



## Resource Recovery I Resursåtervinning I

5 credits

5 högskolepoäng

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**Ladok Code:** FRRRR01

**Version:** 1.0

**Established by:** The Research education committee in Resource Recovery 2022-03-30

**Valid from:** Autumn 2022

**Education Cycle:** Third cycle

**Research Subject:** Resource Recovery

**Prerequisites:** The student has to be admitted to a PhD programme. The examiner can make exceptions to this rule. The student should have connections to the subject Resource Recovery. This must be approved by the examiner.

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

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### Content

This course is an introduction course in Resource Recovery focusing on waste minimization, material recovery, energy recovery and material cycles. Together with material recycling and circular systems also ethical, social, legal and economical questions are discussed. How is the society affected, which waste streams are available, how is a working waste management system put together. The course also includes classifying of hazardous waste and REACH, together with different instruments and legislations in Sweden and EU as catalyst or obstacle for a circular economy.

### Learning Outcomes

Upon completion of the course, the student must be able to:

#### *1 Knowledge and understanding*

- 1.1 describe different incentives available for decision makers to reach their goals
- 1.2 explain the reasons behind and the motives for resource recovery
- 1.3 describe the steps in a recovery process that includes collection, sorting, demolition and identification
- 1.4 describe and explain which different techniques for recycling that is available, such as crushing, melting, pyrolysis.

#### *2 Skills and ability*

- 2.1 evaluate different recycling techniques in economic, environmental and social aspects
- 2.2 explain and discuss how waste management can be climate smart

#### *3 Critical judgement and evaluation*

- 3.1 evaluate how the design of different waste management systems considers sustainability, society and ethics, in addition to conflicts in interest between them

### Forms of Teaching

Lectures, discussions, exercises, study visits and project work (written report and oral presentation).

The language of instruction is English.

### Forms of Examination

Examination of the course occurs through:

- Written Exam (TE) Learning outcome: 1.1-1.4, 2.1-2.2 Credits: 3 Grading scale: Passed or failed

- Project work (IN1) Learning outcome: 2.1-2.2, 3.1 Credits: 1.5 Grading scale: Passed or failed
- Study visit (ST1) Learning outcome: 1.2 Credits: 0.5 Grading scale: Passed or failed

If the student has received a decision/recommendation regarding special pedagogical support from the University of Borås due to disability or special needs, the examiner has the right to make accommodations when it comes to examination. The examiner must, based on the objectives of the course syllabus, determine whether the examination can be adapted in accordance with the decision/recommendation.

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

### **Literature and Other Teaching Methods**

Material provided during the course and selected scientific articles.

### **Student Influence and Evaluation**

The course is evaluated in accordance with current guidelines for course evaluations at the University of Borås in which students' views are to be gathered. The course evaluation report is published and returned to participating and prospective students in accordance with the above-mentioned guidelines, and will be taken into consideration in the future development of courses and education programmes. Course coordinators are responsible for ensuring that the evaluations are conducted as described above.

### **Miscellaneous**

This syllabus is a translation from the Swedish original.