INSTITUTE OF ENVIRONMENTAL MEDICINE

C6F3129, Epidemiology III. Analysis and Interpretation of Epidemiological Data, 1.5 credits (hec)

Epidemiologi III. Analys och tolkning av epidemiologiska data, 1,5 högskolepoäng

Third-cycle level / Forskarnivå

Approval

This syllabus was approved by The Committee for Doctoral Education on 2023-11-27, and was last revised on 2025-09-07. The revised course syllabus is valid from spring semester 2026.

Responsible department

Institute of Environmental Medicine, Faculty of Medicine

Prerequisite courses, or equivalent

Knowledge equivalent to "Epidemiology I: Introduction to epidemiology", "Epidemiology II: Design of epidemiological studies", "Biostatistics I: Introduction for epidemiologists" or corresponding courses.

Purpose & Intended learning outcomes

Purpose

The purpose of the course is to familiarise the student with principles for epidemiological data analysis and critical interpretation of study results.

Intended learning outcomes

After successfully completing this course, you as a student are expected to be able to:

- reason about principles of causal inference,

- discuss examples illustrating the application of mediation analysis,

- propose a rationale for the use of tools to strengthening causal inference from observational data,

- apply good practices for quantitative bias analysis to epidemiological data,

- evaluate methodological aspects when critically reviewing individual epidemiological studies.

Course content

The course focuses on issues related to causal inference, principles of epidemiological data analysis, and interpretation of epidemiological concepts and principles of relevance when critically reviewing individual epidemiological studies.

Forms of teaching and learning

Lectures, group discussions and various forms of group exercises on selected topics, will be used. The course focuses on active learning, i.e. putting knowledge into practice and critically reflecting upon the knowledge, rather than memorising facts.

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

Individual examination task (summative assessment).

Forms of assessment

To pass the course, the student has to show that all the intended learning outcomes have been achieved. Assessments methods used are group assignments (formative assessments) along with a written individual take-home examination. The examination is viewed as contributing to the development of knowledge, rather than as a test of knowledge. Students who do not obtain a passing grade in the first examination will be offered a second chance to resubmit the examination within two months of the final day of the course. Students who do not obtain a passing grade at the first two examinations will be given top priority for admission the next time the course is offered.

Course literature

Suggested reading:

Lash TL, VanderWeele TJ, Haneuse S, Rothman KJ. Modern Epidemiology, 4th Edition, Wolters Kluwer, 2021.

Lash TL, Fox MP, Fink AK. Applying quantitative bias analysis to epidemiologic data. Springer, 2009.

Scientific papers will be distributed before and during the course.