



Course syllabus

Faculty of Technology

Department of Built Environment and Energy Technology

4BT316 Energiplanering i byggd miljö, 7,5 högskolepoäng

Energy management in the built environment, 7.5 credits

Main field of study

Bioenergy Technology, Energy Technology

Subject Group

Energy Technology

Level of classification

Second Level

Progression

A1N

Date of Ratification

Approved by Faculty of Technology 2018-12-10

The course syllabus is valid from autumn semester 2019

Prerequisites

General entry requirements for second cycle studies and specific entry requirements:

- Bachelor of Science in Electrical Engineering, Energy Technology, Environmental Technology, Civil Engineering, Material Science or equivalent
- English B/ English 6 or equivalent

Objectives

After this course, the students should:

- evaluate energy supply and demand in the built environment in relation to current regulations and current research in the area
- describe and explain about relevant processes and technologies those are used to satisfy energy demand in the built environment
- have capability of investigating and evaluating energy demand as well as environmental and climate change effects of using energy in the built environment
- evaluate the energy needs of the built environment and estimate the contribution of different solutions to environmental and climate impact

Content

The course contains of the following elements:

Overview and the significance of energy use in the built environment

End-use energy utilization and requirements

- Buildings and communities: lighting, heating, cooling
- Transport solution: vehicle types and energy use

Energy processes and systems for the built environment: from demand to resources
Energy system auditing, modeling and analysis

- Analysis tools: modelling and calculation platforms
- Plans and processes

Potentials and challenges to satisfy energy demand for a society toward a sustainable built environment:

- Resources: availability and use
- Environmental and climate change effects

Energy system towards a sustainable built environment

- Ingenerated energy system o Digitalisation and sustainable solutions

Type of Instruction

This course is given by lectures, exercises, seminars and site visits.

Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

The course is examined as written exam, report and oral presentation. Assessment of the student's performance usually takes place during special exam periods through examinations and seminars. The seminar information is examined on a regular basis during the course. Examination is done in writing.

The seminar assignment is assessed with Pass/Fail. The final grade of the course is determined by the grade of the written exam.

Course Evaluation

During the course or in close connection to the course, a course evaluation is to be carried out. The result and analysis of the course evaluation are to be communicated to the students who have taken the course and to the students who are to participate in the course the next time it is offered. The course evaluation is carried out anonymously. The compiled report will be filed at the Faculty.

Other

Certain course elements may entail costs that have to be defrayed by the students.

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Required Reading and Additional Study Material

Publications from scientific journals, obtained via the university library. Information will be given at course start.

The literature is about 200-300 pages.