	3	2	2	2	2	-	-	-	-	2	2	-	3	2
C406.4	3	3	2	2	3	-	2	-	-	2	2	-	3	2
C406.5	3	3	3	2	2	-	-	-	-	3	2	-	2	3
C406.6	3	2	2	-	2		-	-	-	-	-	2	3	2

C407 / EC8711/EMBEDDED LABORATORY														
C407.1	3	3	3	2	2	-	-	-	-	-	3	3	2	2
C407.2	3	2	3	2	2	-	-	-	-	-	2	3	2	2
C407.3	3	2	2	2	2	-	-	-	-	-	2	2	2	2
C407.4	3	3	2	2	3	-	-	-	-	-	2	2	2	2
C407.5	3	3	3	2	2	-	-	-	-	-	2	3	2	2
C407.6	2	2	3	2	3	-	-	-	-	-	2	3	2	2
C408 / EC8761/ADVANCED COMMUNICATION LABORATORY														
C408.1	2	-	-	-	-	2	2	-	2	3	-	2	2	2
C408.2	2	-	-	-	-	2	2	-	2	3	-	2	2	2
C408.3	3	-	-	-	-	3	2	-	2	3	-	2	2	2
C408.4	3	-	-	-	-	3	2	-	2	3	-	2	2	2
C408.5	2	-	-	-	-	2	3	-	2	3	-	2	2	2
C408.6	2	-	-	-	-	2	3	-	2	3	-	2	2	2
C409 / EC8093/DIGITAL IMAGE PROCESSING														
C409.1	2	-	2	-	-	3	-	3	-	2	-	2	2	2
C409.2	2	-	2	-	-	3	-	3	-	2	-	2	3	2
C409.3	2	-	2	-	-	3	-	3	-	2	-	2	3	2
C409.4	2	-	2	-	-	3	-	3	-	2	-	2	2	3
C409.5	2	-	2	-	-	3	-	3	-	2	-	2	2	3
C409.6	2	-	2	-	-	3	-	3	-	2	-	2	2	2
C410 / EC8094/SATELLITE COMMUNICATION														
C410.1	2	-	2	-	-	3	-	3	-	2	-	2	3	3
C410.2	2	-	2	-	-	3	-	3	-	2	-	2	2	3
C410.3	2	-	2	-	-	3	-	3	-	2	-	2	3	2
C410.4	2	-	2	-	-	3	-	3	-	2	-	2	2	2

C410.5	2	-	2	-	-	3	-	3	-	2	-	2	3	2
C410.6	2	-	2	-	-	3	-	3	-	2	-	2	2	2
C411 /EC8811/PROJECT WORK														
C411.1	3	3	3	2	3	3	2	-	2	2	2	2	2	2
C411.2	3	2	3	2	3	2	2	-	2	-	2	2	3	2
C411.3	2	3	2	2	3	2	2	2	2	2	-	2	2	2
C411.4	2	2	2	2	2	2	-	-	-	-	-	2	2	3
C411.5	3	3	2	2	2	2	2	-	2	-	-	2	3	2
C411.6	2	2	2	2	2	2	2	2	2	2	-	2	2	2

S.No	Course-PO/PSO MAPPING													
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C101	3	3	3	2	-	-	-	-	-	-	-	-	2.50	2.33
C102	3	2	2	2	-	-	-	-	-	-	-	-	2.50	2.33
C103	3	3	3	2	-	-	-	-	-	-	-	-	2.50	2.33
C104	2	2	2	2	-	-	-	-	-	-	-	-		2.00
C105	3	3	3	2	-	-	-	-	-	-	-	-	2.50	2.33
C106	3	3	3	2	-	-	-	-	-	-	-	-	2.50	2.33
C107	2.09	2.09	2.09	1.39	-	-	-	-	-	-	-	-	1.74	1.63
C108	2.57	1.71	-	-	-	1.71	-	-	-	1.71	-	1.71	-	1.71
C109	2.75	3	3	3	-	-	-	-	-	-	-	-	-	2.00
C110	3	2	2	2	-	-	-	-	-	-	-	-	2.20	2.00
C111	3	3	3	2	-	-	-	-	-	-	-	-	2.50	2.33
C112	2.20	2.20	2.20	1.47	-	-	-	-	-	-	-	-	1.83	1.71
C113	2.20	2.20	2.20	1.47	-	-	-	-	-	-	-	-	1.83	1.71
C114	2.09	2.09	1.39	-	1.39	-	-	-	-	-	-	-	1.39	1.39
C115	2	-	2	2	3	-	2	2	2	2	3	2	2	-
C116	3	2	3	2	-	-	-	2	-	-	-	-	3	2
C201	2.833	2.333	2.167	2	2	2	2	-	2	2.333	2	2	2.667	2.333
C202	2.15	1.43	1.43	1.43	1.67	-	-	-	-	1.43	1.43	1.43	1.43	1.72
C203	3	2.5	2.667	2	-	-	-	-	-	-	-	-	2.33	2.33

