



**LORDS INSTITUTE OF ENGINEERING & TECHNOLOGY**  
**Department of Electronics and Communication Engineering**  
**Course Outcomes**

Academic Year – 2025-26

Semester: **III(Autonomous)**

Student will be able to

CO. No.	Description
<b>Course Outcomes:C211— MATHEMATICS -III</b>	
C211.1	Determine Probability, Random variables, distributions and its application
C211.2	Apply the knowledge of some standard discrete probability distributions and moments
C211.3	Calculate parameters of standard continuous probability distributions
C211.4	Find the parameters and concepts of correlation, regression and obtain the knowledge of sampling Theory with context to test of hypothesis.
C211.5	Analyze and check the validity of statement using testing of hypothesis for various parameters and goodness of fit.
CO. No.	Description
<b>Course Outcomes:C212– ENGLISH FOR TECHNICAL COMMUNICATION</b>	
C212.1	Apply technical communication skills effectively.
C212.2	Adapt different types of official correspondence successfully.
C212.3	Construct report writing productively using various techniques.
C212.4	Develop the skills of manual writing adequately.
C212.5	Interpret the information transfer from verbal to non-verbal data and vice-versa completely.
CO. No.	Description
<b>Course Outcomes:C213—Electronic Devices</b>	
C213.1	Demonstrate the characteristics of various Diodes
C213.2	Design rectifier circuits with filters Calculate ripple factor, efficiency and percentage regulation of rectifier circuits
C213.3	Compare and Contrast the characteristics of BJT in various configurations
C213.4	Distinguish the working principles of FET & MOSFET

C213.5	Demonstrate the properties and applications of special purpose devices
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes:C214- SIGNALS AND SYSTEMS</b>	
C214.1	Define and differentiate types of signals and systems in continuous and discrete time.
C214.2	Apply the properties of Fourier transform for continuous time signals.
C214.3	Relate Laplace transforms to solve differential equations and to determine the response of the Continuous Time Linear Time Invariant Systems to known inputs.
C214.4	Interpret the process of sampling and Linear Convolution of discrete time signals using graphical representation.
C214.5	Apply Z-transforms for discrete time signals to solve difference equations.
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes:C215-Digital electronics</b>	
C215.1	Understand number systems, codes, and Boolean algebra to simplify and analyze logical expressions
C215.2	Design and implement combinational logic circuits using Karnaugh Maps and tabular methods.
C215.3	Analyze the operation of various flip-flops and sequential logic elements, and convert between flip-flop
C215.4	Design and demonstrate applications of sequential circuits like registers and counters.
C215.5	Model and analyze Finite State Machines (FSMs) using Mealy and Moore approaches, and solve design problems involving state minimization and ASM charts.
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes:C216-NETWORK THEORY</b>	
C216.1	Understand the Basics of two port networks with its equivalence & Interconnection of two port networks.
C216.2	Analyse the Symmetrical & Asymmetrical networks by calculating its image and iterative impedances.
C216.3	Study & Design of various filters such as constant - k, m- derived and composite filter.

C216.4	Study & Analyse of various attenuators networks and equalizers.
C216.5	Synthesize the RL & RC networks in Foster and Cauer forms.
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes: C217-Digital Electronics Lab</b>	
C217.1	Apply the principles of Boolean algebra to verify the truth tables of basic logic gates and combinational circuits.
C217.2	Design and implement combinational logic circuits such as adders, subtractors, multiplexers, and decoders using basic logic gates.
C217.3	Construct and analyze sequential circuits including flip-flops, shift registers, and counters to understand their timing and functionality.
C217.4	Evaluate the performance and correctness of digital circuits by testing and debugging various combinational and sequential designs.
C217.5	Design and develop optimized digital subsystems such as parallel adders/subtractors and mod-N counters for specific applications.
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes: C218-Electronic Devices Lab</b>	
C218.1	Demonstrate the characteristic behavior of PN junction diode, Zener diode and special purpose semiconductor diodes.
C218.2	Design various non-linear wave shaping circuits using diodes for a given specification.
C218.3	Analyze the behavior of non-linear wave shaping circuits using diodes.
C218.4	Examine the characteristics of BJT and FET in various configurations.
C218.5	Evaluate and compare the significant parameters obtained from the characteristics of BJT and FET
<b>CO. No.</b>	<b>Description</b>

**Course Outcomes:C219-BASIC SIMULATION LAB**

C219.1	Write OCTAVE/ MATLAB codes for the generation of signals.
C219.2	Apply various transforms on signals to find it's Spectrum using OCTAVE/ MATLAB.
C219.3	Correlate two signals and can remove noise using correlation.
C219.4	Find the response of the system using convolution function in OCTAVE/ MATLAB.
C219.5	Perform sampling of continuous time signals.

