EE 4702-1
GPU Programming

Where/When
Room 3141 P. Taylor Hall, MWF 8:30–9:20 Fall 2012
http://www.ece.lsu.edu/koppel/gpup/

Who
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Office Hours: Monday–Friday: 14:00–15:00.

Prerequisites
By Course: CSC 3102.
By Topic: Programming in C++.

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

• Basics of 3D Computer Graphics
  Coordinates, vectors, lines, planes, intercepts, transforms, . . .
  Primitives and scene representation.
  Material properties, color, lighting approximations, texturing.

• GPU Organization and Shader Programming
  Rendering pipeline, programmable shaders, and OpenGL Shading Language.
  Shader programming for graphical and non-graphical computations.
  OpenGL Shading language.

• GPU Physical Simulation and CUDA or OpenCL Programming
  Physical simulation techniques.
  CUDA or OpenCL programming for physics.

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.