



TEEGALA KRISHNA REDDY ENGINEERING COLLEGE

(UGC-Autonomous)

Approved by AICTE, Affiliated by JNTUH, Accredited by NAAC- 'A' Grade

Medbowli, Meerpet, Balapur, Hyderabad, Telangana- 500097

Mob: 9393959597. Email: info@tkrec.ac.in, deanacademics@tkrec.ac.in



Department of AIML

I B.Tech I Semester Course Outcomes

Course Name: MATRICES AND CALCULUS

Course Code: 22MA101BS		Academic Year: 2022-23
CO1	Write the matrix representation of a set of linear equations and to analyse the solution of the system of equations	
CO2	Find the Eigen values and Eigen vectors and Reduce the quadratic form to canonical form using orthogonal transformations.	
CO3	Apply the mean value theorems and Evaluate the improper integrals using Beta and Gamma functions.	
CO4	Find the extreme values of functions of two variables with/ without constraints.	
CO5	Find the extreme values of functions of two variables with/ without constraints.	

Course Name: APPLIED PHYSICS

Course Code: 22PH102BS		Academic Year: 2022-23
CO1	Understand physical world from fundamental point of view by the concepts of Quantum Mechanics and visualize the difference between conductor, semiconductor, and an insulator by Classification of solids.	
CO2	Identify the role of semiconductor devices in science and engineering Applications	
CO3	Explore the fundamental properties of dielectric, magnetic materials for their Applications.	
CO4	Appreciate the features and applications of Nanomaterials.	
CO5	Understand various aspects of Lasers and Optical fiber and their applications in diverse fields.	

Course Name: PROGRAMMING FOR PROBLEM SOLVING

Course Code: 22CS103ES		Academic Year: 2022-23
CO1	To write algorithms and to draw flowcharts for solving problems.	
CO2	To convert the algorithms/flowcharts to C programs.	
CO3	To code and test a given logic in the C programming language	
CO4	To decompose a problem into functions and to develop modular reusable code.	
CO5	To use arrays, pointers, strings and structures to write C programs.	

Course Name: ENGINEERING WORKSHOP

Course Code: 22ME104ES		Academic Year: 2022-23
CO1	Study and practice on machine tools and their operations	
CO2	Practice on manufacturing of components using workshop trades including plumbing, fitting, carpentry, foundry, house wiring and welding.	
CO3	Identify and apply suitable tools for different trades of Engineering processes including drilling, material removing, measuring, chiseling	
CO4	Apply basic electrical engineering knowledge for house wiring practice..	

Course Name: ENGLISH FOR SKILL ENHANCEMENT

Course Code: 22EN105HS		Academic Year: 2022-23
CO1	Choose appropriate vocabulary and sentence structures for their oral and written communication.	
CO2	Demonstrate their understanding of the rules of functional grammar.	
CO3	Develop comprehension skills from the known and unknown passages.	
CO4	Take an active part in drafting paragraphs, letters, essays, abstracts, précis and reports in various contexts.	
CO5	Acquire basic proficiency in reading and writing modules of English.	

Course Name: ELEMENTS OF COMPUTER SCIENCE AND ENGINEERING

Course Code: 22CS106ES		Academic Year: 2022-23
CO1	Know the working principles of functional units of a basic Computer	
CO2	Understand program development, the use of data structures and algorithms in problem solving	
CO3	Know the need and types of operating system, database systems.	
CO4	Understand the significance of networks, internet, WWW and cyber security.	
CO5	Understand Autonomous systems, the application of artificial intelligence.	

Course Name: APPLIED PHYSICS LABORATORY

Course Code: 22PH107BS		Academic Year: 2022-23
CO1	Carried out data analysis	
CO2	Know the determination of the Planck's constant using Photo electric effect and identify the Material whether it is n-type or p-type by Hall experiment.	
CO3	Analyze V-I characteristics of -PN junction diode, Zener diode, solar cell and BJT	
CO4	Examine the bending losses for different Optical fiber Cables	
CO5	Construct various circuits –Resonance, Time constant and Magnetic field using LCR, RC, Stewart and Gees circuits.	