CO. No.	Description
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**Course Outcomes:C2110- PROGRAMMING LANGUAGE -I LAB**

C2110.1	Apply the principles of Object-Oriented Programming and demonstrate usage of classes and objects in Java.
C2110.2	Apply conditional and loop control statements to solve real-time problems through structured Java programs.
C2110.3	Implement static polymorphism using method overloading and understand its practical utility
C2110.4	Work with arrays and perform various operations such as sorting, summing, and matrix manipulation in Java.
C2110.5	Develop simple Java applications integrating programming logic, constructors, and modular functions for practical use.

CO. No.	Description
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**Course Outcomes:C2111- SS LAB AND ES LAB**

C2111.1	Utilize soft skills at professional level effectively.
C2111.2	Function efficiently in multidisciplinary settings by using leadership skills.
C2111.3	Build confidence through interpersonal skills utterly.
C2111.4	Write Resume/CV and cover letter comprehensively.
C2111.5	Enhance the skills of group discussion and interview perfectly.



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Academic Year – 2025-26

Semester: **V(Autonomous)**

Student will be able to

CO. No.	Description
<b>Course Outcomes:C311—ELECTROMAGNETIC THEORY AND TRANSMISSION LINES</b>	
C311.1	Differentiate the different coordinate systems, vector calculus, coulombs law and gauss law for finding electric fields
C311.2	Apply basic magneto-statics concepts and laws such as Biot-Savarts law and Amperes law in finding magnetic field intensity
C311.3	Distinguish between the static and time-varying fields, establish the corresponding sets of Maxwell's Equations
C311.4	Determine the Transmission Line parameters to characterize the distortions for different lines
C311.5	Apply the Smith Chart and stub matching features, and gain ability to match the transmission lines.
CO. No.	Description
<b>Course Outcomes:C312— PULSE AND LINEAR INTEGRATED CIRCUIT</b>	
C312.1	Construct different linear networks and analyse their response to different input signals
C312.2	Analyse and Design Multivibrators and Sweep Circuits using Transistors.
C312.3	To understand the basic concepts of Operational Amplifier and Differential Amplifier.
C312.4	Develop skills to design simple circuits using OP-AMP and simple filter circuits.
C312.5	Learn about various techniques to develop A/D and D/A converters.
CO. No.	Description
<b>Course Outcomes:C313-- Control System</b>	
C313.1	Understand the concept of the terms control systems, feedback, Mathematical modelling of Electrical and Mechanical systems.

C313.2	Explain the time domain and frequency response analysis of control systems.
C313.3	Acquire the knowledge of various analytical techniques used to determine the stability of control systems.
C313.4	Able to understand the importance of design of compensators.
C313.5	Able to demonstrate controllability and observability of modern control systems.
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes:C314-- DIGITAL SIGNAL PROCESSING</b>	
C314.1	Evaluate the DFT & FFT for given sequence reducing computational complexity of DFT
C314.2	Analyze the performance characteristics of digital filters using various transformation techniques.
C314.3	Design the digital filters and their realization.
C314.4	Apply different sampling rates using interpolation and decimation
C314.5	Compare the Architecture of DSP processor with Microprocessors.
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes:C315-- Advanced Microcontrollers</b>	
C315.1	Describe the internal architecture, memory organization, and I/O features of PIC microcontrollers.
C315.2	Analyze the ARM Cortex-M3 architecture including NVIC, MPU, and operating modes for embedded applications
C315.3	Compare Raspberry Pi models and interface basic sensors like DHT11 using GPIO and SoC resources.
C315.4	Program and configure STM32 peripherals using HAL and direct register access for timers and external interrupts.
C315.5	Implement multitasking applications using FreeRTOS with tasks, queues, and semaphores on STM32.
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes:C316-- ARTIFICIAL INTELLIGENCE</b>	
C316.1	Differentiate between a rudimentary problem and an AI problem, its characteristics and problem solving techniques.
C316.2	compare and contrast the various knowledge representation schemes of AI
C316.3	Appraise knowledge in uncertainty and probabilistic approaches

