UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Molecular Diagnostics and Biomarkers G2F

7.5 credits

Course code: BV511G
Version number: 8
Valid from: 1 January 2027
Ratified by: Curriculum Committee for Bioscience
Date of ratification: 30 April 2026

1. General information about the course

The course is provided by the University of Skövde and is named Molecular Diagnostics and Biomarkers G2F (Molekylär diagnostik och biomarkörer G2F). It comprises 7.5 credits and is a first-cycle course. The level of progression is G2F.

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

2. Entry requirements

The course has the following entry requirements: passed BV108G Cell Biology G1N and [passed BV113G Microbiology G1N or passed BV115G Microbial Bioinformatics G1N] (or the equivalent).

An additional requirement is: attended BV311G Method and Design in Life Science G1F with a passed grade on the examination part 2002 Project presentation, 2.5 credits or passed grade on the examination part 1002 Written examination in computer lab, 5 credits.

Since the level of progression of the course is G2F the prerequisites are at least 60 credits in Bioscience, Bioinformatics, Biomedicine or Chemistry, where the courses above are included.

3. Course content

The course provides the student with knowledge in how different biomarkers can be used as diagnostic and prognostic markers, how biomarkers can be used in the development of new pharmaceutical drugs, and how biomarkers can be used to monitor drug therapies. During the course, different multivariate statistical and experimental methods are used to identify and validate putative biomarkers. The course also includes an individual project which gives the student an opportunity to study in detail how biomarkers are used in different applications.

4. Objectives

After completed course the student should be able to:

- analyze multivariate data in order to detect and validate different types of biomarkers,
- use and apply different multivariate statistical methods in order to combine biomarkers,
- describe applications for different biomarkers, and the different techniques used in molecular biology to detect biomarkers,
- in an individual project, describe the use of biomarkers within different applications, and also present the project orally, and
- plan, report and carry out an experiment, which aims at detecting a disease with the use of biomarkers.

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.

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

- **On-campus supervised written examination**
  4 credits, grades: A/B/C/D/E/F (determines the final grade)
- **Oral presentation**
  2 credits, grades: G/U
- **Written assignment**
  1.5 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 comprises computer exercises, lectures and laboratory sessions.

The teaching is conducted in English.

7. Course literature and other educational materials

Distributed material

Scientific articles

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.