CSCI 346 – Introduction to Computer Graphics

Monday, Wednesday, Friday 8:00am – 9:15am Robinson 217

Instructor	Dr. Marietta E. Cameron	**Phone**	(828)250-3919
Office	Rhodes-Robinson 229	**E-mail**	mcameron@unca.edu (preferred contact)
Office Hours	Make an Appointment via my Google Calendar		

Texts:

Interactive Computer Graphics (Edward Angel and Dave Shreiner, ISBN-978-0-13-357484-5)

OpenGL SuperBible(Graham Sellers, Richard S. Wright Jr., Nicholas Haemel, ISBN-978-0-672-33747-5)

Description:

This course is an introduction to the terminology, standards, and basic algorithms in computer graphics. Topics include image transformations, projections from 3D to 2D, curve and surface modeling, and three-dimensional viewing. Pre-requisites: CSCI 202. This course fulfills a requirement in the Computer Science major concentration Computer Systems and fulfills an elective requirement in the Computer Science concentration Information Systems and in the computer science minor.

Objectives:

Upon "successful" completion of this course, a student should be able to do the following:

1. Graphics-related outcomes:

    a. Compare the techniques of raster graphics and vector graphics

    b. Create images using WebGL

    c. Express basic affine transformations such as scaling, rotation, and translation

    d. Implement transformation and clipping operations in 2D images

    e. Understand lighting, color models, and texture mapping.

2. Overall-Curriculum Outcomes

    a. Develop an intermediate scale software package.

    b. Demonstrate formal problem solving skills.

    c. Write critical critiques of formal methods.

    d. Effectively communicate (orally and in writing) his/her ideas.

Organization:

This is a lecture-lab course. On lecture days, the instructor will facilitate discussions concerning the day's topic and the previously assigned readings. There will be two regular exam days during the semester. The two and half hour final exam will be given on the College assigned date. Moodle is the course management software for this course. Please check Moodle daily for updates.

Activities and Evaluation:

Attendance (5%)	The Instructor will call roll each day. She will attempt to contact any student who misses more than two consecutive classes without notification. If her attempts to contact the student are unsuccessful, she will notify the Assistant Provost in the Office of Academic Administration. As always, you are responsible for all course work/material assigned during your absence. Please note the makeup policy for missed exams and final.
	The point settings for each day is as follows:

Attendance Category	Points	Description
Present	10	Your arrival time is before 9:10am
Excused	8	The following are considered excused absences: 1. Documented participation in College related events. 2. Absence due to illness. Please provide medical documentation for illnesses that causes multiple absences. PLEASE if you sick stay home!! If I am sick, I promise you I will try to conduct class via google hangouts from home. 3. Jury Duty. Please submit a copy of summons.
Late	5	Your arrival time is between 8:10am and 8:30am
Absent	0	Absent from class or arrival time is after 8:30am.

Assignments (15%)	Three category of assignments will be given: 1. Programming – There will be approximately five mini-projects in addition to the term assignment. 2. Reading exercises – Moodle will feature exercises to promote and encourage preparation for book and article discussions.
Term Project (30%)	Teams of two-three students design and implement an interactive project of their choice. Each group will write a proposal, present the proposal to the class, implement the project, demo the project, and produce a poster describing their work.
Two Exams (25% each, 50% total)	Each of these exams will be in-class and closed book. A one page cheat sheet will be allowed. Make-ups are allowed in **documented** cases of illness, court duties, tragedies involving

Exam1: Monday, February 29 Exam2: Wednesday, April 13	immediate family members, and College-related events. Acceptable documents would include but not limited to physician/court excuses (on professional letterhead), athletic schedules, and memorial programs/announcements. In the case of conflicts with a College-related event, please notify the instructor as soon as possible. Make-ups are not allowed for student/family desiring an early departure for Spring/Summer Break.
Penalty (0% to -24%)	It is extremely important that the student demonstrates competency in all components of this course. If a student completes the exams with an average below a grade of "C" (36.5) the overall course grade is reduced by the percentage points computed according to the following formula $$PenaltyProgram = -25\% * \frac{(36.5 - ExamAverage)}{36.5}$$ If a student completes the combined non-exam components with an average below a grade of "C" (36.6) the overall course grade is reduced by the percentage points computed according to the following formula. $$PenaltyExam = -25\% * \frac{(36.5 - ProjectAverage)}{36.5}$$

Grading: Course letter grades will be assigned according to the following scale:

A : 92.50%+	B+: 86.50%	C+: 76.50%	D+: 66.50%	F: below 59.50%
A-: 89.50%	B: 82.50%	C: 72.50%	D: 59.50%	
	B-: 79.50%	C- : 69.50%		

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	B-: 79.50%	C- : 69.50%		

Academic Dishonesty: Listed below are things that the instructor considers academically dishonest.

A. Impermissible collaboration on chapter and lab assignments. Impermissible collaboration includes:
1. Copying any portion of another person's work by **ANY** method (conversation, written, electronic copy, etc.).
2. Allowing another person's to copy any portion of your work by **ANY** method.

B. Impermissible collaboration and/or plagiarism on programming assignments. Impermissible collaboration and/or plagiarism occur when you:
1. Tell, write, and/or electronically copy for another student's usage any code that was not explicitly given in class.

2. Receive from another person and use in your program any code that was not explicitly given in class or in a text.
3. Copy/download and incorporate into your assignment any code that you did not write without citing the source.   At least 70% of an assignment's code should be your code.

