

€ TRAINING

R Programming



29 July - 2 August 2024
Barcelona (Spain)



R Programming

REF: B1738 DATE: 29 July - 2 August 2024 Venue: Barcelona (Spain) - Fee: 6145 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.