



## Process Design – Energy Carrier Production

### Processdesign – Produktion av energibärare

15 credits

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**Ladok Code:** 42K17D

**Version:** 2.0

**Established by:** The Teaching Committee 2012-02-24

**Valid from:** Spring 2012

**Education Cycle:** Second cycle

**Main Field of Study (Progressive Specialisation):** Energy Technology (A1F)

**Disciplinary Domain:** Technology

**Prerequisites:** Accepted for masters course Energy recovery and recycling of materials - sustainable systems

The course is also based on the courses Process Technology, Energy Recovery - thermal processes and Resource Recovery. Exceptions may be granted to the prior knowledge requirements by the director of studies and the course manager, who will make a joint decision.

**Subject Area:** Environmental Science

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

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### Content

- Cost estimating
- Flow sheeting
- Supporting lectures. The content will be adapted according to the nature of the project

### Learning Outcomes

After completing this course, students will be able:

- to analyse and assess a system or facility, or part of a facility for energy recovery, from an economic, technical and environmental point of view.
- to use commercial software to design individual components and for analysis of an entire system.
- to implement a cost estimate in respect of investment and operating costs.
- to present a major project and make it comprehensible to a target group which does not consist of engineers
- to work in a group and be aware of group dynamics

### Forms of Teaching

- Lectures
- Exercises
- Project work

The language of instruction is English.

### Forms of Examination

The course will be examined through the following examination elements:

#### *Examination*

Learning outcomes:

Credits: 3

Grading scale: Fail (U) or Pass (G)

#### *Assignments, seminars, study visits*

Learning outcomes:

Credits: 2

Grading scale: Fail (U) or Pass (G)

*Project presentation, written and verbal*

Learning outcomes:

Credits: 10

Grading scale: Fail (U) or Pass (G)

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

## **Literature and Other Teaching Materials**

### **Literature**

Richard Turton, Joseph A. Shaeiwitz, Wallace B. Whiting (2003) Analysis, Synthesis and Design of Chemical Processes, 3rd Ed, Prentice Hall, ISBN 0135129664. Material handed out, plus material which can be accessed via computers at the university.

### **Student Influence and Evaluation**

The head of department and the 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**