C. Cheating on Exams/Final Exam. It is academically dishonest if during an exam you:
1. Use any unauthorized sources of information.
2. Give information to another student via any method(verbal, written, electronic)

Penalties:
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Type of Offense	Penalty
Impermissible collaboration/ plagiarism on Homework	1st offense -- written warning from instructor. A copy of the warning will be sent to the Assistant Provost. 2nd offense – a grade of zero on ***both*** assignments involved in the first and second offenses. Copy of action will be sent to Assistant Provost. 3rd offense – grade of F in course. Action will be record with Assistant Provost.
Cheating on exams and/or Final	Grade of F in course.

Adverse Weather Policy:
In the event of inclement or threatening weather, everyone should use his or her best judgment regarding travel to and from campus. Safety should be the main concern. Please consult the campus website for campus closings. In the event that the campus remains open and you cannot attend class because of adverse weather conditions, you should contact the instructor as soon as possible. The instructor will make allowances relative to attendance policies, any scheduled exams, and/or discussions. Similarly, if the instructor is unable to reach our class location, she will notify you of any cancellation or change no later than 6:00am via an announcement on our Moodle site. We will investigate the possibility of conducting virtual class using Google Hangouts or Moodle Chat.

Accommodations for Students with Disabilities:
University of North Carolina at Asheville is committed to making courses, programs and activities accessible to persons with documented disabilities. Students requiring reasonable accommodations must register with the Office of Academic Accessibility by providing supporting documentation. All information provided will remain confidential. For more information please contact the Office of Academic Accessibility at (828)232-5050 or academicaccess@unca.edu or visit them in the OneStop Student Services Center.

Preventing Sexual Harassment

Title IX of the Education Amendments of 1972 prohibits sex discrimination against any participant in an educational program or activity that receives federal funds. The act is intended to eliminate sex discrimination in education. Title IX covers discrimination in programs, admissions, activities, and student-to-student sexual harassment. UNC-Asheville's policy against sexual harassment extends not only to employees of the University but to students as well. If you encounter unlawful sexual harassment or gender based discrimination, please talk to any University Responsible Employee who will report the incident; contact Dr. Jill Moffit, UNC-Asheville's Title IX Administrator, at (828)232-5658; or report anonymously at http://publicsafety.unca.edu/police/anonymous-crime-tip-submission For more information regarding Title IX and resources concerning sexual harassment and its prevention please visit: http://publicsafety.unca.edu/title-ix

Other Course Polices:
1. Please set cell phones to vibrate or off. If you must take a call, please quietly leave classroom/lab.

2. During class, please concentrate on the topic/material for this course. It is disrespectful to the instructor and to your peers if during a discussion you read your email, tweet, text, browse facebook, work on other material, play games, sleep, etc. The instructor will ask you to leave if she notices that you are distracted.

3. A grade of incomplete will be assigned only in the case of a dire circumstance. A dire circumstance includes a prolonged absence due to extreme illness, court duty, and/or personal tragedy. Requests for a grade of incomplete must be in writing and must be accompanied by documents that provide evidence of the dire circumstance.

Tentative Schedule: Please visit link on Moodle for updated copy of schedule.

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<tr><th colspan="5">CSCI 346 Tentative Fall 2013 Schedule</th></tr>
<tr><td colspan="5">Topics may change...Exam days will not.</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><th>Week Of</th><th>Readings</th><th>Monday</th><th>Wednesday</th><th>Friday</th></tr>
<tr><td>11-Jan</td><td>Chap 2</td><td>Course Introduction</td><td>WebGL Application</td><td>Primitives and Attributes</td></tr>
<tr><td>18-Jan</td><td></td><td>Color</td><td>Viewing</td><td>Polygons</td></tr>
<tr><td>25-Jan</td><td>Chap 3</td><td>Animation</td><td>Interaction</td><td>Event Driven Programming</td></tr>
<tr><td>1-Feb</td><td>Chap 4</td><td>Event Driven Programming</td><td>Geometric Objects - Mathematical Background</td><td>Geometric Objects - Mathematical Background</td></tr>
<tr><td>8-Feb</td><td></td><td>Geometric Objects 3D -- Primitives</td><td></td><td>Coordinate Systems</td></tr>
<tr><td>15-Feb</td><td></td><td>Coordinate Systems</td><td>WebGL Frames</td><td></td></tr>
<tr><td>22-Feb</td><td></td><td>Transformations</td><td>Transformations</td><td>Transformations</td></tr>
<tr><td>29-Feb</td><td></td><td>Exam 1 (in-class)</td><td>Project Proposals</td><td>Project Proposals</td></tr>
<tr><td>7-Mar</td><td></td><td colspan="3">Spring Break</td></tr>
<tr><td>14-Mar</td><td>Chapter 5 & 6</td><td>Viewing</td><td>Viewing/Lighting</td><td>Lighting</td></tr>
<tr><td>21-Mar</td><td>Chapter 7</td><td>Texture Mapping</td><td>Texture Mapping</td><td>Texture Mapping</td></tr>
<tr><td>28-Mar</td><td>Chapter 8</td><td>Clipping</td><td>Bresenham's Algorithm</td><td>Hidden-Surface Removal</td></tr>
<tr><td>4-Apr</td><td>Chapter 9</td><td>Modeling & Hierarchy</td><td>Fractals</td><td>NCUR -- Please Attend</td></tr>
<tr><td>11-Apr</td><td>Chapter 11</td><td>Curves and Surfaces</td><td>Exam 2(in-class)</td><td>3D Printing</td></tr>
<tr><td>18-Apr</td><td></td><td>3D printing</td><td>Project Work Day</td><td></td></tr>
<tr><td>25-Apr</td><td></td><td>Project Workday</td><td>Final Presentation (April 27)</td><td></td></tr>
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