AKSHAYA
COLLEGE OF ENGINEERING AND TECHNOLOGY
(Approved by AICTE, Affiliated to Anna University & Accredited by NAAC)
Kinathukadavu, Coimbatore-642109.   www.acetcbe.edu.in

DEPARTMENT OF ELECTRONICS AND COMMUNICATIONS ENGINEERING

B.E Regulation-2021 Course Outcomes

S.No	Year / Sem	Course Code	Course Name	Course Outcome
1	II / III	MA3355	RANDOM PROCESSES AND LINEAR ALGEBRA	CO1:Explain the fundamental concepts of advanced algebra and their role in modern mathematics and applied contexts. CO2:Demonstrate accurate and efficient use of advanced algebraic techniques. CO3:Apply the concept of random processes in engineering disciplines. CO4:Understand the fundamental concepts of probability with a thorough knowledge of standard distributions that can describe certain real-life phenomenon. CO5:Understand the basic concepts of one and two dimensional random variables and apply them to model engineering problems.
2		CS3353	C PROGRAMMING AND DATA STRUCTURES	CO1:Develop C programs for any real world/technical application. CO2:Apply advanced features of C in solving problems. CO3:Write functions to implement linear and non–linear data structure operations. CO4:Suggest and use appropriate linear/non–linear data structure operations for solving a given problem. CO5:Appropriately use sort and search algorithms for a given application. CO6:Apply appropriate hash functions that result in a collision free scenario for data storage and retrieval.
3		EC3354	SIGNALS AND SYSTEMS	CO1:Determine if a given system is linear/causal/stable. CO2:Determine the frequency components present in a deterministic signal. CO3:Characterize continuous LTI systems in the time domain and frequency domain. CO4:Characterize discrete LTI systems in the time domain and frequency domain. CO5:Compute the output of an LTI system in the time and frequency domains
4		EC3353	ELECTRONIC DEVICES AND CIRCUITS	CO1:Explain the structure and working operation of basic electronic devices. CO2:Design and analyze amplifiers. CO3:Analyze frequency response of BJT and MOSFET amplifiers CO4:Design and analyze feedback amplifiers and oscillator principles. CO5:Design and analyze power amplifiers and supply circuits
5		EC3351	CONTROL SYSTEMS	CO1:Compute the transfer function of different physical systems. CO2:Analyse the time domain specification and calculate the steady state error. CO3:Illustrate the frequency response characteristics of open loop and closed loop system response. CO4:Analyse the stability using Routh and root locus techniques. CO5:Illustrate the state space model of a physical system and discuss the concepts of sampled data control system.
6		EC3352	DIGITAL SYSTEMS DESIGN	CO1:Use Boolean algebra and simplification procedures relevant to digital logic. CO2:Design various combinational digital circuits using logic gates. CO3:Analyse and design synchronous sequential circuits. CO4:Analyse and design asynchronous sequential circuits. CO5:Build logic gates and use programmable devices.
7		EC3361	ELECTRONIC DEVICES AND CIRCUITS LABORATORY	CO1:Characteristics of PN Junction Diode and Zener diode. CO2:Design and Testing of BJT and MOSFET amplifiers. CO3:Operation of power amplifiers.

