



BB1050 Biotechnology 6.0 credits

Bioteknik

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

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for BB1050 valid from Spring 2024.

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Mathematics 4, Physics 2, Chemistry 1

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

After completion of the course the student shall have

Knowledge and understanding to:

- Explain the basic concepts of the different types of cell structures and organization
- Explain basic concepts regarding structure and function of proteins, nucleic acids, lipids and carbohydrates
- Describe common metabolic pathways

Course contents

The course aims to provide basic-level theoretical knowledge in biochemistry and an introduction to biotechnology. Much of the course focuses on the cell's macromolecules proteins, lipids, nucleic acids and carbohydrates and their building blocks and interactions in metabolism, photosynthesis and gene technology and in applications in industrial biotechnology with connections to green chemistry and sustainability.

The course consists of the following parts:

- Prokaryotic and eukaryotic cells' structure and organization Membranes' structure and function
- Nucleic acids' structure, biosynthesis and function in the cell's transfer of information
- Protein structure, function and biosynthesis
- Enzymes' catalytic function and role in metabolism
- The most important (for example glycolysis, gluconeogenesis, citric acid cycle, oxidative phosphorylation) metabolic pathways' structure, function, interaction and regulation
- Energy balance in aerobic and anaerobic conditions
- Biotechnical tools and applications within green chemistry and sustainability

Examination

- KON1 - Partial exam, 1.0 credits, grading scale: P, F
- TEN2 - Written exam, 5.0 credits, grading scale: A, B, C, D, E, FX, 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.

Other requirements for final grade

Examination. (TEN2; 5.0 credits, grading scale: A, B, C, D, E, FX, F)

Quiz. (KON1; 1.0 credits, grading scale: P, F)

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.