



Information Coding / Computer Graphics, ISY, LITH

TSBK07 Computer Graphics Spring 2010

**Examiner/lecturer:
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**Course home page:
<http://www.computer-graphics.se/TSBK07html>**



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This lecture

Course plan and overview

The course subject

Projects, some demos

Graphics systems

Graphics APIs



Who am I?

- Lecturer/associate professor
- Researcher (image analysis)
- Game & graphics programmer
 - Hacker



Who are you?

- 3-5 year program
- International students

MOST of you have no prior experience of CG
SOME of you have some experience of CG
A FEW of you have extensive experience of CG

All of you know some programming. (Some are
“wizards”)



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**Examiner/lecturer:
Ingemar Ragnemalm**

**Lab assistants:
Jens Ogniewski
Susanne Ragnemalm**



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Time schedule

VT1:

**Lectures (14)
Labs (4)
Project specifications**

VT2:

**Project work
Project demonstrations
Reports
Lessons (2)
Written exam**



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POTENTIAL PROBLEMS:

Any students who have planned only VT1 or only VT2? (Was a problem earlier.)

Any students who are dependent on the course being G2 rather than A?



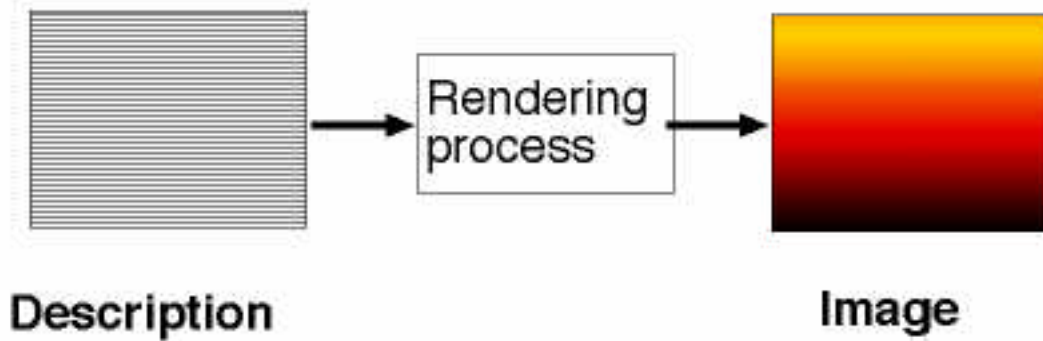
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Image-related technologies:

**Image Processing
Image Editing
Computer Graphics
Image Analysis
Computer Vision
Image Coding
Image Compression
Graphic Arts
Tomography
etc...**



Computer Graphics



Computer Graphics:

Creating images from non-image data

```
Cube =  
(10, 10, 10)  
(10, 10, 20)  
(10, 20, 10)  
(10, 20, 20)  
(20, 10, 10)  
(20, 10, 20)  
(20, 20, 10)  
(20, 20, 20)  
Camera =  
(60, 60, 60) (15,15,15)
```





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Lecture plan (preliminary)

1. Introduction, graphics systems, API's
2. 2D graphics, OpenGL introduction
3. 3D transforms, 3D engines
4. Rotation around arbitrary axis, light models
5. Shading, intro to hidden surface elimination
6. Texture mapping, other mappings
7. Shader programs, GLSL
8. Low-level algorithms
9. Pixel geometry, anti-aliasing, polygon rendering
10. Hidden surface elimination, large worlds
11. Animation, collision detection
12. Ray-tracing and radiosity
13. Curves and surfaces
14. More curves and surfaces, fractals