

# Introduction to R

Dates: 23-27 September 2024 (Time: 13:00-15:00), Sala del Capitolo, Badia Fiesolana

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Register [online](#)

## **Description:**

This workshop is designed for individuals who are new to R or have limited experience with it.

It aims to provide participants with the fundamental skills to work effectively in the RStudio environment and conduct statistical programming tasks.

The course covers basic operations with R objects (vectors, data frames), data loading and unloading, creating different graphs, conducting statistical tests, and basic modeling.

## **Course Outline:**

Overview of R and its advantages over other statistical packages (Stata, SPSS)  
Getting familiar with RStudio

Basic calculations and mathematical operators in R

Storing results: Understanding object classes (scalar, vector, factor, list, matrix, arrays, data frames)

Working with vectors: Types (integer, numeric, logical, character) and basic operations

## **Data Handling**

Introduction to data frames and data management

Loading data into R: Working with different file formats (csv, dta, sav, etc.)

Basics of programming in R: Logical conditions ("if", "else", "else if" operators) and loops ("for", "while" operators)

Functions in R: Writing and using functions effectively

Data visualization: Creating various charts in R (histograms, barplots, scatterplots) with the ggplot2 package

Saving and publishing data

Writing clean and organized code: Best practices

### **Basic Statistics and Modeling**

Working with simple statistical measures in R

One-dimensional and two-dimensional statistical test

Correlations and regressions: Linear, logistic and panel data regression using functions `lm()`, `glm()` and `plm()`

Saving and presenting statistical results

### **Format:**

Each session starts with an introductory lecture followed by practical exercises. Participants will need to bring their own laptops with R and RStudio installed.

**Note:** The course can be slightly adapted to the special needs of the group.