



**Karolinska
Institutet**

Course syllabus for

Quantitative Research and Methods 1, 6 credits

Kvantitativ forskning och metoder 1, 6 hp

This course syllabus is valid from spring 2026.

Course code	4GB004
Course name	Quantitative Research and Methods 1
Credits	6 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Global Health
Level	AV - Second cycle
Grading scale	Pass with distinction, Pass, Fail
Department	Department of Global Public Health
Decided by	Education Committee GPH
Decision date	2024-10-11
Course syllabus valid from	Spring 2026

Specific entry requirements

A Bachelor's degree or a professional degree equivalent to a Swedish Bachelor's degree of at least 180 credits. And proficiency in English equivalent to English B/English 6.

Objectives

After the course, the student should be able to:

- Explain the different epidemiological study designs used in global health, and their relative strengths and weaknesses.
- Explain the different approaches to selecting participants.
- Interpret quantitative data for global health, appreciating the role of different data collection approaches, methods and biases forming conclusions.
- Apply basic methods for descriptive and inferential statistics.
- Explain ethical considerations of participant involvement in quantitative research.

Content

This course introduces students to the key concepts and methods of quantitative research, focusing on its application in global health. Quantitative research is essential for measuring health outcomes and

understanding patterns within populations. Students will explore different study designs, such as cohort and case-control studies, to understand their strengths and limitations, not only in research but also in other types of studies and evaluations.

The course covers practical skills, including how to select participants and collect data in a structured way. Students will learn to interpret health data using key measures such as measures of disease occurrence, such as incidence and prevalence, and associations, such as risk differences and risk ratios. Basic descriptive statistics, such as calculating means or medians to summarise data, will be introduced, alongside inferential statistics, such as p-values or confidence intervals, which allow for drawing conclusions about populations based on sample data. The course also introduces students to statistical software.

Ethical considerations when using quantitative methods will be taught, with a focus on the ethics of involving participants in quantitative studies. By the end of the course, students will be equipped to apply basic quantitative methods not only in research but also in programme evaluations and other global health studies, using statistical techniques to draw meaningful and ethical conclusions from their data.

Teaching methods

Learning activities include lectures, seminars using case study examples and interactive learning activities.

Examination

The course will be examined in an individual assignment graded as fail, pass, or pass with distinction. The course will also include compulsory parts where active participation is required. The compulsory parts include group and individual projects with written submissions, presentations and discussion in seminars and practical exercises. The students must fulfil all the established criteria for the compulsory elements to pass the course.

Compulsory participation

Participation in group work, seminars, practical sessions and the final examination are compulsory.

The examiner assesses if, and in that case how, absence from compulsory educational elements can be compensated for. Before the student has participated in the compulsory educational elements or compensated the absence in accordance with the examiner's instructions, the final course results will not be reported. Absence from a compulsory educational component may imply that the student cannot compensate for the missed compulsory educational element until the next time the course is given.

Limitation of number of occasions to write the exam

Students who have not passed the regular examination are entitled to participate in five more examinations. If the student has not passed the exam after four participations, he/she is encouraged to visit the study advisor. If the student has failed six examinations/tests, no additional examination or new admission is provided. The number of times that the student has participated in one and the same examination is regarded as an examination session. Submission of a blank examination is also regarded as an examination. An examination for which the student registered but did not participate in will not be counted as an examination.

If there are special grounds, or a need for adaptation for a student with a disability, the examiner may decide to deviate from the syllabus's regulations on the examination form, the number of examination opportunities, the possibility of supplementation or exemptions from the compulsory section/s of the course etc. Content and learning outcomes as well as the level of expected skills, knowledge and abilities may not be changed, removed or reduced.

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

The course language is English.

Course evaluation is carried out according to the guidelines that are established by the Committee for Higher Education.

Literature and other teaching aids

Mandatory literature

Mandatory and recommended literature and readings will be available on the learning management system during the course.