S.No	Course Code & Title	Course Outcomes	
1	EE 262 & Electro Magnetics	EE262.1	Ability to apply knowledge of mathematics, science, and engineering to the analysis and Comprehend basic principles of Vector Analysis such as Coordinate Systems and transformations, divergence, gradient and curl operators.
		EE262.2	Analyze and apply laws and methods to solve problems in electro-statics and magneto-statics.
		EE262.3	Apply Maxwell's equations to solve problems in electromagnetics.
		EE262.4	Elucidate, formulate and analyze electromagnetic wave propagation in various kinds of media.
		EE262.5	Calculate parameters/metrics in problems involving transmission lines and waveguides.

Program (PO/PSO)Articulation Matrix

S.No	Course Code & Title	Course Outcomes	
2	EC202 & Analog Electronics II	EC202.1	Identify the high frequency limitations of BJTs and JFETs/MOSFETs and determine frequency response of single and multistage amplifiers.
		EC202.2	Explain the concept of and analyze the performance of negative feedback circuits
		EC202.3	Describe the concept of positive feedback and criterion for oscillations, analyse and design different BJT based oscillators
		EC202.4	Differentiate between the voltage, current and power amplifier and design the power amplifiers for required applications.
		EC202.5	Describe the fabrication process of devices.
		EC202.6	Design, construct and take measurement of various analog circuits and compare experimental results in the laboratory with theoretical analysis.

S.No	Course Code & Title	Course Outcomes	
3	EC-204 & Digital Design II	EC204.1	Design the combinational and sequential digital circuits using VHDL/Verilog
		EC204.2	Implement state tables and circuits using Finite State Machine
		EC204.3	Illustrate state minimization and hazards for Synchronous and asynchronous sequential machines
		EC204.4	Simplify races and faults for asynchronous sequential machines
		EC204.5	Design the Programmable Logic Devices and realization of algorithmic state machines.

S.No	Course Code & Title	Course Outcomes	
4	EC 206 & Communication Systems	EC206.1	Comprehend introductory principles of communication systems such as types of signals and the process of modulation
		EC206.2	Elucidate the process of amplitude, frequency and phase modulation and describe the design of their transmitters, and receievers
		EC206.3	Apply sampling theory and analyze pulse code modulation and delta modulation
		EC206.4	Apply the knowledge of random variables and processes to study noise in communication systems
		EC206.5	Compare the noise performance and design tradeoffs of various modulation schemes

S.No	Course Code & Title	Course Outcomes	
5	EC208& Computer architecture	EC208.1	Identify the organization and structure of digital computer including differentiation of hardwired and microprogrammed control units.
		EC208.2	Develop computer arithmetic algorithms and their hardware implementation.
		EC208.3	Organize and interface different types of memories and input output devices.
		EC208.4	Evaluate the system performance using pipelining and parallel processing.
		EC208.5	Design a basic computer system.

S.No	Course Code & Title	Course Outcomes	
7	EC302&VLSI Design	EC302.1	Describe the technology, design concepts, electrical properties and modelling of MOS device
		EC302.2	Predict the impact of scaling on MOS device.
		EC302.3	Analyze static and timing parameters of inverters and design inverters as per specification
		EC302.4	Design static combinational logic circuits using CMOS, Transmission gates and complementary pass transistor logic
		EC302.5	Apply dynamic circuit techniques to combinational circuit design
		EC302.6	Design and analyze Static and Dynamic Sequential logic circuit and evaluate timing parameters
		EC302.7	Understand VLSI design methodologies and implementation methods
		EC302.8	Compare experimental results in the laboratory with theoretical analysis

S.No	Course Code & Title	Course Outcomes	
8	EC304 & Digital signal Processing	EC304.1	Comprehend the basics of a DSP system such as digital signal processing and analog to digital conversion
		EC304.2	Implementation of Z-transform, DFT, FFT and implementation of various algorithm
		EC304.3	Design, analyse and implement FIR and IIR systems in their direct, cascade and lattice forms
		EC304.4	Design FIR and IIR Filters using windows, sampling methods, impulse invariance method and other standard method
		EC304.5	Understand the basics of multirate digital signal processing and develop its applications, Understanding of the concept of finite word length effect in

S.No	Course Code & Title	Course Outcomes	
9	EC 306 & Embedded Systems	EC306.1	Comprehend basic principles of a microcontroller and identify its need.
		EC306.2	Identify basic architecture of a 8-bit, 16-bit and 32 bit Microcontroller and demonstrate programming skills using PIC and ARM microcontroller.
		EC306.3	Describe the internal architecture and interfacing of different peripheral devices with Microcontrollers.
		EC306.4	Illustrate the need and working principles of Digital Signal Processors and their variants
		EC306.5	Discuss memory organization of ARM Microcontroller and its variants', RT-Linux introduction, RTOS kernel and Real-Time Scheduling Bus structure

S.No	Course Code & Title	Course Outcomes	
10	EC 310 & Testing and diagonis of Digital System Design	EC310.1	List the testing techniques for digital circuits
		EC310.2	Examine a digital circuit for various types of faults
		EC310.3	Differentiate between testing and diagnosis of faults
		EC310.4	Design a self-testing circuit
		EC310.5	Determine the efficacy of a given testing algorithm,Detect the faults in synchronous circuits.

