

Course Syllabus

Design of PV and PV Hybrid Systems 7.5 Credits*, Second Cycle

Learning Outcomes

Upon completion of the course the student shall be able to

- select components for PV and hybrid systems for electricity generation
- describe the main types and concepts of PV and hybrid systems
- independently size PV and hybrid systems based on basic design procedures and calculations,
- have a good command of computer programmes for sizing, optimizing, and performing studies of commonly used types of PV- and hybrid systems,
- critically analyze and evaluate sizing and performance of components and complete PV and hybrid systems,
- describe environmental and socio-economic aspects of PV and hybrid systems.

Course Content

The course deals with electricity production using photovoltaic modules in off-grid, grid-connected and hybrid systems, which also include other types of electricity generators, especially wind power and diesel generators. The course comprises the sizing and designing of components and complete PV and hybrid systems. The students will use the computer simulation and design programmes PVsyst and Homer. The final segment of the course will cover system analysis and evaluations. Project planning will also be covered in portions of the course.

Assessment

Written exam 3 credits. Written assignments 4.5 credits.

Forms of Study

Lectures, exercises and project work.

Grades

The Swedish grades U, 3, 4, 5.

Written assignments, U-VG

The final grade of the course is set after an overall assessment by the examiner.

Prerequisites

Photovoltaics, 7,5 credits Second level

Economics of Solar Energy, 2.5 credits, Second level

Other Information

This course replaces EG3006.

Subject:

Energy Technology

Group of Subjects:

Energy Technology

Disciplinary Domain:

Technology, 100%

This course can be included in the following main field(s) of study:

1. Energy Technology
2. Solar Energy Engineering

Progression Indicator within (each) main field of study:

1. A1F
2. A1F

Approved:

Approved 5 June 2019

Valid from 15 August 2019