Department of Electronics and Communication Engineering

Course Outcomes

Regulation R19/16

Year/Sem: II B.Tech I SEM

Course Name: **Electronic Devices and Circuits**	
Course Code: **EC2101**	
EC2101.1	Apply the basic concepts of semiconductor physics.
EC2101.2	Understand the formation of p-n junction and how it can be used as a p-n junction as diode in different modes of operation.
EC2101.3	Know the construction, working principle of rectifiers with Filters
EC2101.4	Understand the construction, principle of operation of transistors, BJT and FET with their V-I characteristics in different configurations.
EC2101.5	Know the need of transistor biasing, various biasing techniques for BJT and FET and stabilization concepts with necessary expressions.
EC2101.6	Without filters with relevant expressions and necessary comparisons

Course Name: **Switching Theory and Logic Design**	
Course Code: **EC2102**	
EC2102.1	Classify different number systems and apply to generate various codes
EC2102.2	Use the concept of Boolean algebra in minimization of switching functions
EC2102.3	Design different types of combinational logic circuits.
EC2102.4	Apply knowledge of flip-flops in designing of Registers and counters
EC2102.5	The operation and design methodology for synchronous sequential circuits and algorithmic state machines.
EC2102.6	Design different types of Sequential logic circuits.

Course Name: **Signals and Systems**	
Course Code: **EC2103**	
EC2103.1	Differentiate the classification of signals as well as systems operations on signals and signal approximation.
EC2103.2	Analyse the spectral characteristics of continuous-time periodic and aperiodic signals using Fourier series
EC2103.3	Analyse the spectral characteristics of continuous-time periodic and aperiodic signals Using Fourier transform.
EC2103.4	Able to learn sampling theorem to convert continuous-time signals to discrete-time signal and reconstruct back
EC2103.5	Define and evaluate the concept of convolution and filters such as LPF, HPF,BPF ,correlation functions.
EC2103.6	Analyse the spectral characteristics of continuous-time periodic Signals only

Course Name: MEFA	
Course Code: **EC2106**	
EC2106.1	To adopt the Managerial Economic concepts for decision making and forward planning. Also know law of demand and its exceptions, to use different forecasting

	methods for predicting demand for various products and services.
EC2106.2	To assess the functional relationship between Production and factors of production and list out various costs associated with production and able to compute breakeven point to illustrate the various uses of breakeven analysis.
EC2106.3	To outline the different types of business organizations and provide a framework for analyzing money in its functions as a medium of exchange.
EC2106.4	To adopt the principles of accounting to record, classify and summarize various transactions in books of accounts for preparation of final accounts
EC2106.5	To implement various techniques for assessing the financial position of the business.
EC2106.6	To outline the different types of business organizations and provide a framework

Course Name: **Random Variables and Stochastic Processes**	
Course Code: **EC2104**	
EC2104.1	Able to Identify random variables and Define and manipulate distribution and densityfunctions.
EC2104.2	Able to Compute various operations like expectations, variances, etc. from probability density functions and probability distribution functions.
EC2104.3	Able to Characterize probability density and distribution function for multiple random variables
EC2104.4	Able to perform operations on Multiple random variables
EC2104.5	Explain the concept of random process, differentiate between stochastic and ergodic processes
EC2104.6	Able to Characterize probability density and distribution function

Course Name: **OOPS through Java**	
Course Code: **EC2105**	
EC2105.1	Identify classes, objects, members of a class and the relationship among them needed for as pacific problem
EC2105.2	Implement programs to distinguish different forms of inheritance
EC2105.3	Create packages and to reuse them
EC2105.4	Develop programs using Exception Handling mechanism
EC2105.5	Develop multithreaded application using synchronization concept
EC2105.6	Identify members of a class and the relationship among them

Course Name: **Electronic Devices and Circuits Lab**	
Course Code: **EC2107**	
EC2107.1	Ability to analyze PN junctions in semiconductor devices under various conditions.
EC2107.2	Ability to analyzeZener in semiconductor devices under various conditions.
EC2107.3	Ability to design and analyze simple rectifiers and voltage regulators using diodes
EC2107.4	Ability to design and analyze simple BJT and FET circuits.
EC2107.5	Know the CRO and CRO uses

