Realtime Graphics 7.5 credits W0021E

Realtidsgrafik

Course syllabus admitted: Spring 2023 Sp 3 - Spring 2024 Sp 4

DECISION DATE
2022-02-14

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Realtidsgrafik

First cycle, W0021E

Education level	**Grade scale**	**Subject**	**Subject group (SCB)**
First cycle	U G#	Medieteknik	Computer Technology

Main field of study

Media Technology

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and courses corresponding with W0013E - Design processes and methods for Computer Graphics 15 credits, W0020E - Animation and Rigging 15 hp and W0023E - 3D Graphics 15 hp.

Selection

The selection is based on 1-165 credits.

Course Aim

After course completion the student should be able to:

1. Explain the technical, scientific, artistic and practical basics in the field, especially how the limitations of the hardware affect applications in real-time graphics.
2. Create and implement optimized computer graphics for real-time rendering.
3. Use the functions of a game engine to be able to perform various components of simple game projects.
4. Independently plan, execute and deliver projects within the subject area based on given conditions and design principles.
5. Analyze and evaluate own and others' visual results and methods based on principles for visual design and the course topic.

Contents

The course discusses the following subject areas:

- Real-time rendering pipeline, hardware and software.
- Principles and processes for creating optimized graphic content and implementing it in a game engine.
- Simpler tools within a game engine, such as simple level creation, gameplay scripting, physics simulation and UI.

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Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.
  The course material is in English and you are expected to have good oral, written and information-seeking knowledge in that language.

The teaching is mostly based on independent work with practical tasks, and self-study of the specified material. You are expected to be able to search for information on your own to solve tasks. This is then dealt with through seminars (both internal and external), essays and other activities.

Throughout the course, you will have access to a workspace including an appropriate computer and screen. But throughout your studies you will work on your drawing skills, digital painting and photography, therefore you need to acquire a suitable digital tablet and a system camera.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.
  Formative assessments and feedback are given regularly in the course's activities. The course objectives are examined in various forms organized in test modules defined in the syllabus. The examination takes place both individually and in groups.

Each test module can in itself consist of several tasks, which appear in the study guide for the course. For all assignments, there are detailed descriptions in the course's learning platform that clarify how the assignment is to be performed and examined.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Seminars	U G#	2.5	Mandatory	S23	
0002	Project	U G#	2.5	Mandatory	S23	
0003	Practical exam	U G#	2.5	Mandatory	S23	

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Syllabus established

by Jonny Johansson, HUL SRT 2022-02-14

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