Universitat Pompeu Fabra Barcelona

Introduction to R

Duration: 8 hours/2 days

February 16-17	09:00-13:00

Course Description
R is a free programming language designed to apply statistical analysis and produce data visualization. Among its endless capabilities, R is famous among statistical software for its flexibility in creating functions, packages, data visualization, and for offering a wide range of statistical tools.

The aim of this course is to introduce the R language and give hands-on experience on how to use it.

Why should you attend the course?
The R Project for Statistical Computing is an open-source environment, and has become the 'lingua franca of statistics' and the software of choice for analyzing data in various disciplines. This course provides participants with the introductory tools for doing quantitative research using the R programming language. An increasing emphasis in and outside academia is being placed on the skills needed to effectively gather, handle, model, and analyze data as well as present results to a range of audiences.
This course lays the necessary foundation for becoming a proficient R user. This course is also suitable for those participants that want to take part in other RECSM courses and feel they need to refresh their R skills. Many courses at the RECSM summer school are conducted in R and we want to make sure you understand the most in the least possible time. The course will concentrate on two core objectives: understanding the building blocks of R and learning to understand R code.

Prerequisites
This course has no formal prerequisites.

Course Content
Day 1
- Introduction to R objects (reading/writing data, basic objects)
- Data cleaning, merging, types of data, getting help when things don't work

Day 2
- Data visualization, Mapping, Data analysis
- Data analysis (II), Communicating results

Class Pace
We understand that students come from diverse backgrounds. The only way we will know if students do not understand the material is if they ask questions. So questions are strongly encouraged.
Students should always feel free to interrupt lectures with questions. These are the most important questions-they will indicate that we need to slow down the course.

This course mainly offers hands-on practical sessions. Participants will learn the foundations of R language, will work with different types of data (i.e. surveys and country-level data), will learn how to run and plot statistical analyses and will become versed on the basic principles of the R world!

References
These references are really useful to understand basic R structures as well as advanced Rcode:
• Leeper, Thomas. 2016. Really Introductory Introduction to R.
• Grolemund, Garrett and Hadley Wickham. 2016. R for Data Science. O'Reilly.

• Monoan III, James E. 2015. A Beginner's Guide to R. Springer.
• Dalgaard, Peter. 2017. Introductory Statistics with R. Springer.