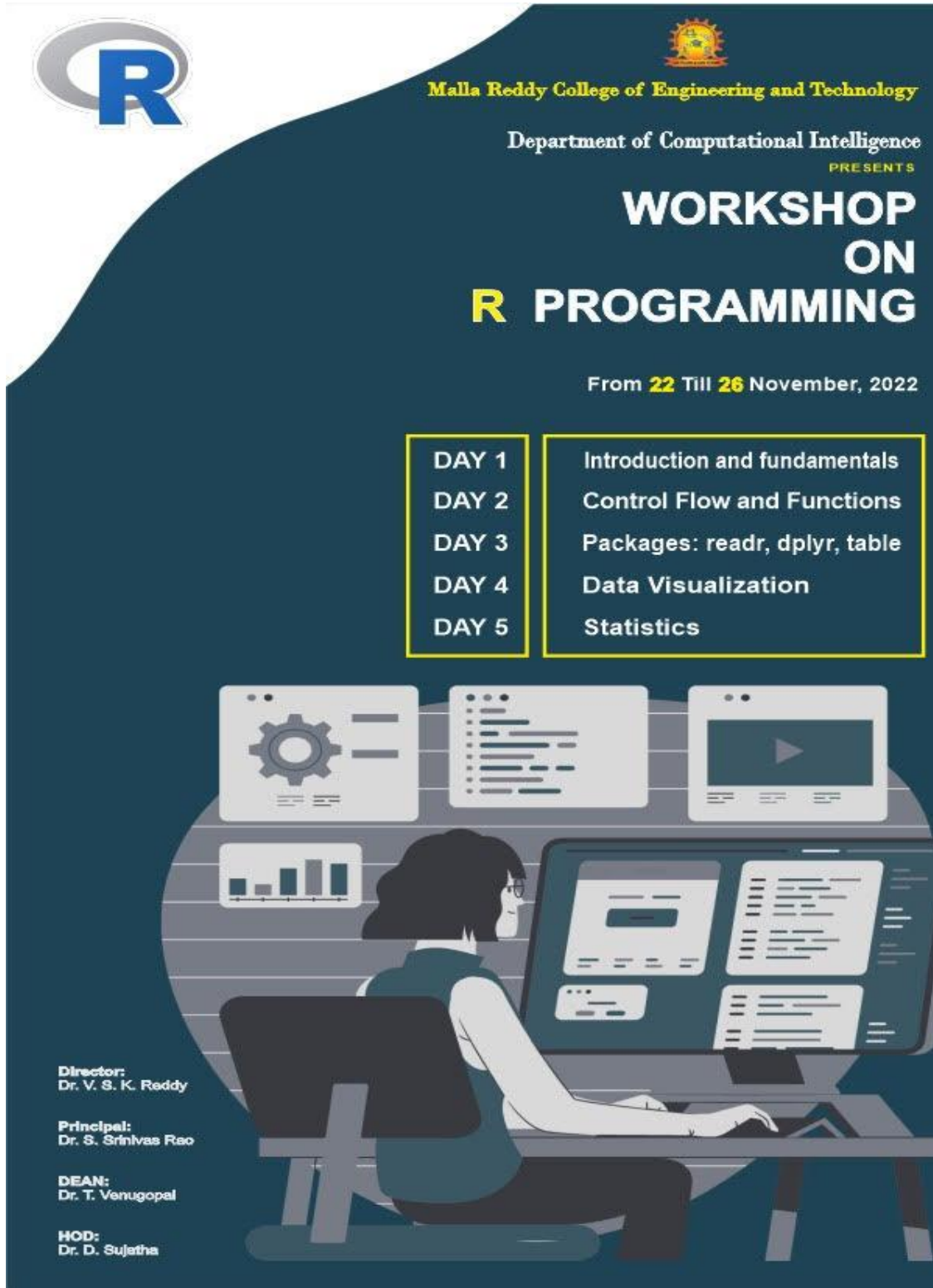


MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY  
DEPARTMENT OF COMPUTATIONAL INTELLIGENCE  
REPORT ON 5 DAYS WORKSHOP ON R PROGRAMMING



The poster features a dark blue background with a white R logo in the top left. At the top right is the college's crest. The main title 'WORKSHOP ON R PROGRAMMING' is in large white and yellow letters. Below it, the dates 'From 22 Till 26 November, 2022' are shown. A central table lists the five days of the workshop. At the bottom, there is an illustration of a person sitting at a desk with multiple computer monitors displaying code and data visualizations. On the left side, the names of the Director, Principal, Dean, and HOD are listed.

