lendi Institute of Engineering & Technology
An Autonomous Institution
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Via 5th APSP Battalion, Jonnada (V), Denkada (M), NH-3, Vizianagaram Dist - 535005, A.P. Website : www.lendi.org
Ph : 08922-241111, 241666, Cell No : 9490344747, 9490304747,e-mail : lendi_2008@yahoo.com

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: CSSE**

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 Physics	C102.1	Analyze the intensity of variation of light in various phenomenon such as interference, diffraction and polarization,
	C102.2	Identify the properties of crystals structures by X-Ray diffraction principles.
	C102.3	Classify the various types of magnetic and dielectrics materials

	C102.4	Explain the basic concepts of Quantum Mechanics and free electron theory.
	C102.5	Recognize the type of semiconductors using Hall Effect.
C103 Communicative English	C103.1	Develop Algorithms and flowcharts and also Understand the compilation, debugging , execution and writing of basic C programs
	C103.2	Develop C Programs using control and iterative statements
	C103.3	Develop C programs using Arrays and pointers
	C103.4	Apply the knowledge of strings and functions in programming
	C103.5	Comprehend structures and unions
C104 Basic Civil & Mechanical Engineering	C104.1	Develop the knowledge on principles governing disciplines of Civil Engineering and their role in the development of society.
	C104.2	Apply the concepts of surveying and leveling for the measurement of linear distances, angles and heights.
	C104.3	Apply principles of environmental management to address resources, transportation, water and air quality challenges for sustainable community well-being.
	C104.4	Identify the materials required for suitable engineering applications.
	C104.5	Apply working principles of basic and advanced manufacturing processes.
	C104.6	Develop the knowledge on working principles of boilers, engines, power plants and various power transmission systems.
C105 Introduction to Programming	C105.1	Understand basics of computers, the concept of algorithm and problem solving analysis.
	C105.2	Understand the concepts of control structures, branching and looping statements.
	C105.3	Apply the concepts of arrays in solving complex problems.
	C105.4	Develop programs on modular programming using functions and strings.
	C105.5	Develop an ability to debug and optimize the code and solve real time problem statements.

C106 Communicative English Lab	C105.1	Understand the different aspects of the English language oral communication with emphasis on Listening and Speaking Skills.
	C105.2	Apply communication skills through various language learning activities.
	C106.3	Analyze the English speech sounds, stress, rhythm and intonation for better listening and speaking comprehension.
	C106.4	Evaluate and exhibit professionalism in participating in debates and group discussions with polite turn-taking strategies and sound more professional while communicating with others
	C106.5	Create effective resonance and prepare them to face interviews and communicate appropriately in corporate settings.
C107 Engineering Physics Lab	C107.1	Apply the working principles of laboratory experiments in optics, mechanics, electromagnetic and electronics.
	C107.2	Compute the required parameter by suitable formula using experimental values (observed values) in mechanics, optics, electromagnetic and electronic experiments.
	C107.3	Analyze the experimental results through graphical interpretation.
	C107.4	Recognize the required precautions to carry out the experiment and handling the apparatus in the laboratory.
	C107.5	Demonstrate the working principles, procedures and applications.
C108 Engineering Workshop	C108.1	Apply wood working skills in real world applications.
	C108.2	Build different parts with fitting in engineering applications.
	C108.3	Apply forging operations for different black smith applications.
	C108.4	Apply different types of basic electric circuit connections.
	C108.5	Understand the basic components, peripherals and basic operations of a computer.
	C109.1	Able to apply functions of a CPU, identify peripherals of a computer, components in CPU, assemble and disassembling the PC.

C109 IT Workshop	C109.2	Student individually installs MS windows, Linux, awareness dual boot on PC.
	C109.3	Student get connected to network, connectivity preparation customizes web browsers and search engines.
	C109.4	Students get knowledge about LaTeX, MS word, EXCEL and PowerPoint.
	C109.5	Experiment with different types of prompts using Chat Gpt simple experiment with GITHUB.
C110 Computer Programming Lab	C110.1	Implement and execute the programs written in C language on Windows and Linux OS
	C110.2	Apply conditional and iterative statements to solve real time scenarios in C.
	C110.3	Develop C programs which utilize memory efficiently through arrays and strings.
	C110.4	Develop programs to demonstrate the applications through user defined data types.
	C110.5	Construct programs using structures, unions, and files.
C111 Health and Wellness, Yoga and Sports	C111.1	Acquire knowledge about the health, fitness, nutrition and balanced diet.
	C111.2	Acquire knowledge on yoga and their benefits in their study period and how to manage stress and develop positive personality
	C111.3	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.
	C111.4	
	C111.5	
C112	C112.1	Solve the first order ordinary differential equations related to various engineering fields
	C112.2	Solve the higher order differential equation and analyze physical situations.

