UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Master Project in Bioinformatics A1E

30 credits

Course code: BI768A
Version number: 2
Valid from: 1 July 2026
Ratified by: Curriculum Committee for Bioscience
Date of ratification: 14 August 2025

1. General information about the course

The course is provided by the University of Skövde and is named Master Project in Bioinformatics A1E (Examensarbete i bioinformatik A1E). It comprises 30 credits and is a second-cycle course. The level of progression is A1E.

The course is a part of the main field of study in Bioinformatics. The disciplinary domain of the course is Natural Sciences.

2. Entry requirements

Bachelor's degree or professional degree of at least 180 credits (or equivalent) in bioinformatics, molecular biology, biomedicine or computer science, passed courses BI764A Bioinformatics Analysis Flows for Large-Scale Sequencing Data A1N and BI763A Introduction to AI in Bioinformatics A1N and passed in the examination modes Assignment and Ethics Seminars in the course BI766A Current Research Themes in AI for Bioinformatics A1F (or equivalent knowledge).

An additional requirement is proof of skills in English equivalent of studies at upper secondary level in Sweden, known as the Swedish course English 6 or English level 2. This is normally demonstrated by means of an internationally recognized test, e.g. IELTS or TOEFL or the equivalent.

3. Course content

In this course, the student will have the opportunity to gain practical experience in research within bioinformatics and its related fields. The course provides the possibility to carry out a scientific project at a university or another organization, either in Sweden or abroad.

Project plan, 3 credits

In this part of the course, an initial literature review is conducted, and the scientific hypotheses and research questions are formulated in a written project proposal, which also includes a timeline. Ethical aspects of the project must also be discussed. Grade passed (G) on this assignment is a prerequisite for being assessed on the remaining examination components of the course.

Method, 12 credits

During this part of the course, the hypotheses are tested. The results obtained may in turn generate new hypotheses, which may also be included as part of the degree project.

Essay, 10 credits

A scientific report is written in English following a specific report template. The report must cover all parts of the project.

Oral examination, 2 credits

During the oral examination, the student shall give a brief presentation of the project to the examiner and defend the chosen methods, results, and conclusions, as well as discuss the subject area.

Poster presentation and opposition, 3 credits

In the poster presentation, the student shall present the project to the examiner and a student peer reviewer, as well as, if possible, to the public. The student is also expected to critically review another student's thesis.

4. Objectives

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

- identify, specify, and justify a scientifically relevant research question within bioinformatics, and design a methodology that enables investigation of the research question,
- integrate and apply previously acquired knowledge to deepen and apply the proposed methodology, analyze and evaluate the collected data, and conduct a critical evaluation of the results,
- write a scientific report and formulate a popular science summary based on the finalized work,
- identify and discuss research ethics issues, gender perspectives, and the societal relevance of the project,
- in dialogue with the examiner give an oral account of the work carried out, defend the chosen methods, results and conclusions, and demonstrate in-depth knowledge of the subject area,
- construct and orally present a scientific poster of the project and critically review another student's report.

5. Examination

The course is graded A (Excellent), B (Very good), C (Good), D (Satisfactory), E (Sufficient) or F (Fail).

A final grade of the course is only issued when all the examination parts have been passed and is determined by a weighted average of the grades for the examination parts Method and Essay. The average value is rounded to the nearest integer (half values are rounded up) and translated into a final grade of the course.

Once the course is finished, access to additional supervision is limited, and determined by the school on a case-by-case basis. Access to such additional supervision cannot be granted more than one year after the course has finished.

The examinations of the course consist of the following modes of assessment:

- **Project plan**
  3 credits, grades: G/U
- **Method**
  12 credits, grades: A/B/C/D/E/F
- **Essay**
  10 credits, grades: A/B/C/D/E/F
- **Oral examination**
  2 credits, grades: G/U
- **Poster presentation and opposition**
  3 credits, grades: G/U

Students with a permanent disability who have been approved for directed educational support may be offered adapted modes of assessment.

6. Types of instruction and language of instruction

The teaching is comprised of supervision.

The teaching is conducted in English.

7. Course literature and other educational materials

Scientific articles related to the chosen research problem.

8. Student influence

Student influence in the course is ensured by means of course evaluation. The students are informed about the results of the evaluation and potential measures that have been taken or are planned, based on the course evaluation.

9. Additional information

Further information about the course, as well as national and local governing documents for higher education, is available on the website of the University of Skövde.