C316.4	Understand the different learning techniques
C316.5	Apply the AI techniques to solve the real world problems.
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes:C317-- Pulse and Linear Integrated Circuits Lab</b>	
C317.1	Analyze the behavior of RC low-pass and high-pass circuits for various time constants and determine parameters like rise time.
C317.2	Evaluate clipping and clamping circuits for waveform shaping applications.
C317.3	Analyze multivibrator circuits (bistable, monostable, astable) and observe their switching behavior.
C317.4	Demonstrate the operation and applications of special waveform generation circuits like Schmitt Triggers and OPAMP-based integrators/differentiators.
C317.5	Measure key parameters of OPAMPs and design basic analog circuits like voltage followers, inverting and noninverting amplifiers.
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes:C318-- DIGITAL SIGNAL PROCESSING LAB</b>	
C318.1	Illustrate various signal processing algorithms.
C318.2	Analyze FIR Filter with specific magnitude and phase requirements.
C318.3	Analyze IIR Filter with specific magnitude and phase requirements.
C318.4	Illustrate the basics of Multirate signal processing.
C318.5	Analyze different digital filtrations process.
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes:C319-- APTITUDE AND REASONING LAB</b>	
C319.1	Acquire the grasp of Data analysis and its interpretation through percentages and measures of central tendency.
C319.2	Calculate the problems pertaining to number series and reasoning ability.
C319.3	Analyze the number system pattern and determine profit and losses.
C319.4	Evaluate proportions and tackle time framework situations
C319.5	Understand and apply combinatorics, clock-calendar concepts and geometry of plane and solid figures.



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Academic Year – 2025-26

Semester: **VII(Autonomous)**

Student will be able to

CO. No.	Description
<b>Course Outcomes:C411— Microwave Engineering</b>	
C.411.1	Analyze completely the rectangular waveguides, their mode characteristics, and design waveguides for solving practical microwave transmission line problems
C411.2	Distinguish between the different types of waveguide and ferrite components, explain their functioning and select proper components for engineering applications
C411.3	Realize the need for solid state microwave sources, understand the concepts of TEDs, RWH Theory and explain the salient features of Gunn Diodes and ATT Devices.
C411.4	Understand the principle and operation of M type tubes and their applications.
C411.5	Understand the properties of Scattering Matrix, formulate the S-Matrix for various microwave junctions, and understand the utility of S-parameters in microwave component design
CO. No.	Description
<b>Course Outcomes:C412– Cellular and Wireless Communication</b>	
C412.1	Interpret the basic concepts, operations and implementation of frequency reuse and Handoff techniques and to analyse interference and capacity enhancement of Basic Cellular System.
C412.2	Illustrate and understand the methods of electromagnetic wave propagation in Cellular Communication and the evaluation of the electromagnetic energy reaching the mobile unit through propagation models.
C412.3	Analyse various multiple access protocols based on their merits and demerits.
C412.4	Explain features, authentication, operational details of GSM and CDMA mobile cellular systems along with data frame structure details.
C412.5	Understand the development and limitation of the preliminary and advanced generation of mobile systems and the present trends in Cellular communications and the future communication requirements.
CO. No.	Description

**Course Outcomes:C413– IOT and It's Protocols**

C413.1	Comprehend the essentials of IoT and its applications.
C413.2	Illustrate the concepts of IoT Architecture Reference model and IoT reference architecture.
C413.3	Analyze various IoT Application layer Protocols.
C413.4	Apply IP based protocols and Authentication Protocols for IoT
C413.5	Design IoT-based systems for real-world problems.
<b>CO. No.</b>	<b>Description</b>

**Course Outcomes:C415– RADAR SYSTEMS**

C415.1	Understand the fundamentals of traffic safety analysis
C415.2	Analyze Accident Data
C415.3	Remember the concepts of Road Safety in Urban transport
C415.4	Apply Crash Reduction Techniques
C415.5	Design of Urban Infrastructure considering Safety Aspects
<b>CO. No.</b>	<b>Description</b>

**Course Outcomes:C416– Microwave Engineering Lab**

C416.1	Study and verify the characteristics of reflex klystron,gunn diode and directional coupler
C416.2	understand the measurement of VSWR for different loads
C416.3	analyse the characteristics of the waveguide parameters and its measurement techniques
C416.4	understand the measurement of scattering parameters of different microwave components
C416.5	understand the measurement of microwave frequency,attenuation and radiation pattern

<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes:C417– Technical Report Writing-Lab</b>	
<b>C417.1</b>	<b>Develop report writing thoroughly</b>
<b>C417.2</b>	<b>Construct business proposals professionally</b>
<b>C417.3</b>	<b>Compose different types of reports systematically</b>
<b>C417.4</b>	<b>Design project report relevantly</b>
<b>C417.5</b>	<b>Illustrate the use of notices, circulars and memos officially</b>
<b>CO. No.</b>	<b>Description</b>
<b>Course Outcomes:C418– TECHNICAL SEMINAR</b>	
<b>C418.1</b>	<b>Interpretation and Solution of real life engineering problems by applying Knowledge.</b>
<b>C418.2</b>	<b>Conduct literature survey on a current topic based on peer reviewed literature &amp; Identify research gap in the literature</b>
<b>C418.3</b>	<b>Develop presentation slides / report arranging the material coherently</b>
<b>C418.4</b>	<b>Compile the content and prepare comprehensive report.</b>
<b>C418.5</b>	<b>Demonstrate skills required for preparation of a technical report Present seminar and Write precise technical reports in a nutshell.</b>