

Department of Computer Science and Engineering

B.E. 5th Sem

Course: Database Management Systems

Course Code: (5KS01)

At the end of Database Management System course the student will be able to:

CO NO.	Course Outcome	Level
CO 1	Use, design and normalize databases for real life applications.	L3
CO 2	Discuss data models, conceptualize and depict a database system using ER diagram.	L2
CO 3	Implement database applications using Query Languages like SQL.	L3
CO 4	Examine transaction processing approach for relational databases.	L4
CO 5	Evaluate validation framework like integrity constraints, triggers and assertions.	L5
CO 6	Explain the concepts of recovery system with its algorithm and Concurrency Control.	L2

Course: Compiler Design

Course Code: (5KS02)

At the end of Compiler Design course, the student will be able to:

CO NO.	Course Outcome	Level
CO 1	Describe the fundamentals of compiler and various phases of compilers.	L2
CO 2	Design and implement LL and LR parsers.	L5
CO 3	Solve the various parsing techniques like SLR, CLR and LALR.	L3
CO 4	Examine the concept of Syntax-Directed Definition and translation.	L4
CO 5	Illustrate the concept of Intermediate-Code Generation and run-time environment.	L3
CO 6	Explain the concept of code generation and code optimization.	L2

Course: Computer Architecture and Organization**Course Code: (5KS03)**

At the end of Computer Architecture and Organization course the student will be able to:

CO NO.	Course Outcome	Level
CO 1	Discuss basic structure of computer.	L2
CO 2	Explain the basic operation of the CPU.	L2
CO 3	Compare and select various Memory and I/O devices as per requirement.	L4
CO 4	Solve the concepts of number representation and their operation.	L3
CO 5	Explain the concept of parallel processing and pipelining.	L2
CO 6	Describe the basic concepts of the Memory Unit.	L2

Course: Data Science and Statistics (PE-I)**Course Code: (5KS04)**

At the end of Data Science and Statistics course the student will be able to:

CO NO.	Course Outcome	Level
CO 1	Explain basics and need of Data Science.	L2
CO 2	Demonstrate proficiency with statistical analysis of data.	L3
CO 3	Apply linear and multiple linear regression analysis.	L3
CO 4	Develop the ability to build and assess classification-based models.	L5
CO 5	Calculate outcomes and make decisions based on data.	L4
CO 6	Compare machine learning techniques to solve data science business problems	L4

NOT APPLICABLE**Course: Data Structures and Algorithms (OE-I)****Course Code: (5KS05)**

At the end of Analog & Digital Electronics course the student will be able:

CO NO.	Course Outcome	Level
CO 1	To describe the basic of data structures and algorithms.	L1
CO 2	To explain data structure array and linked list.	L2
CO 3	To illustrate with example stack and queue operations.	L3
CO 4	To examine the binary tree traversal methods.	L4
CO 5	To construct graph and shortest path algorithm in graph.	L5
CO 6	To inspect various sorting algorithms.	L4

Lab: Database Management Systems**Lab Code: (5KS01)**

At the end of Database Management System lab course, the student will be able to:

LO NO.	Laboratory Outcome	Level
LO 1	Design and develop Databases.	L5
LO 2	Use and implement DDL, DML commands to manage database users and permission.	L3
LO 3	Use and implement various set operators, aggregate functions, joins and Clauses.	L3

Lab: Compiler Design**Lab Code: (5KS07)**

At the end of Compiler Design course, the student will be able to:

LO NO.	Laboratory Outcome	Level
LO 1	Identify the fundamentals of the compiler and its phases and various optimization techniques.	L1
LO 2	Use the powerful compiler generation tools such as lex and yacc.	L3
LO 3	Develop a program for solving parser problems.	L5
LO 4	Write a lexical scanner, either from scratch or using lex	L3

Lab: Emerging Technology Lab-I**Lab Code: (5KS08)**

At the end of Data Science and Statistics lab course the student will be able to:

LO NO.	Laboratory Outcome	Level
LO 1	Apply Python's, Numpy, Pandas, Matplotlib, Seaborn libraries for ML applications.	L3
LO 2	Analyze the different datasets using Exploratory data analysis.	L4
LO 3	Create various machine learning models based on algorithms such as LR, LOR, DT, Random Forest, K-nearest neighbor, K-Means.	L5

Lab: C-Skill Lab-III**Lab Code: (5KS09)**

At the end of C-Skill lab-III lab course the student will be able to:

LO NO.	Laboratory Outcome	Level
LO 1	Explain the various tools, packages and modules required for web development.	L2
LO 2	Discuss the working of web servers, cookies, routes etc.	L2
LO 3	Design GUI using JS framework and/or Libraries.	L5

