INTRODUCTION

- Welcome to CS 548 Computer Graphics!

- Computer Graphics is, simply put, the art and science of using computers to generate imagery. In this course, we will:
  - Present and discuss computer graphics approaches, theory, and techniques
  - Implement some of these approaches both with and without OpenGL
TOPICS COVERED

• The Fundamentals of Computer Graphics
• OpenGL/GLUT
• The Graphics Processing Unit
• Drawing Lines and Curves
• Drawing and Filling Polygons
• Basic Antialiasing
• 2D and 3D Transformations
• 2D and 3D Clipping
• 3D Viewing Transforms
• Parametric Splines and Surfaces
• Visible Surface Detection
• Basic Illumination Models
• Advanced Lighting
• Transparent Surfaces
• Texture Mapping
• Image-Based Effects
• Computer Animation
• Polygonal Techniques
• ...and more (if we have time)!
WHITHER AND WHEN?

• Kunsela Hall C108
• Tuesday and Thursdays
• 4 PM to 5:30 PM (Eastern Time)

• Course Website: http://web.cs.sunyit.edu/~realemj/2015spring/cs548/

• Assignments, class agendas, and useful links/information will be posted to the class website as we progress, so be sure to check it frequently!

• All assignment submissions will be made through Angel.
“I CANNOT LIVE WITHOUT BOOKS.”
– THOMAS JEFFERSON

• Primary Textbook (REQUIRED):
    • Get the 3rd edition if you can help it! 4th edition is acceptable, but it’s not as good (and more expensive)

• Additional Textbook (ALSO REQUIRED):
INSTRUCTOR

- **Dr. Michael J. Reale**
  - *Please address me as:*
    - Dr. Reale, Prof. Reale, Doctor, Professor, or Battle-Captain Reale
- **Email:** realemj@sunyit.edu OR realemj@cs.sunyit.edu
- **Office Phone:** 315-792-7227
- **Office Location:** Kunsela Hall C224
- **Office Hours:** After class, by appointment, or:
  - Mondays and Wednesdays from 12:30pm - 3:30pm
  - *Most* Tuesdays and Thursdays from 2:00pm - 3:30pm

- If you have a question/problem/concern, PLEASE contact me!
GRADING

• Quizzes: 5%
• Tests (Midterm and Final): 10%
• Programming Assignments: 70%
• Term Project: 15%

• Late assignments will be accepted, subject to time-dependent grade penalty. For every day the assignment is late, 5% will be deducted from the grade for that assignment.
QUIZZES AND TESTS

• We will have frequent quizzes (once a week if we can help it)
• Missed quizzes may not be made up.

• There will be two tests: a midterm and a cumulative final
ASSIGNMENTS

• This is a programming-heavy course
• ALL code submitted MUST be written in C/C++
  • Exception: Shader code will be written in GLSL
• Assignments will be POSTED to course website: http://web.cs.sunyit.edu/~realemj/2015spring/cs548/
• Assignments will be SUBMITTED on Angel
• We will have 3 or more assignments + a term (code) project
TERM PROJECT

• There will be a term project that will require you to implement some computer graphics concept or approach (or potentially develop your own)

• A list of project options will be posted around mid-semester
  • If you have an alternative idea, let me know

• Term projects are INDIVIDUAL projects; they are NOT GROUP PROJECTS

• You will be expected to:
  • Implement a given approach (either from a book or a paper)
  • Submit both the code and a brief report
  • Give a short presentation/demo near the end of semester
OTHER RESOURCES

• Real-Time Rendering book website:
  • http://www.realtimerendering.com/
  • Has buckets of links and information, including links to whole free books!

• OpenGL main page:
  • https://www.opengl.org/
  • Documentation, tutorials (although many are old and crufty)
ACADEMIC HONESTY

• **Your work** in this course (including your homework, programs, code, assignments, projects, documentation, quizzes, and exams) **should be yours and yours alone.**

• You shall not plagiarize, copy, buy, or steal any of the above in any form from anyone else and submit it as your own work.

• **You shall not cheat** in any way, shape, or form on any exams, quizzes, assignments, projects, or homework in this (or indeed any other) course.

• You may talk with other students to grasp a CONCEPT or IDEA related to the material in this course. **You may NOT, however, discuss specifics of a given assignment, project, or program.** Cheating shall be suspected if your work is effectively identical to the work of another, if your answers are stylistically inconsistent, and/or if you are unable to explain the work you submitted.

• Various penalties for academic dishonesty and violations of the SUNY PI / SUNYIT Academic Integrity Policy apply. **Evidence of cheating will result in a failing course grade.**

• At the end of the day, you need to be able to do the work in this course yourself in order to learn the material. **You don’t need to cheat to succeed. I have office hours, an email address, and a phone: ask me questions!**

• Students are also responsible for taking reasonable precautions to prevent copying or dissemination of their assignments.

• See the student handbook for more information.
ABOVE ALL...

• Learn!
• Code!
• Have fun!