DALARNA
UNIVERSITY

Course Syllabus

Low-Energy HVAC Systems 2.5 Credits*, Second Cycle Level 2

Learning Outcomes

After completing the course the student shall be able to:

- Estimate heating and cooling loads for low-energy buildings in cold climates
- Describe the design and application of suitable heating, ventilation and air-conditioning systems for low-energy buildings in cold climates.
- Analyse and explain the interaction between the different technical solutions within the building and the building itself.

Course Content

The course aims to explore the basic requirements for heating, ventilation and cooling systems (HVAC) and to introduce innovative concepts for low-energy and renewable energy buildings. Ventilation strategies (such as natural ventilation, mechanically assisted ventilation, demand controlled ventilation, mixed-mode ventilation) and approaches for heating and cooling will be discussed. In the last part of the course, the focus will be to analyse the performance and interaction of HVAC systems and the building with a holistic perspective.

Assessment

Written examination

Forms of Study

Lectures, exercises.

Grades

The Swedish grades U, 3, 4, 5.

Prerequisites

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

Subject:

Construction

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

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

Approved:
Approved 17 May 2017
Valid from 28 July 2017