CS 548: Topics in AI & Modeling - Computer Graphics  
Spring 2015  
Department of Computer and Information Sciences  
SUNY Polytechnic Institute (SUNYIT/Utica Campus)

Course Information

Class Times: Tuesdays and Thursdays, 4 PM to 5:30 PM

Class Location: Kunsela Hall C108


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

Additional Reading: Posted to course website as needed.

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

Instructor

Instructor: Dr. Michael J. Reale

Email/Phone: realemj@sunyit.edu / 315-792-7227

Office: Kunsela Hall C224

Office Hours: After class, by appointment, or between 12:30pm and 3:30pm on Mondays and Wednesdays; also available most Tuesdays and Thursdays from 2:00pm to 3:30pm
Course Objectives

Computer Graphics is, simply put, the art and science of using computers to generate imagery. In this course, we will:

1) Present and discuss computer graphics approaches, theory, and techniques
2) Implement some of these approaches both with and without OpenGL

Know that this will be a programming-heavy course, and that all code submitted must be written in C/C++.

Student Outcomes

By the end of this course, you should be familiar with the following:

- 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
Grading

Grades will be based on:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>5%</td>
</tr>
<tr>
<td>Tests (Midterm and Final)</td>
<td>10%</td>
</tr>
<tr>
<td>Programming Assignments</td>
<td>70%</td>
</tr>
<tr>
<td>Term Project</td>
<td>15%</td>
</tr>
</tbody>
</table>

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

Brief quizzes may be given at various points during the semester. These will be announced the class before. Missed quizzes may not be made up.
There will be a midterm and cumulative final test.

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.
Accommodations for Students with Disabilities

In compliance with the Americans with Disabilities Act of 1990 and with Section 504 of the Rehabilitation Act, SUNY Polytechnic Institute is committed to ensuring educational access and accommodations for all its students with disabilities, in order to fully participate in programs and course activities or to meet course requirements. SUNY Polytechnic Institute students with documented disabilities and medical conditions are encouraged to access these services by registering with the Disability Services Office to discuss their particular needs for accommodations. For information or an appointment contact Suzanne Sprague at the Disability Services Office, located in room B101 Kunsela Hall; in person, by phone (315) 792-7170, or e-mail suzanne.sprague@sunyit.edu.