

## **Exergy, 7.5 credits**

Exergi, 7.5 hp

Second level

Main field: Energy Engineering AIN

Syllabus approved by the board of School of Business, Engineering and Science (2012-10-02) and adopted by the Research and Education Board (2012-10-02), effective starting autumn semester 2014.

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### **Placement in the Academic System**

The course is an optional course in Master's Programme (60 credits) in Renewable Energy Systems.

### **Prerequisites and Conditions of Admission**

90 credits in Energy Technology or equivalent.

### **Course Objectives**

After successful completion of the course student should:

#### *Knowledge and understanding*

- Explain the concept of exergy and difference between energy and exergy
- Calculate exergy for different forms of energy, matter and information

#### *Skills and Ability*

- Be able to apply the exergy concept to analyse typical energy conversion processes and real systems within other fields of study.

#### *Judgement and approach*

- Reflect on sustainable development from an exergy point of view
- Give suggestions towards sustainable development based on energy and exergy analysis

### **Primary Contents**

Fundamental exergy concepts, exergy calculation of different processes, exergy analysis in an area of your interest

### **Teaching Formats**

The course includes lectures and projects work. In a project work you are given the opportunity to apply exergy to an area of your interest.

Teaching is in English.

### **Examination**

The overall grades of Fail, 3, 4 or 5 will be awarded for the course.

The examination consist of assignments and written projects reports with presentation.

### **Course Evaluation**

Course evaluation is part of the course. This evaluation should offer guidance in the future development and planning of the course. Course evaluations should be documented and made available to the students.

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## **Course Literature**

Wall G., Exergetics, 2009.

Dincer I. and Rosen M., Exergy - energy, environment and sustainable development, 2nd, 2012, Elsevier.

Surplus materials.