DALARNA UNIVERSITY

Course Syllabus

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

Learning Outcomes
Upon completion of the course students will 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, optimising, and performing studies of commonly used types of PV- and hybrid systems
- critically analyse 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, in particular wind power and diesel generators. The course comprises the sizing and designing of components and complete PV and hybrid systems. 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 the course.

Assessment
Written assignments 7.5 credits.

Forms of Study
Lectures, exercises and project work.

Grades
The Swedish grades U, 3, 4, 5.

Assignment 1: 2 credits, U-G
Assignment 2: 3 credits, U, 3, 4, 5
Assignment 3: 2.5 credits,U, 3, 4, 5
The final grade of the course is set after an overall assessment of the assignments by the examiner.

* 1 Credit = 1 ECTS

Prerequisites
Photovoltaics, 7,5 credits Second level
Economics of Solar Energy, 2.5 credits, Second level

Other Information
This course replaces AEG234.

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 20 May 2021
Valid from 28 July 2021