



BB1210 Purification of Biomolecules 6.0 credits

Rening av biomolekyler

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 BB1210 valid from Autumn 2015

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Language of instruction

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

Intended learning outcomes

On completion of the course, the students should be able to:

- Describe and compare different technologies for the purification of biomolecules
- Plan an efficient purification process for a biomolecule
- Carry out a chromatographic experiment to purify a biomolecule, calculate yield of the purification, and suggest improvements to reduce losses
- Write a scientific report on his experiment
- Critically review a report and constructively comment on the possibilities for improvements

Course contents

The course gives an orientation in the methods that are used for purifying biomolecules. Focus will be on proteins, but other biomolecules will also be treated.

The course describes methods for:

- Cell disintegration
- Clarification
- Centrifugation
- Filtering
- Precipitation, crystallization.
- The theoretical and practical bases of chromatography: Gel-filtration, ion exchange chromatography, hydrophobic interaction chromatography, reverse-phase chromatography, affinity chromatography
- Electrophoresis
- Methods for buffer exchange, concentration, and storage.

Disposition

The material will be presented through lectures, seminars, exercises and laboratory sessions.

Course literature

1. Biochemistry Laboratory -modern theory and techniques, Rodney Boyer

2. Chromatographic Methods for Protein Purification, compendiums of My Hedhammar et al

Examination

- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, F
- TEN1 - Written exam, 3.0 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

Pass of all parts

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.