Course Name: PROGRAMMING FOR PROBLEM SOLVING LABORATORY

Course Code: 22CS108ES		Academic Year: 2022-23
CO1	formulate the algorithms for simple problems	
CO2	translate given algorithms to a working and correct program.	
CO3	identify and correct logical errors encountered during execution	
CO4	create, read and write to and from simple text and binary files	
CO5	modularize the code with functions so that they can be reused	

Course Name: ENGLISH LANGUAGE AND COMMUNICATION SKILLS LABORATORY

Course Code: 22EN109HS		Academic Year: 2022-23
CO1	Employ the nuances of English language through audio-visual experience and group activities.	
CO2	Articulate a neutral accent of English for intelligibility by overcoming mother tongue influence.	
CO3	Develop the skill of using appropriate language in various speaking contexts.	
CO4	Understand how to use language to make formal presentations	
CO5	Interpret speaking skills with clarity and confidence which in turn enhances their interpersonal skills.	

Course Name: ENVIRONMENTAL SCIENCE

Course Code:		Academic Year: 2022-23
CO1	The students able to know basic concept of ecological perspective and the value of the environment.	
CO2	The students able to understand the significance of various natural resources and its management.	
CO3	The students able to demonstrate a comprehensive understanding of the world's biodiversity and the importance of its conservation.	
CO4	The students able to identify different types of pollution and their control measures, Discover effective methods of waste management and come out with best possible solutions.	
CO5	The students able to raise awareness about environmental laws and sustainable development.	

Coordinator

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Department of AIML

I B.Tech II Semester Course Outcomes

Course Name: ORDINARY DIFFERENTIAL EQUATIONS AND VECTOR CALCULUS

Course Code: 22MA201BS		Academic Year: 2022-23
CO1	Identify whether the given differential equation of first order is exact or not.	
CO2	Apply the concept of differential equation to real world problems.	
CO3	Use the Laplace transforms techniques for solving ODE's.	
CO4	Use gradient to evaluate directional derivatives and conservative vector field.	
CO5	Calculate the line, surface and volume integrals and converting them from one to another.	

Course Name: ENGINEERING CHEMISTRY

Course Code: 22CH202BS		Academic Year: 2022-23
CO1	Apply the principle of potable water for industrial and domestic purposes	
CO2	Identify the electrolytic and electrochemical cells with different types of batteries and make use of corrosion control methods in industry.	
CO3	Explore the fundamental properties of polymers and other materials in engineering field.	
CO4	Distinguish various types of fuels and their applications in day-to-day life.	
CO5	Develop understanding of engineering materials like cement, smart materials and Lubricants.	

Course Name: COMPUTER AIDED ENGINEERING GRAPHICS

Course Code: 22ME203ES		Academic Year: 2022-23
CO1	Gain knowledge of fundamentals of DBMS, database design and normal forms	
CO2	Master the basics of SQL for retrieval and management of data.	
CO3	Be acquainted with the basics of transaction processing and concurrency control.	
CO4	Familiarity with database storage structures and access techniques	
CO5	Categorize various file organizations and indexing for faster retrieval of data, persistent storage of data.	

Course Name: BASIC ELECTRICAL ENGINEERING

Course Code: 22EE204ES		Academic Year: 2022-23
CO1	Verify the basic Electrical circuits through different experiments.	
CO2	Evaluate the performance calculations of Electrical Machines and Transformers through various testing methods.	
CO3	Analyze the transient responses of R, L and C circuits for different input conditions.	
CO4	To determine the performance of different types of DC, AC machines and Transformers.	
CO5	To import the knowledge of various electrical installations and the concept of power, powerfactor and its improvement	

Course Name: ELECTRONIC DEVICES AND CIRCUITS

Course Code: 22EC205ES		Academic Year: 2022-23
CO1	Apply the concepts of Diode applications.	
CO2	Apply concepts of Non-Linear application in solving various problems.	
CO3	Analyse the switching concepts of BJT.	
CO4	Compare BJT with FET and MOSFET.	
CO5	Design circuits using Special Purpose Devices	

Course Name: ENGINEERING CHEMISTRY LABORATORY

Course Code: 22CH207BS		Academic Year: 2022-23
CO1	Determination of parameters like hardness of water and rate of corrosion of mild steel in various conditions.	
CO2	Performing experimental methods such as conductometry, potentiometry and pH metry in order to find out the concentrations or equivalence points of acids and bases.	
CO3	Preparation of polymers like Bakelite and nylon-6.	
CO4	Estimation of saponification value, surface tension and viscosity of lubricant oils.	

