

SYLLABUS

Energy-efficient buildings

7.5 credits F7039T

Energieffektiva byggnader

Course syllabus admitted: Autumn 2023 Sp 1 - Present

DECISION DATE
2022-02-14

Energy-efficient buildings 7.5 credits F7039T

Energieffektiva byggnader

Second cycle, F7039T

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Energiteknik	Energy Technology

Entry requirements

Knowledge about the construction and physics of buildings, for example K0002B Building materials, 7,5 hp, W0008B Building Physics, 7,5 h, W7007B Building technology, 7,5 h. Alternative knowledge about thermal and hydraulic machines and indoor climate, for example F0057T Thermal and hydraulic machines, 7,5 h, F0034T Indoor Climate, 7,5 h.

Selection

The selection is based on 30-285 credits

Course Aim

After passing the course, you can

1. Knowledge and understanding

- relate energy efficient buildings to the Swedish building regulations
- explain and evaluate different systems for the energy production and distribution in a building

2. Skills and abilities

- model, simulate and evaluate energy, installation and building techniques in buildings
- present engineering and scientific results orally and in writing

3. Assessment and attitude

- discuss the significance of energy efficient building for the society's goal for a sustainable economy and ecology

Contents

- Swedish building regulations
- Usage, distribution and production of energy related to buildings
- Design of energy efficient buildings
- Simulation of the energy balance in a building with the software IDA Indoor Climate and Energy (IDA ICE)

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

You make an open, individual research project, which is presented orally and in writing. You also participate in a group project where you practice collaboration, design of energy efficient buildings and oral and written presentation. You participate in lectures and coaching seminars where you discuss energy efficient buildings in small groups with teachers and other students.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.

Individual research project and group project, presented orally and in writing and a separate quiz. The three parts are weighed together and form the base for the final grade: U, 3, 4, or 5.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Course offered by

Department of Engineering Sciences and Mathematics

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0002	Quiz	G U 3 4 5	1.5	Mandatory	A14	
0003	Group project	G U 3 4 5	4	Mandatory	A14	
0004	Individual project	G U 3 4 5	2	Mandatory	A14	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Niklas Lehto, Programme Director 2022-02-14

Syllabus established

by Dept. TVM Mats Näsström 2012-03-14