S.No	Course Code & Title	Course Outcomes	
1	EC201 & Analog Electronics 1	EC201.1	Explain the principles of operation of semiconductor devices such as diode, BJT, JFET and MOSFET;
		EC201.2	Determine parameter values for large and small signal models for diodes, BJTs and MOSFETs based on knowledge of the device structure, dimensions, and bias conditions.
		EC201.3	Determine, compare, and contrast the performance parameters of single stage amplifier circuits using BJTs and MOSFETs.
		EC201.4	Differentiate between single stage and multistage amplifiers, analysis and determine performance parameters of multistage amplifiers.
		EC201.5	Analyze and design analog electronic circuits using discrete components.
		EC201.6	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	
2	EC203& Digital Design-I	EC203.1	Acquired knowledge to determine the philosophy of number systems, codes and logic families.
		EC203.2	Simplify logic expression using Boolean law,Skills to minimize logic expression using k-map and tabular method.
		EC203.3	Design of various combinational and sequential logic circuits for arithmetic and logical operation
		EC203.4	Application and design of shift register and memories
		EC203.5	To know about design of timing circuits and their applications
S.No	Course Code & Title	Course Outcomes	
3	EC205&Signals and systems	EC205.1	Describe signals and systems mathematically in time domain and transform domains, and demonstrate the mathematical modelling of signals and
		EC205.2	Classify signals, systems and filters based on their properties and determine the response of a LTI system using impulse response and convolution
		EC205.3	Apply various transform techniques for the analysis and design of complex continuous time and discrete time signals and LTI systems
		EC205.4	Appraise sampling theorem, reconstruction of a signal from its discrete samples
		EC205.5	Analyze LTI systems using power/energy spectral density
S.No	Course Code & Title	Course Outcomes	
4	EC207& Engineering analysis and design	EC207.1	Acquire knowledge about basic concepts of circuit analysis
		EC207.2	Understand various type of responses for different type of excitations for RC, RL and RLC circuits
		EC207.3	Skill to solve circuits with node, mesh analysis
		EC207.4	Ability to find two port network parameters and composite network parameters
		EC207.5	Ability to synthesize one port passive network (LC, RC&RL)
S.No	Course Code & Title	Course Outcomes	
5	EE251& Electronic Instrumentation & Measurments	EE251.1	To understand and analyze dc and ac bridges
		EE251.2	Explain different types of voltmeters & ammeters
		EE251.3	Compare and contrast different types of sensors
		EE251.4	Understand principle of operation of CRO, function generator, etc
		EE251.5	Analyze IEEE-488 GPIB.
S.No	Course Code & Title	Course Outcomes	
6	EC301& Digital communication	EC301.1	Acquired knowledge about of basic analog and digital communication.
		EC301.2	Acquired knowledge about, quantization and coding
		EC301.3	Acquired knowledge about different Mary modulation techniques
		EC301.4	Acquired knowledge about of Inter Symbol Interference (ISI).
		EC301.5	Acquired knowledge different estimation methods
S.No	Course Code & Title	Course Outcomes	
7	EC303& Linear Integrated Circuits	EC303.1	Infer the DC and AC characteristics of operational amplifiers and its effect on output and their frequency response.
		EC303.2	Analyze and design the linear and non-linear applications of an opamp and special application ICs.
		EC303.3	Describe and compare the working of multivibrators using IC 555 and general purpose opamp.
		EC303.4	Design and use of the Operational Transconductance Amplifer as a basic building block.
		EC303.5	Determine the function of application specific ICs such as Voltage regulators, PLL and its application in communication.
S.No	Course Code & Title	Course Outcomes	
8	EC313& Microprocessor and interfacing	EC313.1	Describe the basics of microprocessors and comprehend their need
		EC313.2	Identify the basic architecture of different microprocessors
		EC313.3	Demonstrate programming skills using the 8085 microprocessor and the 8086 microprocessor language
		EC313.4	Describe the internal architecture and comprehend the interfacing of different peripheral devices with 8085 and 8086 Microprocessor
		EC313.5	Describe briefly the functioning of 80188, 286, 386, 486 and Pentium processors
S.No	Course Code & Title	Course Outcomes	
9	EC323&Control System	EC323.1	Categorize different types of system and identify a set of algebraic equations to represent and model a complicated system into a more simplified form.
		EC323.2	Analyze the response of the closed and open loop systems.
		EC323.3	Analyze the stability of the closed and open loop systems.
		EC323.4	Formulate different types of analysis in frequency domain to explain the nature of stability of the system.
		EC323.5	Develop and analyze state space models.
S.No	Course Code & Title	Course Outcomes	
11	EC315& Computer Communication Network	EC315.1	Define computer networks and layered architecture
		EC315.2	Classify different protocols associated with each layer of OSI/TCP-IP model
		EC315.3	Apply real time medium access protocols, their collision and IEEE standards,
		EC315.4	Distinguish different routing and congestion control algorithms for network layer
		EC315.5	Compare error and flow control mechanism between DLL and Transport layers
S.No	Course Code & Title	Course Outcomes	
12	EC361&Analog Circuits design Layout	EC361.1	Describe the MOS basics and analyze the small signal and SPICE model of MOSFET.
