Computer Graphics

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1. Course Description

This course deals with (1) basic concepts on 3D computer graphics, (2) 3D modeling methodologies (3) rendering technologies, (4) 3DCG animation technique (5) basic knowledge on image processing, (6) computer systems used for 3DCG.
This course is related to diploma policy DP4C and DP4M.

2. Course Objectives

By the end of the course, students should be able to do the following:
- explain basic technologies in the CG.
- explain basic methodologies on 3D modeling.
- explain rendering technologies.
- explain basic methodologies on computer animations.
- explain basic methodologies on digital image processing.
- explain the computer systems to create and display computer graphics.

3. Grading Policy

Grading will be decided based on repots (10%) and term-end examination (90%).
Feedbacks on reports and examinations will be given on LMS.

4. Textbook and Reference

Textbook
"Visual Information Processing", CG-Arts Association
The Learning materials are published on the LMS.

5. Requirements(Assignments)

The students are expected to read lecture materials and fill blanks on "main point notes" as preparation. It takes approximately one hour to finish this work.

6. Note

7. Schedule

[1]   CG and digital camera model
[2]   Coordinate system
[3]   Coordinate transformation
[4]   Modeling (1) shape model, curve, curve surface
[5]   Modeling (2) polygon surface
[6]   Modeling (3) other shape expressions
[7]   Rendering (1) realistic style
[8]   Rendering (2) shadowing, mapping
[9]   Rendering (3) advanced rendering technique
[10]   Animation (1) configuration of animation
[11]   Animation (2) procedural animation, character animation
[12]   Animation (3) physics-based animation
[13]   Generation and processing of digital images
[14]   CG systems
[15]   Summary and examination