DEPARTMENT OF LABORATORY MEDICINE

H5F6091, Introduction to R - Data Management, Analysis and Graphical Presentation, 3 credits (hec)

Introduktionskurs i R - Datahantering, dataanalys och grafisk presentation, 3 högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus was approved by The Committee for Doctoral Education on 2025-09-11, and is valid from spring semester 2026.

Responsible department

Department of Laboratory Medicine, Faculty of Medicine

Prerequisite courses, or equivalent

Basic statistical knowledge (e.g. taken ""Basic course in medical statistics"" or similar course)

Purpose & Intended learning outcomes

Purpose

To increase the doctoral student's skills in data analysis and data presentation.

Intended learning outcomes

After attending the course, the student will be able to use R for data management, statistical analysis and graphical data presentation. The student will be able to install new functions in R.

Course content

R is a powerful software/programming language for data analysis and graphical presentation. R is free-of-charge, and in most cases a useful alternative to commercial statistical software. The programming language is completely text-based, making it challenging compared to software with a graphical user interface. However, it offers greater flexibility, better control over analyses and an automatic documentation of performed analyses.

The course focuses on structure and basic functions of the R programming language . A selection of functions for data management, statistical analysis and graphics is presented. The methods included are commonly used methods in clinical medical science (e.g. t-test, ANOVA, chi2-test, regression and survival analysis, box, line scatter, and bar plots). The course focuses mainly on how the various methods are applied in R and not their theroretical background, underlying assumptions or the theoretical intepretation of the results.

In addition to the course material, the student is offered individual online guidance when applying the methods taught on data from their own doctoral project.

Forms of teaching and learning

Online video lectures, web-based seminars and web-based practical exercises (individual and group assignments), peer assessment of other students' solutions. The examination takes place in Flemingsberg.

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

The practical exercises and the peer assessments of these are compulsory. Students unable to complete the exercises in time due to e.g. illness can get an extension of the deadline.

Forms of assessment

Written examination.

Course literature

Recommended course literature (not mandatory):
Andy Nicholls, Richard Pugh, Aimee Gott, ""R in 24 Hours, Sams Teach Yourself"", Sams Publishing, 2015, ISBN 978-0-672-33848-9.

Other information

Replacing H5F2971.