EE 4702-1
GPU Programming

Where/When
3129 P. Taylor Hall, Mon. Wed. Fri. 9:40–10:30 Fall 2009
http://www.ece.lsu.edu/koppel/gpup/

Who
David M. Koppelman
Room 349 Electrical Engineering Building
(225) 578-5482, koppel@ece.lsu.edu
http://www.ece.lsu.edu/koppel
Office Hours: Monday–Friday: 14:00–15:00.

Prerequisites
By Topic: Programming in C++, physics, calculus.

Topics
- Introduction
  Graphics software/hardware organization.
  Physical simulation quick overview.
  Term project introduction.

- Mathematics of 3D Computer Graphics
  Coordinates, vectors, lines, planes, intercepts, etc.
  Basic transformations, projections.

- Basics of 3D Computer Graphics & OpenGL
  Primitives and scene representation.
  Material properties, color, lighting approximations.
  Basic texturing.

- CPU Physical Simulation

- GPU Organization and Programming
  Modern GPU organization.
  Data staging and efficiency issues.
  OpenGL Shading language.

- Texturing Techniques

- GPU Physical Simulation

Topics subject to change.

Text
To be determined.

Grading
35% Midterm Exam • 35% Final Exam • 30% Homework and Projects
Final exam weight may be increased for a student who shows significant improvement on the final exam.
Late assignment penalty: 10% per day late deducted. Missed-midterm-exam policy: at instructor’s discretion either a makeup exam, use final exam grade for midterm grade (i.e., 70% final exam weight), or use of zero for midterm grade. Daily attendance: optional, however students are responsible for all material, instructions, and notices presented in class.