EC2107.6	Ability to design and amplify the BJT and FET

Course Name: Switching Theory and Logic Design–Lab	
Course Code: **EC2108**	
EC2108.1	Test the operation of different logic gates using relevant IC's.
EC2108.2	Examine the operation of different combinational logic circuits.
EC2108.3	Apply the concept of Boolean algebra or k-maps to reduce and Construct logic circuit for given function
EC2108.4	Analyse the Truth tables of different Flip-Flops.
EC2108.5	Design of registers using sequential logic circuits.
EC2108.6	Design of Synchronous and Asynchronous counters using Flip-Flops

Course Name: Constitution of India	
Course Code: **EC2109**	
EC2109.1	Understand historical background of the constitution making and its importance for building a democratic India.
EC2109.2	Understand the function of Union Government and its Administration Secretariat, LokSabha, RajyaSabha,
EC2109.3	The Supreme Court and High Court: Powers and Functions;
EC2109.4	Understand the structure of state government & Central Government
EC2109.5	Analyze the decentralization of power between central, state and local self-government
EC2109.6	Union Government of its Administration Secretariat

Year/Sem: II B.Tech II SEM

Course Name: Electronic Circuit Analysis	
Course Code: **EC2201**	
EC2201.1	Design and analysis of small signal high frequency transistor amplifier using BJT and FET.

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EC2201.2	Design and analysis of multistage amplifiers using BJT and FET and Differential amplifier using BJT.
EC2201.3	Know the feedback amplifiers and feedback amplifier topologies
EC2201.4	Derive the expressions for feedback amplifiers Gain and impedance of input and output
EC2201.5	Derive the expressions for frequency ofoscillation and condition for oscillation of RC and LC oscillators and their amplitude and frequency stabilityconcept.
EC2201.6	Know the classification of the power and tuned amplifiers and their analysis with performance comparison.

Course Name: Computer Architecture and Organization	
Course Code: **EC2205**	
EC2205.1	Understand the functional architecture of computing systems
EC2205.2	Identify compare and assess, issues related to bus,memory,Control and I/O functions
EC2205.3	Correlate and analyze the operations carried out in Processing Unit
EC2205.4	Design Solutions in the area of computer Architecture
EC2205.5	Design and verify memory organizations
EC2205.6	Identify compare and assess, issues related to bus, memory

Course Name: Analog Communications	
Course Code: **EC2204**	
EC2204.1	Understand modulation and demodulation Techniques of Amplitude modulation.
EC2204.2	Applying modulation and demodulation Techniques to DSB & SS
EC2204.3	Learn the basic concepts of Frequency modulation and also modulation and demodulation Techniques.
EC2204.4	Able to explain the principles of Radio Transmitters and Receivers.
EC2204.5	Analyse the Noise performance of AM, DSB, SSB and FM and Understand the generation and demodulation of pulse analog modulation techniques.
EC2204.6	Analyse Understand the generation and demodulation of pulse analog modulation techniques.

Course Name: Linear control Systems	
Course Code: **EC2202**	
EC2202.1	Explain the concepts of feedback and its advantages to various control systems
EC2202.2	Analyze the performance metrics to design the control system in time-domain
EC2202.3	Find the stability analysis for control systems
EC2202.4	Draw the root locus for control systems
EC2202.5	Analyze the performance metrics to design the control system in frequency-domain

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EC2202.6	Analyze the performance metrics to design the control system

Course Name: Management and Organizational Behaviour	
Course Code: **EC2206**	
EC2206.1	After completion of the Course the student will acquire the knowledge on management, Functions, global leadership and organizational structure.
EC2206.2	Will familiarize with the concepts of functional management that is HRM and Marketing of new product developments
EC2206.3	The learner is able to think in strategically through contemporary management practices.
EC2206.4	The learner may also know about the contemporary practices in concept
EC2206.5	The learner can develop positive attitude through personality development and can equip with motivational theories.
EC2206.6	The concepts of functional management that is HRM and Marketing of new product developments

Course Name: Electronic Circuit Analysis Lab	
Course Code: **EC2207**	
EC2207.1	Determination of fT for transistor
EC2207.2	Design different types of Amplifier and Oscillator circuits
EC2207.3	Simulate different types of Amplifier and Oscillator circuits using software tool
EC2207.4	Test different types of Amplifiers and Oscillator circuits using hardware.
EC2207.5	Design the power amplifiers using software and hard ware to
EC2207.6	Simulate different types of Amplifier circuits using software tool

Course Name: Analog Communications Lab	
Course Code: **EC2208**	
EC2208.1	Analyze the concepts, write and simulate the concepts of AM and AM Demodulation process in Communication.
EC2208.2	Know the origin and simulation of FM and FM-Demodulation process in communication
EC2208.3	Acquaint with AM and FM basic functionalities
EC2208.4	Discriminate the AM and FM functionalities
EC2208.5	Interpret with various angle modulation and demodulation systems
EC2208.6	Write and simulate the concepts of AM and AM Demodulation process in Communication.

