



# Introduction to R Workshop for faculty and research students (in English)

February 10th, 12th and 14th, 2019, at the School of Business Administration at the Hebrew University

**Instruction: Prof. Avi Kluger**

## Background

R, along with RStudio, is a free software that has become the default of researchers in many fields due to several prominent advantages: new statistical models are published along with demonstrations with R code, flexible and high quality graphics, great flexibility in data processing, and publication ready outputs in Word or PDF. The notable disadvantage of R, as opposed to other software such as SAS or SPSS, is the steep learning curve of the language. This workshop is designed to enable researchers interested in transitioning to R to learn the principles of the language in a friendly atmosphere and with metaphoric explanations (Lego, Russian Babushkas and a zoo visit). Upon completion of the workshop, participants will know how to read their data into the R environment, use transformations to create new variables (e.g., build scales), run functions for statistical procedures (e.g., multiple regression), produce plots (e.g., forest plots for meta-analysis and simple-slope analysis for interaction terms in regression analysis), and create publication-ready tables (e.g., correlation tables with means and standard deviations, regression tables). This introductory workshop will facilitate the use of complex statistical procedures that are specific to the speciality of the researcher.

## Schedule and topics

Day and time	Topic
Sunday 10-12:30	Building objects: vectors, matrices, data files, lists Standards for writing a clean code Use of packages Hands-on with a package for meta-analysis
Sunday 13:30-14:00	Reading data, including reading data directly from Dropbox, the WEB, and sites such as Qualtrics Treatment of missing values Stem-and-leaf, box-plot Sub-setting (selecting) columns, rows
Homework	Importing data from Excel or SPSS to R Checking for missing data Exploring distributions
Tuesday 10-12:30	Writing functions and loops Reading help menus for built-in functions and packages Searching help on the web. Reliability testing, building scales, creating files with scales only
Tuesday 13:30-14:00	Outputting publication-ready tables to Word Hypothesis testing: t-test, ANOVA, regression
Homework	Constructing scales Running regressions Preparing a scatterplot with a regression line
Thursday 10-12:30	Using Rmarkdown to create text and Word tables
Thursday 13:30-14:00	Using graphics packages Defining the shape of the graph by the user Saving publication ready graphs as GIF or PDF.

## Recommended Book

de Vries, A., & Meys, J. (2015). *R For Dummies* (2nd ed.). Hoboken, NJ: John Wiley & Sons.

## The instructor

Prof. Avi Kluger has taught Introduction to R, and the following courses using R: meta-analysis, structural equation modeling, and hierarchical linear modeling, to doctoral students. He has published R codes, developed together with Prof. David Kenny, to predict a dichotomous variable in the asymmetric block design model and the actor-partner interdependence model for the output of a Social Relations Model in an article in the *Journal of Personality and Social Psychology*.

## Student's reactions

Like all the courses that Avi gives, this is an applied course, in which students master the tools. The classes are well organized, and he is attentive to his students, both during the lesson, and during reception hours and via email. A good lesson is taught by an excellent lecturer.

Very important, critical tool.

I wish there will be more courses like this one! As a doctoral student in psychology, I feel that apart from this course, there are almost no courses that really teach important skills and tools at the depth required, and in a manner suitable for a doctorate. The fact that the course combines practical study and the application of statistical tools is so helpful, with emphasis on statistics (which are not taught in any other course!) is a blessing, and I feel that I am learning and profiting from the course. The tasks are also very helpful in real learning.

We got out of the class with the necessary tools. Mandatory exercises are essential for understanding the material. The course is important and shows how much R is preferable to other software.

Excellent lecturer, exercises are useful for understanding.

Required course for each doctoral student. Helps to become familiar with R.

Easy, step-by-step delivery. Helps in understanding the processes of data analysis and selecting the most suitable statistical tests for data. Thanks!

## Examples of outputs you will learn in the workshop

1. Forest plot for meta-analysis
2. WORD tables from R, APA style, as in [this page](#) (scroll down to see examples)
3. Plotting regressions and interaction as in [this page](#) (scroll down to see examples)

## Cost

The price of the workshop is 900 NIS. [Click to register](#).  
\* Opening of the workshop depends on minimal number of registrants!

## Note

This workshop is being offered due to the high demand for the workshop that will be offered the previous week in Hebrew. **This workshop will be delivered in English.**