Course Name: BASIC ELECTRICAL ENGINEERING LABORATORY

Course Code: 22AI404PC		Academic Year: 2022-23
CO1	Verify the basic Electrical DC and AC circuits through different experiments.	
CO2	Evaluate the performance calculations of Transformers through various testing methods	
CO3	Evaluate the performance calculations of DC Electrical Machines through various testing methods.	
CO4	Evaluate the performance calculations of AC Electrical Machines through various testing methods.	
CO5	Analyze the simple circuit for lighting and power installations.	

Course Name: PYTHON PROGRAMMING LABORATORY

Course Code: 22CS206ES		Academic Year: 2022-23
CO1	Develop the application specific codes using python.	
CO2	Understand Strings, Lists, Tuples and Dictionaries in Python	
CO3	Verify programs using modular approach, file I/O, Python standard library	
CO4	Implement Digital Systems using Python	

Course Name: IT WORKSHOP

Course Code: 22CS209ES		Academic Year: 2022-23
CO1	Perform Hardware troubleshooting	
CO2	Understand Hardware components and inter dependencies	
CO3	Safeguard computer systems from viruses/worms	
CO4	Document/ Presentation preparation	
CO5	Perform calculations using spreadsheets	

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II B.Tech I Semester Course Outcomes

Course Name: MATHEMATICAL AND STATISTICAL FOUNDATIONS

Course Code: 22MA303BS		Academic Year: 2023-2024
CO1	Apply the number theory concepts to cryptography domain	
CO2	Apply the concepts of probability and distributions to some case studies	
CO3	Correlate the material of one unit to the material in other units	
CO4	Resolve the potential misconceptions and hazards in each topic of study.	
CO5	Describe Stochastic principles to simplify processes that satisfy Markov Property	

Course Name: DATA STRUCTURES

Course Code: 22CS301PC		Academic Year: 2023-2024
CO1	Ability to select the data structures that efficiently model the information in a problem.	
CO2	Ability to assess efficiency trade-offs among different data structure implementations or combinations.	
CO3	Implement and know the application of algorithms for sorting and pattern matching.	
CO4	Design programs using a variety of data structures, including hash tables, binary and general tree structures, search trees, tries, heaps, graphs, and AVL-trees.	
CO5	Implement the graph traversal methods in nonlinear data structures	

Course Name: COMPUTER ORGANIZATION AND ARCHITECTURE

Course Code: 22CS302PC		Academic Year: 2023-2024
CO1	Understand the basics of instruction sets and their impact on processor design.	
CO2	Demonstrate an understanding of the design of the functional units of a digital computer system.	
CO3	Evaluate cost performance and design trade-offs in designing and constructing a computer processor including memory	
CO4	Design a pipeline for consistent execution of instructions with minimum hazards.	
CO5	Recognize and manipulate representations of numbers stored in digital computers	

Course Name: SOFTWARE ENGINEERING

Course Code: C112		Academic Year: 2023-2024
CO1	Ability to translate end-user requirements into system and software requirements, using e.g. UML, and structure the requirements in a Software Requirements Document (SRD).	
CO2	Identify and apply appropriate software architectures and patterns to carry out high level design of a system and be able to critically compare alternative choices.	
CO3	Will have experience and/or awareness of testing problems and will be able to develop a simple testing report	
CO4	Design and evaluate large-scale software systems.	
CO5	Apply the notations used to analyze the performance of algorithms.	

