



## Course syllabus

Faculty of Technology

Department of Built Environment and Energy Technology

1BT302 Uthållig energiförsörjning, 7,5 högskolepoäng  
Sustainable energy supply, 7.5 credits

### **Main field of study**

Bioenergy Technology

### **Subject Group**

Environmental Care and Environmental Protection

### **Level of classification**

First Level

### **Progression**

GIN

### **Date of Ratification**

Approved by Faculty of Technology 2016-12-07

The course syllabus is valid from autumn semester 2017

### **Prerequisites**

Physics A, Chemistry B. General entry requirements and Chemistry A, Physics B, Mathematics C or Chemistry 1, Mathematics 3c, Physics 2 (Field-specific entry requirements 8/A8). (Field-specific entry requirement 8 with exemption from the upper secondary course Mathematics D)

## Objectives

After the course, the student shall

- be familiar with the terminology concerning several types of renewable energy production systems
- be oriented about the global energy resources, about technologies for sustainable energy production and about the expected efficiencies for different types of system solutions.
- be able to do simpler numerical estimates concerning different system solutions.

## Content

For each headline below, the lectures treat the underlying laws of physics as well as application examples.

Course headlines

- Global energy resources and the concept of sustainability
- Technologies for solar heating
- Solar photovoltaics
- Technologies for hydropower production

- Technologies for wind power production
- Technologies for wave- and tidal power production
- Nuclear power

## Type of Instruction

Lectures, guest lectures, calculation tuition, exercises, study visits, projects, seminars and experimental/laborative exercises. Compulsory parts will be specified at the course introductory.

## Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.

The assessment of student performances usually takes place during special examination periods and is normally in the form of a written examination.

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

## Course Evaluation

During the course or in close connection to the course, a course evaluation is to be carried out. The result and analysis of the course evaluation are to be communicated to the students who have taken the course and to the students who are to participate in the course the next time it is offered. The course evaluation is carried out anonymously. The compiled report will be filed at the Faculty.

## Credit Overlap

This course cannot be part of a degree in combination with another course in which the content fully or partly correspond to the content of this course: 1BT011 7,5 credits, 1BT002 7,5 credits

## Other

Some compulsory items in the course might cause costs eligible to the participating student.

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

## Required Reading and Additional Study Material

### Required reading

Boyle (Godfrey) Renewable Energy – power for a sustainable future, Oxford University Press 2004, 432 pages

Lambrou/Laub Gender perspectives on the conventions on ..., Report issued to the FAO 2004 30 pages

### Reference literature

Goldemberg & al. World Energy Assessment, Report issued to the general assembly of the United Nations 1999 50 pages (560)

Goldemberg & al. World Energy Assessment Update, Report issued to the general assembly of the United Nations 2004 20 pages (120)