



CB201V Biocatalysis for Industrial Professionals 4.0 credits

Biokatalys för yrkesverksamma

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 CB201V valid from Spring 2025

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Biotechnology

Specific prerequisites

Organic chemistry 7.5 hp, Biochemistry 7.5 hp, English B/6.

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 be able to:

- demonstrate knowledge and analytical skills in the field of biocatalysis
- demonstrate ability to explain and analyze concepts in biocatalysis based on relevant research literature
- formulate and discuss in writing how biocatalysis can be applied in industry to create more environmentally sustainable processes and, be able to reflect on sustainable societal development

Course contents

The course is given online and remotely and provides an overview of the research area Biocatalysis, with special emphasis on the application of enzymes for environmentally sustainable production of chemical products. The course comprises approximately 105 full-time study hours, corresponding to 4,0 ECTS credits.

Relevant enzymes and their reaction mechanisms are discussed. Furthermore, central experimental techniques for the use of enzymes in organic solvents are discussed, as well as methods for optimizing stereochemical yields with industrial processes as examples.

Furthermore, the course provides knowledge about general and current techniques for design and modification of enzymes, for example directed evolution, for application in biocatalysis. The student carries out a project where a theoretical experiment is designed which includes, among other things, to select and justify the choice of methods for the experimental execution and the analysis of the results.

Examination

- INL1 - Hand in assignments, 1.0 credits, grading scale: P, F
- PRO1 - Project, 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.

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.