**R**

Malla Reddy College of Engineering and Technology  
Department of Computational Intelligence  
PRESENTS

# WORKSHOP ON R PROGRAMMING

From **22** Till **26** November, 2022

DAY 1	Introduction and fundamentals
DAY 2	Control Flow and Functions
DAY 3	Packages: readr, dplyr, table
DAY 4	Data Visualization
DAY 5	Statistics

Director:  
Dr. V. S. K. Reddy

Principal:  
Dr. S. Srinivas Rao

DEAN:  
Dr. T. Venugopal

HOD:  
Dr. D. Sujatha

The 5 day R programming workshop started on 22<sup>nd</sup> November 2022 for the 2<sup>nd</sup> year B.Tech students of the branches AI&DS and AI&ML which was initiated by our respected principal sir, Head of the Department and all the faculty. Principal sir encouraged and gave all the information about the workshop and its prominence In the future to all the students. Our beloved HOD madam introduced the workshop mentor Mr.Chaitanya and then the workshop commenced in the newly inaugurated lab which was fully equipped with all the required facilities.

R is an integrated suite of software facilities for data manipulation, calculation and graphical display. It includes an effective data handling and storage facility, a suite of operators for calculations on arrays, in particular matrices, a large, coherent, integrated collection of intermediate tools for data analysis, graphical facilities for data analysis and display either on-screen or on hardcopy, and a well-developed, simple and effective programming language which includes conditionals, loops, user-defined recursive functions and input and output facilities.

The detailed day to day schedule of the workshop is given below.

#### Day 1

1. Installation and downloading, features of R programming and its interface
2. Declaration and assignment of variables and how to print them
3. Types of data types and syntax for finding the data type of a variable
4. Types of Operators (symbol, usage, examples)
5. Conditional and unconditional statements (syntax, examples) and syntax for taking input from the user
6. Types of loops (syntax, examples) & Sequence function, usage of range in them
7. Vector (syntax, example), other built-in functions like min (), max (), prod (), sum (), mean (), median ()
8. Programs regarding above topics and assignment questions

#### Day 2

1. Functions (syntax, examples), scope of local and global variable
2. Accessing and slicing of vectors, escape sequences, inbuilt functions concatenate and paste functions
3. Matrix
  - Creation and arrangement of elements using a vector
  - Number of rows and columns and their names
  - Adding new rows, columns and updated names and transposing a matrix
  - Inbuilt functions of matrix which apply on individual rows and columns

#### Day 3

1. List (declaration, accessing, usage, syntax)
2. Factors (declaration, ranking, usage, syntax) and how to get the structures
3. How to import and export a csv file, and their manipulations
4. Introduction to data frames and their manipulations
5. Installation of packages like tidyverse , ggplot2 ,tibble ,dplyr

#### Day 4

1. Data transformation
  - Real time data set manipulation

- Handling the inbuilt functions of tidyverse like select(), filter(), group\_by(), summarize(),summary(),count()
  - Introduction and usage of pipe operator
2. Data visualization and its layers
    - Histograms and their inbuilt functions
    - Bar graphs and their inbuilt functions

#### Day 5

1. Data visualization
  - Scatters plot
  - Pie chart (2D,3D)
  - Skewness and its types
2. Statistics
  - Mean, median, mode, variance and standard deviation and their programs
3. Object oriented programing in R
  - Classes, objects, methods, inheritance (declaration, syntax, usage)
  - Explanation of Abstraction, encapsulation
  - Implementation of polymorphism through different graphs

This is the first workshop for the second year students of our department that successfully came to an end on 26<sup>th</sup> November 2022 and it was attended by 140 students which they utilized to their full potential with the help of our beloved HOD ma'am and faculty.

