



Protein Science and Technology Proteinvetenskap och proteinteknologi

7.5 credits

Ladok Code: TK651D

Version: 1.0

Established by: Board of the department 2007-05-22

Valid from: Autumn 2007

Education Cycle: Second cycle

Main Field of Study (Progressive Specialisation): Biotechnology (A1F)

Disciplinary Domain: Technology

Prerequisites: Meets requirements for acceptance to a masters programme in the field of biotechnology.
A knowledge of biochemistry and biotechnology, equivalent at least to the course Introduction to biotechnology.

Subject Area: Biotechnology

Grading Scale: ECTS-credits

Content

- The molecular structure of proteins
- Modelling of proteins and other biomolecules
- Simulation of protein structure and dynamics
- Intracellular production of proteins
- Industrial production of proteins
- Industrial applications
- Pharmaceutical applications.

Learning Outcomes

After completing the course, students must be able:

- to describe structural and chemical properties of proteins, including their intermolecular and intramolecular interaction
- to classify proteins on the basis of their essential properties
- to describe the principles for intracellular formation of proteins
- to describe simulation methods and their use for proteins
- to use modelling and modelling software to examine the basis properties of a protein molecule
- to evaluate several modelling methods in order to resolve a given problem.
- to describe the principles for production of proteins
- to describe a few industrial and pharmaceutical uses of proteins.

Forms of Teaching

The teaching comprises the following elements:

- lectures
- laboratory work
- project work

Teaching will take place through the medium of English.

The language of instruction is English.

Forms of Examination

The course will be examined through the following examination elements:

Seminar

Learning outcomes:

Credits: 0.5

Grading scale: Fail (U) or Pass (G)

Submitted work

Learning outcomes:

Credits: 1.5

Grading scale: Fail (U) or Pass (G)

Examination

Learning outcomes:

Credits: 5.5

Grading scale: Seven-degree grading scale (A-F)

The final grade will be a weighted average of all three of these elements.

ECTS grading scale.

Student rights and obligations at examination are in accordance with guidelines and rules for the University of Borås.

Literature and Other Teaching Materials

Literature

- D. Whitford: Proteins Structure and Function, Wiley 2005
- Supplementary copied material.
- Software

Student Influence and Evaluation

The head of department and teacher responsible for the course are responsible for ensuring that students are invited systematically and regularly to put forward their views on the course. The results of the evaluations will be reported back to the students and will form the basis for the future structure of the course.

Miscellaneous