



Course syllabus

Projektering och beräkningsarbete Construction Design and Calculation

VBEF35, 7,5 credits, G2 (First Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED V

Date of Decision: 2023-03-21

General Information

Compulsory for: IBYA3

Language of instruction: The course will be given in Swedish

Aim

The pedagogical idea and the overall goal for the course series (VBEF25-VBEF40) is to give the students insight and understanding of construction industry working conditions and to train on practical problem solving and collaboration.

This module aims at highlighting construction planning work emphasizing construction legislation, BIM in designing, demand of environmental certification and technics i.e. load-bearing capacity, climate performance, energy performance, heating insulation, damp protection, sound insulation, fire protection, installation and sustainable selection of material.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- develop understanding of the different knowledge areas that must be integrated in the construction process,
- familiarise with the types of planning and different effort required in the design stages.

Competences and skills

For a passing grade the student must

- be able to apply BIM in designing, construction principles and principles of climate calculation and environmental certification
- demonstrate and justify for the chosen construction solution and climate and energy performance
- produce a digital set of the tendering documents required for procurement of a small housing project.

Judgement and approach

For a passing grade the student must

- acquire an overall engineering viewpoint of the construction process and the actors of the construction industry, their roles, responsibilities and cooperation throughout the construction design process,
- gain an understanding of the respective work and opinions of the architect and the engineers in the project group and the need for consensus and cooperation.

Contents

In this course the students continue to develop the project that was initiated in the just ended course module VBEF35 by producing the project document required for procurement containing drawings, descriptions, documents for environmental certification and other kinds of administrative documentation.

Knowledge from several areas, not only those earlier mentioned, has to be acquired and be put together in order to be able to solve the task and produce a complete set of documents relevant for building a one-family house. Lectures, exercises and teaching materials supports the ongoing project work on a general level while it is the students' task to transform and adapt this to the project in question. Guest lectures and external cooperation is part of the project work.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: The final grades will be based on graded project assignments. Final grades will be granted only when all assignments are approved and after 80% participation of all lectures, seminars, visits and the like.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Admission

Admission requirements:

- VBEA20 The Construction Process with Business Economy or VBEA25 Construction Process and Construction Law

Assumed prior knowledge: House construction technique, BIM Modelling and Visualisation, Mechanics, Materials study, Building physics, Installation techniques, Construction techniques, Soil mechanics, Geometrics, Construction economy and Environmental science.

The number of participants is limited to: No

The course overlaps following course/s: VBE685

Reading list

- Designated study material (distributed or via the internet), lecture material and any literature or complementing documentation by reason of the project in question.
- Hansson et al: Byggledning, Projektering. Studentlitteratur, 2015, ISBN: 978-91-44-10572-7.
- Bodin et al: Arkitektens handbok. Studentlitteratur, 2019, ISBN: 978-91-44-13097-2.

Contact and other information

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Course homepage: <http://www.bekon.lth.se/utbildning/grundutbildning/>

Further information: The course is related to the courses VBEF25, VBEF30 and VBEF40. Some parts of the course may be taught in English.