CS 485: Computer Graphics (Spring 2014)

Course Description:

This course provides an introduction to the principles of modern computer graphics. Both the hardware and software aspects of graphics systems will be examined. Fundamental graphics algorithms will be discussed as well as graphics programming using a modern graphics standard. Topics will include graphics primitives, clipping, interaction, object modeling, viewing, shading, rendering, aliasing and animation.

Some of these aspects will be explored using Blender, a powerful open source 3D content creation package (modeling/rendering/animation/game engine). We'll also look at developing interactive graphic applications using Java and OpenGL. OpenGL is the industry's most widely adopted 2D/3D graphics API; available on most platforms (including mobile), it may be accessed through many programming languages. Blender and OpenGL can be used together to create graphic content and software for games, interactive visualizations and other applications.

Prerequisites: 306 with grade of C or better. Math 150 and 221 are recommended.

Recommended Texts:


Outline:(tentative)

- Introduction & Overview of Computer Graphics
- Graphics Programming with Java, OpenGL APIs etc.
- Input and Interactive Graphics
- Transformations and Geometry
- Viewing
- Modeling
- Underlying Algorithms (Rasterization, Clipping etc.)
- Lighting, Shading, Rendering
- Texture
- Animation

General Policies

Make-ups and incompletes will be given only in extreme circumstances. You may feel free to discuss general concepts related to programming problems but the actual solutions to the specific problems should be worked out individually or within your group if given a group assignment.

Grading:(tentative)

- Exams (45-55%) Our last exam will be given during the assigned time slot (Fri May 9, 8:15-9:50am) for this course during finals week. The final exam schedule is available online at: [http://registrar.siuc.edu/calendars/finalexam.html](http://registrar.siuc.edu/calendars/finalexam.html)
- Homeworks, Labs, Presentations (45-55%)
Also note that the University Building Emergency Response Team (BERT) has prepared an Emergency Response Guide. More information is available at SIUC's Department of Public Safety.