

SYLLABUS

Applied mathematics for computer graphics 7.5 credits W0029E

Tillämpad matematik för datorgrafik

Course syllabus admitted: Autumn 2024 Sp 1 - Present

**DECISION DATE
2024-02-15**

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Tillämpad matematik för datorgrafik

First cycle, W0029E

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	U G#	Medieteknik	Computer 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 W0012E - Introduction to Computer Graphics 15 credits, W0013E - Design processes and methods for Computer Graphics 15 credits, W0019E - 3D graphics 7.5 credits and W0020E - Animation and Rigging 7,5 credits, W0021E - Realtime Graphics 7,5 credits and W0024E Compositing 7,5 credits, W0026E - Advanced 3D graphics 7,5 credits and W0027E - Visual effects and simulation 7,5 credits.

Good knowledge in English, equivalent to English 6.

Selection

The selection is based on 1-165 credits.

Course Aim

On successfully completing this course students should be able to:

1. Demonstrate basic knowledge of mathematical concepts relevant to computer graphics production.
2. Use and apply mathematical concepts to solve practical tasks.

Contents

The course discusses the following subject areas:

- An overview of foundational mathematical concepts essential for computer graphics.
- Strategies for utilizing mathematics to tackle challenges in computer graphics.

The aim is to equip students with the ability to apply math in diverse graphics-related tasks, fostering both technical understanding and creative problem-solving.

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.

This course is only offered to programme students. You will have access to your own workstation in the campus studio, which has most hardware and software provided. You will have to arrange some equipment, such as headphones and certain specialized software, on your own. Access to the studio is contingent on following the posted rules.

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.

The course objectives are examined in various forms, as defined in the Modules section below. A module may consist of multiple assignments, each with specific criteria. Each assignment is detailed in the study guide for the course offering. Assignments must be submitted according to the assignment description, as well as according to general assignment guidelines communicated in the study guide for the course.

Late submissions are handled the same as failed assignments. No submissions are accepted after the final date of the course. Re-examination of assignments after the end of the course depends on the assignment type and teacher availability but can always be redone at the next course offering. Students who fail all or most parts of a course may not attempt re-exam assignments of individual assignments and will instead need to retake the course at the next course offering.

Laboratory work are about doing some type of independent work and then submitting the result, usually a digital file. Some assignments involve a process either before or after the file submission, which must be carried out per instructions for the file submission to be considered as complete. Re-examination of hand-in assignments is usually possible at the next re-exam period.

Unauthorized aids during exams and assessments

If a student, by using unauthorized aids, tries to mislead during an exam or when a study performance is to be assessed, disciplinary measures may be taken. The term "unauthorized aids" refers to aids that the teacher has not previously specified as permissible aids and that may assist in solving the examination task. This means that all aids not specified as permissible are prohibited. The Swedish version has interpretative precedence in the event of a conflict.

Course offered by

Department of Computer Science, Electrical and Space Engineering

Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Laboratory work	U G#	5	Mandatory	A23	
0002	Written exam	U G#	2.5	Mandatory	A23	

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.

Last revised

by Robert Brännström 2024-02-15

Syllabus established

by Robert Brännström 2023-02-15