Linnæus University

Course syllabus

Faculty Board of Science and Engineering

School of Computer Science, Physics and Mathematics

1DV300 Datorgrafik, 7,5 högskolepoäng
1DV300 Computer Graphics, 7.5 credits

Main field of study
Computer Science

Subject Group
Informatics/Computer and Systems Sciences

Level of classification
First Level

Progression
G1F

Date of Ratification
Approved 2009-12-15
Revised 2010-11-26 by School of Computer Science, Physics and Mathematics.
Revision made for prerequisites and course evaluation.
The course syllabus is valid from autumn semester 2011

Prerequisites
Programming and Data Structures 7.5 credits (1DV007), and Vector Geometry 7.5 credits (1MA103) or equivalent.

Objectives

Upon completion of the course the student should be able to:

- understand and implement algorithms for generating basic output primitives in 2D
- understand and implement transformations and typical algorithms in 2D
- interactively edit objects in 2D
- understand various steps and basic algorithms included when modelling with polygon surfaces from a geometric 3D description to a photo-realistic display image (in 2D)
- understand various algorithms for identifying visible surfaces in 3D
- understand basic illumination models
- understand basic colour models in Computer Graphics
- implement general 2D solutions using OpenGL

Content
The course contains:

- graphical equipment
- 2D output primitives
- geometric transformations in 2D
- algorithms for clipping in 2D
- interactive input techniques
- basic 3D representations
- surface modelling in 3D
- transformations, projections and clipping in 3D
- algorithms for identifying visible surfaces
- illumination models
- colour models
- introduction on to OpenGL

Type of Instruction
Teaching consists of lectures and tutoring of practicals. Practicals are carried out individually or in groups of two.

Examination
The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

Written examination and/or assignments which are presented orally and/or in written form. The assessment method is decided at the start of the course.
Students who do not pass the regular examination are given the opportunity to do a resit examination shortly after the regular examination.

Course Evaluation
A written course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The course evaluation will be filed at the department.

Other
Upon request, a Swedish University degree will be issued upon successful completion of the full demand for that degree.

Upon request, a Swedish University course certificate will be issued upon successful completion of the course.

Required Reading and Additional Study Material
Required reading
Hearn, D och Baker, P, *Computer Graphics with OpenGL, 3rd Ed.*, Prentice Hall, 2004. Pages 520.
DFM, *Distributed material*. Pages 50.