

SIR C R REDDY COLLEGE FOR WOMEN
COMPUTER SCIENCE DEPARTMENT
B.Sc course outcomes

Semester – I

Subject: Problem Solving in C

Course Objectives

- This course aims to provide exposure to problem-solving through programming.
- It introduces the concepts of the C Programming language.

Course Outcomes

CO1: Understand the evolution and functionality of a Digital Computer.

CO2: Apply logical skills to analyze a given problem.

CO3 : Apply ‘C’ language constructs to the algorithms to write a ‘C’ language program.

CO4: To convert algorithms into programs using C .

CO5: Understand ‘C’ language constructs like Iterative statements

CO6: Implement different Operations on arrays and Strings

CO 7 : Design and Develop user defined functions for applications

CO 8: Design and develop programs using various data structures

CO 9: Build applications using files

Unit 1: CO-1,2

Unit 2: CO-3,4,5

Unit 3: CO- 6

Unit 4: CO-7,8

Unit 5: CO-9

Semester: II

Course: 2 DATA STRUCTURES USING C

Course Objectives:

- To provide the knowledge of basic data structures and their implementations.
- To understand importance of data structures in context of writing efficient programs.
- To develop skills to apply appropriate data structures in problem solving.

Course Outcomes:

Upon successful completion of the course, a student will be able to:

- CO1: Understand available Data Structures for data storage and processing.
- CO2: Ability to estimate the algorithmic complexity of simple, non-recursive programs.
- CO3: Ability to program data structures and use them in implementations of abstract data types.
- CO4: Have knowledge on Data Structures basic operations like insert, delete, search, update and traversal.
- CO5: Implement abstract data types using arrays and linked list.
- CO6: Apply the different linear data structures like stack and queue to various computing problems.
- CO7: Implement different types of trees and apply them to problem solutions.
- CO8: Analyze the various sorting and searching algorithms.
- CO9: Discuss graph structure and understand various operations on graphs and their applicability.

Unit 1: CO-1,2,3

Unit 2: CO-4,5

Unit 3: CO-6

Unit 4: CO-7

Unit 5: CO-8,9

SEMESTER –III

DataBase Management System

Course objective:

- The objectives of the course are to introduce the design and development of databases with special emphasis on relational databases.

Course Outcomes:

CO1: Gain knowledge of database DBMS.

CO2: Understand the fundamental concepts of DBMS with special emphasis on relational data model.

CO3: Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.

CO4: Model database using ER Diagrams and design database schemas based on the model.

CO5: Create a small database using SQL.

CO6: Ability in creations, manipulation and querying of data in databases.

CO7: Store, Retrieve data in database.

CO8: Analyze PL/SQL structures like functions, procedures and triggers for database applications.

Unit 1: CO-1

Unit 2: CO-2

Unit 3: CO-3, 4

Unit 4: CO-5, 6, 7

Unit 5: CO-8

Semester-IV

Subject: OBJECT ORIENTED PROGRAMMING USING JAVA

Course objective:

- To introduce the fundamental concepts of Object Oriented programming.
- To design and implement object oriented programming concepts in Java.

Course Outcomes:

After completing this course satisfactorily, a student will be able to:

CO-1: Summarize the OOPs concepts and basics of java programming (Console and GUI based).

CO-2: Understand underlying principles of Object-Oriented Programming in Java

CO-3: Illustrate the benefits of a well-structured program.

CO-4: Develop problem-solving and programming skills using OOPS concepts

CO-5: Having basic Knowledge on constructors and Inheritance.

CO-6: Demonstrate how to handle errors using exception handling technique

CO-7: Gain knowledge on packages and interfaces to develop programs.

CO-8: Describe the differences between threads, multithreading & deadlocks.

CO-9: Make use of FileInputStream & FileOutputStream to read and write Data.

CO-10: Understand concepts of Applets and JDBC (Java Database Connectivity).

CO-11: Develop the ability to use jdbc- odbc Bridge Driver to Connect to Oracle Database

Unit 1 : CO -1,2, 3

Unit 2 : CO-4,5

Unit 3: CO -6,7

Unit 4 : CO- 8,9

Unit 5 : CO-10,11

Semester – IV

Subject: OPERATING SYSTEMS

Course Objectives:

- This course aims to introduce the structure and organization of a file system.
- It emphasizes various functions of an operating system like memory management, process management, device management, etc.

Course Outcomes:

CO 1 : Know Computer system resources and the role of operating system in resource management with algorithms

CO 2: Understand Operating System Architectural design and its services.

CO 3 : Gain knowledge of various types of operating systems including UNIX and Android.