B.E. 6th Sem

Course: Security Policy and Governance

Course Code: (6KS01)

At the end of Security Policy and Governance course the student will be able to:

CO NO.	Course Outcome	Level
CO 1	List and explain the key characteristics of Information Security, Leadership and Management.	L2
CO 2	Distinguish between Law and Ethics.	L2
CO 3	Describe why ethical codes of conduct are important to information.	L1
CO 4	Explain the importance, benefits and desired outcome of information security governance.	L2
CO 5	Explain the process of developing, implementing and maintaining various types of Information Security Policies.	L2
CO 6	Define Risk Management and its role in the organization.	L1

Course: Design and Analysis of Algorithm

Course Code: (6KS02)

At the end of Design and Analysis of Algorithm course the student will be able to:

CO NO.	Course Outcome	Level
CO 1	Understand different algorithmic design strategies.	L2
CO 2	Carry out the analysis of various Algorithms for mainly Time complexity.	L4
CO 3	Apply design principles and concepts to algorithm design.	L3
CO 4	Apply the standard sorting algorithms.	L3
CO 5	Describe backtracking strategy and backtracking framework.	L2
CO 6	Analyze the efficiency of algorithms using time complexity.	L4

Course: Software Engineering**Course Code: (6KS03)**

At the end of Software Engineering course, the student will be able to:

CO NO.	Course Outcome	Level
CO 1	Explain various process model for developing a software project.	L2
CO 2	Describe basics of Project management, Plan, schedule and execute a project considering the risk management.	L2
CO 3	Apply quality attributes in software development life cycle to ensure good quality software.	L3
CO 4	Apply System Engineering principles to design the complex system	L3
CO 5	Analyze effectively about software architecture and user interface design	L4
CO 6	Design test cases of a software system.	L5

Course: Big Data Analytics (PE-II)**Course Code: (6KS04)**

At the end of Big Data Analytics course the student will be able to:

CO NO.	Course Outcome	Level
CO 1	Outline with big data tools and its analysis techniques.	L4
CO 2	Illustrate and apply basic data analysis methods for prediction.	L3
CO 3	Analyze the data by utilizing clustering and classification algorithms.	L4
CO 4	Apply different algorithms and recommendation systems for large volumes of data.	L3
CO 5	Operate analytics on data streams.	L3
CO 6	Analyze NoSQL databases and management.	L4

Course: Data Communication and Internet (OE-II)**Course Code: (6KS05)**

At the end of Data Communication and Internet course the student will be able to:

CO NO.	Course Outcome	Level
CO 1	Develop an understanding of computer networking basics.	L5
CO 2	Develop and understanding of different components of data communication, various protocols.	L5
CO 3	Discuss on information sharing and networks.	L2
CO 4	Describe flow of data, categories of network, different topologies.	L1
CO 5	Interpret signals, transmission media, errors in media communications and their correction.	L3
CO 6	Describe the building blocks of a digital communication system.	L2

Lab: Design and Analysis of Algorithm**Lab Code: (6KS06)**

At the end of Design and Analysis of algorithm lab course the student will be able to:

LO NO.	Laboratory Outcome	Level
LO 1	Carry Out the analysis of various algorithm for time complexity.	L4
LO 2	Apply the principle and concepts to algorithm design.	L3
LO 3	Analyze the efficiency of algorithm using time complexity.	L3

Course: Software Engineering**Course Code: (6KS07)**

At the end of Software Engineering lab course, the student will be able to:

LO NO.	Laboratory Outcome	Level
LO 1	Use and implement different types of Structural diagrams and Behavioral diagrams.	L3
LO 2	Prepare problem statements and SRS for any project.	L3
LO 3	Prepare test cases for any real time system.	L5

Lab: Emerging Technology Lab-II**Lab Code: (6KS08)**

At the end of Big Data Analytics lab course, the student will be able to:

LO NO.	Laboratory Outcome	Level
LO 1	Analyze the different datasets using Exploratory data analysis in KNIME	L4
LO 2	Create various machine learning models based on algorithms such as LR, LOR, DT, Random forest, K-nearest neighbor, K-Means in KNIME.	L5
LO 3	Apply different MongoDB commands on the data stored in MongoDB database.	L3

Course: C Skill Lab-IV**Course Code: (6KS09)**

At the C Skill Lab-IV lab course the student will be able to:

LO NO.	Laboratory Outcome	Level
LO 1	Install and setup, Create and run jobs, Create and run pipelines in Jenkins	L5
LO 2	Add and manage plugins, Use plugins in job	L3
LO 3	Setup, configure, and deploy jobs	L3