

# € TRAINING

R Programming



1 - 5 September 2024  
Dubai (UAE)



# R Programming

REF: B1738 DATE: 1 - 5 September 2024 Venue: Dubai (UAE) - Fee: 5310 Euro

## Introduction:

This training program provides participants with essential knowledge and skills in R programming. It empowers them to use R for data analysis, statistical computing, and data visualization effectively.

## Program Objectives:

At the end of this program, participants will be able to:

- Understand the basics of R programming language.
- Perform data manipulation and analysis using R.
- Create visualizations to represent data insights.
- Apply statistical methods and models using R.
- Utilize R for reproducible research and reporting.

## Targeted Audience:

- Data Analysts.
- Statisticians.
- Data Scientists.
- Researchers.
- Professionals interested in data analysis.

## Program Outline:

### Unit 1:

#### Introduction to R Programming:

- Overview of R and its applications.
- Setting up the R environment.
- Basic syntax and data types in R.

- Working with vectors, matrices, and lists.
- Introduction to R packages and libraries.

## Unit 2:

### Data Manipulation in R:

- Importing and exporting data.
- Data cleaning and preprocessing.
- Using dplyr for data manipulation.
- Handling missing values and outliers.
- Summarizing and aggregating data.

## Unit 3:

### Data Visualization with R:

- Introduction to data visualization principles.
- Creating basic plots using base R.
- Advanced visualizations with ggplot2.
- Customizing and saving plots.
- Interactive visualizations with plotly.

## Unit 4:

### Statistical Analysis with R:

- Descriptive statistics and exploratory data analysis.
- Inferential statistics: hypothesis testing, t-tests, chi-square tests.
- Correlation and regression analysis.
- Analysis of variance ANOVA.
- Time series analysis.

## Unit 5:



## Advanced Topics and Best Practices:

- Writing and debugging R scripts.
- Functional programming in R.
- Reproducible research with RMarkdown.
- Introduction to Shiny for building web applications.
- Best practices for efficient R programming.