SYLLABUS

Building technology 7.5 credits W7007B

Byggteknik

Course syllabus admitted: Spring 2024 Sp 3 - Present

DECISION DATE
2023-06-02

Luleå University of Technology 971 87 Luleå, Sweden
Phone: +46 (0)920 49 10 00 • Corporate Identity: 202100-2841

LULEÅ TEKNISKA UNIVERSITET

Building technology 7.5 credits W7007B

Byggteknik

Second cycle, W7007B

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

Entry requirements

Knowledge in Building Physics corresponding to the course W0008B Building Physics and knowledge in Structural Engineering corresponding to the course B0002B Structural Engineering.Good knowledge in English, equivalent to English 6.

Selection

The selection is based on 30-285 credits

Course Aim

The goal is for you to develop an understanding of current practices for building technical solutions and for older building techniques.

Knowledge and understanding
After completing the course, you should be able to:
• describe the development of house-building technology over the last 120 years
• explain common construction and technical solutions for residential buildings
• explain the interaction between different building technology solutions and different functional requirements

Competence and skills
After completing the course, you should be able to:
- analyse and critically evaluate building technical solutions in a residential building based on the functional requirements placed on them
- identify and analyse building technical solutions in compliance with various functional requirements for a residential building
- estimate and analyse energy and power demands for a residential building
- propose and reflect on energy efficiency measures for a residential building based on energy use, economic and indoor environment
- perform an overall design for a heat and ventilation system in a residential building
- interpret and present drawings and technical solutions for a residential building

Contents

The course contains in-depth studies of building and technical solutions to meet functional and performance requirements for energy use, heating, fire protection and moisture safety. The course focuses on residential buildings, including both smaller houses and multi-residential buildings.

An energy balance with its gains and losses for a small house is quantified and analysed. Energy efficiency measured for a small house is included as a part of the course where calculations are used to identify and reflect on feasible measures from the perspective of energy use, economical savings and indoor environment. The course part regarding installation technology in multi-residential buildings includes heating, water, ventilation, drainage, sewage and electricity.

The lectures deal with the history of building construction technology, building maintenance, the design and construction of buildings and their building technical solutions, energy and power demand calculations, fire protection design and moisture safety design.

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.
The course contains project assignments that are carried out in small groups and an individual written exam. One of the project assignments deals with the energy balance in a small house and the other project assignment concerns building technical solutions for a multi-residential building. Inventory of existing buildings is used as a framework for the projects. The building technology used is explained based on the current functional requirements of the building code. The individual knowledge is obtained through lectures, seminars and supervision during the project assignments.

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.
The course includes two examination parts; project assignment and an individual written examination.

The project task assesses knowledge and understanding of construction and installation technical solutions in residential buildings, as well as the interaction between these in relation to various functional requirements. The project assignment also examines all learning objectives relating to skills and abilities.

The exam assesses all learning objectives related to knowledge and understanding, as well as the ability to reflect on energy efficiency measures for residential buildings based on energy use, economy and indoor climate.

The project task is assessed through submissions and a seminar related to the task. These submissions include both group and individual assignments. The exam is assessed through an individual written exam. For the final grade, a pass on both subtasks of the project task (small house and apartment building), attendance at a seminar linked to the project task, and a passed written individual exam are required. The two examination elements are graded with G or U. The differentiated grade (U, 3, 4 or 5) is set based on a point system described in the course's study guide.

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 Civil, Environmental and Natural Resources Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0003	Project task	U G#	6	Mandatory	A13	
0004	Written exam	U G#	1.5	Mandatory	A13	

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 Assistant Director of Undergraduate Studies Eva Gunneriusson, Department of Civil, Environmental and Natural Resources Engineering 2023-06-02

Syllabus established

by Lars Bernspång 2010-03-01