UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Experimental Methods and Design in Bioscience A1N

10 credits

Course code: BV700A
Version number: 7.1
Valid from: 1 January 2024
Ratified by: Curriculum Committee for Bioscience
Date of ratification: 28 September 2023

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 10 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 prerequisites for this course are 150 higher education credits passed, of which at least 90 higher education credits must be courses within biology or medicine. Among these higher education credits, at least 15 must be on G2E-level or higher (or the 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 consists of theory and laborations in experimental molecular biology. In the course, one or more research problems in life science is to be practically solved and presented by the student in an independent and scientific way.

4. Objectives

After completed course the student should be able to:

- in depth describe the theories behind molecular biological techniques where DNA, RNA and proteins are studied,
- in an independent way plan and perform lab experiment 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.

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 Written examination in computer lab 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 and 3 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:

- **Oral presentation**
  0.5 credit, grades: G/U
- **Written examination in computer lab**
  3 credits, grades: A/B/C/D/E/F
- **Laboratory assignment 1**
  1 credit, grades: G/U
- **Laboratory assignment 2**
  1.5 credits, grades: G/U
- **Laboratory assignment 3**
  2.5 credits, grades: G/U
- **Reports 1**
  0.5 credit, grades: G/U
- **Reports 2**
  1 credit, 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 9781119640752. (Ebook)

Brown, T. A. (2021). *Gene cloning and DNA analysis: An introduction* (8th ed.). Hoboken, NJ: Wiley-Blackwell. ISBN 9781119640783. (Book) or

Hofmann, A. & Clokie, S. (Eds.). (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

The content of the course corresponds completely or partially with the following course(s) and cannot be included in the required credits of a degree qualification:

- BM782A - Experimental Methods and Design in Biomedicine A1N 10 credits
- BM737A - Experimental Biomedicine A1N 7.5 credits
- BM719A - Experiment Design A1N 7.5 credits
- MB723A - Experimental Design in Molecular Biology A1N 7.5 credits
- MB725A - Experimental Methods and Design in Molecular Biology A1N 10 credits
- MB724A - Experimental Molecular Biology A1N 7.5 credits
- MB727A - Experimental Methods and Design in Life Science A1N 10 credits
- MB733A - Experimental Methods and Design in Bioscience A1N 10 credits

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.