HÖGSKOLAN I BORÅS

MSc in Resource Recovery - Industrial Biotechnology

Masterutbildning i energi- och materialåtervinning - industriell bioteknik

120 credits

Ladok Code: KMAKB
Version: 9.1
Level: Second cycle
Approved by: The Teaching Committee 2012-11-09
Valid from: Autumn 2013
Valid for:

General Objectives

Second level education shall essentially build on the knowledge that students acquire in first level education or corresponding knowledge. Second level education shall involve a deepening of knowledge, skills and abilities relative to first level education and, in addition to what applies to first level education, shall

- further develop the students' ability to independently integrate and use knowledge,
- develop the students' ability to deal with complex phenomena, issues and situations, and
- develop the students' potential for professional activities that demand considerable independence or for research and development work.

(The Higher Educations Act, Chapter 1, Section 9)

Objectives

The education is intended to give the student knowledge and skills to be able to introduce systems and technology favourable to a sustainable development. The central focus of the programme is biotechnical methods. The education is also intended to prepare the student for PhD studies.
Upon graduation, the student is expected to:

- be well prepared for PhD studies,
- have adequate knowledge in materials issues with regard to a sustainable development,
- have adequate knowledge in production and development of renewable fuels such as bioethanol and biogas
- have acquired experience and knowledge about planning of biotechnical facilities and have obtained knowledge in shaping a biotechnical process from a desired microbial product,
- have adequate knowledge about biological techniques to solve problems concerning waste,
- have an in-depth ability to apply molecular biotechnology in practice within traditional areas of business but also within areas of business where biotechnology isn't the primary choice of technology,
- have acquired experience of working in projects,
- orally and in writing be able to present projects and investigations in English.

Content

The courses that the programme comprises are listed below.
A course comprises 7.5 ECTS credits unless otherwise stated.

Study year 1. For students *with* pre-requisites equivalent to Industrial Microbiology, 7,5 ECTS and Applied Molecular biology, 7,5 ECTS

- Resource Recovery
- Protein Science and Technology
- Biofuels and Biological Treatments of Wastes
- Life Cycle Assessment
- Molecular Biotechnology, 15 ECTS
- Bioprocess Design, 15 ECTS *or* Biotechnology for Waste Treatment, 15 ECTS

Study year 1. For students *without* pre-requisites equivalent to Industrial Microbiology, 7,5 ECTS and Applied Molecular Biology, 7,5 ECTS

- Resource Recovery
- Industrial Microbiology
- Biofuels and Biological Treatments of Wastes
- Applied Molecular Biology
- Molecular Biotechnology
- Bioprocess Design, 15 ECTS *or* Biotechnology for Waste Treatment, 15 ECTS

Study year 2

- Degree Thesis, 60 ECTS. The degree thesis, 60 ECTS, includes a series of seminars in theory of science and scientific methods comprehending 4 ECTS.

Or

- Degree Thesis, 30 ECTS, course in Scientific Method, 7.5 ECTS, and elective courses within the area Resource Recovery comprehending 22,5 ECTS.

Admission Requirements

- Bachelor's degree, 180 credits, in Engineering with a specialisation in Chemical Engineering or a Bachelor's Degree in Chemistry or equivalent.
- Verified knowledge of English corresponding to the course *English B/6* in the Swedish Upper Secondary School *or* a Bachelor's degree from a university in Sweden, Denmark, Norway, Finland or Iceland.

For further information about English language proficiency, please view:
http://www.hb.se/en/International-student/Bachelor--Master-student/Application--Admission/Admission-process/English-language-proficiency/

Degree

Degree of Master of Science (Two Years) with a major in Energy and Material Recovery - specialisation Industrial Biotechnology.

Degree certificates are issued upon application on a special form. More information is available at www.hb.se.

Student Influence and Evaluation

Every course in the programme is evaluated (see to the university policy on course evaluation). The head of the programme is responsible for regularly and in a systematic fashion collecting the student’s opinions on the education. The head of the programme, along with the prefect, is also responsible for evaluating the whole programme on a yearly basis. The evaluation is carried out in cooperation with the programme’s teacher, the students and professional representatives. The evaluation is documented in writing and brought back to the students.

Miscellaneous

Study language: English.

The language of instruction is English.