



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 2018-12-10

Revised 2020-09-23 by Faculty of Technology. Examination and assessment methods are revised.

The course syllabus is valid from autumn semester 2021

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
- 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.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

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

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.