



**Karolinska
Institutet**

Course syllabus for

Scientific methods 3 - scientific theory, method and study design, 9 credits

Vetenskap 3 - vetenskaplig teori, metod och studiedesign, 9 hp

This course syllabus is valid from autumn 2018.

Please note that the course syllabus is available in the following versions:

Autumn2018 , [Autumn2019](#) , [Autumn2020](#) , [Autumn2021](#) , [Autumn2022](#) , [Autumn2023](#) , [Autumn2024](#)

Course code	1AU063
Course name	Scientific methods 3 - scientific theory, method and study design
Credits	9 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Audiology
Level	G2 - First cycle 2
Grading scale	Pass, Fail
Department	Department of Clinical Science, Intervention and Technology
Decided by	Education committee CLINTEC
Decision date	2018-04-10
Course syllabus valid from	Autumn 2018

Specific entry requirements

For admission to the course, it is required that the student has managed at least 105 HE credits from Semester 1-4.

Objectives

The course is included in a scientific streak which includes total of 15 HE credits that runs in parallel with the study programme. The general aim with the scientific streak is to provide the student knowledge about research methodology and skills in scientific working methods. The specific aims of this course, Scientific methods 3, are to give the student basic knowledge in scientific theory, method, study design and statistics as well as good preparation for subsequent science courses in the streak.

The expected learning outcomes of the course

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

- explain scientific theoretical concepts and different research traditions within the audiological subject area
- explain and define different qualitative and quantitative methods and concepts
- apply statistical methods and hypothesis tests in calculations and arguments

- form a project idea that can lead to a degree project report with focus on hypothesis and research question as well as study design with quantitative or qualitative methods

Content

The course consists of three modules:

Scientific concepts and research methodology, 3.0 hp

Grading scale: GU

The moment provides an introduction to scientific concepts to give an understanding of the different research traditions that occur in the field of audiology. In addition, evidence-based methodology is dealt with.

The moment contains lectures and seminars on qualitative methodology, science theory and evidence as well as ethics.

Quantitative method and statistics, 4.5 hp

Grading scale: GU

The moment focuses on quantitative methodology with emphasis on descriptive statistics, surveys and hypothesis testing related to the subject area of audiology. The moment also provides an introduction to statistics programs.

Project idea, 1.5 hp

Grading scale: GU

A project idea that can lead to a thesis should be formed. The work involves training in how to plan and post a study. In support of the design of the project idea, follow-up exercises are carried out in literature search in databases, eg. pubmed, web of science at KI's library.

Teaching methods

Lectures, group assignments, exercises in the form of math tutoring and computer lab, and seminars.

Group assignments, computer lab and seminars are compulsory. If absent from a compulsory part, the student is responsible for contacting the course coordinator for complementary assignments.

The course coordinator decides how absence from compulsory course elements can be made up. Study results cannot be reported until the student has participated in compulsory course elements or compensated for any absence in accordance with instructions from the course coordinator. Absence from a compulsory course element could mean that the student can not retake the element until the next time the course is offered.

Examination

Scientific concepts and research methodology 3 credits

Active participation in compulsory seminars
Self-tests about scientific theoretical concepts
Self-test about statistical concepts

Quantitative methodology and statistics 4.5 credits

An individual take-home examination with application of statistical methods based on articles
Compulsory participation in laboratory work

Pilot project and Project idea 1,5 credits

An oral poster presentation of the independently implemented PM including the project idea, hypothesis and problem specification

For a Pass grade in the course, attendance and active participation in compulsory parts are also required. Students who do not pass a regular examination are entitled to re-sit the examination on five more occasions. Each time the course is offered, one regular examination and two additional examinations are given. Each occasion the student participates in the same test counts as an examination. Supplementary addition to a written assignment is counted as one examination. Submission of a blank exam paper is regarded as an In case a student is registered for an examination but does not attend, this is not regarded as an examination.

Transitional provisions

Examination may take place under the previous reading list during a period of one year after the renewal of the reading list. Examination will be provided during a period of two years after a close-down of the course.

Other directives

The course evaluation will be carried out according to the guidelines that are established by the Board of education. The course evaluation will be carried out both through a written course evaluation at the end of the course, and through an oral course forum at least once in connection with the course, during which the students can state their opinions.

Literature and other teaching aids**Mandatory literature**

Ejlertsson, Göran

Statistik för hälsovetenskaperna

2., moderniserade och utök. uppl. : Lund : Studentlitteratur, 2012 - 303 s.

ISBN:978-91-44-07048-3 LIBRIS-ID:13374003

URL: [Övningsmaterial](#)

[Library search](#)

Nordenström, Jörgen

Evidensbaserad medicin i Sherlock Holmes fotspår

4., [omarb.] uppl. : Stockholm : Karolinska University Press, 2007 - 106 s.

ISBN:978-91-85565-12-2 LIBRIS-ID:10352883

[Library search](#)

Scientific papers and other relevant materials may be added.

Recommended literature

Trost, Jan; Hultåker, Oscar

Enkätboken

5., [moderniserade och rev.] uppl. : Lund : Studentlitteratur, 2016 - 178 s.

ISBN:9789144115450 LIBRIS-ID:19616911

[Library search](#)

Kvale, Steinar; Brinkmann, Svend

Den kvalitative forskningsintervjun

3. [rev.] uppl. : Lund : Studentlitteratur, 2014 - 412 s.

ISBN:9789144101675 LIBRIS-ID:16763239

[Library search](#)