



Faculty of Health, Science and Technology
Construction Engineering

Syllabus

House Building Technology

Course Code:	BYGB20
Course Title:	House Building Technology <i>Husbyggnadsteknik</i>
Credits:	7.5
Degree Level:	Undergraduate level
Progressive Specialisation:	First cycle, has less than 60 credits in first-cycle course/s as entry requirements (G1F)

Major Field of Study:
BYA (Building Technology)

Course Approval

The syllabus was approved by the Faculty of Health, Science and Technology 2023-01-31, and is valid from the Autumn semester 2023 at Karlstad University.

Prerequisites

Registered for Sustainable development for engineering (7.5 ECTS credits), Thermal and fluid sciences for building and construction engineers (10 ECTS credits), and Introduction to building engineering (12.5 ECTS credits), or enrollment in the study programme in Building and Construction Engineering, or equivalent

Learning Outcomes

The aim of the course is that students acquire basic knowledge of building materials, building technology, and building physics and develop knowledge and skills in using environmental databases for building materials and energy estimation software.

Upon completion of the course, students should be able to:

- describe the manufacturing, properties, and functions of building materials,
- describe the structure of the environmental data tool SundaHus,

- use the environmental data tool to assess building materials,
- give an overview of fire and acoustic requirements for buildings,
- give an overview of the interior climate of buildings,
- calculate moisture dispersion in building parts and analyse moisture safety,
- calculate the U-value and ventilation loss and draw up an energy balance for single-family houses,
- use computer-based aids to maintain an energy balance for single-family houses based on given input, and be able to interpret and present the results,
- give an account of the calculation principles for computer-aided energy balance estimations,
- interpret structural engineering drawings, and
- compile and give an account of the technical information of a building in a clear and accessible way.

Content

The course covers the following:

- building materials
- environmental assessment of building materials
- the structure and function of foundation, structure, structure completion, and climate shell
- the fire resistance and acoustic aspects of buildings
- exterior and interior climate
- heat and moisture transport in buildings
- energy consumption in buildings
- reading building drawings
- laboratory work including concreting and compressive test of concrete, tensile test of steel, and compressive test of wood
- computer exercises in the software SundaHus and VIP energy

Instruction is in the form of lectures, calculation exercises, four mandatory group laboratory exercises, field trips, and computer exercises.

Reading List

See separate document.

Examination

Assessment is based on a written exam, written laboratory reports, mandatory laboratory attendance, and written and oral presentations of hand-in assignments.

If students have a decision from Karlstad University entitling them to Targeted Study Support due to a documented disability, the examiner has the right to give such students an adapted examination or to examine them in a different manner.

Grades

One of the grades 5 (Pass with Distinction), 4 (Pass with Some Distinction), 3 (Pass), or U (Fail) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course evaluation is partly based on student views and experiences obtained in accordance with current regulations and partly on other data and documentation. Students will be informed of the result of the evaluation and of any measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional information

The local regulations for studies at the Bachelor? and Master? levels at Karlstad University stipulate the obligations and rights of students and staff.

The course BYGB20 cannot be included in the same degree programme as the course BYGA11.