



Molecular biotechnology

Molekylär bioteknik

15 credits

Ladok Code: 42K03D

Version: 3.0

Established by: The Teaching Committee 2013-05-23

Valid from: Autumn 2013

Education Cycle: Second cycle

Main Field of Study (Progressive Specialisation): Chemical Engineering (A1F)

Disciplinary Domain: Technology

Prerequisites: Meets requirements for acceptance to a masters programme in the field of chemical engineering. This course is based on and will develop knowledge from the courses Technical Microbiology and Molecular Biology.

These two courses must be passed before entering the course in Molecular Biotechnology.

Subject Area: Chemical Engineering

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

Content

- bioinformatics
- protein modelling
- project planning
- gene transformation.

Learning Outcomes

After completing this course, students must be able:

- *Knowledge and Understanding*

1.1 use the basics of bioinformatics

1.2 use the basics of protein modeling

1.3 use a range of important molecular biological tools

- *Skills and abilities*

2.1 plan and implement a major laboratory biotechnology project

- *Judgement and approach*

3.1 critically review and evaluate the results of laboratory projects

Forms of Teaching

The teaching comprises the following elements:

- laboratory work
- guides
- seminars
- field studies
- laboratory work on computer
- project work

The language of instruction is English.

Forms of Examination

The course will be examined through the following examination elements:

Learning outcomes:

Credits: 1

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

Bioinformatics

Learning outcomes:

Credits: 0.5

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

Laboratory work

Learning outcomes:

Credits: 11

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

Seminar

Learning outcomes:

Credits: 1

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

Protein modelling

Learning outcomes:

Credits: 1.5

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

To pass the course, students must:

- pass a written task on bioinformatics, which must be handed in
 - describe the protein modelling project in a report
 - present the protein modelling project at a seminar
 - describe the laboratory work task in a planning report
 - describe the laboratory work task in a final report
- Pass and Fail marks will be given for this course.

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

Literature and Other Teaching Materials

Literature

There is reference literature in the following areas: Cell biology, microbiology and molecular biology, as well as scientific articles.

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