



## Biotechnology for Waste Treatment

### Bioteknik för behandling av avfall

15 credits

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**Ladok Code:** 42K16D

**Version:** 2.0

**Established by:** The Teaching Committee 2013-05-23

**Valid from:** Spring 2012

**Education Cycle:** Second cycle

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

**Disciplinary Domain:** Technology

**Prerequisites:** Meets requirements for acceptance to a master program in the field of chemical engineering.

The course is based on and will develop knowledge received during the course of Molecular Biotechnology, which must be passed before entering the course in Biotechnology for Waste Treatment. Exceptions can be issued by the head of the program.

**Subject Area:** Biotechnology

**Grading Scale:** ECTS-credits

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## Content

- Bioinformatics
- Review of various accessible databases in order to find information on microorganisms and enzymes utilized in biological waste treatment processes
- Literature study to investigate the state of the art today within an individual area chosen for the project
- Problem description and delineation
- Project planning
- Discussion of validity and reliability

## Learning Outcomes

After course completion the students must be able to:

- *Knowledge and Understanding*

1.1 identify areas of biological waste management where molecular biotechnology techniques can be used

1.2 understand the contents of the relevant literature in the field and be able to put their own work in this context

1.3 create a project of wastes that aims to use molecular biotechnology techniques to improve a biological waste processing

- *Skills and Abilities*

2.1 Search for literature and databases to obtain knowledge of specific bioprocesses

2.2 use a range of tools in bioinformatics

- *Judgement and approach*

3.1 critically review and evaluate the results of the project

## Forms of Teaching

- Individual supervisions
- literature seminars
- individual project work

Teaching will take place through the medium of 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)

#### *Seminars*

Learning outcomes:  
Credits: 4  
Grading scale: Fail (U) or Pass (G)

#### *Project work*

Learning outcomes:  
Credits: 10  
Grading scale: ECTS-credits

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, fermentation microbiology, biotechnology, 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**