

CSCI445: Computer Graphics

1.	Course Prefix and number	CSCI 445
2.	Number of semester hours	3 An undergraduate student should expect to spend on this course a minimum of two hours outside the classroom for every hour in the classroom. The outside hours may vary depending on the number credit hours or type of course. More details are available from the faculty member or department office and in CMU's <i>Curriculum Policies and Procedures Manual</i> .
3.	Pre-requisites	MATH 152 (Calc 2) and CSCI 250 (CS 3)
4.	Location of classroom and time course meets	WS 118 9:00-9:50 Mon, Wed, Fri
5.	Intstructor Web Page	Dr. Warren MacEvoy http://www.coloradomesa.edu/~wmacevoy
6.	Office Hours	See my web page.
7.	Course Description	Introduction to the use of the computer to produce images: two and three dimensional graphics, algorithms and data structures for hidden lines and surfaces, shading, and reflections.
8.	General Education Objectives	This is not a general education course.
9.	Textbook and Materials	Interactive Computer Graphics A Top-Down Approach with OpenGL Edward Angel and Dave Shreiner Sixth Edition, Addison-Wesley 2012. Errata
10.	Course Objectives	To understand the foundations of computer graphics in modern application areas, emphasizing 3d tools and applications. You will

		be expected to produce a significant 3d final project.
11.	Policy on absences and tardies	You are expected to attend class, including in particular days where you or other students are presenting their works or reviews.
12.	Policy on late work	If a student needs more time on an assignment, the instructor needs to be contacted before the assignment is due.
13.	Policy on academic dishonesty	It is illegal to plagiarize content, or to use content not permitted by copyright policy. It is dishonest to claim other's work as your own or use tools outside the scope of the projects to build your website. You may be given a failing grade on a project or the course overall for academic dishonesty.
14.	Disability Arrangements	In coordination with Educational Access Services, reasonable accommodations will be provided for qualified students with disabilities. Please meet with the instructor the first week of class to make arrangements. Educational Access Services can be contacted at 248-1801, or in person in Houston Hall, Suite 108.
15.	Evaluation and grading	Tests and assignments will be graded on a combination of objective and subjective basis. Students that do more than is required on an assignment, and demonstrate the knowledge of web page development will achieve higher grades. The major goal of this class is to produce a 3d graphics project of some sort (animation, application, etc.).
16.	Major assignments	TBD
17.	Course Topics	• Foundations • OpenGL 2D • 3D Geometry • OpenGL 3D • Blender

Week	Mon	Wed	Fri
17-Aug	Mon 18-Aug 1	Wed 20-Aug 2	Fri 22-Aug 3
24-Aug	Mon 25-Aug	Wed 27-Aug	Fri 29-Aug

	4	5	6
31-Aug	Mon 01-Sep 7	Wed 03-Sep 8	Fri 05-Sep 9
7-Sep	Mon 08-Sep 10	Wed 10-Sep 11	Fri 12-Sep 12
14-Sep	Mon 15-Sep 13	Wed 17-Sep 14	Fri 19-Sep 15
21-Sep	Mon 22-Sep 16	Wed 24-Sep 17	Fri 26-Sep 18
28-Sep	Mon 29-Sep 19	Wed 01-Oct 20	Fri 03-Oct 21
5-Oct	Mon 06-Oct 22	Wed 08-Oct 23	Fri 10-Oct *Fall Break*
12-Oct	Mon 13-Oct 24	Wed 15-Oct 25	Fri 17-Oct 26
19-Oct	Mon 20-Oct 27	Wed 22-Oct 28	Fri 24-Oct 29
26-Oct	Mon 27-Oct 30	Wed 29-Oct 31	Fri 31-Oct 32
2-Nov	Mon 03-Nov 33	Wed 05-Nov 34	Fri 07-Nov 35
9-Nov	Mon 10-Nov 36	Wed 12-Nov 37	Fri 14-Nov 38
16-Nov	Mon 17-Nov 39	Wed 19-Nov 40	Fri 21-Nov 41
23-Nov	Mon 24-Nov *Thanksgiving*	Wed 26-Nov *Thanksgiving*	Fri 28-Nov *Thanksgiving*
30-Nov	Mon 01-Dec 42	Wed 03-Dec 43	Fri 05-Dec 44
7-Dec	Mon 08-Dec *Finals*	Wed 10-Dec 8:00-9:50 Final	

Assignment # 1: Javascript Canvas

Assignment # 2: WebGL

Assignment # 3: Blender (or Maya etc) simple scene setup.

Assignment # 4: Scripted version of something.

Assignment # 5: Animation.

Good online lecture notes: <http://math.hws.edu/eck/cs424/notes2013/index.html>

[Basic 2D math](#)

<http://diveintohtml5.info/canvas.html>

https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/Canvas_tutorial

http://learningwebgl.com/blog/?page_id=1217

[WebGL CubicVR http://open.gl/](http://open.gl/)
<http://madebyevan.com/webgl-water/>
<http://www.khronos.org/webgl/wiki/Tutorial>

three.js notes http://math.hws.edu/eck/cs424/notes2013/15_Threejs_Intro.html

[Unity3d](#)

[Blender](#) (BlenderGURU.com)

<http://airplanes3d.net/downloads/pydev/pydev-blender-en.pdf>

Install blender & do basics tutorials blender cookie (Sep 29)
<http://cgcookie.com/blender/cgc-courses/blender-basics-introduction-for-beginners/>

Interesting other library links:

[WebGL constructive solid geometry library](#)
[webgl on ios](#)

[Lighthouse3d GLSL tutorial](#)
[GLSL examples](#)
[non photo-realistic rendering](#)
[nehe GLSL tutorial](#)