lendi Institute of Engineering & Technology
An Autonomous Institution
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DEPARTMENT OF SCIENCE AND HUMANITIES

LIET/SH/D-45/2023-24
REV.: 0.0:0.0

LIST OF COURSE OUTCOMES (CO's)

ACADEMIC YEAR: 2023-24 **Branch: ME**

COURSE CODE & NAME	CO	CO STATEMENT
C101 Linear Algebra & Calculus	C101.1	Able to determine the rank of a matrix by reducing to echelon form, normal form & solve system of simultaneous linear equations and apply these methods to find the current in electrical circuits using matrices.
	C101.2	Able to find the Eigen values & Eigen vectors of a given matrix, determine the inverse and powers of a matrix using Cayley – Hamilton theorem and identify the rank, nature and index of a Quadratic form.
	C101.3	Utilize mean value theorems to real life problems
	C101.4	Acquire knowledge on partial differentiation and calculate total derivative, Jacobian and Maxima and Minima of function of several variables
	C101.5	Able to determine Double integral over a surface and triple integral over a volume and find the areas and volumes of solids using double and triple integrals
C102 Engineering Chemistry	C102.1	Determine the hardness of water using EDTA method.
	C102.2	Demonstrate the corrosion preventive methods, factors affecting corrosion and construction of a battery.
	C102.3	Understand the importance of plastics, elastomers, conducting polymers, biodegradable polymers and fuels.
	C102.4	Understand the need of composite materials, refractories,

		cements, and lubricants.
	C102.5	Apply the principles of green chemistry and nanomaterials in eco-friendly chemical reactions and preparation of engineering materials.
C103 Introduction to Programming	C103.1	Understand basics of computers, the concept of algorithm and problem solving analysis.
	C103.2	Understand the concepts of control structures, branching and looping statements.
	C103.3	Apply the concepts of arrays in solving complex problems.
	C103.4	Develop programs on modular programming using functions and strings.
	C103.5	Develop an ability to debug and optimize the code and solve real time problem statements.
C104 Engineering Graphics	C104.1	Explain the Engineering Graphics concepts to construct the polygon, curves and scales.
	C104.2	Apply the basic concepts of orthographic projections and draw the orthographic projections of points and straight lines inclined to both the planes.
	C104.3	Draw the projections of planes in various conditions.
	C104.4	Apply the basic concepts of solids in simple positions and draw the projections of regular solids, its axis inclined to one of the principal planes
	C104.5	Develop the isometric views from orthographic views and vice versa with discuss basic tools required to design in CAD software.
C105 Basic Electrical & Electronics Engineering	C105.1	Understand the problem solving concepts associated to dc and ac circuits.
	C105.2	Understand the principle and operation of basic electrical machines and measuring Instruments.
	C105.3	Identify the electricity bill calculations and layout representation of electrical power systems.

	C105.4	Understand the operation of various basic semiconductor devices.
	C105.5	Make use of the applications of semiconductor devices.
	C105.6	Analyze the different digital circuits
C106 Engineering Chemistry Lab	C105.1	Determine the conductance of different solutions using conductivity meter.
	C105.2	Synthesize advanced polymer materials using addition and condensation polymerization.
	C106.3	Determine the amount of acidity and alkalinity different water samples using neutralization titrations.
	C106.4	Estimate the viscosity index, flash and fire point, acid number of lubricating oil using Redwood viscometer, Clevelands apparatus and acid base titrations respectively.
	C106.5	Calculate the amount of copper, zinc and hardness of different water samples using complexometric titrations.
C107 Computer Programming Lab	C107.1	Implement and execute the programs written in C language on Windows and Linux OS
	C107.2	Apply conditional and iterative statements to solve real time scenarios in C.
	C107.3	Develop C programs which utilize memory efficiently through arrays and strings.
	C107.4	Develop programs to demonstrate the applications through user defined data types.
	C107.5	Construct programs using structures, unions, and files.
C108 Electrical &Electronics Engineering Workshop	C108.1	Apply theoretical concepts to obtain calculations for the measurement of electrical parameters.
	C108.2	Analyze various characteristics of electrical circuits, electrical machines and measuring instruments.
	C108.3	Design suitable circuits and methodologies for the measurement of various electrical parameters, Household and commercial wiring.
	C108.4	Summarize the characteristics of various electronic devices.

	C108.5	Analyze the different digital circuits.
	C108.6	Evaluate the electronic devices with simulation
C109 NSS/NCC/Scouts &Guides/Community Service	C109.1	Understand the importance of discipline, character and service motto.
	C109.2	Outline the needs and problems of the community and solve some societal issues by applying acquired knowledge, facts and techniques
	C109.3	Explore human relationships by analyzing social problems.
	C109.4	Determine to extend their help for fellow beings and downtrodden people.
	C109.5	Develop leadership skills and civic responsibilities.
C110 Differential Equations and Vector Calculus	C110.1	Solve the first order ordinary differential equations related to various engineering fields
	C110.2	Solve the higher order differential equation and analyze physical situations.
	C110.3	Solve partial differential equations of first order and higher order related to engineering applications.
	C110.4	Apply vector differential operators to the real world situations
	C110.5	Estimate the work done against a field, circulation and flux using vector calculus.
C111 Engineering Physics	C111.1	Analyze the intensity of variation of light in various phenomenon such as interference, diffraction and polarization,
	C111.2	Identify the properties of crystals structures by X-Ray diffraction principles.
	C111.3	Classify the various types of magnetic and dielectrics materials
	C111.4	Explain the basic concepts of Quantum Mechanics and free electron theory.
	C111.5	Recognize the type of semiconductors using Hall Effect.
	C112.1	Learn how to understand the context, topic, and specific information from social or transactional dialogues concerning human values. Skim and Scan the content effectively, use capital letters, spelling, content words, parts of speech, word

