

Syllabus for CSC – CPE 471: Introduction to Computer Graphics

Professor: Zoë Wood

Office: Building 14, room 209

Phone: 756-5540

office hours: TTh 11-12

email: zwood@csc.calpoly.edu

General: Welcome to computer graphics. This course will teach you the fundamentals for writing your own computer graphics applications. **This course requires substantial math and programming skills.** Experience with C or C++ will be essential and experience with linear algebra will be helpful. We will be using OpenGL and GLUT for graphics APIs, along with C or C++ to create computer graphics applications throughout the quarter. <OS?>

Assignments:

- 2 mid-term exams (24% of final grade – 12% each)
- Lab exercises (7% of final grade)
- 4 substantial programming assignments (11% each of final grade)
 - GLUT, OpenGL & C++ applications
- One larger final programming project (20% of final grade)
 - of your choice (again using GLUT, OpenGL and C++)
 - project must be approved by the instructor (details to follow)
- Participation (5% of final grade)
 - attend class/ talk in class or office hours interaction

Deadlines will be typically Tuesday before class but they will vary. Please see the program description for final details. **There is a strict late policy for all assignments** – if your program is late you will lose:

- -20% within first 24 hours after deadline
- -40% within 48 hours
- -100% after 48 hours

However, you get 2 **free** days for the entire quarter which can be applied to the four programming assignments only. You do not need to explain why you are using the days – these two late days will be automatically applied to any late assignments. *After your two late days have been used up, the late penalties apply.*

Required Text: “OpenGL: A primer” by Edward Angel

Highly recommended Text: “Fundamentals of Computer Graphics” by Peter Shirley

Also good: “OpenGL: programming guide” by OpenGL ARB

Cheating: Although I encourage you to have lively discussions with one another, **all work you hand in must be your own work.** If your program or parts of your program are plagiarized from another student or unapproved source, you will fail the course and a letter will be put in your file with Cal Poly Judicial Affairs.

The following schedule for the lectures and assignments may change.

Week 1	3/31/09	Academic Holiday	
	4/2/09	Introduction	
Week 2	4/7/09	Coordinate systems and Displays	
	Read	<i>Chapt. From webpage</i>	
	4/9/09	Scan conversion and line drawing	
	Read	<i>Chpt. 3.5 from Shirley book</i>	
Week 3	4/14/09	Scan conversion, line drawing & polygon	Program 1 due
	Read	<i>Chpt. 3.6 from Shirley book</i>	
	4/16/09	Math review - vectors	
	Read	<i>Chpt. 2.4 from Shirley book</i>	
Week 4	4/21/09	Math review - Geometric transforms I	
	Read	<i>Chpt. 4.2 up to 4.2.4 only from Shirley book</i>	
	4/23/09	Geometric transforms II	Program 2 due
	Read	<i>Chpt. 5.1 from Shirley book</i>	
Week 5	4/28/09	Geometric transforms & virtual trackball	
	Read	<i>Chpt. 5.2 & 5.3 from Shirley book</i>	
	4/30/09	Midterm 1	
Week 6	5/5/09	Lighting and Shading I	
	Read	<i>Chpt. 8.1 from Shirley book</i>	
	5/7/09	Lighting and Shading II	Program 3 due
	Read	<i>Chpt. 8.2 from Shirley book</i>	
Week 7	5/12/09	Viewing transforms and Camera I	
	Read	<i>Chpt. 6.1&6.2 from Shirley book</i>	
	5/14/09	Viewing transforms and Camera II	
	Read	<i>Chpt. 6.3 from Shirley book</i>	Final proj. proposals due
Week 8	5/19/09	Visibility: Clipping & Hidden Surfaces	
	Read	<i>Chpt. 7.2 & 11.1 from Shirley book</i>	
	5/21/09	Graphics Pipeline review	Program 4 due
		<i>Chpt. 11 from Shirley book</i>	
Week 9	5/26/09	Midterm	Final project check-in
	5/28/09	Cartoon Rendering and NPR	
	Read	<i>Chpt. 8.3 from Shirley book</i>	
Week 10	6/2/09	Hierarchical models & Texture mapping	
	Read	<i>Chpt. 10 from Shirley book</i>	Final project check-in
	6/4/09	Curves & Surfaces	
		<i>Chpt. 13 from Shirley book</i>	
Final	6/11/09	Thursday 1:10-4pm	Final Projects demo

