



Subject : EC3401 NETWORKS AND SECURITY

Year : II year

Faculty Handled: Mrs.Chandrasekaran.M

ΤΟΡΙΟ	PEDAGOGIAL INITIATIVES	OBJECTIVES	SNAPSHOTS/PROOFS
Computer Networking Devices	Peer group learning	Students will be able to understand the functions and roles of various computer networking devices such as routers, switches, and hubs in data communication.	Routers Hubs Repeaters Control Control
Zigbee technology	Flipped class Room	Students will be able to explore the principles of Zigbee technology and its applications in low-power, wireless communication for IoT devices.	https://www.youtube.com/ watch?v=THtVeaxnd9E What is ZiGEE * ZigBee is a wireless technology standard that defires a set of communication protocols for short range communications. Why another short-range communications standar? @ Buetoth * Zigbee standard is specially build for control and sensor networks
Peer to Peer Networking	Technical Seminar	Students will be able to understand the architecture and functionality of peer-to-peer networking and its use in decentralized communication systems.	P2P Network Fundamental Concepts Explained with Example - Step by Step You You Peer-to-Peer model
Introduction to Cryptography	Flipped class Room	Students will be able to understand the fundamentals of cryptography and its techniques for ensuring data security and privacy.	https://www.youtube.com/ watch?v=68Pqir_moqA WHAT IS CRYPTOCRAPHY ? # stol3+ key Plaintext Plaintext EncryP with Key cipitertext
Steganography	Peer Group Learning	Students will be able to explore the concept of steganography and its applications in concealing information within digital media for secure communication.	Steganography * Conceal the existence of the message. * Hiding the message. * Not an encryption scheme. * Cryptography renders the message unintelligible to autiders by various transformations of the text. * Example: Simply encrypt carrect reading exactly twice.





Subject

: EC3451 LINEAR INTEGRATED CIRCUITS

Year : II year

Faculty Handled: Mrs.Shabana M

ΤΟΡΙΟ	PEDAGOGIAL INITIATIVES	OBJECTIVES	SNAPSHOTS/PROOFS
Interpretation of OP amp (IC741) Datasheet	Peer group Learning	Students will be able to analyze and interpret the IC 741 operational amplifier datasheet to understand its specifications and applications in electronic circuits.	Image: Control Contro Control Contro Control Control Control Control Control Control Co
IC Fabrication	Flipped class Room	Students will be able to understand the process of IC fabrication, including the design and manufacturing of integrated circuits.	https://www.youtube.com/ watch?v=Wr1zZvygVrc Basic Semiconductor IC Fabrication steps
PCB Design Software	Flipped class Room	Students will be able to utilize PCB design software to create, simulate, and implement printed circuit board layouts for electronic projects.	https://www.youtube.com/ watch?v=8Eh5No8FR80
IC Voltage Regulators	Flipped class Room	Students will be able to understand the working principles of IC voltage regulators and their role in providing stable output voltage in electronic circuits.	https://www.youtube.com/ watch?v=PnxyLaGTaAc
Switching Regulators	Peer Group Learning	Students will be able to explore the design and functionality of switching regulators and their applications in efficient power management systems.	Chapter Name (Neiting: Regulators Type Name : Neiting: Regulator TypeIngtes (Step Down or Bluck Switching Regulator Neiting Company of the Step Down of the





Subject

: EC3491 COMMUNICATION SYSTEMS

Year : II year

Faculty Handled: Mrs.Thahseen Thahir

ΤΟΡΙΟ	PEDAGOGIAL INITIATIVES	OBJECTIVES	SNAPSHOTS/PROOFS
Fading channel	Technical Seminar	Students will be able to understand the characteristics of fading channels and their impact on wireless communication performance.	The Wireless Channel
Direct sequence spread spectrum	Flipped class Room	Students will be able to explore the principles of direct sequence spread spectrum (DSSS) and its application in enhancing communication security and resistance to interference.	https://engineerstutor.co m/2018/08/04/direct- sequence-spread- spectrum/#google_vignett
Reed Solomon codes	Flipped class Room	Students will be able to understand and apply Reed- Solomon codes for error detection and correction in digital communication systems.	$\frac{\text{https://www.youtube.com/}}{\text{watch?v=1pQJkt7-R4Q}}$
Recursive least square algorithms	Collaborative Learning	Students will be able to analyze and implement recursive least squares algorithms for adaptive filtering and signal processing.	Prediction Error Prediction Error Prediction Error Prediction Error Comparison RLS Methods Gradient Methods
Low density parity check codes	Peer Group Learning	Students will be able to understand the structure and application of low-density parity-check (LDPC) codes in improving error correction in modern communication systems.	Low Density Party Check codes • Point on the statistic stress of the stress • Point of the stress of the stress of the stress • Point which were stress of the stress of the stress • Point which were stress of the stress • Point were stress • Point of the stress of the stress • Point for the stress of the stress • Point for the stress of the stress • Point for the stress of the stress • Point stress of the stress of the stress • Point stress of the stress of the stress • Point stress of the stress of the stress of the stress • Point stress of the stres





