



Koneru Lakshmaiah Education Foundation

(Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

❖ Recognised as Category 1 University by UGC ❖ Approved by AICTE ❖ ISO 21001:2018 Certified

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Department of Civil Engineering

Program: B.Tech-Civil Engineering

Academic Year 2025-26

Course Code	Course Name	Co No	Description of the course Out come
25MT1001	LACE	CO1	Apply matrix algebra concepts to solve system of linear equations.
		CO2	Apply multivariate differential calculus to find extremum of functions and solve differential equations.
		CO3	Solve improper integrals using beta and gamma functions and also evaluate double and triple integrals.
		CO4	Evaluate line, surface and volume integrals by vector calculus concepts.
25SC1101	PSTC	CO1	Develop Basic and Complex Building Blocks for real world problems using structured programming paradigm
		CO2	Develop logical building blocks using conditional and loop statements to solve real world problems
		CO3	Develop logical solutions using the concepts of arrays and functions
		CO4	Develop solutions by applying various operations on user defined data types such as structures, unions and files
		CO5	Apply the structured programming paradigm with logic building blocks for solving real world problems
		CO6	Skill the students in such a way that students will be able to develop logic that help them to create programs as well as applications in C
25UC0017	IAKS-VM	CO1	Interpret the origin and philosophy of Vedic Mathematics as rediscovered and structured by Swami Bharati Krishna Tirthaji Maharaj and Summarize the purpose and meaning of the 16 Vedic Mathematics sutras, including their mathematical significance and application areas.
		CO2	Apply Vedic Mathematics sutras to perform efficient addition, subtraction, multiplication, and division operations.

		CO3	Apply logical reasoning principles and problem-solving strategies to solve related Shakuntala Devi Puzzles.
		CO4	Apply reasoning concepts to solve problems involving clocks, calendars, cubes, deductions, logical connectives, and arrangements.
25UC1203	DTI	CO1	Understand the importance of Design thinking mindset for identifying contextualized problems
		CO2	Analyze the problem statement by empathizing with user
		CO3	Develop ideation and test the prototypes made
		CO4	Explore the fundamentals of entrepreneurship skills for transforming the challenge into an opportunity
25ME1002	EG	CO1	Apply the principles of orthographic and pictorial projections to visualize, sketch, and interpret engineering objects.
		CO2	Develop 3D part models, assemblies, and tolerance drawings using Autodesk CAD & Fusion 360.
25UC0026	HVGE	CO1	"understand about value, human values and develop right understanding of human values in personal and professional life."
		CO2	"Understand about self, others and human relationship in individual, family, society and nature."
		CO3	Understand, Apply the acquired knowledge in the dimensions of the biological, sociological, psychological and legal aspects of gender equality at all four orders of living.
		CO4	"Understand, Apply how the human values and gender equality will be helping individual in maintaining professional ethics for harmony at all orders of living"
25FL3058	JLG	CO1	Understand general feature of Japanese, Introduction to writing, everyday greetings and expressions
		CO2	Frame verb sentence 1 and verb sentence 2
		CO3	Frame sentence with i-adjectives
		CO4	Frame sentence using the Na-adjective
25UC0018	FOM	CO1	Apply matrix theory to solve system of linear equations
		CO2	Apply trigonometric identities to solve trigonometric equations and solve the equations for complex numbers
		CO3	Apply calculus concept to determine areas and volumes and also solve differential equations.

		CO4	Apply statistical methods to find central tendency of the given data and also find directional ratios by vector algebra concepts.
25UC1203E	DTI	CO1	"Understand the importance of Design thinking mindset for identifying contextualized problems
		CO2	"Analyze the problem statement by empathizing with user
		CO3	"Develop ideation and test the prototypes made
		CO4	"Explore the fundamentals of entrepreneurship skills for transforming the challenge into an opportunity
25MT1002E	DM	CO1	Apply the fundamental concepts of sets and relations to model mathematical structures such as relations, partially ordered sets, lattices using Hasse diagrams.
		CO2	Apply the concepts of functions and logic as well as propositional and predicate logic to model and validate logical statements and computational problems in computer science.
		CO3	Apply various proof and fundamental counting principles to solve and justify mathematical and computational problems.
		CO4	Apply methods for solving linear recurrence relations to computational problems and utilize graph theory to model real-world structures and their applications.
25SC1105E	PSP	CO1	Apply fundamental programming constructs such as data types, operators, conditional and iterative statements in Java to develop logic-based solutions for basic computational problems. Students will learn to design simple algorithms, trace execution, and validate logic through hands-on coding tasks.
		CO2	Design, trace, and optimize algorithms using one-dimensional and two-dimensional arrays to solve mathematical, quantitative, and real-world problems efficiently through search, sort, and matrix manipulation techniques. Students will also analyze the efficiency and accuracy of algorithmic approaches.
		CO3	Construct and evaluate advanced problem-solving logic using strings, recursion, and bitwise operations for solving complex mathematical, pattern-based, and combinatorial problems relevant to competitive coding platforms. Students will be able to integrate mathematical reasoning and pattern recognition into coding

