



DEPARTMENT OF LEARNING, INFORMATICS, MANAGEMENT AND ETHICS

C7F3134 Basic Course in Medical Statistics, 3 credits (hec)

Grundkurs i medicinsk statistik, 3 högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus is approved by the The Committee for Doctoral Education on 2023-11-27, and is valid from Spring semester 2024.

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 medical field of 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

This course is a Team-Based Learning (TBL) course. TBL is a specific form of learning method that integrates individual assessment and group work with immediate feedback. Focus will be on solving statistical problems in a team setting. This two weeks course consists of online preparation through video lectures and exercises, and several TBL sessions (in class meeting). The time in between TBL sessions will be spent reading the course material, and preparing for the assessment and group application exercises.

Language of instruction

The course is given in English.

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

In class attendance during TBL sessions are mandatory for passing grade. If a student misses one of the five TBL sessions a supplementary exercise will be given. If the student misses more than one TBL session it is recommended that the student takes the course at another occasion (since absence also affects the other members of the team).

Forms of assessment

Individual and group readiness assurance tests, as well as application exercises.

Course literature

Medical Statistics - A textbook for the health sciences, 4th edition, Wiley by Michael J. Campbell et al. (2007).

Other recommended literature on basic statistics:

Essential medical statistics, Betty R. Kirkwood & Jonathan A.C. Sterne, Blackwell, (2003).

Intuitive Biostatistics, 1st edition, Oxford University Press by Harvey Motulsky, (2009).

Medical statistics at a glance, 1st edition, Blackwell Science by Aviva Petrie & Caroline Sabin, (2000).

An Introduction to Medical Statistics, 3rd edition, Oxford University Press by Martin Bland, (2000).