

Course Description: A Brief Introduction to Programming with R

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04/09/2020

Prerequisites

- Install the latest R version. R is open source and freely available from here: <https://stat.ethz.ch/CRAN/>. Click on the respective link for your operating system (Windows, Mac, Linux), and follow the instructions.
- Once R is installed, install RStudio from here: <https://www.rstudio.com/products/rstudio/download/#download>. Under “Installers for Supported Platforms”, click on the respective installer for your operating system (Windows, Mac, etc.) and follow the instructions.

Course Content

Short summary

This course introduces students to the fundamental practices of programming with R in the context of economic research. The course briefly covers basic theoretical concepts and teaches basic skills in how to use the high-level programming language and statistical computing environment R. Examples and exercises are focused on data handling and data analysis tasks. The overall aim is to give students a solid overview of basic programming in R, and how they can potentially use of R during their studies and research in economics.

Course Structure

This is a block course and part of the introductory week for MEcon students at HSG. The course is structured in three parts:

Part I: Background/Tools

- Why R? Why programming?
- The tools: R, RStudio.

Part II: First steps in R, core concepts.

- First steps in R: R as a calculator, variables.
- Basic programming concepts in R.
- R objects and data structures.
- R functions for basic statistics.

Part III: Working with Data in R.

- Loading/importing data.
- Visualizing data with R/ggplot.
- Basic data analysis with R.

Detailed Schedule

- 09:15-10:00 *Introduction, Background, Tools* (UM [TA, JS])
- 10:00-10:15 *BreJS, support with installations* (UM, TA, JS)
- 10:15-11:00 *Exercises, First Steps with R* (TA, JS)
- 11:00-11:15 *BreJS, Q&A* (TA, JS)
- 11:15-12:00 *First Steps with R, Concepts* (TA, JS)
- 12:00-13:15 *Lunch (individually)*
- 13:15-14:00 *Exercises* (TA, JS)
- 14:00-14:15 *BreJS, Q&A* (TA, JS)
- 14:15-15:00 *Working with Data* (UM [TA, JS])

(UM: Ulrich Matter, TA: Thomas Aebischer, JS: Jan Serwart)