UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Experimental Methods and Design in Bioscience A1N

17.5 credits

Course code: BV717A
Version number: 2
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 Experimental Methods and Design in Bioscience A1N (Experimentella metoder och design inom biovetenskap A1N). It comprises 17.5 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 Bioscience. It can also be a part of the main field of study in Systems Biology and Biomedicine. The disciplinary domain of the course is Natural Sciences.

2. Entry requirements

The course has the following entry requirements: 150 passed credits, including a total of at least 90 credits within one of, or both, the subjects of biology and medicine. Of these, at least 15 credits must be on the level of progression G2E (or the equivalent).

3. Course content

The course consists of theory and laboratory experiments in molecular biology, as well as one or more research problems in life science that students are expected solve and present in an independent and scientific way. The course also includes advanced training in searching, analyzing, and critically reviewing scientific texts, along with knowledge and practical exercises in reference management and how to avoid plagiarism.

4. Objectives

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

- in depth describe theories behind molecular biological techniques where DNA, RNA and proteins are studied,
- in an independent way plan and perform lab experiments using molecular biological techniques,
- in a critical and correct way analyze the obtained results and present the results in a scientific way, orally and in writing, and
- search for, evaluate, and critically review scientific publications in a structured manner.

5. Examination

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

The final grade of the course is determined by a weighted average of the grades for the examination parts Supervised written examination and Reports 2. The average value is rounded to the nearest integer (half rounded up) and translated into a final grade of the course.

The examination Laboratory assignment 1, 2, 3 and 4 involve dugga. The purpose of the dugga is to ensure that the student has the required knowledge regarding safety surrounding the laboratory work. The dugga also secures that the student can perform the laboration in a professional manner.

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

- **Seminar assignment**
  2 credits, grades: G/U
- **Oral presentation**
  1 credit, grades: G/U
- **Supervised written examination**
  5 credits, grades: A/B/C/D/E/F
- **Laboratory assignment 1**
  1.5 credits, grades: G/U
- **Laboratory assignment 2**
  2 credits, grades: G/U
- **Laboratory assignment**
  2.5 credits, grades: G/U
- **Laboratory assignment 4**
  1 credit, grades: G/U
- **Reports 1**
  1 credit, grades: G/U
- **Reports 2**
  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 modes of assessment.

6. Types of instruction and language of instruction

The teaching is comprised of laboratory sessions, lectures, seminars/group discussions, presentations, exercises and supervision.

The teaching is conducted in English.

7. Course literature and other educational materials

Brown, T. A. (2021). *Gene Cloning and DNA Analysis: An Introduction* (8th ed.). Hoboken, NJ: : John Wiley & Sons. ISBN 9781119640783. (Book) or ISBN 9781119640752 (e-book)

Hofmann, A. & Clokie, S. (2018). *Wilson and Walker's Principles and Techniques of Biochemistry and Molecular Biology* (8th ed.). Cambridge: Cambridge University Press. ISBN 9781316614761.

Weyers, J. et al. (2016). *Practical Skills in Biomolecular Sciences* (5th ed.). Harlow: Pearson Education Limited. ISBN 9781292100739.

Scientific articles and experimental protocols.

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.