Course Name: Electromagnetic Waves and Transmission Lines	
Course Code: **EC2203**	
EC2203.1	Acquire knowledge on various types of transmission lines, derive transmission-line equations from a circuit model in terms of primary and secondary constants
EC2203.2	Derive and Calculate the expressions for input impedance of transmission lines, reflection coefficient, VSWR etc. using smith chart
EC2203.3.	Determine E and H using various laws and applications of electric & magnetic fields
EC2203.4	Apply the Maxwell equations to analyze the time varying behaviour of EM waves
EC2203.5	Gain the knowledge in uniform plane wave concept and characteristics of uniform plane wave in various media
EC2203.6	Derive and Calculate the expressions for input impedance of transmission lines

Year/Sem: III B.Tech I SEM

Course Name: Linear IC Applications	
Course Code	**EC3102**
EC3102.1	Describe the characteristics of operational amplifiers.
EC3102.2	Design the various linear and non-linear applications of op-amp.
EC3102.3	Design the Active filters using Operational Amplifier
EC3102.4	Describe the Op-Amp and internal Circuitry: 555 Timer, PLL
EC3102.5	Discuss the Applications of Operational amplifier: 555 Timer, PLL
EC3102.6	Use the Op-Amp in A to D & D to A Converters

Course Name: Digital Communications	
Course Code: **EC3104**	
EC3104.1	Define and Determine the performance of pulse digital modulation techniques such as PCM,DPCM,DM,ADM.
EC3104.2	Elaborate the principles of digital modulation techniques like ASK, FSK, PSK, DPSK, and QPSK.
EC3104.3	Determine the probability of error for digital modulation schemes such as FSK,ASK, BPSK

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EC3104.4	Determine the probability of error for digital modulation schemes such as BPSK, BFSK, and QPSK.
EC3104.5	Understand the concept of digital information over the channel, Analyze different source coding techniques Shanon-Fano coding, Huffman coding etc.
EC3104.6	Able to Compute and analyze different error control coding schemes along with different domain approaches.

Course Name: Digital IC Applications	
Course Code: EC3103	
EC3103.1	Find the analytic functions using C-R equations, the image using conformal mapping and bi-linear transformation
EC3103.2.	Use Cauchy's theorem, Cauchy's integral formula and Cauchy's residues theorem to evaluate complex integration and expansion of complex function using Taylor's and Laurent's series.
EC3103.3	Define Laplace and inverse Laplace transforms of various functions and solve ordinary differential equations using Laplace transform
EC3103.4	A thorough understanding of operational amplifiers with linear integrated circuits
EC3103.5	Understanding of the different families of digital integrated circuits and their characteristics
EC3103.6	Also students will be able to design circuits using operational amplifiers for various applications

Course Name: Linear IC Applications LAB	
Course Code: EC3107	
EC3107.1	Design and analyse the various linear application of op-amp
EC3107.2	Design and analyse the various non-linear application of op-amp
EC3107.3	Design and analyse filter circuits using op-amp
EC3107.4	Design and analyse oscillators and multivibrator circuits using op-amp
EC3107.5	Design and analyse the various application of 555 timer
EC3107.6	Analyse the performance of oscillators and multivibrators using PSPICE.

Course Name: Antenna and Wave Propagation	
Course Code: EC3105	
EC3105.1	Understand the radiation of electromagnetic waves by antennas.
EC3105.2	Understand the antenna operation through the solution of

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	antenna design and analysis problems.
EC3105.3	Analyze basic antennas to determine their performance characteristics.
EC3105.4	Interpret the antenna performance characteristics and understand their importance in antenna engineering design.
EC3105.5	understand of the Radio wave propagation
EC3105.6	Understanding of the Transmission Lines

