



Resource Recovery

Resursåtervinning

5 credits

Ladok Code: 42RR05

Version: 4.2

Established by: Committee for Education in Technology 2019-03-08

Valid from: Spring 2019

Education Cycle: Second cycle

Main Field of Study (Progressive Specialisation): Resource Recovery (A1N)

Disciplinary Domain: Technology

Prerequisites: Degree of Bachelor of Science or Bachelor of Science in Engineering with major in Mechanical Engineering, Industrial Business Economics, Energy Technology, Chemical Engineering, Biotechnology, Civil Engineering, Textile Engineering or Structural Engineering

or

Bachelor's degree in physics or chemistry.

Proficiency in English equivalent to :

IELTS (academic training), 6.5 (with no part of the test below 5.5)

or

TOEFL (Internet based): 90 (with a minimum of 20 on the written part)

or

TOEFL (paper based): 575 (with a minimum of 4.5 on the written part)

For further information about English language proficiency requirements, please view: www.hb.se/Englishlanguageproficiency

Subject Area: Environmental Science

Grading Scale: Seven-degree grading scale (A-F)

Content

- Waste minimization
- Resource recovery for sustainable development
- Feeding the waste streams: sources of materials in the environment
- Managing material waste: technologies for separation and recycling
- Drivers and barriers for material recycling: social, legal and economic factors
- Environmental impacts of waste and recycling
- Hazardous waste-classification, Reach
- Ethical issues

Learning Outcomes

Upon completion of the course this student must be able to

1 Knowledge and Understanding

1.1 Describe different instruments 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 the recycling process including

- collection

- sorting

- dismantling

- identification

1.4 Describe available material recovery techniques, such as crushing, melting, pyrolysis

2 Skills and ability

2.1 Evaluate different available recovery techniques from an economic, environmental and social perspective

2.2 Explain and discuss how waste management can be made Climate smart

3 Critical judgement and Evaluation

3.1 Plan and explain how the waste system in a given environment should take account of sustainability, society and ethics

Forms of Teaching

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

The language of instruction is English.

Forms of Examination

When all parts of the course have been passed the grade of the written examination determines the course grade.

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

Literature and Other Teaching Materials

Provided during the course.

Student Influence and Evaluation

The head of department and course coordinator have the responsibility to systematically and regularly monitor the students' assessments of the course. These assessments form the foundation for the course development.

Miscellaneous

Tutorial language: English or Swedish