

R for Psychology Research

Selectable PhD course in methodology, 7.5 credits

COURSE PLAN

Goal

After completing this course, the student is expected to have gained sufficient knowledge of the R language to be able to use it to solve statistical problems relevant to psychology research.

Content

This is a PhD course with approximately 500 pages literature, lectures, homework assignments and labs. The course is aimed at students with no prior knowledge of R and no programming experience. The course teaches basic R skills and how standard statistical problems in psychology research can be solved using R. Thus, students are expected to have knowledge about standard statistical techniques such as descriptive statistics, t-test, correlation, ANOVA, multiple regression and similar. The subjects taught in the course include:

- Variables, operators, and data structures
- Packages and package handling
- Functions and iterations
- Data wrangling
- Data visualization
- Implementation of statistical tests relevant to psychology research
- Reproducible workflows

Teaching forms

The course will consist of lectures and lab sessions. Each lecture includes assignments that implement important concepts from the lecture. During interactive lab sessions students will achieve additional training in R programming.

Examination

The examination consists of two parts. First, students will solve a set of tasks for each lab session by writing their own R code, which will be submitted to the teacher.

Second, as a final examination students will write a reproducible report, including statistical tests and visualizations of data, for a realistic data set, potentially from their own research.

Literature

Wickham, H. & Golemund, G. (2017). *R for Data Science: Import, Tidy, Transform, Visualize, and Model Data*. Sebastopol: O'Reilly. – Full book available free online at:
<https://r4ds.had.co.nz>