8		CS3362	C PROGRAMMING AND DATA STRUCTURES LABORATORY	CO1:Use different constructs of C and develop applications.
				CO2:Write functions to implement linear and non-linear data structure operations.
				CO3:Suggest and use the appropriate linear / non-linear data structure operations for a given problem.
				CO4:Apply appropriate hash functions that result in a collision free scenario for data storage and Retrieval.
				CO5:Implement Sorting and searching algorithms for a given application.
9		GE3361	PROFESSIONAL DEVELOPMENT	CO1:Use MS Word to create quality documents, by structuring and organizing content for their day to day technical and academic requirements.
				CO2:Use MS EXCEL to perform data operations and analytics, record, retrieve data as per requirements and visualize data for ease of understanding.
				CO3:Use MS PowerPoint to create high quality academic presentations by including common tables, charts, graphs, interlinking other elements, and using media objects.
10	II / IV	EC3452	ELECTROMAGNETIC FIELDS	CO1:Relate the fundamentals of vector, coordinate system to electromagnetic concepts.
				CO2:Analyze the characteristics of Electrostatic field.
				CO3:Interpret the concepts of Electric field in material space and solve the boundary conditions.
				CO4:Explain the concepts and characteristics of Magneto Static field in material space and solve boundary conditions.
				CO5:Determine the significance of time varying fields
11		EC3401	NETWORKS AND SECURITY	CO1:Explain the Network Models, layers and functions.
				CO2:Categorize and classify the routing protocols.
				CO3:List the functions of the transport and application layer.
				CO4:Evaluate and choose the network security mechanisms.
				CO5:Discuss the hardware security attacks and countermeasures.
12		EC3451	LINEAR INTEGRATED CIRCUITS	CO1:Design linear and nonlinear applications of OP – AMPS.
				CO2:Design applications using analog multiplier and PLL.
				CO3:Design ADC and DAC using OP – AMPS.
				CO4:Generate waveforms using OP – AMP Circuits.
				CO5:Analyze special function ICs.
13		EC3492	DIGITAL SIGNAL PROCESSING	CO1:Apply DFT for the analysis of digital signals and systems.
				CO2:Design IIR and FIR filters.
				CO3:Characterize the effects of finite precision representation on digital filters.
				CO4:Design multirate filters.
				CO5:Apply adaptive filters appropriately in communication systems.
14		EC3491	COMMUNICATION SYSTEMS	CO1:Gain knowledge in amplitude modulation techniques
				CO2:Understand the concepts of Random Process to the design of communication systems
				CO3:Gain knowledge in digital techniques
				CO4:Gain knowledge in sampling and quantization
				CO5:Understand the importance of demodulation techniques
15		GE3451	ENVIRONMENTAL SCIENCES AND SUSTAINABILITY	CO1:To recognize and understand the functions of environment, ecosystems and biodiversity and their conservation.
				CO2:To identify the causes, effects of environmental pollution and natural disasters and contribute to the preventive measures in the society.
				CO3:To identify and apply the understanding of renewable and non-renewable resources and contribute to the sustainable measures to preserve them for future generations.
				CO4:To recognize the different goals of sustainable development and apply them for suitable technological advancement and societal development.
				CO5:To demonstrate the knowledge of sustainability practices and identify green materials, energy cycles and the role of sustainable urbanization.

