Computer Graphics

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Course www: https://www.scs.tcd.ie/~ramcdonn/

Applications
Movies

Incredibles 2, Disney 2018

Rogue One: A Star Wars Story, 2016
Architectural Design

Product Design
Cultural Heritage

Intro

- BA Computer Science / BAI Engineering / Maths
- CS4052
- 5 ECTS
- Michaelmas wks 1-12
- Schedule
  - Mon 3-4 Lecture 1
  - Tues 11-12 Lecture 2
  - Tues 12-1 Lab
Graphics

Modelling
creating, or capturing the representation of objects – most often geometrical

Rendering
creating an image of these objects on a display device

Animation
making objects move by describing how they change over time

Course Topics

- An introduction to computer graphics; problem domain and applications;
- Modelling - data sources and acquisition; modelling software; representation schemes;
- Linear algebra - two and three dimensional transforms; geometric operations; hierarchical 3D transformations;
Course Topics

- The computer graphics pipeline and the OpenGL API for 3D computer graphics;
- Projection and viewing; window to viewport transformation;
- Illumination models and rendering algorithms; colour, shading algorithms (Gouraud and Phong), local and global illumination;

Assessment

- Project (20%)
  - Will be developed in increments throughout
- Exam (80%)
  - end Semester 1 (CS), end Semester 2 (BAI)