



DH2323 Computer Graphics and Interaction 6.0 credits

Datorgrafik med interaktion

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

Computer Science and Engineering, Information Technology, Information and Communication Technology

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, students should be able to

- explain and program important algorithms for computer graphics, such as transformations, lighting models and rendering techniques

- select, motivate, and use an appropriate programming language (eg, C++, Javascript, Python, Rust), graphics library (eg, Vulkan, OpenGL), game engine (eg, Unity3D, Godot, or Unreal), and/or a modeling application (eg, Blender or Maya) to create 3D objects, environments, and visualizations
- develop a specification for a problem or design in computer graphics and interaction, and then build a solution and visualize the results

in order to be able to select, program and use software platforms to create sophisticated modern computer graphics applications.

Course contents

- Transformations, lighting models, rendering, animation, determination of visible surfaces, procedural generation algorithms.
- Human-computer interaction methods for interactive computer graphics.
- Interactive applications developed using graphics libraries, real-time game engines and 3D modeling programs.
- Project of the student's own choice to deepen knowledge in a specific area of computer graphics and interaction.

Examination

- LABA - Laboratory work, 3.0 credits, grading scale: P, F
- PROA - Project, 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.