Basic Biostatistics, 4.0 credits

Grundläggande biostatistik, 4.0 hp

Third-cycle education course

8FO0112

Department of Health, Medicine and Caring Sciences

Valid from: Autumn 2024

Approved by
The Research and PhD studies Committee

Approved
2019-09-23

Revised by
The Research and PhD studies Committee

Revised
2020-02-24

Registration number
DNR LIU-2019-01975

Entry requirements

Entry requirement for studies on third-cycle education courses

- second-cycle degree,
- 240 credits in required courses, including at least 60 second-cycle credits, or
- acquisition of equivalent knowledge in some other manner

Specific information

In the Spring the course is given in Swedish and in the Autumn it is given in English

Learning outcomes

By the end of the course the students will be able to:
Knowledge and understanding

- Determine in which situations and for which types of data the most common statistical methods can be used
- Explain the importance of different probability distributions
- Explain how different study designs affect the statistical analysis

Competence and skills

- Interpret results from statistical software
- Identify different types of studies from a statistical perspective
- Perform basic calculations of sample size and power, and interpret the results of such calculations

Judgement and approach

- Critically evaluate scientific publications from a statistical perspective

Contents

The course deals with the most common statistical methods in biostatistics. The main focus of the course is that the students should be able to know when to use a certain test, correctly interpret the results from a statistical program and to judge the use of statistical methods described in scientific publications. Some aspects of study design in experimental, clinical and observational studies are also discussed as well as aspects of validity, errors and power analysis

Educational methods

The pedagogical approach applied at the Faculty of Medical and Health Sciences is student centered, problem based learning (PBL). The student takes responsibility for his/her own learning, and seeks and evaluates information and knowledge based on own queries and formulated problems. The role of the teacher is to guide and support the students.
Educational methods applied in this course are lectures followed by exercises in using statistical programs. The students perform individual assignments and one group assignment. The teacher supervises the work and sessions for answering students' questions are offered.

Examination

The course examination consists of written individual assignments and a group work presented orally at a mandatory session at the end of the course.
Students who cannot attend the presentation may submit their version of the group work in writing.
Students who fail are offered one re-examination occasion in close connection to the course. After that participation in a coming course examination is offered. The re-examination should be equally comprehensive as the ordinary examination.
Change of examiner
Students who have failed the course or part of the course twice are entitled to request another examiner for the following examination occasion.

Grading

Two-grade scale

Course literature

A list of recommended literature will be provided by the course coordinator before the start of the course.

General information

The course is planned and carried out according to what is stated in this syllabus. Course evaluation, analysis and suggestions for improvement should be fed back to the Research and PhD studies Committee (FUN) by the course coordinator.
If the course is withdrawn or is subject to major changes, examination according to this syllabus is normally offered at three occasions within/in close connection to the two following semesters.
Course certificate

On the student's request, course certificate is issued by the course examiner.