
“Introduction to R”

R is a very powerful and versatile computing environment, and is widely used by statisticians, economists, political scientists, etc. R is developed by its users, and researchers from many different fields have contributed to making R into the powerful statistical program it is today. What this means it that user can write their own R code, or adjust existing code according to their needs, and share this code with others. But this also means that there are a vast number of statistical tools and methods implemented in R, and we will only be able to scratch the surface of R’s vast potential in this short introductory course. However, the goal is to provide students with enough knowledge of how R works so they can learn new techniques themselves and/or follow other courses taught in R.

First Day

At the beginning of the course we will cover how R works and which tools are available to facilitate working with R (in particular we will use RStudio). Then we will learn about objects in R, how they (or a subset of their elements) can be accessed and manipulated, and how they can be transformed into datasets for further analysis. In addition, reading in data from other data formats (such as SPSS and STATA) will be covered as well as how to save data. Once we are familiar with data generation and data access, we will learn how to merge different datasets, and how to bring them into the desired data format.

After we are familiar with the basic functions, we will start analysing the data, first using simple summary commands and descriptive statistics, but also through the use of various tabulating tools available in R. Then we will cover how to implement regression analysis in R, and how to access various elements of our statistical models for further analysis. In addition, in this section we will cover data transformation and how to deal with special values in R.

Second Day

We will talk about the very powerful graphic tools provided by R. On the one hand we will use the basic plot function that comes with the standard R distribution, but we will also talk about other graphics packages such as lattice and ggplot2. Finally, we will briefly talk about writing our own simple functions in R.

At the end of the course students should be confident users of the basic functions of R. They should also know how to get help, and thus how to learn techniques not covered in the course itself. At the very least, the course should enable students to participate in other, more specialised topical courses taught in R in the future.

About the lecturer

Dr Florian Weiler joined the University of Kent in 2016 as a lecturer in Quantitative Politics. His research currently focuses on international environmental problems, and on the role of interest groups for national and international policy-making processes. Previous to joining the University of Kent, he worked as a post-doctoral researcher at the University of Bamberg (Germany). In this role, he taught various courses on quantitative methods, international negotiations, international environmental agreements, and interest group politics. He also taught statistics at the ECPR Winter School on Methods and Techniques in 2015 and 2016. He obtained his PhD from ETH Zurich (Switzerland) in 2013.