

SYLLABUS

Virtual Construction 7.5 credits P7006B

Datorstödd byggproduktion

Course syllabus admitted: Autumn 2023 Sp 1 - Present

**DECISION DATE
2022-02-11**

Virtual Construction 7.5 credits P7006B

Datorstödd byggproduktion

Second cycle, P7006B

Education level
Second cycle

Grade scale
G U 3 4 5

Subject
Byggproduktion

Subject group (SCB)
Building Technology

Entry requirements

Basic understanding about the building process and the role of construction in the construction process. Basic knowledge in 3D modeling and activity-based and location-based planning methods and Lean Construction, equivalent course P7001B Construction logistics and procurement.

Selection

The selection is based on 30-285 credits

Course Aim

After the course the student should individually and together with others, be able to

- explain and critically process the role of models and other digital information sources for data driven construction planning
- apply model based quantity take-offs from building information models to create cost estimates of construction projects
- apply model based time planning for construction projects with feasible rhythm and ability to tackle disturbances.
- apply automation for parts of the planning process using programming.
- explain the importance of standards and classification within virtual construction

Contents

The course covers the conditions that apply to BIM and the broader concept of virtual construction, with the perspective of the construction contractor. The student will learn how BIM and other digital information sources affect and facilitate the planning and preparation work and the demands it place on the information that comes from different stakeholders and processes for data driven decisions. The student will during the course get to use standard computer tools from the industry.

Realization

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

The first part of the course consists of theoretical lectures and practical exercises in a computer environment that trains the students' understanding of the theory presented during the lectures. In the second part of the course, students in small groups get to apply knowledge from the first part in a project with a more open problem setting, but also take part of guest lectures that deepen and/or broaden the student's view of virtual construction. The course ends with a written and oral presentation of the groups' results.

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 examination consists of individual tasks and a group project. Rating scale is U G on individual modules and project work. The entire course is graded U 3 4 5. The final grade for the course is based on course credits (0-100p) that students gather during the course. The system is described in detail in the study guide that will be distributed at the beginning of the course.

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
0001	Assignment report	U G#	3	Mandatory	A08	
0002	Project assignment	U G#	4.5	Mandatory	A08	

Last revised

by Assistant Director of Undergraduate Studies Eva Gunneriusson, Department of Civil, Environmental and Natural Resources Engineering 2022-02-11

Syllabus established

by Department of Civil and Environmental Engineering 2008-01-22