



CB2130 Teori, metodik och hållbarhet inom bioteknik 7.5 credits

Teori, metodik och hållbarhet inom bioteknik

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

The official course syllabus is valid from the autumn semester 2026 as decided by the Faculty Board decision PA-2025-0010. Date of decision: 2025-10-01.

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Biotechnology

Specific prerequisites

A bachelor's degree comprising at least 180 credits and courses equivalent to at least 20 credits in life science subjects, 20 credits in chemistry, 15 credits in mathematics and 5 credits in programming.

Intended learning outcomes

After completing the course, the student should, with regard to scientific theory and methodology, be able to:

- identify definitions and descriptions of concepts, theories and problem areas and identify correct application of these concepts and theories
- account for concepts, theories and general problem areas and apply concepts and theories to specific cases
- critically discuss definitions and applications of concepts and theories in relation to specific research cases.

After completing the course, the student should also be able to:

- describe and discuss the relevance of sustainable development for biotechnology in academia and industry from social, economic and ethical perspectives, including gender equality, diversity and inclusion
- apply concepts and theories to examples from the biotechnology field and conduct a critical discussion of the methodology in biotechnology research.

Course contents

The course provides students with training in scientific theory and methodology, as well as principles for equitable and sustainable development, with applications in industrial and environmental biotechnology, molecular biotechnology and bioinformatics, and medical biotechnology. Students develop skills in basic concepts, theories, and problem areas in the philosophy of science, while reflecting on ethics, gender equality, diversity, inclusion, and sustainability. The course thus prepares students to apply biotechnology in a responsible and innovative way to meet societal and environmental challenges.

The course covers:

- scientific knowledge, definitions and hypothesis testing
- observations and measurements, experiments and models
- statistical reasoning, causes and explanations
- research ethics
- sustainable development, gender equality, diversity and inclusion.

Examination

- SEM1 - Seminar, 1.5 credits, grading scale: P, F
- SEM2 - Seminar, 1.0 credits, grading scale: P, F
- HEM1 - Home exam, 2.0 credits, grading scale: P, F
- PRO1 - Project work, 3.0 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability. The examiner may

apply another examination format when re-examining individual students. If the course is discontinued, students may request to be examined during the following two academic years.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.