Course Syllabus

Building Energy Performance Simulation and Analysis 5 Credits*, Second Cycle

Learning Outcomes

After completing the course the student shall be able to:

- Setup and perform building energy simulations.
- Select appropriate tools for a given simulation purpose (such as for load calculation, system simulation and building energy simulation).
- Select/identify appropriate simulation strategies and procedures to fit the aim of the given simulation.
- Interpret model results and identifyerrors.
- Understand the performance of a building using numerical simulation and offer suggestions for energy saving.

Course Content

Building energy simulation is the focus of this course. It introduces building performance simulation (BPS) by covering different approaches to BPS calculations and simulation set-up (such as the selection of appropriate parameters and boundary conditions). It continues with a review of simulation strategies and quality control techniques that assist in an understanding of the limitations and advantages of different BPS tools. This understanding will help students to select the most appropriate tool for a given simulation purpose. Finally, the student conducts a case study analysis for a selected building through load calculation, system simulation and building energy simulation. Through this study, the student gains valuable experience with building energy modeling, and learns how to analyse, interpret and present the results.

Assessment

- Project work: written report and seminar presentation (5 credits).

Forms of Study

Lectures, laboratory work, supervision and seminars.

Grades

The Swedish grades U, 3, 4, 5.

* 1 Credit = 1 ECTS

DALARNA UNIVERSITY

Prerequisites
Bachelor of Science degree from building-, energy technology or civil engineering related fields of at least 180 credits and English 6

Other Information
This course cannot be included in the same degree as BY2022.
Replaces BY3022.

Subject:
Construction

Group of Subjects:
Building Technology

Disciplinary Domain:
Technology, 100%

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

Progression Indicator within (each) main field of study:
1. A1N

Approved:
Approved 21 February 2019
Valid from 17 April 2019