C112 Communicative English		roots, prefixes and suffixes to converse on familiar topics.
	C112.2	Learn how to listen for main and supporting ideas through poetry to appreciate Nature, apply grammatical structures to formulate sentences and use appropriate words and correct word forms, Articles and Prepositions to write coherent paragraphs and make short talks.
	C112.3	Improve communicative competence in formal and informal contexts and for social and academic purposes through biographical sketches to report what was discussed through paraphrasing, summarizing, collocations, tense, and subject-verb agreement
	C112.4	Critically comprehend and appreciate reading /listening texts and to write summaries based on the texts used for inspiration through data interpretation with right voice and speech and jargon
	C112.5	Identify key terms, concepts for motivation and write or present correcting common errors with appropriate technical vocabulary and comprehension.
C113 Basic Civil & Mechanical Engineering	C113.1	Understand the principles of governing disciplines in Civil Engineering and their role in the development of society.
	C113.2	Apply the concepts of surveying and leveling for the measurement of linear distances, angles and heights.
	C113.3	Explain the principles of environmental management to address resources, transportation, water and air quality challenges for sustainable community well-being.
	C113.4	Identify the materials required for suitable engineering applications.
	C113.5	Illustrate the working principles of basic and advanced manufacturing processes.
	C113.6	Explain the basic principles of boilers, engines, power plants, and other power transmission systems.

C114 Engineering Mechanics	C114.1	Understand the basic concepts in mechanics and determine the frictional forces for bodies in contact.
	C114.2	Apply equilibrium conditions on different force systems to calculate their resultant forces and moments.
	C114.3	Calculate the centroid /centre of gravity/moment of inertia for simple/composite sections through method of integration.
	C114.4	Solve the displacement, velocity & acceleration relations in dynamic systems.
	C114.5	Analyze the motion of the bodies with (or) without the application of force using Newton's laws of motion.
C115 Communicative English Lab	C115.1	Understand the different aspects of the English language oral communication with emphasis on Listening and Speaking Skills.
	C115.2	Apply communication skills through various language learning activities.
	C115.3	Analyze the English speech sounds, stress, rhythm and intonation for better listening and speaking comprehension.
	C115.4	Evaluate and exhibit professionalism in participating in debates and group discussions with polite turn-taking strategies and sound more professional while communicating with others
	C115.5	Create effective resonance and prepare them to face interviews and communicate appropriately in corporate settings.
C116 Engineering Physics Lab	C116.1	Apply the working principles of laboratory experiments in optics, mechanics, electromagnetic and electronics.
	C116.2	Compute the required parameter by suitable formula using experimental values (observed values) in mechanics, optics, electromagnetic and electronic experiments.
	C116.3	Analyze the experimental results through graphical interpretation.
	C116.4	Recognize the required precautions to carry out the experiment and handling the apparatus in the laboratory.
	C116.5	Demonstrate the working principles, procedures and

		applications.
C117 IT workshop	C117.1	Able to apply functions of a CPU, identify peripherals of a computer, components in CPU, assemble and disassembling the PC.
	C117.2	Student individually installs MS windows, Linux, awareness dual boot on PC.
	C117.3	Student get connected to network, connectivity preparation customizes web browsers and search engines.
	C117.4	Students get knowledge about LaTeX, MS word, EXCEL and PowerPoint.
	C117.5	Experiment with different types of prompts using Chat Gpt simple experiment with GITHUB.
C118 Engineering Workshop	C118.1	Identify workshop tools and their operational capabilities.
	C118.2	Practice on manufacturing of components using workshop trades including fitting, carpentry, foundry and welding.
	C118.3	Apply fitting operations in various applications.
	C118.4	Apply basic electrical engineering knowledge for House Wiring Practice.
	C118.5	Prepare the pipe joint with couplings for same diameter and with reduced diameters for the given application.
C119 Engineering Mechanics Lab	C119.1	Evaluate the coefficient of friction between two different surfaces and between the inclined plane and the roller.
	C119.2	Verify Law of Polygon of forces and Law of Moment using force polygon and bell crank lever.
	C119.3	Determine the Centre of gravity and Moment of Inertia of different configurations.
	C119.4	Verify the equilibrium conditions of a rigid body under the action of different force systems.
	C119.5	Draw free body diagram for given force system.
	C120.1	Acquire knowledge about the health, fitness, nutrition and balanced diet.
	C120.2	Acquire knowledge on yoga and their benefits in their study

C120 Health and Wellness, Yoga and Sports		period and how to manage stress and develop positive personality
	C120.3	Student will be able to know about the benefits of sports in their daily life by considering success and failure equally and improve leadership skills and build healthy life style.