



LORDS INSTITUTE OF ENGINEERING & TECHNOLOGY

Hyderabad-500091, TS.

Department of Electronics and Communication Engineering

COURSE OUTCOMES (COS)

Course Outcomes: C221– Analog Communication Year: II-II Sem A.Y: 2022-23

C221.1	Understand analog communication system
C221.2	Compare and analyze analog modulation techniques
C221.3	Calculate noise performance of analog modulation techniques
C221.4	Design AM and FM receivers
C221.5	Differentiate between pulse modulation techniques & continuous modulation techniques

Course Outcomes: C222– Pulse and linear integrated circuits Year: II-II Sem A.Y: 2022-23

C222.1	Construct different linear networks and analysis their response to different input signals
C222.2	Analyze and design multivibrators and sweep circuits using transistor
C222.3	To understand the basic concept of operational amplifier and differential amplifier
C222.4	Develop skills to design simple circuits using op amp and simple filter circuits
C222.5	Learn about various techniques to develop A/D and D/A converters

Course Outcomes: C223– Electronic Circuit Analysis Year: II-II Sem A.Y: 2022-23

C223.1	Extract the equivalent models for BJT & JFET at low & high frequencies so as to analyze small signal amplifiers.
C223.2	Differentiate between the positive & negative feedback concepts and apply to series and shunt feed back amplifiers.
C223.3	Design, construct & amp; analyze oscillator circuits to generate audio & radio frequency sinusoidal signals.
C223.4	Realize different types of power amplifiers for practical applications as per the specifications.
C223.5	Interpret the operation of Tuned Amplifiers and voltage regulators.

Course Outcomes: C224– Digital System Design Year: II-II Sem A.Y: 2022-23

C224.1	Understand the numerical information in different forms and Boolean Algebra theorems.
C224.2	Apply various techniques to minimize Boolean functions and design of combinational circuits.
C224.3	Design and analyze sequential circuits to implement register and counters.
C224.4	Represent a sequential circuit using FSM and apply state minimization techniques to design a FSM.
C224.5	Implement the combinational and sequential circuits using Verilog HDL.

Course Outcomes: C225– Electromagnetic Theory and Transmission lines Year: II-II Sem A.Y: 2022-23

C225.1	Understand the different coordinate systems, vector calculus, coulombs law and gauss law for finding electric fields due to different charges and to formulate the capacitance for different capacitors.
C225.2	Learn basic magneto-statics concepts and laws such as Biot-Savarts law and Amperes law, their application in finding magnetic field intensity, inductance and magnetic boundary conditions.
C225.3	Distinguish between the static and time-varying fields, establish the corresponding sets of Maxwell's Equations and use them for solving engineering problems.
C225.4	Determine the Transmission Line parameters to characterize the distortions and estimate the characteristics for different lines.
C225.5	Study the Smith Chart profile and stub matching features, and gain ability to practically use the same for solving practical problems.

Course Outcomes: C226– Pulse and Linear Integrated Circuits lab Year: II-II Sem A.Y: 2022-23

C226.1	Design and analyze linear and non-linear wave shaping circuits.
C226.2	Design and analyze clipping and clamping circuits
C226.3	Design and analyze multivibrator circuits
C226.4	Design and analyze Schmitt trigger circuit
C226.5	Design and analyze Inverting and Non-inverting op-amp and measurements of op-amp parameters

Course Outcomes: C227– Electronic Circuits Analysis Lab Year: II-II Sem A.Y: 2022-23

C227.1	Implement the Two stage RC Coupled CE BJT Amplifier using the fundamentals of multistage amplifiers.
C227.2	Analyze the design process of feedback amplifiers for shunt and series feed back amplifiers.
C227.3	Discriminate the design and simulate various oscillator circuits
C227.4	Create the design and simulate the class A, class B power amplifier and tuned amplifier circuits.
C227.5	Implement the series and shunt voltage regulators.

Course Outcomes: C228 – Python Programming Lab -II Year: II-II Sem A.Y: 2022-23

C228.1	Develop python programs using library modules.
C228.2	Implement python programs using pandas.
C228.3	Develop python programs using Matplotlib module.
C228.4	Write, Test, Debug python library modules.
C228.5	Debug python image programs using various modules.



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COURSE OUTCOMES (COS)

Course Name: C321 Digital Communications

Year: III-II Sem A.Y: 2022-23

C321.1	Comprehend the different types of digital modulation techniques ,PCM, DPCM, DM and ADM.
C321.2	Illustrate the classification of channels and source coding methods
C321.3	Distinguish different types of error control codes along with their encoding/decoding algorithm.
C321.4	Analyze the different Digital Carrier Modulation schemes of coherent and Non coherent type based on probability or error.
C321.5	Generation of PN sequence using special spectrum and characterize the Acquisition schemes for receivers to the track signals.

Course Name: C322 VLSI Design Year: III-II Sem

A.Y: 2022-23

C322.1	Acquire qualitative knowledge about the fabrication process of integrated circuits using MOS transistors.
C322.2	Draw the layout of any logic circuit which helps to understand and estimate parasitic effect of any logic circuit.
C322.3	Design building blocks of data path systems using different combinational circuit elements.
C322.4	Understand the array sub system using memories and logic circuits using PLA, PAL, FPGA and CPLD.
C322.5	Understand different types of faults that can occur in a system and learn the concept of testing and adding extra hardware to improve testability of system.

Course Name: C323 Data Communication and Computers Networks Year: III-II Sem A.Y: 2022-23

C323.1	Illustrate the working of various network topologies and circuit and packet switching
C323.2	Comprehend the role of data link layers and significance of MAC protocols
C323.3	Relate networking protocols and Internet protocols
C323.4	Obtain transport layer working with TCP, UDP and ATM protocols
C323.5	Comprehend the functionality of application layer and importance of network security.