Course Name: Computer Architecture and Organization	
Course Code:	**EC3101**
EC3101.1	Understand the functional architecture of computing systems
EC3101.2	Identify compare and assess, issues related to bus,memory,Control and I/O functions
EC3101.3	Correlate and analyze the operations carried out in Processing Unit
EC3101.4	Design Solutions in the area of computer Architecture
EC3101.5	Design and verify memory organizations
EC3101.6	Correlate and analyze the operations carried out in Processing

Course Name: **Pulse and Digital Circuits Lab**	
Course Code: **EC3106**	
EC3106.1	will be able generate sinusoidal signals
EC3106.2	will be able generate non-sinusoidal signals
EC3106.3	will be able to understand basic logic gates
EC3106.4	will be able to understand basic logic gates and can design applications
EC3106.5	will be able to analyze various multi vibrator circuits
EC3106.6	will be able to design non sinusoidal oscillator

Course Name: **Digital IC Applications Lab**	
Course Code: **EC3108**	
EC3108.1	Design various applications using op-amp
EC3108.2	Design various applications with 555 timer IC
EC3108.3	Deign various sequential and combinational circuits using Verilog HDL.
EC3108.4	Describe Digital Logic families and their applications.
EC3108.5	Analyze various Combinational And Sequential Circuit Designs.
EC3108.6	Design various Combinational And Sequential Circuits .

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Year/Sem: III B.Tech II SEM

Course Name: **VLSI Design**	
Course Code: **EC3203**	
EC3203.1	Demonstrate a clear understanding of CMOS fabrication flow and technology scaling.
EC3203.2	Apply the design Rules and draw layout of a given logic circuit
EC3203.3	Design MOSFET based logic circuit. Design basic building blocks in Analog IC design.
EC3203.4	Analyze the behaviour of amplifier circuits with various loads
EC3203.5	Design various CMOS logic circuits for design of Combinational logic circuits.
EC3203.6	Design MOSFET based logic circuits using various logic styles like static and dynamic CMOS

Course Name: **Digital Signal Processing**	
Course Code: **EC3204**	
EC3204.1	Apply the difference equations concept in the analyzation of Discrete time systems
EC3204.2	Able to apply the FFT algorithm for solving the DFT of a given signal
EC3204.3	Student can able to design a Digital filter (IIR) from the given specifications and Realize the IIR Structures.
EC3204.4	Design a Digital filter (FIR) from the given specifications and Realize the FIR Structures.
EC3204.5	Use the Multirate Processing concepts in various applications Such as Design of phase shifters, Interfacing of digital systems.
EC3204.6	Able to learn the architecture of DSP Processor and addressing modes.

Course Name: **VLSI Lab**	
Course Code: **EC3207**	
EC3207.1	Understand the physical design process of Digital Integrated Circuits.
EC3207.2	Describe procedure for designing of programmable circuits.
EC3207.3	Demonstrate the ability to use various EDA tools for digital

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	system design
EC3207.4	Demonstrate the ability to use various Mentor Graphics Software for digital system design
EC3207.5	Implement various combinational and sequential circuits using VHDL on FPGA.
EC3207.6	Implement schematic and layout of various digital CMOS logic circuits using EDA tools.

Course Name: **Digital Communications Lab**	
Course Code: **EC3208**	
EC3208.1	Able to understand basic theories of Digital communication system in practical.
EC3208.2	Able to design and implement different modulation and demodulation techniques.
EC3208.3	Able to analyze digital modulation techniques
EC3208.4	Able to identify and describe different techniques in modern digital communications, in particular in source coding
EC3208.5	Able to perform channel coding.
EC3208.6	Able to detect and correct errors using LBC,Binary Cyclic codes & detect dual bit errors in Convolution codes

Course Name: **Bio-Medical Engineering**	
Course Code: **EC3205**	
EC3205.1	Understand various methods of acquiring bio signals.
EC3205.2	Understand and analyze different biomedical electrodes and sensors used for clinical observation.
EC3205.3	Analyze ECG signal with characteristic feature points.
EC3205.4	Measure heart rate, blood pressure and respiration rate. And also understand various sources of blood flow meters.
EC3205.5	Understand bio-telemetry & instrumentation used for Clinical Laboratory.
EC3205.6	Analyze EEG signal with characteristic feature points.

Course Name: **Micro Wave Engineering**	
Course Code:	**EC3202**
EC3202.1	Explain different types of waveguides and their respective modes of propagation.
EC3202.2	Analyze typical microwave networks using impedance, admittance, transmission and scattering matrix representations.
EC3202.3	Design microwave matching networks using L section, single and double

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	stub and quarter wave transformer.
EC3202.4	. Explain working of microwave passive circuits such as isolator, circulator, Directional couplers, attenuators etc.
EC3202.5	Describe and explain working of microwave tubes and solid state devices.
EC3202.6	Perform measurements on microwave devices and networks using power meter and VNA.

