



DEPARTMENT OF MEDICINE, SOLNA

K2F2868, Advanced Course in SAS Programming for Health Care Data, 1.5 credits (hec)

Påbyggnadskurs i SAS-programmering för hälsorelaterade data, 1,5 högskolepoäng
Third-cycle level / Forskarnivå

Approval

This syllabus was approved by The Committee for Doctoral Education on 2023-11-06, and was last revised on 2026-02-20. The revised course syllabus is valid from autumn semester 2026.

Responsible department

Department of Medicine, Solna, Faculty of Medicine

Prerequisite courses, or equivalent

Knowledge corresponding to the intended learning outcomes of the KI doctoral courses Introductory course in SAS programming, Epidemiology I: Introduction to Epidemiology, Biostatistics I: Introduction for epidemiologists and Biostatistics II: Logistic regression for epidemiologists.

Purpose & Intended learning outcomes

Purpose

The purpose of this course is to give students with prior experience in SAS the foundation needed to work independently with large data bases in SAS, performing the data management needed for observational studies from for instance a register linkage.

Intended learning outcomes

After this course the student should be able to:

- independently use a wide range of SAS functions and procedures for data management
- manage data using Proc SQL, and in a given situation decide whether to use SQL or SAS Base
- develop basic SAS macros
- use core statistical procedures, and export results to other software

Intended learning outcomes are classified according to Bloom's taxonomy: knowledge, comprehension, application, analysis, synthesis, and evaluation (Bloom, 1956, extended by Anderson and Krathwohl, 2001).

Course content

Students will develop their skills in processing data using built-in functions and procedures, including loops, learn how to merge data sets and perform operations with SAS Base and SQL coding, and the benefits and tricks of transposition, where one moves between "long" and "wide" data sets. Students will also learn how to write user written functions (macros) in SAS, and work through examples of how to analyse data with core statistical techniques, and export relevant results to edited tables. Although exercises during the course will use health care data, the same skills would be useful for studies in e.g., demography, sociology, and economics.

Forms of teaching and learning

Different strategies for teaching and learning, such as interactive lectures, laboratory exercises and small group discussions, will be used. Daily, formative assessments are used to support the students' learning processes.

Language of instruction

The course is given in English

Grading scale

Pass (G) /Fail (U)

Compulsory components & forms of assessment

Compulsory components

The individual examination (summative assessment).

Forms of assessment

A computerized individual examination with realistic assignments, corresponding to the learning outcomes of the course. Students will be allowed to use any literature during the exam, including access to the Internet.

Students who do not obtain a passing grade in the first examination will be offered a second examination occasion within two months of the final day of the course.

Students may be granted additional examination sessions, up to six in total, subject to discussion with and approval by the examiner.

Course literature

Course compendium, handouts, and example code in SAS.