Subject : GE3451 ENVIRONMENTAL SCIENCE AND SUSTAINABILITY

Year : II year

Faculty Handled: Mrs. Thayala Shankar

ΤΟΡΙΟ	PEDAGOGIAL INITIATIVES	OBJECTIVES	SNAPSHOTS/PROOFS
Chemical hazards, Physical hazards and biological hazards in the environment	Peer Group Learning	Students will be able to identify and assess chemical, physical, and biological hazards in the environment and their impact on human health and ecosystems.	CHEMICAL & DUST HAZARDS HUCLOGICAL HAZARDS Hermit Hilderson Barting Harderson HazarDS SAFETY HAZARDS Corpuspendial (add) Corpuspendial (add)
Photochemical reactions in the Atmosphere	Flipped class Room	Students will be able to understand the mechanisms of photochemical reactions in the atmosphere and their role in air pollution and climate change.	$\frac{\text{https://www.youtube.com/}}{\text{watch?v=IIIZs4VRLt0}}$ $N0_2 + hV \longrightarrow N0_2^{+}$ $N0_2^{+} \longrightarrow N0_2 + hV$
Biochemical degradation of pollutants, Bioconversion of pollutants	Flipped class Room	Students will be able to explore the processes of biochemical degradation and bioconversion of pollutants for environmental remediation.	https://www.youtube.com/ watch?v=M9JhtKNAP4Y TYPES OF POLLUTANTS *Complex organic compounds *Inorganic compounds *Natural products *Reasons for acculmulation +Dilution +Disposal +Improper treatments
Principles of green chemistry	Collaborative Learning	Students will be able to understand and apply the principles of green chemistry to minimize environmental impact and promote sustainable chemical practices.	A constant of the second secon
GIS-remote sensing	Peer Group Learning	Students will be able to utilize GIS and remote sensing technologies for environmental monitoring, analysis, and decision-making.	





Subject : EC8094 Satellite Communication

Year

: IV year

Faculty Handled: Mr.K.Babu

ΤΟΡΙΟ	PEDAGOGIAL INITIATIVES	OBJECTIVES	SNAPSHOTS/PROOFS
GNSS	Peer Group Learning	Students will be able to understand the operation and applications of GNSS for global positioning and navigation.	Image: state
GPRS	Peer Group Learning	Students will be able to explore the principles and applications of GPRS in enabling mobile data communication over cellular networks.	
Artificial Satellite	Peer Group Learning	Students will be able to understand the design, functionality, and roles of artificial satellites in communication, weather monitoring, and space exploration.	<text><text><text><text><text><text></text></text></text></text></text></text>
Millimetre wave Wireless Technology for satellite	Collaborative Learning	Students will be able to explore the use of millimeter- wave technology for high- frequency wireless communication in satellite systems.	backbas brokba
Switching and Networking	Peer Group Learning	Students will be able to understand the principles of switching and networking in communication systems for efficient data transfer and connectivity.	Switching • Switches are devices capable of creating temporary connections between two or more devices linked to the switch





