



Energy Recovery Energiåtervinning

7.5 credits

Ladok Code: TK691C

Version: 4.0

Established by: Board of the department 2010-11-22

Valid from: Autumn 2010

Education Cycle: Second cycle

Main Field of Study (Progressive Specialisation): Energy Technology (A1N)

Disciplinary Domain: Technology

Prerequisites: These prerequisites do not apply to students within the programme Science without Borders.

Meets requirements for acceptance to a masters programme in the field of Resource Recovery – Sustainable Engineering.

Exceptions can be made after decision from the director of studies.

Subject Area: Energy Technology

Grading Scale: ECTS-credits

Content

Incineration;

- fluidised bed
- fire grids
- gasification
- energy recovery technology
- effects of inorganic material in the fuel
- fuel and ash management
- fouling
- sintering
- laboratory work at an incineration plant
- study visit to a biogas plant

Material science:

- basics of metallic materials
- oxidation phenomena
- high temperature corrosion
- erosion corrosion

Learning Outcomes

After completing this course, students must be able:

- To describe the most common technologies for incineration of solid, liquid and gaseous fuels.
- To describe gasification and the most common gasification technologies
- To describe the most common gasification reactions and their dependence on temperature and pressure
- To explain why phenomena such as fouling and sintering occur
- To describe the basics of oxide formation on metal components in incineration plants
- To explain various types of high temperature corrosion, why they occur and how they can be countered

Forms of Teaching

The teaching comprises the following elements:

- lectures
- Study visits

- laboratory work
- exercises

Teaching will take place through the medium of English.

The language of instruction is English.

Forms of Examination

The course will be examined through the following examination elements:

Examination

Learning outcomes:

Credits: 4.5

Grading scale: ECTS-credits

Project and lab work

Learning outcomes:

Credits: 3

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

- Course folder containing material produced by the students themselves plus guides for laboratory work.

Student Influence and Evaluation

The head of department and 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