		EC361.2	Draw the layout of MOS devices, resistors and capcitors and perform physical verifcation.
		EC361.3	Explain and differentiate different current mirror.
		EC361.4	Design and discuss various single stage amplifiers.
		EC361.5	Design and discuss various multi stage amplifiers.
S.No	Course Code & Title	Course Outcomes	
13	EC353& Computer Vision	EC353.1	Learn the fundamentals of modern computer vision theory, as well as the problems and current solutions.
		EC353.2	Implement and test several basic computer vision techniques, such as picture filtering, restoration, segmentation, and calibration.
		EC353.3	Analyze and assess the development and integration of computer vision algorithms and systems critically.
		EC353.4	Through a team research project, project report, and presentation, design and demonstrate a working computer vision system.
		EC353.5	Continue to critically review and assess scientific literature and apply the knowledge and skills gained from the course in developing innovative
S.No	Course Code & Title	Course Outcomes	
14	EC357&Digital Image Processing	EC357.1	Define 2-D signals and systems, image acquisition, sampling, quantization, 2D signals and systems, image transforms,, basics of color image processing
		EC357.2	Explain the mathematical tools used for digital manipulation of images.
		EC357.3	Employ pre-processing, enhancement, filtering and noise removal technique.
		EC357.4	Distinguish spatial domain and frequency domain filtering, enhancement and restoration.
		EC357.5	Evaluate and defend various application specific techniques for enhancement, denoising, morphology, segmentation and compression
		EC357.6	Identify, formulate a wide range of real-world problems and design and develop solutions to these problems

S.No	Course Code & Title	Course Outcomes	
15	EC427&Information Theory and coding	EC427.1	Representation of mathematical models for each block of communication systems and analysis of channel
		EC427.2	Describing various parameters if information theory and channel theorems and their limitations
		EC427.3	To study the linear block codes for error control.
		EC427.4	To study the basic structure and properties of cyclic codes
		EC427.5	Study of multiple error correcting codes
S.No	Course Code & Title	Course Outcomes	
16	EC403 & Training Seminar	EC403.1	To learn about various products and applications
		EC403.2	Hands-on experience on various tools and techniques for product development
		EC403.3	Designing/ Improving the solution for real-life problems
		EC403.4	To follow ethical practice during training
S.No	Course Code & Title	Course Outcomes	
17	EC405&Microwave Engineering	EC405.1	To define and explain the microwave sub bands, various parameters and its applications
		EC405.2	To describe the various components of microwave and their practical applications
		EC405.3	To describe various microwave tubes, state of art performance figures, relative advantages and applications of competing devices
		EC405.4	To describe various semiconductor microwave devices, their state of the art performance figures and comparison from practical point of view
		EC405.5	Qualitative and quantitative analysis of various microwave components.
S.No	Course Code & Title	Course Outcomes	
18	EC407& Optical communication	EC407.1	Describe the vector nature of light, and its propagation mechanism inside an optical fiber (ray and mode theory)
		EC407.2	Apply mode theory to differentiate between the different kind of optical fibers based on their light transmission and dispersion characteristics
		EC407.3	Illustrate the working principles of optical sources (LEDs and LASERS), and photo-detectors
		EC407.4	Evaluate the performance of different types of optical switches and optical amplifiers
		EC407.5	Design an optical communication system and evaluate its power and time budget
S.No	Course Code & Title	Course Outcomes	
19	EC423&Internet and web technologies	EC423.1	Interpret user ids, passwords, message components and mailer features. Also originate mailing lists and chat rooms
		EC423.2	Explain internet congestion, modes of connecting to internet and utilize DNS, IP.v6, internet tools
		EC423.3	Describe world wide web, search strategies and working of search engines
		EC423.4	HTML and hyperlinks using fornt page express and plugins
		EC423.5	Extend, illustrate advanced HTML, PWS, IIS, Apache to design and modify web servers
S.No	Course Code & Title	Course Outcomes	
20	EC359&VLSI Design	EC359.1	Describe the technology, design concepts, electrical properties and modelling of MOS device
		EC359.2	Predict the impact of scaling on MOS device.
		EC359.3	Analyze static and timing parameters of inverters and design inverters as per specification
		EC359.4	Design static combinational logic circuits using CMOS, Transmission gates and complementary pass transistor logic
		EC359.5	Apply dynamic circuit techniques to combinational circuit design
		EC359.6	Design and analyze Static and Dynamic Sequential logic circuit and evaluate timing parameters
		EC359.7	Understand VLSI design methodologies and implementation methods
		EC359.8	Compare experimental results in the laboratory with theoretical analysis
S.No	Course Code & Title	Course Outcomes	
21	EC 411 & Biomedical signal and image processing	EC411.1	Understand basic of different types of Biomedical signals and images like ECG,EEG and MRI and types of dependent and independent noises and artifacts in Biomedical signals
		EC411.2	Understand parametric models for the Analysis of of biomedical signals, Open-Loop Identification, Closed-Loop Identification
		EC411.3	Study latest ECG and EEG denoising methods/Techniques
		EC411.4	Understand concepts of biomedical image segmentation, feature reduction and classification
		EC411.5	Compare performance of different techniques/methods of biomedical image segmentation, feature reduction and classification