DH2323 Computer Graphics and Interaction 6.0 credits

Datorgrafik med interaktion

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

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

Establishment

Course syllabus for DH2323 valid from Spring 2015

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

Single course students: 120 ECTS-credits including 45 university credits in Mathematics and/or Information Technology.

Language of instruction

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

Intended learning outcomes

The students should after the course be able to

- briefly explain fundamental terms within computer graphics
- explain fundamental concepts within computer graphics such as geometrical transformations, illumination models, removal of hidden surfaces and rendering
- explain the ideas in some fundamental algorithms for computer graphics and to some extent be able to compare and evaluate them
- use a basic parts of a modelling software such as Maya in order to build simple 3D objects
- use a software/API such as OpenGL to build simple 3D objects

Course contents

Graphical systems and models. Graphical primitives. Use of a graphics API (application programmer interface). Input and interaction. Geometric objects and transformations.

Projections and viewing. Shading (local and global models). Color. Operations on buffers and pixels. Rendering: clipping, hidden surface removal, scan conversion. Hierarchical and object oriented models and animation. Curves and surfaces. Procedural methods. Realism. Human perception.

For the lab work a modern graphics package (OpenGL, which means that some programming is needed) and a modern 3D graphics editor are used.

Course literature

Meddelas på kurshemsidan senast 4 veckor före kursstart. Föregående läsår användes E. Angel: Interactive Computer Graphics, Addison-Wesley samt material producerat vid institutionen.

Examination

- LAB1 - Laboratory Work, 3.0 credits, grading scale: P, F
- TEN1 - Examination, 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.

In this course all the regulations of the code of honor at the School of Computer science and Communication apply, see: http://www.kth.se/csc/student/hederskodex/1.17237?l=en_UK.

Other requirements for final grade

Examination/project (TEN1; 3 university credits).
Laboratory assignments (LAB1; 3 university credits).

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.