			strategies.
		CO4	Develop structured and modular programs by applying object-oriented programming principles such as encapsulation, abstraction, and modularization using Java classes, methods, and constructors. Students will transition from procedural to modular design thinking.
		CO5	Design extensible and reusable Java programs employing inheritance, polymorphism, abstract classes, interfaces, and reflection API to solve domain-oriented problems with clarity and maintainability. Students will model real-world entities and relationships through effective OOP architecture.
		CO6	Implement robust, scalable, and generic Java applications integrating exception handling, file I/O, generics, and collections framework, along with functional programming constructs to handle real-world data-driven tasks. Students will demonstrate ability to write production-level, fault-tolerant programs.
25SC1203	DATA STRUCTURES	CO1	Understand various sorting algorithms and analyze the efficiency of the algorithms
		CO2	Implement and evaluate Linear Data Structures and Demonstrate their applications
		CO3	Implement and evaluate tree data structures and understand hashing techniques
		CO4	Understand graph data structures and apply graphs to solve problems
		CO5	Design, Develop and evaluate common practical applications for linear and nonlinear data structures.
		CO6	programs as well as applications in DS
25MT2003	MATHEMATICAL MODELLING & NUMERICAL METHODS	CO1	Modeling and solution of algebraic and transcendental equations
		CO2	Apply different numerical techniques for solving first order ordinary differential equations
		CO3	Apply Legranges method to solve the linear partial differential equations
		CO4	Apply the method of separation of variables for solving the applications of partial differential equations
25CE1201	ENGINEERING GEOLOGY	CO1	Understand the significance of engineering geology, basics of geological processes that modify the surface of the earth, earth quakes,landslides

		CO2	Understand the basics of minerals and rocks, geological structures exhibited by rocks and their influence
		CO3	Apply the geological conditions to identify suitable site for civil engineering projects.
		CO4	Understanding the geological conditions to identify potential sites for groundwater, sites for dam and reservoir and tunnels.
		CO5	The study of how Earth's materials, structures, processes, and organisms have changed over time
OEGN1001	NATIONAL CADET CORPS - 1	CO1	"
		CO2	Respect the diversity of different Indian culture.
		CO3	Practice togetherness and empathy in all walks of their life.
		CO4	Do their own self-analysis and will work out to overcome their weakness for
		CO5	Perform foot drill and follow the different word of command and Fire a weapon effectively with fair degree of marksmanship
25EC1101	BEEC	CO1	Understand the basic concepts of AC and DC circuits and apply them to solve electric circuit problems.
		CO2	Apply different circuit analysis techniques to find voltage, current, impedance and power in electrical circuits.
		CO3	Comprehend the behavior of basic electronic components, such as diodes and transistor, and their applications.
		CO4	Understand the basic functional principles of different analog ICs, such as IC 741 Op-Amp, IC 555 Timer and IC Voltage Regulators.
		CO5	Utilize measurement tools and equipment for validating theoretical concepts of different electrical and electronic circuits and develop problem-solving capabilities through hands-on experimentation.
25EC1203	FUNDAMENTALS OF IOT AND SENSORS	CO1	Understand the basic concepts of IoT and the role of Arduino-based hardware platforms in IoT systems.
		CO2	Apply and demonstrate the interfacing of various sensors with Arduino to acquire and process real-time data.
		CO3	Apply and demonstrate the interfacing of different actuators with appropriate driver circuits for IoT applications.
		CO4	Analyze and develop IoT applications using ESP32 and display modules supported by various case studies.
		CO5	Design, simulate, and implement IoT-based

			systems using Arduino and ESP32, integrating sensors, actuators, and displays to build functional prototypes.
25ME1001	EM	CO1	Apply the concept of forces, governing static equations, and analyze the planar system of forces.
		CO2	Use analytical techniques for analyzing forces in statically determinate structures.
		CO3	Apply the concepts of planar and non-planar system of parallel forces and estimate the moment of inertia for lamina and material bodies.
		CO4	Apply fundamental concepts of kinematics and kinetics of particles to solve simple practical problems.
25SC1104E	FWD	CO1	Apply Internet Fundamentals, HTML & Introductory CSS Styling
		CO2	Apply HTML Forms, Semantic Tags & Comprehensive CSS Layouts
		CO3	Apply JavaScript Programming Essentials
		CO4	Apply JavaScript Interactivity, DOM
		CO5	Apply Advanced Web Development & Deployment
	DESIGN TOOLS WORKSHOP	CO1	Demonstrate proficiency in typing sentence, paragraph, report, presentations along with spreadsheets using office tools, LaTeX tools and PowerBI
		CO2	Build a static website and blog with using HTML along with special features of HTML5, CSS and Javascript
		CO3	Develop a virtual environment with Cosplay and construct a marker-based Augmented Reality
		CO4	Utilising the software of Autodesk Fusion 360 and the same can be printed in 3D printer as physical prototype, Fundamentals of electrical circuit.
25FL3055	GLG	CO1	Understand the German language, with greeting wishes, alphabets and numbers learning
		CO2	Comprehend the German articles and conjugation with present, past and future tense
		CO3	Characterize to build a sentence with suitable prepositions, questions, and possessive pronouns, and the importance of the German four cases (4 Deutsche Fälle)
		CO4	Understand about how to move in public places, such as shopping centres, restaurants, tourist places, etc, and preparation of them for German A1.1 level examination

25FL3064	KLG	CO1	Understanding of key features of Korean, Introduction to Hangul, Everyday greetings & expressions
		CO2	Learning of important grammar particles & Parts of speeches
		CO3	Verbs, Adjectives & additional vocabularies for daily life conversation
		CO4	Sentence formation & Different aspects of tenses
25UC1204	COMMUNICATION SKILLS FOR ENGINEERS	CO1	"Understand the concept of professional communication skills, interview skill, resume building"