

## Course Syllabus

### Applied Solar Energy Engineering 7.5 Credits\*, Second Cycle

#### Learning Outcomes

On completion of the course, students shall be able to:

- Describe and explain for the electrical-, thermal engineering and measurement technique that is required for solar systems
- Plan, design, build and test a solar energy system
- Apply fundamental engineering and specific solar engineering knowledge in a critical and systematic manner
- Communicate engineering work by presenting project results orally and in written form
- Reflect on social aspects when introducing solar systems
- Critically evaluate the results of the project.

#### Course Content

The first part of the course covers applied electrical and thermal engineering topics as well as applied measurement technique. The detailed topics are chosen in conjunction with the necessary knowledge that is necessary to plan, design, build and test a solar energy technology component such as a solar collector. The first part of the course also includes lectures on technical communication, plagiarism, information search and social barriers related to solar energy technology. In the second part of the course students will plan, design, build and test a solar energy technology system where the knowledge from the previous/parallel lectures and the programme courses on solar radiation, photovoltaics and solar thermal will be applied.

#### Assessment

- Written home assignments 2.5 credits
- Oral presentations during seminars for the project 2 credits
- Written group reports for the project 2 credits
- Individual report, in which students reflect on the project implementation in respect to the course objectives, 1 credit

#### Forms of Study

Lectures, compulsory seminars, compulsory laboratory work with written reports, active information search, project meetings and group work.

**Grades**

The Swedish grades U–VG.

Oral presentations and group reports for the project, U-G.

The overall grade is based on the individual assignments and the individual report.

**Prerequisites**

B.A. in engineering (mechanical, electrical, energy) of at least 180 credits and English 6

**Other Information**

Students are expected to be taking the courses Solar Radiation, and Solar Geometry and Photovoltaics at the same time since their content will be applicable in this course.

**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. Solar Energy Engineering

**Progression Indicator within (each) main field of study:**

1. A1N

**Approved:**

Approved 31 January 2019

Valid from 31 March 2019