



### **Master Programme in Resource Recovery - Biotechnology and Bioeconomy** **Masterprogram i Resursåtervinning - bioteknik och bioekonomi**

120 credits

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**Ladok Code:** TAVEB

**Version:** 1.1

**Level:** Second cycle

**Approved by:** Committee for Education in Technology 2023-10-06

**Valid from:** Spring 2024

**Valid for:** Admitted spring 2024

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#### **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 Education Act, Chapter 1, Section 9)

#### **Objectives**

Educational programme's goals

The overall goal of the educational programme is to provide the student with knowledge and skills in order to develop and implement systems, engineering, and technology that promote a more resource-efficient society, especially in the materials, energy, and recycling sectors. In this context, the programme is also to provide knowledge and skills that the student can take into account and critically examine when it comes to sustainability aspects, international aspects, and ethical issues. The aim of the programme is to prepare the student for doctoral education, as well.

Upon completion of the programme, the student is to be able to:

##### **1. Knowledge and understanding**

- demonstrate knowledge and understanding of resource recovery, including both broad knowledge and substantially specialised knowledge in certain areas of resource recovery as well as specialised insight into current research and development work.
- The student should also demonstrate specialised methodological knowledge in resource recovery.

##### **2. Skills and abilities**

- based on complex phenomena, problems, and situations related to resource recovery, even with limited information, have the ability to critically and systematically integrate knowledge and analyse, assess, and process it from a technical, economic, environmental, and social perspectives.
- demonstrate the ability to critically, independently, and creatively identify and formulate questions as well as plan and, with adequate methods, carry out and evaluate qualified tasks within given time frames and thereby also contribute to the development of knowledge.
- orally and in writing clearly recount and discuss conclusions and results and the knowledge and arguments on which they are based in dialogue with different groups, both in national and international contexts.
- have acquired the skills required to participate in research and development work or to work independently in other qualified settings.

##### **3. Evaluation ability and approach**

- demonstrate the ability to make assessments in the main area of resource recovery with regard to scientific, societal, and ethical aspects and demonstrate awareness of ethical aspects of research and development work.
- demonstrate insight into the possibilities and limitations of science and technology, their role in society, and people's responsibility for how they are used.
- demonstrate the ability to identify their own need for additional knowledge and to take responsibility for their own knowledge development.

## **Content**

### **Admission Requirements**

Degree of Bachelor of Science or Degree of Bachelor of Science in Engineering, 180 ECTS credits, specialising in mechanical engineering, industrial economics, energy engineering, chemical engineering, biotechnology, road and water technology, textile engineering, or construction engineering. Or a Bachelor's degree in physics or chemistry. To study this specialisation, you need prior knowledge of chemistry. In addition, proficiency in English equivalent to Swedish upper secondary course English 6 is required.

### **Degree**

After completing the educational programme corresponding to the requirements in this programme syllabus, the student can, upon application to the university, receive this degree:

Degree of Master of Science (Two Years) with a major in Resource Recovery – specialisation Industrial Biotechnology

The diploma is bilingual (Swedish/English). Together with the diploma, you receive a Diploma Supplement (English). A Diploma Supplement is an appendix describing the place of the awarded degree within the Swedish education system. Diplomas are issued upon application via a form. More information can be found on the university's website.

Degree certificates are issued upon application on a special form. More information is available at [www.hb.se](http://www.hb.se).

### **Student Influence and Evaluation**

All courses within the programme are evaluated (see the university's policy for course evaluation). The Programme Coordinator is responsible for ensuring that students' views on the education are systematically and regularly collected. The Programme Coordinator together with the Dean of Faculty, is responsible for ensuring that the programme is evaluated annually with the participation of the students. The evaluation is documented in writing and returned to the students.

### **Miscellaneous**

This syllabys is a translation from the Swedish written original.

The language of instruction is English.