UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Translational Genetics A1N

7 credits

Course code: BM708A
Version number: 3
Valid from: 1 January 2026
Ratified by: Curriculum Committee for Health Sciences
Date of ratification: 28 May 2025

1. General information about the course

The course is provided by the University of Skövde and is named Translational Genetics A1N (Translationell genetik A1N). It comprises 7 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 Biomedicine. The disciplinary domain of the course is Natural Sciences.

2. Entry requirements

A Bachelor's degree equivalent to a Swedish kandidatexamen of 180 credits, with a major within the main field of Biomedicine, Biotechnology, Cell and Molecular Biology or Medicine (or the equivalent).

An additional requirement is proof of skills in English equivalent of studies at upper secondary level in Sweden, known as the Swedish course English 6 or English level 2. This is normally demonstrated by means of an internationally recognized language test, e.g. IELTS or TOEFL.

3. Course content

The course explores the complex interplay between genetic alterations and the environment and how this affects human traits and diseases. The course includes functional genetic methods and how personalized medicine and pharmacogenetics are used to tailor treatments. Additionally, the course includes a gene function experiment, and students are trained in analyzing and presenting the results as well as discussing ethical and societal aspects related to translational genetics.

4. Objectives

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

- explain in detail the complex interplay between genes and the environment in the development of diseases and how genetic alterations can lead to clinical heterogeneity
- explain pharmacogenetics and individualized medicine
- describe the principles of functional genetic methods
- conduct a gene function experiment and analyze and present the results in writing
- discuss the influence of gender and ethnicity on gene function, including their societal implications
- elaborate on the 3Rs principles – Replace, Reduce, and Refine – in biomedical research

5. Examination

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

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

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

[1] Examination of the laboratory assignments includes a dugga. The dugga aims to ensure the student has the necessary knowledge of the safety routines for the laboratory work as well as has sufficient theoretical knowledge to be able to perform laboratory in a professional manner.

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, laboratory sessions and seminars/group discussions.

The teaching is conducted in English.

7. Course literature and other educational materials

Strachan, T. & Read, A. P. (2018). *Human molecular genetics* (5th ed.). London: Garland Science. ISBN 9780815345893.

Scientific articles and web material will be added.

The latest edition of the course literature shall be used.

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.