



# ID1007 3D Graphics for Computer Game Development 7.5 credits

## 3D-grafik för datorspelsutveckling

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 ID1007 valid from Spring 2009

## Grading scale

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

## Education cycle

First cycle

## Main field of study

Technology

## Specific prerequisites

### **For single course students:**

60 hp in computer and systems sciences or from other higher education in computer science 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 student should be able to describe, explain, and/or apply important techniques used to represent 3D-graphics, with emphasis on using polygon mesh based 3D-graphics in the computer games area, but also on an overview level regarding other uses of 3D-graphics. The student should further be able to explain, compare, and/or apply different techniques for modelling polygon mesh based graphics.

The student should also be able to describe, compare and/or apply shading algorithms, contrasting them against each other regarding their functionality and resulting differences regarding specular effects. The student should in addition be able to summarize, motivate and/or apply important principles involved in hidden surface removal, and be able to describe and/or apply techniques for the reduction of unwanted mapping phenomena.

The student should be able to contrast, evaluate and/or apply key principles for simulated surface depth, and in addition be able to identify and/or through implementation relate to advantages and disadvantages with dynamic lighting techniques in contrast to effects statically baked into textures.

The student should be able to suggest and/or apply compromise solutions of a performance enhancing nature suitable for the computer games graphics area, and to compare, identify and/or relate to in implementation differences between real-time and pre rendered 3D-graphics.

The student should be able to apply relevant parts of the course content by producing a lit 3D game environment with real-time first-person movement, using a 3D-modelling tool with an integrated real-time game engine.

## Course contents

The course content is presented during a series of lectures in Swedish throughout the course. The development tool used for the course assignments is demonstrated during integrated tool presentations. Students are provided with support in the form of tutor supervision in Swedish in the computer rooms during their course assignments work.

## Disposition

Lectures, demonstrations, assignments. The course language is Swedish.

## Course literature

Preliminary:

Matthew Omernick: Creating the Art of the Game, New Riders / Pearson, 2004, ISBN 0-7357-1409-6

Compendium with the lecturing slides used, partly containing additional information not covered in the course book

## Examination

- INL1 - Assignment, 1.5 credits, grading scale: P, F
- INL2 - Assignment, 1.5 credits, grading scale: P, F
- TEN1 - Examination, 4.5 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.

Written exam, grades A, B, C, D, E, Fx, F given.

Assignment 1 carried out using designated development tool, presented at seminar specified in the course schedule, grades P, F given.

Assignment 2 carried out using designated development tool, presented at seminar specified in the course schedule, grades P, F given.

## 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.