Subject : GE8076 Professional Ethics in Engineering

Year : IV year

Faculty Handled: Ms.Renswick S

ΤΟΡΙϹ	PEDAGOGIAL INITIATIVES	OBJECTIVES	SNAPSHOTS/PROOFS
Stress Management	Peer Group Learning	Students will be able to understand and apply stress management techniques to improve personal well-being and professional performance	Human Values in Stress Management Trans-Cultural-Values Unbiased Personality Loyalty towards workers Cooperation Open minded Transparency in dealing Clear objective Self discipline Socially responsible Inspiration to give
Ethical theories	Peer Group Learning	Students will be able to explore various ethical theories and apply them to analyze moral dilemmas and decision- making processes.	Inteories of Ethics - Summary Description Enheid Perrens look to an outside ourse or central fundamentalism Utilitarianism Perrens doob ethal iterruits the have wold provide the second second second second second second second the second second second second second second second second consistency in application and (2) reversibility: Rawly social justic theory Asset of taileren and second
Code of Ethics	Peer Group Learning	Students will be able to understand the principles of a code of ethics and its importance in guiding professional behavior and integrity.	Code of Ethics INTEGRITY Maintain honesty and clear communication in the workplace. TEAMWORK Work together to get the job done. OBJECTIVITY Don't make career decisions based on whom you like best. CONFIDENTIALITY Maintain clients' confidence at all times. CROWTH Always pursue professional growth.
Evaluating Profession Ethics	Collaborative Learning	Students will be able to assess and evaluate ethical standards within professions to ensure accountability and responsible conduct.	Professional Ethics Course Evaluation Three other students have published articles on their field of interest in international journals and at CEPE and E-CAP conferences which attracted the interest of the computing and philosophy community to ethical issues related to Software Engineering.
Importance of Corporate social responsibility	Peer Group Learning	Students will be able to understand the significance of corporate social responsibility and its role in fostering sustainable business practices and societal impact.	





Subject : EC3352 DIGITAL SYSTEM DESIGN

Year : II year

Faculty Handled: Ms.Thahseen Thahir

ΤΟΡΙϹ	PEDAGOGIAL INITIATIVES	OBJECTIVES	SNAPSHOTS/PROOFS
HDL Models of Combinational Circuits.	Flipped Class Room	Students will be able to design and simulate combinational circuits using Hardware Description Languages (HDL) for digital system design.	https://www.youtube.com/ watch?v=ccJvmFE9tuL
HDL Models of Registers and Counters	Flipped Class Room	Students will be able to model and implement registers and counters using HDL for sequential circuit design.	https://www.youtube.com/ results?search_query=HD L+Models+of+Registers+ and+Counters
Hardware Multithreading	Peer Group Learning	Students will be able to understand and apply the concept of hardware multithreading to improve the efficiency and performance of processors.	Hardware Multithreading Allow multiple threads to share a single processor Requires replicating the independent state of each thread Virtual memory can be used to share memory among threads .
Exception handling in MIPS Architecture	Peer Group Learning	Students will be able to analyze and implement exception handling mechanisms within the MIPS architecture for effective error management.	
Introduction to Graphics Processor Units.	Peer Group Learning	Students will be able to understand the architecture and functionality of Graphics Processing Units (GPUs) and their applications in parallel processing and computing.	Introduction When is GPD? 1. is a processor optimized for 2D:0D graphics, video, video computing, and display. 1. is highly parallel, highly multithreaded multiprocessor optimized for visual computing. 0. objects via graphics images, and video. 1. it sets a both a programmable graphics processor and a scalable parallel computing platform. 1. Heterogeneous Systems: combine a GPU with a CPU





Subject : CS3353 C PROGRAMMING AND DATA STRUCTURE

Year : II year

Faculty Handled: Mrs.V.P.Anila

ΤΟΡΙΟ	PEDAGOGIAL INITIATIVES	OBJECTIVES	SNAPSHOTS/PROOFS
C Programming Fundamentals	Peer Group Learning	Students will be able to understand and apply the basic concepts of C programming, including syntax, control structures, and functions.	C programmingbasic 1 Introduction to C 2 C Fundamentals 3 Formatted Input/Output 4 Expression 5 Selection Statement 6 Loops 7 Basic Types 8 Arrays 9 Functions 10 Pointers 11 Pointers and Arrays
C Programming advanced Features	Flipped Class Room	Students will be able to explore advanced features of C programming such as pointers, dynamic memory allocation, and file handling for complex applications.	https://www.youtube.com/ watch?v=IDrdMctfjTc
Linear Data Structure	Peer Group Learning	Students will be able to implement and analyze linear data structures like arrays, linked lists, stacks, and queues for efficient data management.	LINEAR Arrays Stacks Linked Lists Queues
Non-Linear Data Structure	Peer Group Learning	Students will be able to understand and apply non- linear data structures such as trees and graphs to solve complex computational problems.	Non-Linear Data Structures
Sorting and searching	Flipped Class Room	Students will be able to implement and evaluate various sorting and searching algorithms to optimize data retrieval and organization.	<section-header><section-header><section-header><section-header><list-item><list-item><list-item><list-item><list-item><list-item><list-item><list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></list-item></section-header></section-header></section-header></section-header>





