



DEPARTMENT OF LABORATORY MEDICINE

H5F2953 Statistics with R - from Data to Publication Figure, 3 credits (hec)

Statistik med R - från data till publikationsfigur, 3 högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus is approved by the The Committee for Doctoral Education on 2023-11-10, and is valid from Spring semester 2024.

Responsible department

Department of Laboratory Medicine, Faculty of Medicine

Prerequisite courses, or equivalent

No prerequisite courses, or equivalent, demanded for this course.

Purpose & Intended learning outcomes

Purpose

Do you need to turn data into a publication figure? We offer tools and confidence for the student to independently select a statistical method for research questions in their field. The course is practical and includes implementing a basic statistical analysis in R, the leading statistical programming language in bioinformatics and medical science. Furthermore, we give a brief introduction to visualization in R, with a focus on R/ggplot2. Students can bring data from their own research project, or work on data from the course.

Intended learning outcomes

By the end of the course the student should be able to:

- *download and install the latest versions of R and Rstudio.
- *know where to look for help when working in R.
- *know how to import data into R.
- *use R for basic analysis and presentation of data in their field.
- *select statistical method and motivate the choice using a structured approach.

*communicate efficiently with a statistician about their choice of statistical method.

Course content

Basics of R. Download, install, import data, basic analysis, how to get help. Visualization of data.

Learn to speak statistics. A structured approach to selecting statistical method and communicating with a statistician.

Practice how to go from data to publication figure using data from your project or more or less friendly data offered by the course.

Forms of teaching and learning

Distance learning with online lectures, quizzes and interaction with other students.

Lectures at campus or online via ZOOM.

Individual project work using your own computer.

Digital poster presentation of individual work.

Language of instruction

The course is given in English.

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

Online quizzes and tasks. Participation during Poster Presentation day.

Forms of assessment

Poster presentation and peer review.

Course literature

The literature is recommended , but not compulsory. Most information can be found online for free.

Dalgaard - Introduction to statistics with R

Crawley - Statistics an introduction using R

Wickham - ""ggplot2: Elegant Graphics for data analysis""