Course Name: **Microprocessor and Microcontrollers**	
Course Code: **EC3201**	
EC3201.1	To be able to understand the microprocessor capability in general and explore the evaluation of microprocessors
EC3201.2	To be able to understand the addressing modes of microprocessors
EC3201.3	To be able to understand the micro controller capability
EC3201.4	To be able to program MP&MC
EC3201.5	To be able to interface MP & MC with other electronic devices
EC3201.6	To be able to understand the ARM processor architecture

Course Name: **Microprocessor and Microcontrollers - Lab**	
Course Code: **EC3206**	
EC3206.1	The student will learn the internal organization of popular 8086/8051 microprocessors/microcontrollers
EC3206.2	Explain 80x86/80x51instruction set and gain the knowledge how assembly language works
EC3206.3	The student will learn hardware and software interaction and integration.
EC3206.4	To apply the concepts in the design of microprocessor/microcontroller based systems in real time applications
EC3206.5	Make use of standard test and measurement equipment to evaluate digital interfaces.
EC3206.6	To understand the KEIL MDK software

Year/Sem: IV B.Tech I SEM

Course Name: **Digital Image Processing**	
Course Code **EC4102**	
EC4102.1	Know the fundamentals of a digital image processing; representation of digital images in transform domain; and various mathematical transforms necessary for image processing.
EC4102.2	Learn and implement various Intensity transformations and spatial filtering methods in image enhancement and image restoration process.
EC4102.3	To know Image Restoration and Reconstruction process by using different mathematical approaches.
EC4102.4	To understand compressing images by using different mathematical approaches.
EC4102.5	To know image segmentation by the detection of point, line and edges in images, edge linking through local/global processing.
EC4101.6	To Analyze pseudo and full color image processing techniques
Course Name: **Embedded Systems**	
Course Code: **EC4106**	
EC4106.1	Understand the design process of an embedded system
EC4106.2	Understand typical embedded System & its components
EC4106.3	Understand embedded firmware design approaches
EC4106.4	Learn the basics of OS and RTOS
EC4106.5	Learn the basics of hardware design
EC4106.6	Learn the basics of software design

Course Name: **Radar Systems**	
Course Code: **EC4101**	
EC4101.1	Demonstrate and understanding of the factors affecting the radar performance using Radar Range Equation
EC4101.2	Analyze the principle of FM-CW radar and apply it in FM- CW Altimeter
EC4101.3	Distinguish between a MTI Radar and a Pulse Doppler Radar based on their Working principle.
EC4101.4	List the different methods used for tracking targets.
EC4101.5	Demonstrate an understanding of the importance of Matched Filter Receivers in Radars
EC4101.6	List different types of Radar Receivers and their application in real time scenario

Course Name: **TV Engineering**	
Course Code: **EC4105**	
EC4105.1	Compare Digital TV transmission standards and performance parameters
EC4105.2	Analyse channel coding, errors, interferences and modulation techniques for Digital TV
EC4105.3	Make use of RF amplifiers
EC4105.4	Identify Transmission lines for Digital TV
EC4105.5	Test for a Digital TV Transmitter
EC4105.6	modules and systems for Digital TV

Course Name: **Microwave Engineering & Optical Lab**	
Course Code: **EC4107**	
EC4107.1	Understand the significance of microwaves and microwave transmission lines
EC4107.2	Analyze the characteristics of microwave tubes and compare them
EC4107.3	Be able to list and explain the various microwave solid state devices
EC4107.4	Can set up a microwave bench for measuring microwave parameters
EC4107.5	Verify frequency range of Radar
EC4107.6	Verify Virtual Height of Light

Course Name: **Computer Networks**	
Course Code: **EC4103**	
EC4103.1	Apply the concepts of Computer Networks and Networks Models for Data Communication.
EC4103.2.	Analyze networking architecture and infrastructure for wired and wireless link
EC4103.3.	Design, calculate, and apply subnet masks and routing addresses to fulfill networking requirements
EC4103.4	Analyze issues of routing and congestion mechanism for independent and internetworking networks for wired and wireless link.
EC4103.5	Analyze internal workings of the Internet and of a number of common Internet applications
EC4103.6	Protocols (DNS, SMTP, FTP, HTTP, WWW, Security and Cryptography).

