UNIVERSITY OF BORÅS

The building as a system
Byggnaden som system
7.5 credits

Ladok Code: A556TA
Version: 1.0
Established by: Committee for Education in Technology 2025-10-10
Valid from: Spring 2026

Education Cycle: Second cycle
Main Field of Study (Progressive Specialisation): Civil Engineering (A1F)
Disciplinary Domain: Technology
Prerequisites: Meets the requirements for admission to the Master's Programme in Resource Recovery – Sustainable Civil Engineering
Subject Area: Building Technology
Grading Scale: Seven-degree grading scale (A-F)

Content
The course focuses on providing students with the knowledge and skills to understand the building as a system. The course uses literature and cases, from which the building is described multidisciplinary and theorised based on the current state of knowledge: in building physics - indoor environment including light and thermal envelope, building technology - structural engineering and building materials and building services. Students are prepared for research on the design of buildings, as well as the theoretical basis needed to describe the the thermal envelope, the indoor environment and the ventilation and control systems.

Learning Outcomes
After completing and passing the course, the student will be able to:
Knowledge and understanding
1.1 explain key concepts of the building as a system
1.2 outline the main trends in the state of the art of research on the building as a system
1.3 describe the links between the building and its technical systems
1.4 explain the links between sustainability, durability and functional requirements of the building as a system
1.5 explain the challenges, conflicts and synergies between different functional requirements

Competence and skills
2.1 use methods and tools for building techniques, building services and indoor environment for energy efficient buildings
2.2 critically review energy efficiency measures for the building as a system
2.3 describe and discuss in writing and orally relevant functional requirements for the building with regard to sustainability

Judgement and approach
3.1 evaluate, plan and develop strategies and action plans for the design of high-performance, energy-efficient and sustainable buildings with a good indoor environment
3.2 reflect on how different professions need to work together to create sustainable, energy efficient and healthy buildings.

Forms of Teaching
The course consists of:
- Lectures
- Seminars

The language of instruction is English.

Forms of Examination

The course will be examined through the following examination elements:

Exam
Learning outcomes:
Credits: 3.5
Gradingscale: Seven-degree grading scale (A-F)

Project with seminar
Learning outcomes:
Credits: 4
Gradingscale: Fail (U) or Pass (G)

The examination component Written exam determines the final grade of the course, which is issued only when all components have been passed.

If the student has received a decision/recommendation regarding special pedagogical support from the University of Borås due to disability or special needs, the examiner has the right to make accommodations when it comes to examination. The examiner must, based on the objectives of the course syllabus, determine whether the examination can be adapted in accordance with the decision/recommendation.

Student rights and obligations at examination are in accordance with guidelines and rules for the University of Borås.

Literature and Other Teaching Materials

Additional literature and teaching materials are provided via the university's learning platform.

Student Influence and Evaluation

The course is evaluated in accordance with current guidelines for course evaluations at the University of Borås in which students' views are to be gathered. The course evaluation report is published and returned to participating and prospective students in accordance with the above-mentioned guidelines, and will be taken into consideration in the future development of courses and education programmes. Course coordinators are responsible for ensuring that the evaluations are conducted as described above.

Miscellaneous

The course is a programme course for the Master's programme Resource Recovery- Sustainable civil engineering.