



**Karolinska
Institutet**

Course syllabus for

Basic Epidemiology and Statistics 1, 5 credits

Grundläggande epidemiologi och statistik 1, 5 hp

This course syllabus is valid from spring 2023.

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

Spring2018 , Spring2022 , Spring2023

Course code	4HM004
Course name	Basic Epidemiology and Statistics 1
Credits	5 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Medical Management
Level	AV - Second cycle
Grading scale	Fail (U), pass (G) or pass with distinction (VG)
Department	Department of Learning, Informatics, Management and Ethics
Decided by	Education committee LIME
Decision date	2017-10-25
Revised by	Education committee LIME
Last revision	2022-10-21
Course syllabus valid from	Spring 2023

Specific entry requirements

Bachelor's degree or professional qualification worth at least 180 credits in public health science, healthcare or other relevant social sciences subject area. Proficiency in the English language documented by an internationally recognized test such as TOEFL with a total score of at least 79 (internet based), 550 (paper based), 213 (computer based), IELTS with a total score of at least 6,0 (no band less than 5,0), or other documentation that certifies English language skills equivalent to English B at Swedish upper secondary school.

Objectives

The goal of the course is to increase knowledge about epidemiological concepts and how medical statistics can be used to analyze health economics data to support decision-making about which health care interventions and health technologies that should be used in order to improve health outcomes in the context of limited resources.

By the end of this course students should be able to:

- describe the basic epidemiological concepts
- select and apply appropriate statistical methods for managing common types of health economics data

- use various software packages for statistical analysis and
- interpret the results of descriptive statistics and findings from different statistical tests including t-test, Chi-square test, McNemar's test and linear regression.

Content

The course covers basic concepts in epidemiology such as prevalence, incidence, relative risk, and odds ratio; and basic concepts in medical statistics which covers introduction to descriptive statistics, hypothesis testing and confidence intervals, analysis of categorical data, regression analysis and non-parametric statistics.

Teaching methods

The teaching methods include lectures, seminars, group-work, group discussion, computer exercises and student presentations.

Examination

Written assignments related to four computer based exercises and final seminar with group discussions.

To pass the course it is required that the student has passed the obligatory written computer assignments, and participated in all the seminars.

Students are given the opportunity to complete an extra assignment that is optional.

To achieve a pass with distinction it is required that the student has passed the obligatory written computer assignments, participated in all the seminars, and received a pass with distinction on the optional assignment.

Compulsory participation

Participation in seminars, group work and certain lectures is compulsory. Detailed information will be given in the schedule. The course director assesses if, and in that case how, absence can be compensated. Before the student has participated in all compulsory parts or compensated absence in accordance with the course director's instructions, the student's results for the course/respective part will not be registered in LADOK.

Limitation of number of examinations: The student is entitled to participate in a total of six examination sessions. If the student has not passed the exam after four participations he/she is encouraged to visit the study advisor.

Participation in an examination is defined as an occasion on which a student attends an examination, even if the student submits a blank examination paper. If a student has registered to sit an examination, but does not attend the examination, this is not defined as participation in the examination.

Transitional provisions

Examination will be provided during a time of two years after a possible cancellation of the course. Examination can take place according to an earlier literature list during a time of one year after the date when a major renewal of the literature list has been made.

Other directives

Course evaluation will be carried out in accordance with the guidelines established by the Board of Education.

The course language is English.

Literature and other teaching aids

Campbell, Michael J.; Machin, David; Walters, Stephen J.

Medical statistics : a textbook for the health sciences

4. ed. : Chichester : Wiley, cop. 2007 - xii, 331 s.

ISBN:9780470025192 LIBRIS-ID:10097092

[Library search](#)

Dicker, Richard

Principles of Epidemiology in Public Health Practice

Institutionen för lärande, informatik, management och etik, 2006

URL: [Principles of Epidemiology in Public Health Practice - Free E-book](#)

Teaching aids: SPSS and Statistica manual

Institutionen för lärande, informatik, management och etik,

Petrie, Aviva; Sabin, Caroline

Medical statistics at a glance

2. ed. : Malden, Mass. : Blackwell Publ., 2005 - 157 p.

ISBN:978-1-4051-2780-6 (alk. paper) LIBRIS-ID:9981725

[Library search](#)

Bland, Martin

An introduction to medical statistics

3. ed., [Nachdr.] : Oxford : Oxford University Press, 2009 - XVI, 405 S

ISBN:978-0-19-263269-2 LIBRIS-ID:11926588

[Library search](#)

Motulsky, Harvey.

Intuitive biostatistics : a nonmathematical guide to statistical thinking

Completely rev. 2nd ed. : New York : Oxford University Press, 2010. - 447 s. (various pagings)

ISBN:978-0-19-973006-3 (pbk. : alk. paper) LIBRIS-ID:12076833

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