



DEPARTMENT OF LEARNING, INFORMATICS, MANAGEMENT AND ETHICS

C7F2738, Intermediate Medical Statistics: Regression Models, 3 credits (hec)

Fortsättningskurs i medicinsk statistik: Regressionsmodeller, 3 högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus was approved by the The Committee for Doctoral Education on 2023-11-01, and was last revised on 2024-09-04. The revised course syllabus is valid from spring semester 2025.

Responsible department

Department of Learning, informatics, Management and Ethics, Faculty of Medicine

Prerequisite courses, or equivalent

Basic Medical Statistics (or equivalent)

Purpose & Intended learning outcomes

Purpose

The aim of the course is to introduce intermediate statistical methods and to facilitate acquirement of skills that involve hands-on data analysis using statistical software.

Intended learning outcomes

After successfully completing this course students are expected to be able to: 1) Explain the basic theory behind the statistical methods introduced in the course and to evaluate their applicability and limitations. 2) Choose a suitable statistical model for assessing a specific research hypothesis using data from a medical science study, evaluate the fit of the model, and interpret the results. 3) Apply the methods discussed in the course on real data.

Course content

The course is an introduction to more advanced statistical methods and requires that the student is familiar with the statistical concepts of descriptive and inferential statistics and has some basic

knowledge of linear regression. The course covers multiple linear regression, analysis of variance, logistic regression, and introduction to survival analysis. Concepts examined in this course include dummy variables, interaction between variables, influential observations, collinearity and model selection.

Forms of teaching and learning

The course consists of lectures, group discussions and assignments solved individually and in groups. There are computer-based exercises to be solved in groups. Support in R and SPSS is provided.

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

Computer based exercises, seminars, article presentations and lectures are mandatory. The course leader assesses whether and if so, how absence can be compensated.

Forms of assessment

That all intended learning outcomes have been achieved is assessed on the basis of 1) a passing grade on the computer based exercises, and 2) the contribution of the student during in the final seminar and the article presentations in relation to the intended learning outcomes.

Course literature

Highly recommended as supporting material:

Eric Vittinghoff et al.: Regression Methods in Biostatistics: Linear, Logistic, Survival, and Repeated Measures Models, Second edition, Springer, 2012.