UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Molecular Genetics G1F

7.5 credits

Course code: BV317G
Version number: 8
Valid from: 1 January 2025
Ratified by: Curriculum Committee for Bioscience
Date of ratification: 25 April 2024

1. General information about the course

The course is provided by the University of Skövde and is named Molecular Genetics G1F (Molekylär genetik 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 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 BM136G Genetics G1N (or the equivalent).

3. Course content

The course focuses on how genes function, are regulated and are constructed. The course also deals with the molecular biological techniques used to study gene function and structure and provides examples of applications where these techniques are used.The course also contains a longer laboratory experiment where genetic material will be cloned.

4. Objectives

After completed course the student should be able to:

- describe how genes are functioning and how their expression is regulated in prokaryotic and eukaryotic organisms,
- describe the theories behind some molecular biological techniques where DNA, RNA and proteins are studied,
- orally and in writing describe and discuss applications within gene technology,
- discuss ethical aspects concerning the use of gene technology, and
- plan and perform laboratory work were gene regulation is studied and discuss the results in writing.

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 examination Laboratory assignment involves a 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 secure that the student can perform the laboration in an occupational workmanlike manner. The student must pass the dugga in order to be able to participate and complete the laboration.

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

- **Supervised written examination**
  4 credits, grades: A/B/C/D/E/F (determines the final grade)
- **Seminar assignment**
  1 credit, grades: G/U
- **Laboratory assignment** [1]
  2.5 credits, grades: G/U

[1] The laboration is mandatory.

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 laboratory session.

Depending on the study period, the language of instruction may be Swedish or English. Even if the teaching is conducted in Swedish, some English may still occur.

7. Course literature and other educational materials

Campbell, N. A., Urry, L. A., Wasserman, S. A., Minorsky, P. V., Cain, M. L. & Orr, R. B. (2020). *Biology: a global approach* (12th ed.). Pearson Education Limited. ISBN 9781292341637.

Brown, T. (2016). *Gene cloning and DNA analysis: An introduction*. Chichester, West Sussex: Wiley-Blackwell. 9781119072560 (book). **or**

Brown, T. A. (2015). *Gene Cloning and DNA Analysis: An Introduction*. New York, NY: John Wiley & Sons. 9781119072546 (e-book).

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:

- MB311G - Gene Regulation G1F 7.5 credits
- MBB112 - Gene Regulation B11, Intermediate level 5 p
- MBB111 - Molecular Genetics B11, Intermediate level 5 p

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.