# LORDS INSTITUTE OF ENGINEERING & TECHNOLOGY

Himayath Sagar - 500 091, Hyderabad.

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

Estd. 2002

## COURSE OUTCOMES (COs)

**Course Name: C221 Signals and Systems Year: II-II Sem A.Y: 2021-22**

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|---|---|
| C221.1 | Define and differentiate types of signals and systems in continuous and discrete time |
| C221.2 | Apply the properties of Fourier transform for continuous time signals |
| C221.3 | Relate Laplace transforms to solve differential equations and to determine the response of the Continuous Time Linear Time Invariant Systems to known inputs |
| C221.4 | Apply Z-transforms for discrete time signals to solve Difference equations |
| C221.5 | Obtain Linear Convolution and Correlation of discrete time signals with graphical representation |

**Course Name: C222 Analog Electronics Circuits Year: II-II Sem A.Y: 2021-22**

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|---|---|
| C222.1 | Design and Analyze low frequency, mid frequency and high frequency response of small signal Single stage and Multistage RC coupled and Transformer Amplifiers using BJT and FET. |
| C222.2 | Identify the type of negative feedback, Analysis and design of negative feedback amplifiers. |
| C222.3 | Design Audio Frequency and Radio Frequency oscillators. |
| C222.4 | Distinguish between the classes of Power Amplifiers and their design considerations. |
| C222.5 | Compare the performance of single and double tuned amplifiers. |

**Course Name: C223 Computer Organization and Architecture Year: II-II Sem AY: 2021-22**

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|---|---|
| C223.1 | Evaluate mathematical operation on fixed and floating point digital data. |
| C223.2 | Understand the basic structure and operation of Digital Computer. |
| C223.3 | Understand the basic structure, operation and types of processing of Central Processing Unit of Digital Computer. |
| C223.4 | Understand input output organization and input output interfacing of a computer. |
| C223.5 | Analyses hierarchical memory system and understand memory management and mapping function. |

**Course Name: C224 Electromagnetic Wave Theory and Transmission Line Year: II-II SemA.Y: 2021-22**

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|---|---|
| C224.1 | 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. |
| C224.2 | 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. |
| C224.3 | Distinguish between the static and time-varying fields, establish the corresponding sets of Maxwell's Equations and use them for solving engineering problems. |
| C224.4 | Determine the Transmission Line parameters to characterize the distortions and estimate the characteristics for different lines. |
| C224.5 | Study the Smith Chart profile and stub matching features, and gain ability to practically use the same for solving practical problems. |

**Course Name: C225 Pulse and Linear Integrated Circuits Year: II-II Sem A.Y: 2021-22**

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|---|---|
| C225.1 | Construct different linear networks and analysis their response to different input signals |
| C225.2 | Analyze and design multivibrators and sweep circuits using transistor |
| C225.3 | To understand the basic concept of operational amplifier and differential amplifier |
| C225.4 | Develop skills to design simple circuits using op amp and simple filter circuits |

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|---|---|
| C225.5 | Learn about various techniques to develop A/D and D/A converters |

**Course Name: C226 Electronic Measurements and Instrumentation Year: II-II Sem A.Y: 2021-22**

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|---|---|
| C226.1 | Understand the characteristic of an instrument and state different Standards of measurements. |
| C226.2 | Identify and learn different types of Transducers. |
| C226.3 | Draw and Interpret types of transducers. |
| C226.4 | Design and analyse the digital voltmeters and Prioritize the instruments. |
| C226.5 | Identify and classify types of Biomedical instruments |

**Course Name: C227 Analog Electronics Circuits Lab Year: II-II Sem A.Y: 2021-22**

| | |
|---|---|
| C227.1 | Design and analyze BJT, FET amplifiers by calculating gain and bandwidth. |
| C227.2 | Analyze different Oscillator circuits. |
| C227.3 | Illustrate Operational Amplifier and its Applications. |
| C227.4 | Evaluate filter circuits and its Applications |
| C227.5 | Demonstrate Feedback Amplifier and its Applications. |

**Course Name: C228 Pulse and Linear Integrated Circuits y Lab Year: II-II Sem A.Y: 2021-22**

| | |
|---|---|
| C228.1 | Design and analyse linear and non-linear wave shaping circuits. |
| C228.2 | Design and analyse clipping and clamping circuits |
| C228.3 | Design and analyse multivibrator circuits |
| C228.4 | Design and analyse Schmitt trigger circuit |
| C228.5 | Design and analyze Inverting and Non-inverting op-amp and measurements of op-amp parameters |

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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

## COURSE OUTCOMES (COs)

**Course Name: C321 Digital Communication** **Year: III-II Sem A.Y: 2021-22**

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|---|---|
| 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 Digital system Design withVerilog** **Year: III-II Sem A.Y: 2021-22**

| | |
|---|---|
| C322.1 | Understand the language constructs and programming fundamentals of Verilog HDL. |
| C322.2 | Choose the suitable abstraction level for a particular digital design |
| C322.3 | Construct Combinational and sequential circuits in different modelling styles using Verilog HDL |
| C322.4 | Analyze and Verify the functionality of digital circuits/systems using test benches |
| C322.5 | Describes designing with Programmable Logic Devices (PLD‟s). |

