



**Karolinska
Institutet**

Course syllabus for

Monitoring of non-communicable diseases, large scale data collection, analysis and data visualizations, 7 credits

Monitorering av icke-smittsamma sjukdomar, storskalig datainsamling, analys och datavisualiseringar, 7 hp

This course syllabus is valid from spring 2025.

Course code	4NT015
Course name	Monitoring of non-communicable diseases, large scale data collection, analysis and data visualizations
Credits	7 credits
Form of Education	Higher Education, study regulation 2007
Main field of study	Nutrition Science
Level	AV - Second cycle
Grading scale	Fail (U), pass (G) or pass with distinction (VG)
Department	Department of Medicine, Huddinge
Decided by	Education committee BioNut
Decision date	2024-06-17
Course syllabus valid from	Spring 2025

Specific entry requirements

At least grade pass for the course "Diet and health - scientific evidence, recommendations and sustainability" (4NT000, 4NT021) within the Master's Programme in Nutrition Science.

Objectives

After completion of this part of the course, the student should be able to:

- describe and discuss the prevalence and trends of diet-related global diseases and their determinants, with focus on diet and physical activity.
- account for global health problems in relation to nutrition and describe the role of relevant organizations, policy documents and action plans in disease management in the field of public health nutrition.
- identify and describe available surveillance and monitoring tools and datasets for lifestyle-related global diseases and disease determinants.
- comprehend, explain and reproduce the main types of cross-sectional and longitudinal data

visualization schemes for such datasets.

- perform basic data processing, curation and visualization using Excel and R-programming.
- demonstrate basic skills with regards to large dataset visualization in oral and written format.
- apply the earned knowledge to produce and present a scientific poster based on relevant research and surveillance efforts.

Content

The course deals with large-scale and local management of global public health diseases, their prevalence, trends and determinants, with focus on diet and physical activity. Different surveillance and monitoring tools, as well as data visualization schemes for these diseases will be introduced and used together with relevant organizations, policy documents and action plans in the field of public health nutrition. Teaching will focus on deployment requirements for appropriate disease monitoring data collection, requirements for appropriate data management and visualization, as well as ways of presenting disease monitoring outcomes in scientific terms. To achieve the above, the students will be introduced to mainstream data analysis, processing and visualization tools. The use of AI analytics in health science and nutrition will also be introduced during the course.

Teaching methods

This course consists of seminars, group work, lectures, exercises and discussions.

Examination

The examination consists of active participation in group work (graded Pass/Fail) and an individual assignment (graded Pass with distinction/Pass/Fail). To pass the course, all assignments must fulfil the criteria for Pass. The grading criteria for all examinations are provided on Canvas.

In the case a student fails an assignment, the individual assignment can be complemented to get a Pass on that individual assignment. The assignment can be resubmitted a maximum of five more times. After six failed assignments, no further examination opportunities will be given for that assignment. If the student has not submitted complementation at given deadline, grad Fail is given. A student who has failed two examinations for a course or part of a course, is entitled to have another examiner appointed unless special reasons speak against it.

Compulsory participation:

Assignments and seminars are compulsory. The examiner assesses if and, in that case, how absence from compulsory parts can be compensated. Before the student has participated in all compulsory parts or compensated absence according with the examiner's instructions, the student's study results cannot be finalized. Absence from a compulsory activity may result in that the student cannot compensate absence until the next time the course is given.

If there are special reasons, or need for adaptations for a student with a disability, the examiner may decide to depart from the syllabus's regulations on examination form, number of examination opportunities, possibility of complementation of or exemption from compulsory activities, etc. Content and learning outcomes as well as the level of expected skills, knowledge and abilities must not be altered, removed or lowered.

Other directives

The course language is English.

Literature and other teaching aids

Reports, articles and other prescribed literature are listed at course start and will be available electronically.