Course Name: OPERATING SYSTEMS

Course Code: 22AI302PC		Academic Year: 2023-2024
CO1	Will be able to control access to a computer and the files that may be shared	
CO2	Demonstrate the knowledge of the components of computers and their respective roles in computing.	
CO3	Ability to recognize and resolve user problems with standard operating environments.	
CO4	Gain practical knowledge of how programming languages, operating systems, and architectures interact and how to use each effectively.	
CO5	Apply the various system calls to enable the operating system services	

Course Name: DATA STRUCTURES LAB

Course Code: 22CS304PC		Academic Year: 2023-2024
CO1	Ability to develop C programs for computing and real-life applications using basic elements like control statements, arrays, functions, pointers and strings, and data structures like stacks, queues and linked lists.	
CO2	Ability to Implement searching and sorting algorithms	
CO3	Implementing linear data structures stack, queue operations by using arrays and pointers	
CO4	Implement various sorting algorithms	
CO5	Implement various non-linear data structures trees, graphs operations.	

Course Name: OPERATING SYSTEMS LAB

Course Code: 22AI303PC		Academic Year: 2023-2024
CO1	Simulate and implement operating system concepts such as scheduling, deadlock management, file management and memory management.	
CO2	Able to implement C programs using Unix system calls	
CO3	Analyze the methods of handling deadlock to maintain appropriate process synchronization.	
CO4	Choose appropriate page replacement algorithm for effective memory management.	
CO5	Apply the various system calls to enable the operating system services	

Course Name: SOFTWARE ENGINEERING LAB

Course Code: 22AI304PC		Academic Year: 2023-2024
CO1	Understand software engineering principles involved in building large software programs and process of requirements specification and requirements validation.	
CO2	Understand the concepts of object orientation and development of class models.	
CO3	Analyze system models for designing patterns	
CO4	Recognize the importance of software maintenance and complexities involved in software evolution.	
CO5	Apply estimation techniques, schedule project activities and compute pricing.	

Course Name: CONSTITUTION OF INDIA

Course Code: 22MC310		Academic Year: 2023-2024
CO1	Discuss the growth of the demand for civil rights in India for the bulk of Indians before the arrival of Gandhi in Indian politics.	
CO2	Discuss the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India.	
CO3	Understand fundamental duties and federal structure of Constitution of India.	
CO4	Discuss the circumstances surrounding the foundation of the Congress Socialist Party [CSP] under the leadership of Jawaharlal Nehru and the eventual failure of the proposal of direct elections through adult suffrage in the Indian Constitution	
CO5	Discuss the passage of the Hindu Code Bill of 1956.	

Course Name: SKILL DEVELOPMENT COURSE (NODE JS/ REACT JS/ DJANGO)

Course Code: 22AI305PC		Academic Year: 2023-2024
CO1	Build a custom website with HTML, CSS, and Bootstrap and little JavaScript.	
CO2	Demonstrate Advanced features of JavaScript and learn about JDBC	
CO3	Develop Server – side implementation using Java technologies like	
CO4	Develop the server – side implementation using Node JS.	
CO5	Design a Single Page Application using React.	

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II B.Tech II Semester Course Outcomes

Course Name: DISCRETE MATHEMATICS

Course Code: 22MA401BS		Academic Year:2023-2024
CO1	Understand and construct precise mathematical proofs.	
CO2	Apply logic and set theory to formulate precise statements.	
CO3	Analyze and solve counting problems on finite and discrete structures.	
CO4	Estimate how the Combinatorics are used in analysis of algorithm.	
CO5	Apply graph theory in solving computing problems.	

Course Name: AUTOMATA THEORY AND COMPILER DESIGN

Course Code: 22AI401PC		Academic Year2023-2024
CO1	Able to employ finite state machines for modeling and solving computing problems.	
CO2	Able to design context free grammars for formal languages.	
CO3	Able to distinguish between decidability and undecidability	
CO4	Demonstrate the knowledge of patterns, tokens & regular expressions for lexical analysis.	
CO5	Acquire skills in using lex tool and design LR parsers	

Course Name: DATABASE MANAGEMENT SYSTEMS

Course Code: 22CS402PC		Academic Year: 2023-2024
CO1	Gain knowledge of fundamentals of DBMS, database design and normal forms	
CO2	Master the basics of SQL for retrieval and management of data.	
CO3	Be acquainted with the basics of transaction processing and concurrency control.	
CO4	Familiarity with database storage structures and access techniques	
CO5	Categorize various file organizations and indexing for faster retrieval of data, persistent storage of data.	