**Course Name: C323 Data Communication andcomputer networks Year: III-II SemA.Y: 2021-22**

| | |
|---|---|
| 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 Electronic Measurements andInstrumentation Year: III-II SemA.Y: 2021-22**

| | |
|---|---|
| C324.1 | Understand the characteristic of an instrument and state different Standards of measurements. |
| C324.2 | Identify and learn different types of Transducers. |
| C324.3 | Draw and Interpret types of transducers. |
| C324.4 | Design and analyse the digital voltmeters and Prioritize the instruments. |
| C324.5 | Identify and classify types of Biomedical instruments |

**Course Name: C325 Optical Communications** **Year: III-II Sem A.Y: 2021-22**

| | |
|---|---|
| C325.1 | Recognize and classify the structures of Optical fiber and types. |
| C325.2 | Classify the construction and characteristics of optical sources and detectors |
| C325.3 | Analyze system performance of optical communication systems |
| C325.4 | Classify the construction and characteristics of optical sources and detectors |
| C325.5 | Learn the fiber optical network components, variety of networking aspects, SONET/SDH and operational principles WDM. |

**Course Name: C326 Soft Skills and Inter Personal Skills Year: III-II Sem A.Y: 2021-22**

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|---|---|
| C326.1 | Develop effective communication skills (spoken and written). |
| C326.2 | Develop effective presentation skills. |
| C326.3 | Conduct effective business correspondence and prepare business reports which produce results. |
| C326.4 | Become self-confident individuals by mastering inter-personal skills, team management skills, and leadership skills. |
| C326.5 | Develop all-round personalities with a mature outlook to function effectively in different circumstances. |

**Course Name: C327 Communication Lab Year: III-II Sem A.Y: 2021-22**

| | |
|---|---|
| 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 Data Communication andcomputer networks Lab Year: III-II Sem A.Y: 2021-22**

| | |
|---|---|
| C328.1 | Capable of simulation for modulation and demodulation of AM and FM |
| C328.2 | Analyzation of pre-emphasis and de-emphasis at the transmitter and receiver Respectively |
| C328.3 | Realize and simulation of the PAM, PWM &PPM circuits |
| C328.4 | Comprehend the baseband transmission (i.e., PCM, DPCM, DM, and ADM) |
| C328.5 | Analyze the error detection and correction |

**Course Name: C329 Digital system Design withVerilog LabYear: III-II Sem A.Y: 2021-22**

| | |
|---|---|
| C329.1 | Appreciate the constructs and conventions of the verilog HDL programming in gate level and data flow modeling. |
| C329.2 | Generalize combinational circuits in behavioral modeling and concepts of switch level modeling |
| C329.3 | Design and analyze digital systems and finite state machines. |
| C329.4 | Perform functional verification by writing appropriate test benches. |
| C329.5 | Implement designs on FPGA/CPLD boards. |

**Course Name: C3210 Summer Internship Year: III-II Sem A.Y: 2021-22**

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|---|---|
| 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 OUTCOMES (COs)

**Course Name: C421 Radar Systems** **Year: IV-II Sem A.Y: 2021-22**

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|---|---|
| C422.1 | Derive the complete radar range equation. |
| C422.2 | Deliver the need and functioning of CW, FM-CW and MTI radars |
| C422.3 | Demonstrate various Tracking methods. |
| C422.4 | Derive the matched filter response characteristics for radar receivers. |
| C422.5 | Get familiar with the basic concept of Radar Receivers |

**Course Name: C422 Test and Testability** **Year: IV-II Sem A.Y: 2021-22**

| | |
|---|---|
| C422.1 | Acquire the knowledge of fundamental concepts in fault and fault diagnosis |
| C422.2 | Generate Test pattern for combinational circuits |
| C422.3 | Generate test pattern for CA using LFSR |
| C422.4 | Design for testability rules and techniques for combinational circuits |
| C422.5 | Introducing scan architectures |

**Course Name: C423 Basics of Power Plant Engineering** **Year: IV-II Sem A.Y: 2021-22**

| | |
|---|---|
| C423.1 | Understand economics of power generation Concepts |
| C423.2 | Evaluate the power tariff methods |
| C423.3 | Understand the operation of conventional generating stations of electrical power |
| C423.4 | Understand the operation of nuclear and renewable sources based generation of electrical power |
| C423.5 | Understand underground cables and overhead line insulators |

**Course Name: C424 Major Project Phase-II** **Year: IV-II Sem A.Y: 2021-22**

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|---|---|
| C424.1 | The student gains knowledge on the basic concepts of Electronics and communication engineering and learn the implementation. |
| C424.2 | The student understands the design and analysis of particular problems in project. |
| C424.3 | The students learn MATLAB programming and implementing the Simulink. |
| C424.4 | The student will be able to develop the hardware. |
| C424.5 | The student will learn the complete process of a project – designing, programming, module development. |