DH2323 Computer Graphics and Interaction 6.0 credits

Datorgrafik med interaktion

Course syllabus for DH2323 valid from Spring 15

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

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

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 main content

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.

Language of instruction

Language of instruction is specified in the course offering information in the course and programme directory.

Eligibility

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

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

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.

Requirements for final grade

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