



# BB1150 Biochemistry 1 7.5 credits

## Biokemi 1

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

## Establishment

Course syllabus for BB1150 valid from Spring 2023

## 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:

- Describe and explain basic biochemical concepts.
- Describe the function, name and chemical structure of different biomolecules.
- Apply common techniques used in biochemical laboratory exercises.
- Summarize the executed laboratory exercises in a report.

For higher grades (A-D) the student shall also have

Knowledge and understanding to:

- Use and combine knowledge within biochemistry to explain complex biochemical questions.

## Course contents

All living organisms require energy, but the opportunities to acquire energy varies. The process is called metabolism and gives both building blocks and energy. This course will primarily include catabolism of carbohydrates for energy extraction and the central biomolecules and their building blocks amino acids, lipids and carbohydrates.

Course main contents:

- Draw chemical structures, functional groups, isomerism and various types of chemical bonds.
- Biological building blocks, amino acids, nucleotides, carbohydrates and lipids.
- The composition, structure and function of proteins.
- The activity, catalytic strategy and role in metabolism of different enzymes.
- Structure, isomerism and construction from mono- to polysaccharides of carbohydrates.
- Different types of lipids and composition of biological membranes.
- Transport over membranes
- Carbohydrate degrading metabolism from glycolysis to oxidative phosphorylation.
- Risk assessment in the laboratory and writing of a report.

## Examination

- TENA - Written Exam, 6.5 credits, grading scale: A, B, C, D, E, FX, F
- LABA - Laboratory, 1.0 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.

## **Other requirements for final grade**

To pass the course the student must pass the examination (TENA) and pass the laboratory course (LABA).

## **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.