

**SYLLABUS**

# **Advanced Techniques for Visualization (CAID) 7.5 credits D7005A**

**Avancerad 3D-visualisering**

**Course syllabus admitted: Autumn 2013 Sp 1 - Spring 2015 Sp 4**

**DECISION DATE  
2013-06-20**

# Advanced Techniques for Visualization (CAID) 7.5 credits D7005A

## Avancerad 3D-visualisering

### Second cycle, D7005A

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Industriell design	Other Subjects within Technology

## Entry requirements

Good knowledges in the software StudioTools by Alias/Wavefront and Photoshop.

## Selection

The selection is based on 30-285 credits

## Examiner

Dennis Pettersson

## Course Aim

The student should have knowledge how to use digital tools to archive photo realistic pictures of products or environments. The student should also have knowledge about advanced lightning and texturing together with different advanced rendering techniques.

## Contents

Description on how to construct advanced materials. Construction of custom textures. Lectures of advanced lighting, and various rendering techniques and visualization exercises.

The following topics are covered:

- Basic modeling of polygon surfaces
- Repetition of Nurbs-modeling
- Texturing and creating your own textures
- Keyframe animation
- Image-based lighting
- Mentalray material and rendering
- Non-photorealistic rendering

## Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

Lectures, where theory is mixed with exercises. The course requires a lot of time spent on individual work, and therefore have a fair amount of tutorial sessions. Exercises and assignments are carried out in the programs Autodesk Automotive, Autodesk Maya, Adobe Photoshop and Adobe Premiere. The programs are provided on the school computers. To give an idea of the course objectives and scope of the course begins with a demonstration of previous students' work. The course can be held in English as a supervised reading course.

All assignments are presented to the whole class where feedback is given. Final submission is made after the exam period, so students have the opportunity to improve their work based on the feedback given.

## 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 have a differentiated grade scale U, 3, 4 and 5. For exchange students the ECTS grading scale is used. Passing the course requires attendance at presentations and performed visualization exercises and project work..

## Remarks

Students must register for the courses themselves, or contact ETKS educational administration [eduetks@ltu.se](mailto:eduetks@ltu.se), not later than two days after the quarter commences. Failure to do so can result in the place being lost. This rule also applies to students with a guaranteed place.

## Transition terms

1214

## Literature. Valid from Autumn 2013 Sp 1

Andersson, Berglund, Wikberg och Håkansson; Alias ytmodellering, animering, och visualisering.

## Course offered by

Department of Business Administration, Technology and Social Sciences

## Items/credits

Number	Type	Credits	Grade
0001	Presentation and approved visualization tasks	7.5	G U 3 4 5

## Last revised

by Director of Undergraduate Studies Bo Jonsson, Department of Business Administration, Technology and Social Sciences 2013-06-20

## Syllabus established

The syllabus has been confirmed by the Department of Human Work Sciences 2007-02-28