SK00010 Program for Doctoral Students in Clinical Research with clinical epidemiological methods, course 3, 7.5 credits

Forskarskolan Klinisk forskning med klinisk epidemiologisk metodik, kurs 3, 7,5 högskolepoäng

Third-cycle level / Forskarnivå

Confirmation

This syllabus was confirmed by the Council for PhD Education at Sahlgrenska Academy on 2019-01-31, and is valid from Spring semester 2019.

Responsible Department

Institute of Clinical Sciences, Sahlgrenska Academy

Entry requirements

- Admitted to postgraduate education
- To be eligible for the course the student has to be registered in Third Cycle at the Sahlgrenska Academy or at another faculty or university. The student also has to be admitted to Research school Clinical research employing clinical epidemiologic methodology and must have passed course 1 and 2 or show documented knowledge equivalent with course 1 and 2.

Learning outcomes

On successful completion of the course, the PhD student is expected to be able to:

Knowledge and understanding

- Demonstrate deeper understanding of the role of biostatistics in clinical epidemiologic research.
- Demonstrate good familiarity with the principles of linear and logistic regression as well as correlation and interaction tests.
- Demonstrate good knowledge of survival analysis and the use of Cox- and Poisson regressions.
- Demonstrate knowledge of how to deal with matching of comparison groups in studies with various study designs.
Demonstrate knowledge of the structure of a scientific article and how to read articles in a structured manner.

Skills and ability

- Actively discuss biostatistical methods with a person with statistical expertise.
- In collaboration with a statistician demonstrate ability to calculate the sample size with respect to the size of a hypothesized clinical effect.
- Demonstrate ability to independently develop a statistical analysis plan for a data set in a clinical study.
- Demonstrate ability to independently manage and categorize variables in a data set as well as independently carry out various types of hypothesis tests and stratified analyses.
- Demonstrate ability to present and interpret the results of the analyses graphically and in the form of tables.
- Use a statistical software program to conduct statistical computations at an intermediate level.
- Demonstrate good ability to read and assimilate the contents in scientific articles in a structured manner.

Judgement and approach

- Discuss the possibilities and limitations of biostatistics with respect to clinical research.
- Demonstrate good ability to critically review scientific articles and respond to critical reviews, orally as well as in writing.

Course content

The course comprises two sections:

- Biostatistics for clinical research, advanced level, including exercises employing interactive software designed for statistical analysis.
- Review of scientific literature on clinical effects.

Types of instruction

Lectures, group seminars and assignments, information searching, laboratory exercises, individual assignments.

Language of instruction

The course is given in Swedish.

The language of instruction is Swedish, if, however, the lecturer is English-speaking the language of instruction will be English. Some of the required reading will be in English.

Grades

The grade Pass (G) or Fail (U) is given in this course.

Types of assessment
Performance in the course is evaluated on the basis of written reports, examinations, and on an individual evaluation of each participant’s performance in presenting an oral report. Active participation is expected at every stage in the course.

The following is required of the student to pass the course:

- Passed written examination
- Passed oral presentation
- Passed written assignment
- One hundred percent attendance and active engagement in group seminars, group assignments as well as in information searching and biostatistical laboratory exercises.

In the case of absence due to illness or strong personal reasons, the student is to complete the course according to instructions given by the course director.

A student who has failed a test twice has the right to change examiners, if it is possible. A written application should be sent to the relevant institution.

Course evaluation

Evaluation of the course is achieved through the use of individually written evaluations presented anonymously along with a general discussion at the end of the course. The overall results will be communicated to the students in writing and will function as a guide for the development of the course.

Other information

This syllabus was confirmed by the Council for PhD Education at Sahlgrenska Academy on 15-09-2015 and was last revised on 28-08-2018 (reg.nr.: U 2018/457). The revised course syllabus is valid from the spring term 2019. The syllabus was entered into FUBAS on 31-01-2019.