16		EC3461	COMMUNICATION SYSTEMS LABORATORY	CO1:Design AM, FM & Digital Modulators for specific applications. CO2:Compute the sampling frequency for digital modulation. CO3:Simulate & validate the various functional modules of Communication system. CO4:Demonstrate their knowledge in base band signaling schemes through implementation of digital modulation schemes. CO5:Apply various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of Communication system.
17		EC3462	LINEAR INTEGRATED CIRCUITS LABORATORY	CO1:Analyze various types of feedback amplifiers CO2:Design oscillators, tuned amplifiers, wave-shaping circuits and multivibrators CO3:Design and simulate feedback amplifiers,oscillators, tuned amplifiers, wave- shaping circuits and multivibrators, filters using SPICE Tool. CO4:Design amplifiers, oscillators, D-A converters using operational amplifiers. CO5:Design filters using op-amp and perform an experiment on frequency response
18	III / V	EC3501	WIRELESS COMMUNICATION	CO1:Understand The Concept And Design Of A Cellular System. CO2:Understand Mobile Radio Propagation And Various Digital Modulation Techniques. CO3:Understand The Concepts Of Multiple Access Techniques And Wireless Networks CO4:Characterize a wireless channel and evolve the system design specifications CO5:Design a cellular system based on resource availability and traffic demands.
19		EC3552	VLSI AND CHIP DESIGN	CO1:In depth knowledge of MOS technology CO2:Understand Combinational Logic Circuits and Design Principles CO3:Understand Sequential Logic Circuits and Clocking Strategies CO4:Understand Memory architecture and building blocks CO5:Understand the ASIC Design Process and Testing.
20		EC3551	TRANSMISSION LINES AND RF SYSTEMS	CO1:Explain the characteristics of transmission lines and its losses. CO2:Calculate the standing wave ratio and input impedance in high frequency transmission lines. CO3:Analyze impedance matching by stubs using Smith Charts. CO4:Comprehend the characteristics of TE and TM waves. CO5:Design a RF transceiver system for wireless communication
21		CEC352	SATELLITE COMMUNICATION	CO1:Identify the satellite orbits CO2:Analyze the satellite subsystems CO3:Evaluate the satellite link power budget CO4:Identify access technology for satellite CO5:Design various satellite applications
22		CEC366	IMAGE PROCESSING	CO1:Know and understand the basics and fundamentals of digital image processing, such as digitization, sampling, quantization, and 2D-transforms. CO2:Operate on images using the techniques of smoothing, sharpening and enhancement. CO3:Understand the restoration concepts and filtering techniques. CO4:Learn the basics of segmentation, features extraction, compression and recognition methods for color models. CO5:Comprehend image compression concepts.
23		CEC345	OPTICAL COMMUNICATION & NETWORKS	CO1:Realize Basic Elements In Optical Fibers, Different Modes And Configurations. CO2:Analyze The Transmission Characteristics Associated With Dispersion And Polarization Techniques. CO3:Design Optical Sources And Detectors With Their Use In Optical Communication System. CO4:Construct Fiber Optic Receiver Systems, Measurements And Techniques. CO5:Design Optical Communication Systems And Its Networks.

24		MX3084	DISASTER RISK REDUCTION AND MANAGEMENT	CO1:To impart knowledge on the concepts of Disaster, Vulnerability and Disaster Risk reduction (DRR) CO2:To enhance understanding on Hazards, Vulnerability and Disaster Risk Assessment prevention and risk reduction. CO3:To develop disaster response skills by adopting relevant tools and technology CO4:Enhance awareness of institutional processes for Disaster response in the country CO5:Develop rudimentary ability to respond to their surroundings with potential disaster response in areas where they live, with due sensitivity
25		EC3561	VLSI LABORATORY	CO1:Write HDL code for basic as well as advanced digital integrated circuit CO2:Import the logic modules into FPGA Boards CO3:Synthesize Place and Route the digital Ips CO4:Design, Simulate and Extract the layouts of Digital & Analog IC Blocks using EDA tools CO5:Test and Verification of IC design
26	III / VI	ET3491	EMBEDDED SYSTEMS AND IOT DESIGN	CO1:Explain the architecture and features of 8051. CO2:Develop a model of an embedded system. CO3:List the concepts of real time operating systems. CO4:Learn the architecture and protocols of IoT. CO5:Design an IoT based system for any application.
27		CS3491	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	CO1:Use appropriate search algorithms for problem solving. CO2:Apply reasoning under uncertainty. CO3:Build supervised learning models. CO4:Build ensembling and unsupervised models. CO5:Build deep learning neural network models.
28	IV/ VII	EC3711	SUMMER INTERNSHIP	CO1:System-level design processes, verification and validation techniques, manufacturing and production processes in the firm or research facilities in the laboratory/research institute. CO2:Analysis of industrial / research problems and their solutions. CO3:Documentation of system specifications, design methodologies, process parameters, testing parameters and results. CO4:Preparing of technical report and presentation.
29	IV / VIII	EC3811	PROJECT WORK/ INTERNSHIP	CO1:Formulate and analyze problem / create a new product/ process. CO2:Design and conduct experiments to find solution. CO3:Analyze the results and provide solution for the identified problem, prepare project report and make presentation.