Course Name: **Optical Communications**	
Course Code: **EC4104**	
EC4104.1	Illustrate the structure and fabrication methods of Optical fibers
EC4104.2	Analyze the channel impairments: losses and dispersion
EC4104.3	Analyze the Optical sources (LED and LASER) and detectors (PIN and Avalanche Photo diode).
EC4104.4	Apply design considerations to analog and digital fiber optic systems
EC4104.5	Analyze the components of fiber optic networks: Couplers, multiplexers, switches and filters.
EC4104.6	Couplers, multiplexers, switches and filters.

Course Name: Digital Signal Processing Lab	
Course Code: EC3208	

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EC3208.1	Carryout basic signal processing operations
EC3208.2	Design and Implement the FIR and IIR Filters using MATLAB
EC3208.3	Demonstrate their abilities towards MATLAB based implementation of various DSP systems
EC3208.4	Analyze the architecture of a DSP Processor
EC3208.5	Design and Implement the FIR and IIR Filters in DSP Processor for performing filtering operation over real-time signals
EC3208.6	Design a DSP system for various applications of DSP

Year/Sem: IV B.Tech II SEM

Course Name: **Wireless Sensors and Networks**	
Course Code: **EC4204**	
EC4204.1	Adapt the basic concepts of wireless sensor networks, sensing, computing and communication tasks
EC4204.2	Explain the architectures, features, and performance for wireless sensor network systems and platforms
EC4204.3	Describe and explain radio standards and communication protocols adopted in wireless sensor networks
EC4204.4	Illustrate allocation of addresses and management
EC4204.5	Able to apply appropriate algorithms to improve existing or to develop new wireless sensor network applications
EC4204.6	Use of names in wireless sensor networks

Course Name: **Project**	
Course Code: **EC4201**	
EC4201.1	Work on proposed engineering solution as per industry need
EC4201.2	Customize various tools and techniques needed for project development.
EC4201.3	Understand significance of safe and ethical practices during project.
EC4201.4	Work in a team with healthy working environment
EC4201.5	Develop skill to present project related activities effectively to peers and mentors.
EC4201.6	Develop skill to innovate the developed project and convert it in form of product for industrial / societal need.

Course Name: **Seminar**	
Course Code: **EC4201**	
EC4201.1	Work on proposed engineering solution as per industry need
EC4201.2	Customize various tools and techniques needed for project development.
EC4201.3	Understand significance of safe and ethical practices during project.
EC4201.4	Work in a team with healthy working environment
EC4201.5	Develop skill to present project related activities effectively to peers and mentors.
EC4201.6	Develop skill to innovate the developed project and convert it in form of product for industrial / societal need.

Course Name: **Satellite Communications**	
Course Code: **EC4201**	
EC4201.1	Work on proposed engineering solution as per industry need
EC4201.2	Customize various tools and techniques needed for project development.
EC4201.3	Understand significance of safe and ethical practices during project.
EC4201.4	Work in a team with healthy working environment
EC4201.5	Develop skill to present project related activities effectively to peers and mentors.
EC4201.6	Develop skill to innovate the developed project and convert it in form of product for industrial / societal need.

Course Name: **Cellular and Mobile Communication**	
Course Code: **EC3204**	
EC3204.1	Introduction to Cellular Mobile System, Cellular Concepts
EC3204.2	Types of interferences, Co-channel Interference Reduction Factor, non-co-channel interference-different types.
EC3204.3	Frequency management And Channel Assignment, Numbering and grouping
EC3204.4	Cell Coverage For Signal , phase difference between direct and reflected paths
EC3204.5	TRAFFIC Concept of Handof, types of handoff, soft and hard hand offs,
EC3204.6	Digital Cellular Networks, GSM architecture, TDMA, CDMA, OFDMA

Course Name: **Electronic Measurements and Instrumentation**	
Course Code: **EC3105**	
EC3105.1	Select the instrument to be used based on the requirements.
EC3105.2	Understand and analyze different signal generators and analyzers.
EC3105.3	Understand the design of oscilloscopes for different applications
EC3105.4	Understand the design of Digital oscilloscopes for different applications
EC3105.5	Design and derive the different bridges
EC3105.6	Design different transducers for measurement of different parameters