



LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Datorgrafik Computer Graphics

EDAF80, 7,5 credits, G2 (First Cycle)

Valid for: 2023/24

Faculty: Faculty of Engineering, LTH

Decided by: PLED C/D

Date of Decision: 2023-04-18

General Information

Main field: Virtual Reality and Augmented Reality.

Compulsory for: MVAR1

Elective for: C4, D4-bg, E4-bg, F4, F4-bg, IDA3, L4-gi, Pi4-bam, MMSR2

Language of instruction: The course will be given in English

Aim

To give a fundamental understanding of methods and techniques for 3D computer graphics and practical experience of graphics programming.

Learning outcomes

Knowledge and understanding

For a passing grade the student must

- know the different steps comprising the translation of a scene description to an image
- understand the structure and design of interfaces to graphics hardware.

Competences and skills

For a passing grade the student must

- be able to perform the mathematical calculations needed in the rendering process
- use OpenGL to implement a hardware accelerated renderer

Contents

Construction of geometric objects. Describing and calculating object movement. User interaction. Translation of geometries in 3D space to the screen. Models of light and

surface materials. Mapping and buffer techniques.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)

Assessment: Written examination and completed course items. To qualify for the written examination students must have completed the compulsory items. The final grade of the course is based on the result of the written examination.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts

Code: 0117. **Name:** Compulsory Course Items.

Credits: 3,5. **Grading scale:** UG. **Assessment:** To qualify for a passing grade the laboratory work and the project must be completed. **Contents:** Laboratory work and a small project.

Code: 0217. **Name:** Written Examination.

Credits: 4. **Grading scale:** TH. **Assessment:** To qualify for the written exam the compulsory course items must be completed. The final grade of the course is based on the result of the written examination. **Contents:** Written examination.

Admission

Admission requirements:

- EDA011 Programming, First Course or EDA016 Programming, First Course or EDA017 Programming, First Course or EDA501 Programming, First Course or EDAA10 Computer Programming in Java or EDAA20 Programming and Databases or EDAA45 Introduction to Programming or EDAA50 Programming, First Course or EDAA55 Programming, First Course or EDAA65 Programming, First Course
- FMA420 Linear Algebra or FMAA55 Mathematics, Linear Algebra or FMAB20 Linear Algebra

Assumed prior knowledge: EDAA01 Programming - Second Course

The number of participants is limited to: No

The course overlaps following course/s: EDA221, EDA220

Reading list

- Will be announced later.

Contact and other information

Course coordinator: Michael Doggett, Michael.Doggett@cs.lth.se

Course homepage: <http://cs.lth.se/edaf80>