



DEPARTMENT OF LEARNING, INFORMATICS, MANAGEMENT AND ETHICS

C7F2609, Basic Course in Medical Statistics - a Distance Course, 3 credits (hec)

Grundkurs i medicinsk statistik - distanskurs, 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 2024-09-03. 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

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

Purpose & Intended learning outcomes

Purpose

The aim of the course is to introduce the basic statistical methods and the fundamental principles of statistical inference and to offer basic skills that involve hands-on data analysis using statistical software.

Intended learning outcomes

The course participants shall after the course be able to: 1) perform and interpret basic descriptive statistics from frequency tables and graphical presentations, 2) perform and interpret results from basic inferential statistical analysis and tests, 3) recognize and critically examine the statistics being presented in articles within the field of medical research.

Course content

Concepts being treated are descriptive vs inferential statistics, collection of data and study design, different types of data and level of measurement, independent and dependent samples,

correlation and regression, hypothesis testing and different type of statistical errors in relation to the testing and data collection procedure. The major topics for the course are t-test, chi-square test, nonparametric test and regression analysis, and how to evaluate the assumptions for the different techniques.

Forms of teaching and learning

The course is an online distance course. On the first day of the course there will be an introduction via Zoom. The teaching and learning methods include pre-recorded video lectures, self-study, individual self-assessment tests, computer-based application exercises, an individual examination, and links to statistical software demonstration videos in SPSS and R. Interaction with other participants or teachers will be possible via the discussion forum in Canvas throughout the course. Participants are welcomed to send e-mails to the teacher or attend open office hours on Zoom. There will be two mandatory days for examination; one is oral, the other one written. The mandatory oral examination is a full-day including two seminar sessions with group discussions and takes place on Zoom two days before the written examination (Wednesday, 9:00-16:00). The mandatory written individual examination is an open-book home examination and takes place on the last day of the course (Friday, 9:00-16:00).

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

The computer-based exercises, individual examinations, and the seminars are mandatory. The course leader assesses whether and if so, how absence can be compensated.

Forms of assessment

Assessment of the intended learning outcomes by a passing grade on the individual examinations. The participants will have to demonstrate their ability to perform, recognize, critically examine and discuss the statistics presented during the seminars.

Course literature

Recommended literature:

Medical Statistics - A textbook for the health sciences, 4th edition, Wiley by Michael J. Campbell et al. (2007). Accessible as e-book with KI-ID via KI-library (KIB).

or later version;

Medical Statistics - A textbook for the health sciences, 5th edition, Wiley-Blackwell by Walters et al. (2021).