S.No	Course Code & Title	Course Outcomes	
11	EC316 & Wireless sensor Networks	EC316.1	Explain the Fundamental concepts and applications of ad hoc and wireless sensor networks.
		EC316.2	Evaluate the performance of schedule based and random Medium Access Control protocols for power consumption, fairness, channel utilization and control packet overhead.
		EC316.3	Evaluate the performance of transport control protocols for congestion detection and avoidance, reliability and control packet overhead parameters.
		EC316.4	Discuss the WSN routing issues by considering QoS measurements.
		EC316.5	Analyze the various applications of sensor networks and deploy security mechanisms.

S.No	Course Code & Title	Course Outcomes	
13	EC402 & B.Tech Project-II	EC402.1	Identify the problems through a literature survey for the project work
		EC402.2	Formulate a conceptual project design
		EC402.3	Develop a methodology and design strategy to implement the project
		EC402.4	Design/ Implement/ Fabricate using appropriate tools and components
		EC402.5	Evaluate the outcome and application of the project

S.No	Course Code & Title	Course Outcomes	
14	EC404 &Wireless Communication	EC404.1	Acquire knowledge about basics of Wireless Communication
		EC404.2	Acquire knowledge about Cellular Mobile System Architecture, Fundamentals & associated concepts
		EC404.3	Acquire knowledge about Evolution of different Cellular Systems.
		EC404.4	Acquire knowledge about signal propagation & related issues
		EC404.5	Acquire knowledge of various new wireless technologies

S.No	Course Code & Title	Course Outcomes	
15	EC438&Radar and Satellite Communication	EC438.1	Introduction to radar, its frequencies & bands
		EC438.2	Understand principle of operation of CW FM Radar
		EC438.3	Explain VSAT, GPS, Multiple Access Techniques
		EC438.4	Compare & contrast communication satellites
		EC438.5	Design satellite link and analyze the same

S.No	Course Code & Title		Course Outcomes
16	EC422& Robatics and machine vision	EC422.1	To describe the mathematical modelling of robotics and understand concept of homogenous transformation.
		EC422.2	To evaluate forward kinematic models and understand kinematic constraints and mobile robot maneuverability and motion control.
		EC422.3	To categorize the classification of sensors and evaluate various performance characteristics of sensor and understand the issues with sensor noise.
		EC422.4	To analyze the feature extraction and object recognition methods and algorithms for the tracking of objects
		EC422.5	To describe the localization requirement for mobile robot and their challenges and path planning and navigation.

S.No	Course Code & Title		Course Outcomes
17	EC412 & Machine Learning	EC412.1	Describe the fundamental issues and challenges of machine learning: data, model selection, model complexity, etc
		EC412.2	Explain the underlying mathematical relationships within and across Machine Learning algorithms.
		EC412.3	Compare and contrast different paradigms for learning (supervised, unsupervised, etc.).
		EC412.4	Evaluate the models and optimize the models learned.
		EC412.5	Design and implement the appropriate machine learning techniques for different real-world problems.

S.No	Course Code & Title		Course Outcomes
18	EC328 & Speech Recognition	EC328.1	Illustrate how the speech production is modelled.
		EC328.2	Signal digitization and basic signal processing in time and frequency domains.
		EC328.3	Summarize the various techniques involved in collecting the features from the speech signal in both time and frequency domain.
		EC328.4	Compare the various techniques involved in speech and speaker detection.
		EC328.5	Statistical framework used for automatic speech recognition

S.No	Course Code & Title		Course Outcomes
19	EC-332 & Information Theory and Coding	EC322.1	Understand and apply fundamental concepts in information theory such as probability, entropy, information content and their inter-relationships.
		EC322.2	Compute information theoretic quantities, construct bounds and implement algorithms for source coding and noisy channel theorems
		EC322.3	Apply linear block codes for error detection and correction
		EC322.4	Understand Binary Cyclic Codes, encoding with (n-k)-Stage Shift Register and Syndrome Calculations and Error Detection
		EC322.5	Apply convolution codes for performance analysis for error detection and correction

S.No	Course Code & Title		Course Outcomes
20	EC416 & Pattern Recognition	EC416.1	Understand fundamental concepts of Pattern classification, structural pattern recognition, and pattern classifier combination techniques.
		EC416.2	Summarize, assess, and relate research in the domain of pattern recognition in verbal and written form.
		EC416.3	Apply pattern recognition performance evaluation methodologies and evaluate comparisons of techniques in the academic literature.
		EC416.4	Use pattern recognition techniques to solve real-world challenges like document recognition and analysis.
		EC416.5	Implement simple pattern classifiers, classifier combinations, and structural pattern recognizers.

S.No	Course Code & Title		Course Outcomes
21	EC 430 Advance Computer Architecture	EC430.1	Describe the basic architecturs like RISC and CISC
		EC430.2	Explain Pipelined and Multiprocessors systems architecture
		EC430.3	Understand and analyse the memory systems and their implementations
		EC430.4	Designing different peripheral devices
		EC430.5	Manage interfacing issues related to I/O devices for driving advanced hardware.
		EC430.6	Investigate architectural updates