



DD2364 Interactive Visualisation of Virtual Urban Environments and Computational Urban Design 7.5 credits

Interaktiva visualiseringar av virtuella stadsmiljöer och datalogisk stadsbyggnad

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

Establishment

The official course syllabus is valid from the autumn semester 2026 as decided by the faculty board decision HS-2025-1944. Date of decision 2025-10-07

Grading scale

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

Education cycle

Second cycle

Main field of study

Computer Science and Engineering

Specific prerequisites

Knowledge and skills in programming, 6 credits, equivalent to completed course DD1337/DD1310-DD1319/DD1321/DD1331/DD1333/DD100N/ID1018/ID1022.

Intended learning outcomes

After passing the course, the student should be able to

- explain and describe theoretical foundations and practical computational methods for creating and visualising urban environments
- compare and select relevant software, hardware and computational methods for developing immersive interactive urban environments
- implement and evaluate interactive computational urban design using standard interactive software, such as Unity 3D

in order to be able to create immersive simulated urban experiences with advanced technologies that unite computer science and urban planning.

Course contents

Computational Urban Design: Introduction to computational urban design, computer-aided design (CAD) and 3D modelling (radiometry), urban morphology and morphological models of cities.

Computer Graphics: Interactive real-time computer graphics and game technology, including computer vision.

eXtended Reality: Introduction to AR, VR, MR and immersive environments.

Procedural Generation: Interactive visualisation and procedural generation of urban content.

Generative Design: Morphological generative frameworks, generative design and design of cities.

In-depth project in your own chosen area within computational urban design.

Examination

- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, F
- PRO1 - Project Work, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- PRO2 - Project Work, 3.0 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.

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.