Subject : EC8501 Digital Communication

Year : III year

Faculty Handled: Mrs.Thahseen Thahir

ΤΟΡΙΟ	PEDAGOGIAL INITIATIVES	OBJECTIVES	SNAPSHOTS/PROOFS
Channel Capacity theorem	Flipped class Room	The student will be able to understand the maximum data transmission rate over a communication channel without error under given noise conditions	$\frac{\text{https://www.youtube.com/watch}}{?v=3ekWsXeZ8TM}$ $C = IK = \frac{K}{2} \log_2(1+\frac{5}{H})$ $Nyquint Banchold M = \frac{1}{5} K = 2B$ $C = B \log_2(1+\frac{5}{H})$
Pseudo noise sequence	Peer Group Learning	The student will be able to understand the generation, properties, and applications of pseudo-noise (PN) sequences in secure communication and spread spectrum systems after learning through the lesson	Decudo-Noise SequenceA pseudo-noise (PN) sequence is a periodic binary sequence with a noise like waveform that is usually generated by a means of a feed back shift register, it consists of a shift register made up of m Alp-flops and a logic circuit to form a multitoop feedback circuit.Image: Image: Image
Linear Prediction	Flipped class Room	The student will be able to understand the principles, techniques, and applications of linear prediction in signal processing, including its use in estimating future values of a signal based on past data, after learning through the lesson	https://www.youtube.com/watch ?v=cv35Z28tk0A Linear prediction In linear prediction discrete time signals are estimated as a linear function of previous samples. Linear prediction is a method used to reduce the bandwidth required to transmit PCM pulses. It is widely used in speech communications over mobile channels, channel prediction, stock marker prediction, and many other applications.
Power Spectra of discrete PAM signals	Flipped class Room	The student will be able to understand the analysis and interpretation of the power spectra of discrete Pulse Amplitude Modulation (PAM) signals, including how spectral components are influenced by signal parameters, after learning through the lesson	https://www.youtube.com/watch ?v=jhlWmgDLFhk Power Spectrue donosity (PSD) of NE2 unipolar Line Coding Scheme - NR2 Unipolar NR2 Unipolar Tw/L 0 Tw/L to Tw/L
Turbo codes	NPTEL Videos	The student will be able to understand the encoding, decoding processes, and error- correcting capabilities of turbo codes, as well as their applications in communication systems, after learning through the lesson.	called turbo codes Now what is concatenation In concatenation we take small codes and we





: EC3452 ELECTRO MAGNETIC FIELDS Subject

Year

: II year Faculty Handled: Mrs.Poornima.R

ΤΟΡΙΟ	PEDAGOGIAL INITIATIVES	OBJECTIVES	SNAPSHOTS/PROOFS
Electromangnetic interface and electromagnetic compalibility	Collabrative Learning	Students will be able to understand the principles of electromagnetic interference (EMI) and electromagnetic compatibility (EMC) to design systems that minimize interference and ensure compatibility.	ELECTRO MAGNETIC INTERFERENCE
Polarization	Flipped class Room	Students will be able to understand the concept of polarization in electromagnetic waves and its significance in communication and antenna design.	https://www.youtube.com/ watch?v=Un-9fbqlIKo
Reluctance	Technical Seminar	Students will be able to explore the concept of reluctance in magnetic circuits and its role in the behavior of magnetic materials and systems.	<section-header><pre>https://www.youtube.com/ watch?v=7OIgG2TbScc </pre></section-header>
Computational electromagnetics	Flipped class Room	Students will be able to apply computational methods to solve complex electromagnetic problems using numerical simulations and modeling.	https://www.youtube.com/ watch?v=- xTP2NbwGxA&list=PLL YQF5WvJdJU23QP4y1s Nj-d92sh2FNkR DWH for a User's Perspective Model of the state
Electromagnetic spectrum	Peer Group Learning	Students will be able to understand the electromagnetic spectrum and its applications in various fields such as communication, medical imaging, and remote sensing.	Electromagnetic Spectrum