CO 4 : Understand various process scheduling algorithms

CO 5 : Have a basic knowledge about multithreading.

CO 6 : Understand various process management concepts including synchronization, and deadlocks.

CO 7 : Comprehend different approaches for memory management.

CO 8 : Understand and identify potential threats to operating systems and the security features design to guard against them.

CO 9 : Describe the functions of a contemporary operating system.

Unit 1 : CO -1,2, 3

Unit 2 : CO-4,5

Unit 3: CO -6

Unit 4 : CO- 7

Unit 5 : CO-8,9

Semester: V

Course: 6C Data science

Course Objectives:

- Data Science is a fast-growing interdisciplinary field, focusing on the analysis of data to extract knowledge and insight.
- This course will introduce students to the collection, Preparation, analysis, modeling and visualization of data, covering both conceptual and practical issues. Examples and case studies from diverse fields will be presented, and hands-on use of statistical and data manipulation software will be included.
- Provide strong core training so that graduates can adapt easily to changes and new demands from industry.

Course Outcomes:

Students after successful completion of the course will be able to:

Co's 1 : aware of the challenges that arise in Data Sciences.

Co's 2 : Understand the processes of data science identifying the problem to be solved.

Co's 3 : Be comfortable using open source tool such as the Python language and its associated libraries for data analytics and Visualization.

Co's 4 : Develop an ability to Visualize data using Matplotlib Module.

Co's 5 : Learn the basics of linear algebra and understand how and when they're used in data science.

Co's 6 : Able to learn Statistics, refers to the mathematics and techniques with which students can understand data using Central Tendencies ,Dispersion,Correlation etc.

Co's 7 :Students will demonstrate ability in mathematical techniques---including basic probability, Hypothesis and Inference,Gradient Descent and modeling principles---necessary to understand statistical methods typically applied in data analysis.

Co's 8 : Able to experience how to get data from different types of sources like standard input/output stream,Text Files,Delimited Files ,Scraping the Web and able to use APIs which allow students to explicitly request data in a structured format.

Co's 9 : Develop the ability of doing One, Two,Many Dimensional Data,Clean the data like finding missing values,outliers etc,Munging,Manipulating Data,Rescaling for scale the data,Dimensionality Reduction using stochastic gradient descent.

Co's 10 : Able to understand Basics of Machine Learning and terms like overfitting,underfitting conditions,The Bias-Variance Trade-off and able to do Feature Extraction and Selection .

Co's 11 : Able to learn about a supervised learning algorithm that is popularly known as the KNN or the k – Nearest Neighbours and its implementation.

Co's 12 : Can Gain knowledge on Naive Bayes classifiers are a collection of classification algorithms based on Bayes' Theorem and its implementation.

Co's 13 : Able to learn about a Simple Linear Regression Using Gradient Descent, Maximum Likelihood Estimation to understand the nature of the relationship.

Co's 14 : Were able to understand the Multiple Regression algorithm which models the linear relationship between a single dependent continuous variable and more than one independent variable.

Co's 15 : Able to learn about a Logistic regression algorithm which is a Supervised Learning technique used for predicting the categorical dependent variable using a given set of independent variables.

Co's 16 : were able to understand decision tree is one of the most powerful tools of supervised learning algorithms and Random Forests Algorithm.

Co's 17 : Can Gain knowledge on Perceptron, Different types of Neural Networks like Feed-Forward Neural Networks And Back propagation with example.

Co's 18 : Able to learn about Clustering is an unsupervised learning algorithm, which groups the unlabelled dataset and learns about K-means Clustering ,Bottom up Hierarchical Clustering.

Unit 1 : CO -1,2,3,4,5

Unit 2 : CO-6,7

Unit 3: CO -8,9,10

Unit 4 : CO- 11,12,13,14

Unit 5 : CO-15,16,17,18

Semester: V

Course: 7C Python for Data science

Course Objectives:

- Students will learn about a very popular general-purpose interpreted, interactive, object-oriented, and high-level programming language (i.e) PYTHON.
- To learn how to design and program Python applications using data science.

Course Outcomes:

Students after successful completion of the course will be able to:

CO 1:Identify the need for data science and solve basic problems using Python built-in data types and their methods.

CO 2:Design an application with user-defined modules and packages using OOP concepts.

CO 3:To learn how to use exception handling in Python applications for error handling.

CO 4:Employ efficient storage and data operations using NumPy arrays.

CO 5:Apply powerful data manipulations using Pandas.

CO6:Do data pre-processing and visualization using Pandas

Unit 1 : CO -1

Unit 2 : CO-2,CO-3

Unit 3: CO -4,

Unit 4 : CO- 5

Unit 5 : CO-6