



UNIVERSITY
OF SKÖVDE

COURSE SYLLABUS

Bioinformatics Concepts and Methods A1N

7.5 credits

Course code: BI760A

Version number: 7.1

Valid from: 1 January 2024

Ratified by: Curriculum Committee for Bioscience

Date of ratification: 25 May 2023

1. General information about the course

The course is provided by the University of Skövde and is named Bioinformatics Concepts and Methods A1N (Bioinformatiska koncept och metoder A1N). It comprises 7.5 credits and is a second-cycle course. The level of progression is A1N.

The course is a part of the main field of study in Bioinformatics. It can also be a part of the main field of study in Bioscience and Systems Biology. The disciplinary domain of the course is Natural Sciences.

2. Entry requirements

Admission to the course requires a minimum of 90 credits in biology, medicine or computer science, including at least 15 credits at advanced level G2F (or equivalent).

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

3. Course content

The course gives an overview of bioinformatics and a review of commonly used information sources and bioinformatic methods. The underlying principles of these information sources and tools are general, and they can therefore be used in many problem domains. The goal of the course is to provide general knowledge of how bioinformatics is applied to solve problems in molecular biology.

4. Objectives

After completed course the student should be able to:

- extensively define concepts and questions that are central to bioinformatics, and critically evaluate practical applications of bioinformatics,
- describe the role of bioinformatics in the digitilisation of clinical practice and research in bioscience and biomedicine, and how it thereby contributes to improving health and wellbeing,
- describe how bioinformatics has developed,
- describe and evaluate the public information sources that are central to bioinformatics, and how these are structured,
- independently apply and extensively describe methods and tools used for analysis of largescale data in molecular biology and biomedicine, and

TRANSLATION FROM SWEDISH

- independently draw conclusions regarding strategies to solve a given bioinformatic problem and critically analyse the results.

5. Examination

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

The final grade will be issued only when all examinations are approved.

The final grade of the course is determined by the average from the grades for the five examination parts; A=5, B=4, C=3, D=2 and E=1. The average value is rounded to the nearest integer (half rounded up) and translated to a final grade for the course A=5, B=4, C=3, D=2 and E=1.

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

- **Written assignment 1**
1.5 credits, grades: A/B/C/D/E/F
- **Written assignment 2**
1.5 credits, grades: A/B/C/D/E/F
- **Written assignment 3**
1.5 credits, grades: A/B/C/D/E/F
- **Written assignment 4**
1.5 credits, grades: A/B/C/D/E/F
- **Supervised written examination**
1.5 credits, grades: A/B/C/D/E/F

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

6. Types of instruction and language of instruction

The teaching comprises of lectures, assignments and laborations/exercises.

The teaching is conducted in English.

7. Course literature and other educational materials

Scientific articles and web material. They are reported on a special list provided by the course coordinator.

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.