



Faculty of Medicine

MEVN29, Medical Sciences: Biostatistics II, 7.5 credits

Medicinsk vetenskap: Biostatistik II, 7,5 högskolepoäng

Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by Board of Rehabilitation Sciences Education on 2015-02-03 to be valid from 2015-07-01, autumn semester 2015.

General Information

The course is an elective component of the Master's programme in Medical Science. It complies with the regulations of the Higher Education Ordinance (SFS 1993:100) with later amendments. The course may also be studied as a freestanding course.

Language of instruction: Swedish

The course may be taught in English.

Main field of studies

Radiography

Audiology

Physiotherapy

Medicine

Speech and Language Pathology

Occupational Therapy

Reproductive, Perinatal and Sexual Health

Nursing

Depth of study relative to the degree requirements

A1F, Second cycle, has second-cycle course/s as entry requirements

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Learning outcomes

Knowledge and understanding

On completion of the course, the students shall be able to

- demonstrate basic knowledge of concepts of epidemiology, study designs and analysis of epidemiological data
- demonstrate knowledge of different types of effect measure and calculation of sample sizes
- demonstrate specialised knowledge of hypothesis testing and regression analysis
- determine the extent to which the conditions have been reached and sources of error eliminated in completed analyses
- demonstrate knowledge of different types of survival analysis
- demonstrate specialised knowledge of different measures of validity and reliability.

Competence and skills

On completion of the course, the students shall be able to

- perform different types of variance analysis
- perform different types of multiple regression analysis
- perform explorative factor analysis
- present the results of their own completed analyses

Judgement and approach

On completion of the course, the students shall be able to

- demonstrate awareness of the possibilities and limitations of statistical methods and the responsibility of people for how they are used.

Course content

The aim of the course is to provide students with an introduction to epidemiology and specialised knowledge of hypothesis testing, regression analysis and methods for assessing validity and reliability. Furthermore, students are introduced to methods of survival analysis and multivariate analysis. The course includes the following components:

Epidemiology (concepts, study design, analysis of binary outcomes)
 Effect measures and sample volume calculation
 Variance analysis (parametric and non-parametric)
 Multiple regression analysis (linear and logistic)
 Survival analysis (life tables, Kaplan-Meier, Cox regression)
 Factor analysis (exploratory and confirmatory)
 Theories of measurement and testing/psychometrics

Course design

The studies on the course are characterised by active information searching, problem solving, reflection and critical analysis. The methods of work vary between individual work, group assignments, seminars, lectures and independent study.

Assessment

The numbering of the forms of assessment corresponds to the numbering of the subjects examined above.

1. Individual written exam in the form of a critical review of the student's own analyses
2. Individual critical review of measuring instruments including a presentation at a seminar

To be awarded a Pass on the course, the student must have passed all subjects examined.

Number of exams

One examination and one opportunity to retake the examination are arranged soon after the course. Students who do not achieve a pass on either of these occasions will be able to retake the examination on a later occasion. Students who have failed an examination on a theoretical course are entitled to retake the examination four times.

New examiner

A student who has twice failed examination on a course or course component is entitled to have another examiner appointed, unless there are special reasons to the contrary. (SFS 2006:1053). The request is to be made to the programme director.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, Pass.

Entry requirements

- To be admitted to the course, students must have a Bachelor's degree (180 credits) in audiology, medicine, nursing, occupational therapy, physiotherapy, speech and language pathology or radiology nursing, or the corresponding

- qualification in medical science,
• and completed course MEVN28 Biostatistics I or the equivalent.

Further information

The course replaces VMFN08.

Subcourses in MEVN29, Medical Sciences: Biostatistics II

Applies from H15

- 1501 Presentation and critical review of own analyses, 6,5 hp
Grading scale: Fail, Pass
- 1502 Critical review of assessment instruments, 1,0 hp
Grading scale: Fail, Pass