



## Course syllabus

Faculty of Technology

Department of Physics and Electrical Engineering

4ED433 El från förnyelsebara källor, 7.5 credits

Electricity from renewable sources

### **Main field of study**

Energy Technology, Electrical Engineering

### **Subject Group**

Electrical Engineering

### **Level of classification**

Second Level

### **Progression**

A1N

### **Date of Ratification**

Approved 2015-04-28

Revised 2022-06-13 by Faculty of Technology. Literature list is revised.

The course syllabus is valid from autumn semester 2022

### **Prerequisites**

Basic eligibility for advanced level studies and special eligibility:

- Bachelor Degree in Engineering/Science/Technology, 180 credits
- Electric power systems or equivalent, 7.5 credits
- English B/ English 6 or equivalent

## Objectives

After completing the course the student should:

- Critically evaluate concepts in renewable energy and power generation.
- Value the different techniques for generating electricity with solar, wind and hydropower.
- Be able to critically assess scientific papers on electricity production from renewable sources and to report on specific problems and solutions of this.

## Content

The course covers the following topics:

- Electrical machines, generators and converters
- Electric power systems and renewable sources
- Energy from solar panels
- Wind power
- Hydropower
- Other renewable energy sources

## Type of Instruction

The teaching consists of lectures and self study. During the course, two reports shall be written by the students.

## Examination

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

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).

The course is examined by the assessment of two reports.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

## Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

## Other

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.

Some elements of the course may incur costs that are to be paid by the course participant.

## Required Reading and Additional Study Material

L. Freris och D. Infield, Renewable Energy in Power Systems, Wiley & sons, 2008, ISBN: 978-0-470-01749-4, 300 pages.

At least two relevant scientific papers

## Övrig litteratur

Renewable Energy- Power for a Sustainable Future, Stephen Peake. Oxford University Press, latest edition.

Other reading materials Handouts, 50 pages.