AF272U BIM2, Design, Installation and Integrated Planning 7.5 credits

BIM2, projektering, installation och samordning

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

The Built Environment

Specific prerequisites

Completed upper secondary education,120 credits within the study fields of structural engineering/building services engineering/architecture /CAD or equivalent knowledge, course AF1730 Building Information Modeling 7.5 credits or equivalent knowledge. Alternatively, a Bachelor of Science in Engineering in Constructional Engineering and Design or a Master of Science in Engineering in Built Environment from KTH or equivalent knowledge.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

This course aims to provide a general introduction to 3D design, installation and coordination.

Upon completion of this course, the student shall:

- Understand the theory behind Building Information Modeling (BIM)
- Be able to manage model data and use databases in BIM design
- Be able to coordinate installation with MagiCad
- Be familiar with the collision detection capabilities in Navisworks
- Be able to apply this knowledge in the planning stage in order to facilitate the production stage
- Be able to apply this knowledge in a project to achieve sustainable construction

Course contents

Problem-based learning: the course revolves around a project based on a given architectural model. During the course, students will perform simplified installation planning and planning coordination. The elements below are the needed basis.

The following topics will be covered in this course:

- General definition of BIM
- MagiCAD and BIM
- MagiCAD and IFC - IFC Viewers
- IFC Import using AutoCAD MEP
- Coordination between planners
- Introduction to MagiCAD in Revit MagiCAD and Revit MEP
- Installation coordination using Navisworks

By mixing BIM theory with practical, reality-based examples, the relatively new method of Building Information Modelling is integrated into the course BIM2. Solving reality-based engineering problems is practiced. In this module, the student should directly be able to manage and implement a real BIM project in an engineering process for a construction project containing the disciplines A, K, E, V, with regard to spatial coordination, collision control, calculation, visualisation etc.

Disposition

The course will be taught via lectures in the computer lab. The lectures consists of theory, demonstration and exercises.

Course literature

Reading materials will be announced at the start of the course.

Examination

- PRO2 - Project Work, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO1 - Project, 2.0 credits, grading scale: P, F
- TEN1 - Examination, 1.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

A project is carried out individually, and submitted within a stated timeframe at the beginning of the course. This project represents 2.0 credits. Grading scale: P/F.

In connection with the first project of the course, a larger project will also be initiated in groups of 3-4. This project is to be handed in prior to the course exam. The project represents 4.0 credits. Grading scale: A-F.

The course ends with a practical exam carried out using a computer. The exam represents 1.5 credits. Grading scale: A-F.

Other requirements for final grade

To receive a final grade for this course, a passing grade on Project 1 as well as grade E or higher on both Project 2 and the exam are required.
Overall course grade is based on grading scale A-F.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.

- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.