



FCA3009 Data Management, Open Science and Data Infrastructures 7.5 credits

Datahantering, öppen vetenskap och datainfrastrukturer

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

The official course syllabus is valid from the autumn semester 2026 as decided by the Faculty Board: dnr PA-2026-0005. Decision date: 2026-06-10

Grading scale

P, F

Education cycle

Third cycle

Specific prerequisites

Admitted to third-cycle studies.

Intended learning outcomes

After completing the course, the doctoral student should have the knowledge and ability to:

- Assess which parts of a Data Management Plan are appropriate or mandatory to have in place within their own research project or a related research area.

- Be able to argue for how best practices in Open Science can be applied to create scientific success within their own research field.
- Formulate an appropriate strategy for using digital services and infrastructures made available within relevant research ecosystems, including Swedish and EU infrastructures.
- Resonate about sustainability and security for Open Science and data infrastructures.

Course contents

In a quickly changing research environment, the value of data and methods for (re-)use in scientific projects is evident, not the least with the developments in data driven research and artificial intelligence. Proper data management is therefore a key skill for researchers, and an important component in the move towards Open Science, where studies can (re-)use and share data. Both nationally and internationally, a vastly expanding eco system of digital services and data platforms exists and knowledge about this is of importance for the modern researcher in many domains.

In this course, the students will be introduced to different aspects and best practices in data management, Open Science and data infrastructures.

Through a series of seminars, senior experts will cover different concepts like EU infrastructures, sharing of FAIR data and the use of Data Management Plan tools, with additional materials available for reading which can be selected depending on the scientific domain of the student.

The student is expected to write a reflective report on how data management, Open Science and data infrastructures can be used for good scientific practices in their own (PhD) project or scientific domain. The report should be discussed with the main supervisor of the student, and each participant will peer-review the report of another student.

Concepts included:

- Basic information about legislation and guidelines for data management.
- Overview of current tools for Data Management Plans.
- Introduction to Open Science as a concept.
- Advantages and disadvantages of different aspects of Open Science.
- The policy context surrounding Open Science, including research funding.
- The development of data infrastructures in Sweden and the EU.
- Best practices for the use of data infrastructures.

Examination

- INL1 - Assignment, 3.0 credits, grading scale: P, F
- DEL1 - Participation, 4.5 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability. The examiner may apply another examination format when re-examining individual students. If the course is discontinued, students may request to be examined during the following two academic years.

Other information about the course and grading criteria are found in the course memo.

Other requirements for final grade

To pass the course, the following is required:

- attendance at a minimum of 80% of mandatory course sessions.
- approved assignments, including a written reflection (6–12 pages) on how data management, Open Science, and data infrastructures can be handled successfully within the student's own research project or a related research area.
- a certificate from the doctoral student's principal supervisor confirming that the reflection has been discussed and is appropriate for the research project or field.
- completed peer review of another student's written reflection.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.