UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

## COURSE SYLLABUS

# Bioinformatic analysis with Python 2 G1F

### 7.5 credits

**Course code:** BI320G
**Version number:** 6
**Valid from:** 1 July 2025
**Ratified by:** Curriculum Committee for Bioscience
**Date of ratification:** 30 January 2025

## 1. General information about the course

The course is provided by the University of Skövde and is named Bioinformatic analysis with Python 2 G1F (Bioinformatisk analys med Python 2 G1F). It comprises 7.5 credits and is a first-cycle course. The level of progression is G1F.

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

The course has the following entry requirements: passed BI121G Bioinformatic Analysis with Python 1 G1N and passed BI119G Introduction to Bioinformatics G1N (or the equivalent).

## 3. Course content

This course provides extended knowledge of procedural programming in the language Phyton, with the purpose of solving bioinformatics problems and perform commonly occurring bioinformatic analyses. The course covers both theoretical and practical knowledge for object-oriented programming in Phyton. Students learn how to design and implement programs in Phyton in a systematic way by using both built-in and external packages, and commonly used strategies for developing efficient code. Covered theory and practice is exemplified with exercises and assignments.

## 4. Objectives

After completed course the student should be able to:

- write programs in Python that include code from built-in and external packages to perform bioinformatic analyses,
- develop programs in Python that use regular expressions to solve bioinformatic problems,
- develop programs in Python that visualize results from bioinformatic analyses,
- apply commonly used strategies to develop more efficient code,
- describe and explain the fundamental concepts of object-oriented programming, and
- develop object-oriented programs in Python to solve bioinformatic problems.

## 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 two written assignments. The average value is rounded to the nearest integer (half rounded up) and translated into a final grade of the course.

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

- **Written Assignment 1**
  3.5 credits, grades: A/B/C/D/E/F
- **Written Assignment 2**
  4 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 modes of assessment.

## 6. Types of instruction and language of instruction

The teaching is comprised of lectures and exercises.

The teaching is conducted in English.

## 7. Course literature and other educational materials

The literature for the course consists of lecture slides and lecture notes, exercises, and other study material that will be made available on the course site.

## 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.