C204	3	3	3	2	2	-	-	-	-	2	-	-	2.50	2.33
C205	3	2.667	2.5	2.5	-	-	-	-	-	-	-	-	2.50	2.33
C206	3	2	2	2	-	-	-	-	-	-	-	-	2.50	2.50
C207	2.84	1.89	1.89	2.37	2.13	-	-	-	-	-	1.89	1.89	2.21	1.89
C208	2.84	2.21	-	-	-	1.89	-	-	-	-	1.89	1.89	1.89	1.89
C209	2	2	2	2	2	1	2	-	-	2	1	-	2	2
C210	3	3	2.667	2	-	-	-	-	-	-	-	-	2.667	2.333
C211	3	3	3	2	-	-	-	-	-	-	-	-	2.50	2.33
C212	2.5	1.5	2	2	-	-	-	-	-	-	-	-	2.50	2.33
C213	2.15	1.43	1.43	-	1.43	-	-	-	-	-	-	1.43	1.67	1.56
C214	2.04	1.81	1.59	1.47	1.81	-	-	-	-	-	-	1.81	1.59	1.81
C215	1.71	1.71	1.71	-	-	-	-	-	-	-	-	-	1.83	1.83
C216	2.43	2.14	2.28	1.71	2.00	1.71	1.71	1.71	1.71	1.71	1.71	2.00	1.71	1.71
C217	2.63	1.90	2.05	1.75	-	1.75	-	-	-	1.75	-	1.75	1.75	1.75
C301	3	2.667	2.333	2.167	-	-	-	-	-	-	-	-	2.17	2.00
C302	2.33	2.33	2.33	-	-	-	-	-	-	-	-	-	2.50	2.50
C303	3	2	2	2	-	-	-	-	-	2	2	2	2	2
C304	3	3	3	2	-	-	-	-	-	-	-	-	2.5	2.833
C305	1.88	1.88	1.75	1.50	-	-	-	-	-	-	-	1.50	1.50	1.50
C306	2.04	1.36	1.36	1.36	-	-	-	-	-	-	-	-	1.48	1.36
C307	2.68	2.37	2.52	1.89	2.21	1.89	1.89	1.89	1.89	1.89	1.89	2.21	1.89	1.89
C308	2.68	2.08	1.94	-	-	-	-	-	2.68	1.79	1.79	2.23	1.79	1.79

C309	2.73	2.43	2.43	1.82	-	-	-	1.82	-	-	1.97	1.82	1.82	1.82
C310	3	3	2.667	2	-	-	-	-	-	-	-	2	2.5	2.667
C311	2.833	2.5	2.667	2	-	-	-	-	-	-	-	-	2.33	2.50
C312	2.333	2.167	2.167	2	-	-	-	-	-	-	-	-	1.67	2.00
C313	2.08	-	-	-	-	2.08	2.08		1.79	2.68		1.79	2.38	2.23
C314	3	2	2	2	-	-	-	-	-	2	2	2	2.50	2.33
C315	2.667	1.333	1.333	1.333	-	-	-	-	-	-	-	-	1.33	2.33
C316	2.58	2.28	2.43	1.82	2.12	-	-	-	-	-	1.97	-	1.82	1.82
C317	2.73	2.43	2.12	1.97	2.43	-	-	-	-	-	-	2.43	1.82	1.82
C318	3	3	2	2	3	-	-	-	-	-	-	-	2	2
C319	3	2	2	-	-	-	-	-	3	2	2	3	2	2
C401	3	3	3	2	-	-	-	-	-	-	-	-	2.50	2.33
C402	2.79	2.02	2.17	1.86	-	1.86	-	-	-	1.86	-	1.86	2.17	2.02
C403	2.79	1.86	1.86	-	1.86	-	-	-	-	1.86	1.86	2.79	2.79	1.86
C404	1.86	2.64	1.86	-	-	1.86	1.86	2.05	-	-	1.86	1.86	2.33	2.17
C405	2.29	2.13	2.13	1.97	1.97	1.97	1.97	2.13	-	1.97	1.97	1.97	2.46	2.46
C406	2.84	2.37	2.37	1.89	2.05	1.89	1.89	1.89	1.89	2.27	2.08	1.89	2.52	2.21
C407	2.68	2.37	2.52	1.89	2.21	-	-	-	-	-	2.05	2.52	1.89	1.89
C408	2.08	-	-	-	-	2.08	2.08	-	1.79	2.68	-	1.79	1.79	1.79
C409	1.86	-	1.86	-	-	2.79	-	2.79	-	1.86	-	1.86	2.17	2.17
C410	1.57	-	1.57	-	-	2.36	-	2.36	-	1.57	-	1.57	1.97	1.84
C411	3	3	2	2	3	2	2	2	2	2	2	2	2	2