Course Name: C324 Digital Image and Video Processing

Year: III-II Sem

A.Y: 2022-23

C324.1	Understand basic concepts and methodologies for digital Image processing and models in Image and Video processing.
C324.2	Explain the need of spatial and frequency domain techniques for image enhancement and related concepts of image segmentation.
C324.3	Apply the process of image compression for optimal use of resources.
C324.4	Illustrate quantitative models of image and video segmentation.
C324.5	Comprehend different methods, models for video processing and motion estimation.

Course Name: C325 IoT System Design and Applications

Year: III-II Sem

A.Y: 2022-23

C325.1	Learn IoT Strategic Research and Innovation Directions and future Internet Technologies based on IoT Applications.
C325.2	Illustrate an emerging industrial structure for IoT and an architectural overview of M2M to IoT.
C325.3	Demonstrate an architectural Reference Model of IOT including its functional and informational view.
C325.4	Illustrate IoT applications in industrial domain for value creations.
C325.5	Overview of Governance, Privacy and Security Issues concerned with IoT and IoT-Data-Platforms for Smart Cities.

Course Name: C326 Electrical Energy Conservation and Safety

Year: III-II Sem

A.Y: 2022-23

C326.1	Explain the current energy scenario and importance of energy conservation.
C326.2	Describe the concepts of energy management and its importance.
C326.3	Recognize the methods of improving energy efficiency in different electrical systems.
C326.4	Discuss the concepts of different energy efficient devices.
C326.5	Interpret the basic concepts related to electrical safety codes and standards.

Course Name: C327 Communications Engineering Lab Year: III-II Sem A.Y: 2022-23

C327.1	Capable of simulation for modulation and demodulation of AM and FM
C327.2	Analyzation of pre-emphasis and de-emphasis at the transmitter and receiver Respectively
C327.3	Realize and simulation of the PAM, PWM &PPM circuits
C327.4	Comprehend the baseband transmission (i.e., PCM, DPCM, DM, and ADM)
C327.5	Analyze the error detection and correction

Course Name: C328 Digital Integrated Circuits Lab Year: III-II Sem A.Y: 2022-23

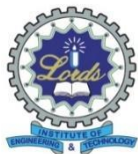
C328.1	To develop Verilog HDL code for digital circuits using gate level, data flow and behavioral, modeling and Verify the design block using stimulus.
C328.2	To develop Verilog HDL code for digital circuits using structural modeling and verify the design block using stimulus.
C328.3	Demonstrate the ability to use various EDA tools for digital system design implementation.
C328.4	Design CMOS circuits like basic gates, adders at the transistor level using EDA tools.
C328.5	Implement schematic and layout of various digital CMOS logic circuits using EDA tools.

Course Name: C329 Data Communications and Networks Lab Year: III-II Sem A.Y: 2022-23

C329.1	Analyze the TCL Script to create two nodes and links between nodes
C329.2	Apply the TCL Script to transmit data between two nodes.
C329.3	Analyze the performance of various LAN Topologies.
C329.4	Evaluate the performance of TCP and UDP Protocols and other routing protocols.
C329.5	Understanding the simulation and analysis of different data packets.

Course Name: C3210 Summer Internship Year: III-II Sem A.Y: 2022-23

C3210.1	Construct the company profile by compiling the brief history, management structure, products / services offered, key achievements and market performance for his / her organization of internship.
C3210.2	Determine the challenges and future potential for his / her internship organization in particular and the sector in general.
C3210.3	Test the theoretical learning in practical situations by accomplishing the tasks assigned during the internship period.
C3210.4	Analyze the functioning of internship organization and recommend changes for improvement in processes
C3210.5	Construct the company profile by compiling the brief history, management structure, products / services offered, key achievements and market performance for his / her organization of internship.



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Course Name: C421 Satellite Communications

Year: IV-II Sem A.Y: 2022-23

C421.1	Explain the principle, working and operation of satellite.
C421.2	Illustrate the various effects on satellite communications and its antennas.
C421.3	Outline the various components in satellite and satellite TV systems.
C421.4	Analyze and design satellite communication link by taking consideration Uplink and Downlink C/N Ratio.
C421.5	Illustrate the role of satellite in various applications such as DVB, Radarsat and GPS.

Course Name: C422 Wireless Sensor Networks

Year: IV-II Sem A.Y: 2022-23

C422.1	Analyze the design issues and challenges in wireless sensor networks and its applications.
C422.2	Illustrate the network architecture, node discovery and localization, deployment strategies.
C422.3	Interpret the Physical Layer and Transceiver Design Considerations including different routing protocols.
C422.4	Contrast the performance of sensor network and identify bottlenecks.
C422.5	Discuss the various concepts of security architecture in wireless sensor networks and its protocols.

Course Name: C423 Radar Systems

Year: IV-II Sem A.Y: 2022-23

C423.1	Explain the basics of RADAR system and will able to develop radar range equation.
C423.2	Discuss the various types of radars such as CW radar and their variations and displays in radar.
C423.3	Outline the MTI radar and understand the limitations of MTI radar and non-coherent MTI radar.
C423.4	Distinguish on different radar tracking methods and differences among them.
C423.5	Generalize different search radars and various antennas used in radars

Course Name: C424 Project Work – II

Year: IV-II Sem A.Y: 2022-23

C424.1	Demonstrate the ability to synthesize and apply the knowledge and skills acquired in the academic program to the real-world problems.
C424.2	Evaluate different solutions based on economic and technical feasibility.
C424.3	Effectively plan a project and confidently perform all aspects of project management.
C424.4	Demonstrate effective written and oral communication skills.