Course Name: INTRODUCTION TO ARTIFICIAL INTELLIGENCE

Course Code: 22AI402PC		Academic Year: 2023-2024
CO1	Learn the distinction between optimal reasoning Vs human like reasoning and formulate an efficient problem space for a problem expressed in natural language. Also select a search algorithm for a problem and estimate its time and space complexities.	
CO2	Apply AI techniques to solve problems of game playing, theorem proving, and machine learning.	
CO3	Learn different knowledge representation techniques.	
CO4	Understand the concepts of state space representation, exhaustive search, heuristic search together with the time and space complexities.	
CO5	Comprehend the applications of Probabilistic Reasoning and Bayesian Networks.	

Course Name: OBJECT ORIENTED PROGRAMMING THROUGH JAVA

Course Code: 22AI403PC		Academic Year: 2023-2024
CO1	Demonstrate the behavior of programs involving the basic programming constructs like control structures, constructors, string handling and garbage collection	
CO2	Demonstrate the implementation of inheritance (multilevel, hierarchical and multiple) by using extend and implement keywords	
CO3	Use multithreading concepts to develop inter process communication..	
CO4	Understand the process of graphical user interface design and implementation using AWT or swings.	
CO5	Develop applets that interact abundantly with the client environment and deploy on the server	

Course Name: : DATABASE MANAGEMENT SYSTEMS LAB

Course Code: 22CS405PC		Academic Year: 2023-2024
CO1	Design database schema for a given application and apply normalization	
CO2	Acquire skills in using SQL commands for data definition and data manipulation	
CO3	Develop solutions for database applications using procedures, cursors and triggers	
CO4	Formulate queries using SQL DML/DDL/DCL commands.	
CO5	Implement triggers to raise as per real time data and also Implement concurrency control mechanisms.	

Course Name: : JAVA PROGRAMMING LAB

Course Code: 22AI404PC		Academic Year: 2023-2024
CO1	Able to write the programs for solving real world problems using Java OOP principles.	
CO2	Able to write programs using Exceptional Handling approach.	
CO3	Able to write multithreaded applications.	
CO4	Able to write GUI programs using swing controls in Java.	
CO5	Create a program to handle mouse and events{use adapter classess}	

Course Name: GENDER SENSITIZATION LAB

Course Code: 22AI304PC		Academic Year: 2023-2024
CO1	Students will have developed Ra better understanding of important issues related to gender in contemporary India.	
CO2	Students will be sensitized to basic dimensions of the biological, sociological, psychological and legal aspects of gender. This will be achieved through discussion of materials derived from research, facts, everyday life, literature and film.	
CO3	Students will attain a finer grasp of how gender discrimination works in our society and how to counter it.	
CO4	Students will acquire insight into the gendered division of labor and its relation to politics and economics.	
CO5	Students will develop a sense of appreciation of women in all walks of life.	

Course Name: : SKILL DEVELOPMENT COURSE (PROLOG/ LISP/ PYSWIP)

Course Code: 22AI405PC		Academic Year: 2023-2024
CO1	Build a custom website with HTML, CSS, and Bootstrap and little JavaScript.	
CO2	Demonstrate Advanced features of JavaScript and learn about JDBC	
CO3	Develop Server – side implementation using Java technologies like	
CO4	Develop the server – side implementation using Node JS.	
CO5	Design a Single Page Application using React.	

Course Name: SKILL DEVELOPMENT COURSE (NODE JS/ REACT JS/ DJANGO)

Course Code: 22AI305PC		Academic Year: 2023-2024
CO1	Build a custom website with HTML, CSS, and Bootstrap and little JavaScript.	
CO2	Demonstrate Advanced features of JavaScript and learn about JDBC	
CO3	Develop Server – side implementation using Java technologies like	
CO4	Develop the server – side implementation using Node JS.	
CO5	Design a Single Page Application using React.	

Coordinator

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