FDD3336 Interactive Entertainment Technologies 6.0 credits

Interaktiv underhållningsteknik

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

Establishment

Course syllabus for FDD3336 valid from Autumn 2013

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

PhD students in computer science or other programming related subject. Please consult your PhD supervisor before taking the course.

Lectures, seminars, assessment, etc in this course will take place in English.

Language of instruction

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

Intended learning outcomes

After completion of the course the student will be able to

- Analyse the market for various types of interactive entertainment products, explain the theory behind game rules and game experience, and analyse how rules affect games.
- Appraise advanced core technologies (computer graphics and animation, physics, artificial intelligence) applicable to the domain of real-time interactive entertainment products and implement (program) a chosen technology using appropriate infrastructures.
- Describe and apply design patterns and graphic quality analysis on computer games, with a focus on the entertainment experience.

So the students will be able to

- Develop prototypes of interactive entertainment products, founded on core technologies, which are sufficiently advanced for presenting to a publisher or for self-publishing (i.e. as an 'indie' product).

Course contents

Series of themed seminars, guest lectures and practical lab and project work sessions concerning the following topics:

Interactive entertainment technologies including real-time computer graphics and animation / physics / AI for AAA games, data-driven engines and game development tools, concept development, computer game history, social gaming, game rules, game experience, computer game market and business opportunities.

Disposition

This course builds upon the Computer Game Design course DH2650, using the wider context of infrastructure (i.e. data-driven game engines and tool-chains), design and HCI to focus further on the development and application of advanced interactive entertainment technologies. It is intended for PhD students with an interest in the design and implementation (programming) of real-time interactive technologies where the end user and their experience is of paramount concern. It is also open to students taking the course DH2650 Computer Game Design.

Course literature

There is no mandatory course literature. Examples of optional literature and technologies relevant to the course include, but are not limited, to the following:

T. Akenine-Moller, E. Haines and N. Hoffmann (2008). Real-Time Rendering (third edition). AK Peters/CRC Press.
D. Shreiner and E. Angel (2011). Interactive Computer Graphics: A Top-Down Approach with Shader-Based OpenGL (sixth edition). Pearson Education.
K. Salen (2003). Rules of Play: Game Design Fundamentals. MIT Press.
I. Millington and J. Funge (2009). Artificial Intelligence for Games. CRC Press.

Gamasutra , http://www.gamasutra.com/
Ars Technica , http://arstechnica.com/
AiGameDev.com , http://aigamedev.com/
Edge magazine , http://www.edge-online.com/

OpenGL , http://www.opengl.org/
OpenSteer , http://opensteer.sourceforge.net/
Bitsquid Game Engine , http://www.bitsquid.se/
Havok Project Anarchy , http://www.projectanarchy.com/

Examination

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.

LAB1 - Laboratory Work (Product session and presentation), 1.5 credits, grade scale: P, F

LAB2 - Laboratory Work (Technology showcase), 1.5 credits, grade scale: P, F

PROJ1 - Project Work (Design project), 3.0 credits, grade scale: P, 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.

Other requirements for final grade

Laboratory work:
Entertainment product session and presentation (LAB1; 1,5 university credits);
Technology showcase (LAB2; 1,5 university credits)
Project work:
Design project encompassing chosen technology implementation (PROJ1; 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.