DEPARTMENT
OF POLITICAL AND
SOCIAL SCIENCES

September Programme, Academic Year 2022-2023

Preparatory Workshop: Introduction to R

Dates: 26 - 30 September 2022

Time: 13:00 - 15:00

Refectory room, Badia Fiesolana

Instructor:
Giacomo Vagni, Max Weber Fellow and SPS Part-Time Professor

Register online
Contact: Monika.Rzemieniecka@eui.eu

Description

This workshop introduces researchers to statistical programming using R and RStudio. Researchers will learn how to import social science surveys into R, perform basic data transformation, learn how to visualise data and how to share their results. By the end of the workshop, researchers will be familiar with R and will have acquired the basic skills of statistical programming. The workshop is recommended for researchers with no prior knowledge of R (which will be the software used in the first term course 'Introduction to Quantitative Methods').

Format

Each session will consist of an introductory lecture followed by lab exercises. Researchers should bring their own computer with R installed.

Before the workshop

For the workshop, you will need to have **both** R and RStudio working on your laptops. If you don't have them already, you can download them from the following links:

- R – https://cran.r-project.org/
- RStudio (Desktop version, Open Source edition) – https://rstudio.com/products/rstudio/

General Bibliography

- Wickham, H., & Grolemund, G. (2016). *R for data science: import, tidy, transform, visualize, and model data.* O'Reilly. Link: https://r4ds.had.co.nz/index.html
- Grolemund, G. (2014). *Hands-on programming with R: Write your own functions and simulations*. O'Reilly. Link: https://rstudio-education.github.io/hopr/

Course structure

Day 1: Basics of R and RStudio

In this first session, we will learn the very basics of R and RStudio.

Resources for Day 1
• https://www.statmethods.net/r-tutorial/index.html
• https://rstudio-education.github.io/hopr/basics.html
• https://r4ds.had.co.nz/introduction.html
• https://rstudio-education.github.io/hopr/packages.html

Day 2: Data manipulation

This second session will focus on data preparation, such as subsetting, selecting, summarising, merging, and general data wrangling.

Resources for Day 2
• https://r4ds.had.co.nz/transform.html
• https://r4ds.had.co.nz/wrangle-intro.html

Day 3: Introduction to visualization

This session will focus on data visualisation using R.

Resources for Day 3
• https://r4ds.had.co.nz/data-visualisation.html
• https://ggplot2-book.org/getting-started.html
• https://www.statmethods.net/graphs/index.html

Day 4: Basic statistics with R

In this 4th session, we will learn about the basic tools that R offers for statistical analysis. We will see how to import and analyse social science datasets.

Resources for Day 4
• https://www.statmethods.net/stats/index.html
• https://r4ds.had.co.nz/exploratory-data-analysis.html
• https://haven.tidyverse.org

Day 5: Reproductible Research

On the last day, we will learn how to export our results and create reproductive documents using RMardown.

Resources for Day 4
• https://bookdown.org/yihui/rmarkdown/basics.html