Faculty of Medicine

MPHP54, Public Health: Biostatistics, 7.5 credits

Folkhälsovetenskap: Biostatistik, 7,5 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by The Master's Programmes Board on 2026-03-10. The syllabus comes into effect 2026-03-10 and is valid from the autumn semester 2026.

General information

Compulsory component of the Master's Programme in Public Health.

Language of instruction: English

Main field of study	*Specialisation*
Public Health Science	A1N, Second cycle, has only first-cycle course/s as entry requirements

Learning outcomes

The aim of the course is to provide the student with an introduction to basic and more advanced statistical concepts, principles and methods. The aim is also to enable the student to formulate research questions and hypotheses, select and justify appropriate statistical methods, carry out analyses using statistical software, and interpret and present the results accurately and in a scientific manner. Furthermore, the course aims to enable the student to critically examine the use of statistics in scientific publications in the field of public health.

Knowledge and understanding

On completion of the course, the student shall be able to:

- account for types of variables and levels of measurement, and how these are presented numerically and graphically,
- explain the concepts of random sampling, parameter, parameter estimation and the relationship between sample size and uncertainty.

Competence and skills

On completion of the course, the student shall be able to:

- formulate null and alternative hypotheses and interpret the concepts of significance level, statistical power, confidence interval and p-value,
- select statistical methods for comparing two groups, as well as for regression analysis and the handling of confounding factors,
- carry out statistical analyses using statistical software and interpret the results.

Judgement and approach

On completion of the course, the student shall be able to:

- assess the strengths and limitations of various statistical models in relation to public health data,
- critically examine the use of basic statistics in scientific publications.

Course content

The course covers fundamental and applied statistical concepts and methods in public health. Key areas include variables and measurement scales, distributions, central tendency and dispersion, and graphical presentations of data. The course covers parameter estimation, uncertainty in estimates, hypothesis testing and statistical tests for comparisons between groups. It also covers regression models and the handling of confounding factors, as well as the interpretation of statistical significance, effect size and generalisability. The course also introduces the use of statistical software for the analysis and presentation of results.

Course design

The course is based on a student-centred approach that emphasises active learning. Teaching comprises engaging lectures, work with digital resources and practical exercises using statistical software. The course includes a course portfolio comprising, on the one hand, group-based project work which is presented and discussed orally at a seminar, and, on the other hand, seminars with compulsory attendance where the choice of methodology in scientific publications is discussed, as well as seminars in which students are given project tasks which they then discuss in small groups. The seminars are compulsory and require active participation, as they help to practise and develop the skills required to achieve the learning outcomes. In the event of absence from compulsory components, the examiner may decide to offer a supplementary assignment in connection with the course.

Assessment

The course is assessed through two assessed components:

- Written exam, 5 credits
  Fail/Pass/Pass with distinction
  Assesses the student's ability to account for statistical concepts, hypothesis testing and regression models, and to interpret the results of statistical analyses.

- Course portfolio, 2.5 credits
  Fail/Pass
  Assesses the student's ability to apply statistical methods, interpret results, communicate statistical methods and the choice of statistical methods, and critically evaluate the use of statistics in scientific publications.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Grades

Grading scale includes the grades: Fail, Pass, Pass with distinction
To achieve a grade of 'Pass with Distinction' (VG), students must obtain a VG grade in the written exam and the course portfolio must be approved.

To achieve a grade of 'Pass' (G) for the entire course, students must obtain a G grade in all assessed components.

Entry requirements

A Bachelor's degree comprising at least 180 credits, as well as English B.