

B.TECH. 3rd SEM

DIGITAL ELECTRONICS

Category: Engineering Science courses

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Outline the general concepts and terminology related to logic gates, logic families, combinational and sequential circuits.
(CO2)	Discuss the basic analog/digital components and their interconnections in logic families and circuits.
(CO3)	Apply different methods/techniques to design various digital circuits.
(CO4)	Analyze day to day problems and industrial problems for their solutions using digital circuits.
(CO5)	Contrast different types of digital circuits and their designing methods and Design digital circuit for various practical problems.

ADVANCE DATA STRUCTURE

Category: Professional Core Courses

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Design and Analyze programming problem statements.
(CO2)	Understand the ADT/libraries, and use it to design algorithms for a specific problem.
(CO3)	Select algorithm design approaches in a problem-specific manner.
(CO4)	Compare & contrast the complexity analysis of various sorting & searching algorithms.
(CO5)	To be able to analyze the efficiency of algorithms and Implement various data structure concepts on real-world industrial problems.

DATABASE MANAGEMENT SYSTEMS WITH SQL

Category: Professional Core Courses

Course Outcome (CO)	Details of Course Outcomes
(CO1)	For a given query, write relational algebra expressions for that query and optimize the developed expressions
(CO2)	For a given requirement specification, design the databases using E R method and normalization.
(CO3)	For a given specification, construct the SQL queries for Open source and Commercial DBMS - MYSQL, ORACLE, and DB2.
(CO4)	For a given query, optimize its execution using Query optimization algorithms
(CO5)	For a given transaction-processing system, determine the transaction atomicity, consistency, isolation, and durability and Implement the isolation property, including locking, and time stamping based on concurrency control and Serializability of scheduling

PROGRAMMING WITH C++

Category: Professional Core Courses

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Understand the concept of Object-Oriented Programming through C++
(CO2)	Identify importance of object-oriented programming and difference between Procedural programming and object oriented programming features.
(CO3)	Be able to make use of objects and classes for developing programs.
(CO4)	Be able to use various object-oriented concepts to solve different problems.
(CO5)	Be able to develop the programs /Projects using some advanced features of C++ Programming.

CALCULUS AND ORDINARY DIFFERENTIAL EQUATIONS

Category: Basic Science Courses

Course Outcome (CO)	Details of Course Outcomes
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(CO1)	Deal with functions of several variables and evaluate partial derivative.
(CO2)	Evaluate multiple integrals and their usage.
(CO3)	Solve ordinary differential equations that model physical processes.
(CO4)	Formulate and solve problems involving moment of inertia, volume and centre of gravity
(CO5)	Solve engineering problems related to oscillatory electric circuits and also Solve field problems in engineering involving Ordinary Differential Equations like R-L-C circuits and to find heat loss

INTRODUCTION TO AI and ML

Category: Professional Core Courses

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Formulate a problem and build intelligent agents.
(CO2)	Apply basic principles of AI in solutions that require problem solving, inference, knowledge representation and learning.
(CO3)	Analyze the problem and infer new knowledge using suitable knowledge representation schemes.
(CO4)	Develop planning and apply learning algorithms on real world problems.
(CO5)	Design an expert system and implement advance techniques in Artificial Intelligence and Create a real life and industrial problems related mini project.

CONSTITUTION OF INDIA

Category: Mandatory courses

Course Outcome (CO)	Details of Course Outcomes
(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 a revolution in India
(CO3)	Exercise his fundamental rights in proper sense at the same time identifies his responsibilities in national building.
(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 And Analyze the Indian political system, the powers and functions of the Union, State and Local Governments in detail.

DIGITAL ELECTRONICS LAB

Category: Laboratory course

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Identify the fundamental elements of relational database management systems.
(CO2)	Design and explain the basic concepts of relational data model, entity-relationship model, and relational database design.
(CO3)	Apply the relational database theory to formulate basic and advanced SQL queries and relational algebra expressions for the queries.
(CO4)	Identify the use of normalization and functional dependency in database design.
(CO5)	Understand the concept of transactions and serializability in database management system and Classify the implementation details of Concurrency control protocols and discuss various database recovery methods.

ADVANCED DATA STRUCTURE LAB

Category: Laboratory course

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Identify the appropriate data structure for a given problem.
(CO2)	Implement Dictionary by using hashing techniques.
(CO3)	Analyze various basic operations of trees to improve the efficiency
(CO4)	Build a Binary Heap using Priority queues.
(CO5)	Apply the concepts of data structures in various real-world applications. And Identify, model, solve and develop algorithms for real-life problems like shortest path and MST using graph theory.

PROGRAMMING WITH C++ LAB

Category: Laboratory course

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Understand dynamic memory management techniques using pointers, constructors, destructors, etc.
(CO2)	Describe the concept of function overloading, operator overloading, virtual functions and polymorphism.
(CO3)	Classify inheritance with the understanding of early and late binding
(CO4)	Usage of exception handling and generic programming.
(CO5)	Develop the programs /Projects using some advanced features of C++ Programming and Percept the utility and applicability of OOP.

DATABASE MANAGEMENT SYSTEM LAB

Category: Laboratory course

Course Outcome (CO)	Details of Course Outcomes
(CO1)	Identify the fundamental elements of relational database management systems.
(CO2)	Design and explain the basic concepts of relational data model, entity-relationship model, and relational database design.
(CO3)	Apply the relational database theory to formulate basic and advanced SQL queries and relational algebra expressions for the queries.
(CO4)	Identify the use of normalization and functional dependency in database design.
(CO5)	Understand the concept of transactions and serializability in database management system and Classify the implementation details of Concurrency control protocols and discuss various database recovery methods.