Differential Equations and Vector calculus	C112.3	Solve partial differential equations of first order and higher order related to engineering applications.
	C112.4	Apply vector differential operators to the real world situations
	C112.5	Estimate the work done against a field, circulation and flux using vector calculus.
C113 Chemistry	C113.1	Understand the fundamental principles underlying the classification, synthesis and processing of polymers, including thermoplastics, thermosetting polymers, elastomers, conducting Polymers and biodegradable polymers.
	C113.2	Analyze electrochemical cells in practical applications such as batteries and sensors using the basic principles of electrochemistry
	C113.3	Outline the fundamental principles, preparations, properties and applications of nano materials, semiconductors, super conductors, super capacitors
	C113.4	Illustrate the basic aspects and components involved in harnessing each type of non conventional energy sources, including hydropower, geothermal power plant, tidal and wave, ocean- thermal, solar thermal power plant.
	C113.5	Understand the fundamental principles of various instrumental techniques used in chemical analysis, including spectroscopic methods (UV-Visible and IR) and chromatographic techniques(HPLC)
C114 Engineering Graphics	C114.1	Understand the basics of Engineering Graphics to construct the polygon, curves and scales.
	C114.2	Draw the orthographic projections of points and straight lines inclined to both the planes.
	C114.3	Draw the projections of planes in various conditions.
	C114.4	Draw the projections of regular solids, with its axis inclined to one plane and sections of solids.
	C114.5	Visualize the 3D isometric views from 2D orthographic views and vice versa along with basic introduction to CAD.

C115 Basic Electrical &Electronics Engineering	C115.1	Understand the problem solving concepts associated to dc and ac circuits.
	C115.2	Understand the principle and operation of basic electrical machines and measuring Instruments.
	C115.3	Identify the electricity bill calculations and layout representation of electrical power systems.
	C115.4	Understand the operation of various basic semiconductor devices.
	C115.5	Make use of the applications of semiconductor devices.
C116 Data Structures	C116.1	Understand algorithmic complexities of linear data structures.
	C116.2	Design, implement, and apply linked lists for dynamic data storage via dynamic memory allocation.
	C116.3	Apply stacks and queue model for real-world scenarios.
	C116.4	Understand the basic tree data structures and tree traversals.
	C116.5	Recognize scenarios where hashing is advantageous, and design hash-based solutions.
C117 Chemistry Lab	C117.1	Determine the conductance of different solutions using conductivity meter.
	C117.2	Synthesize advanced polymer materials using addition and condensation polymerization.
	C117.3	Analyze the strength of an acid present in lead-acid batteries using acid base titrations
	C117.4	Determine the amount of acidity and alkalinity different water samples using neutralization titrations.
	C117.5	Calculate strength of iron present in a given sample using redox titrations.
C118 Electrical &Electronics	C118.1	Apply theoretical concepts to obtain calculations for the measurement of electrical parameters.
	C118.2	Analyze various characteristics of electrical circuits, electrical machines and measuring instruments.
	C118.3	Design suitable circuits and methodologies for the measurement of various electrical parameters, Household and

Engineering workshop		commercial wiring.
	C118.4	Summarize the characteristics of various electronic devices.
	C118.5	Analyze the different digital circuits.
	C118.6	Evaluate the electronic devices with simulation
C119 Data Structures Lab	C119.1	Explain the role of linear data structures in organizing and accessing data efficiently in algorithms.
	C119.2	Design, implement, and apply linked lists for dynamic data storage.
	C119.3	Develop programs using stacks and queues to handle recursive algorithms.
	C119.4	Apply tree traversal algorithms using linked lists on binary trees and binary search trees
	C119.5	Design hash-based solutions for specific problems like collision resolution techniques.
C120 NSS/NCC/Scouts &Guides/Community Service	C120.1	Understand the importance of discipline, character and service motto.
	C120.2	Outline the needs and problems of the community and solve some societal issues by applying acquired knowledge, facts and techniques
	C120.3	Explore human relationships by analyzing social problems.
	C120.4	Determine to extend their help for fellow beings and downtrodden people.
	C120.5	Develop leadership skills and civic responsibilities.