SCIENCE DEPARTMENT

COURSE OUTLINE – FALL 2016

CS 3110 : Introduction to Computer Graphics – 3 (3-0-3) 6 Hours for 15 Weeks

INSTRUCTOR:	David Gregg	**PHONE:**	(780)539-2976
OFFICE:	C-427	**E-MAIL:**	dgregg@gprc.ab.ca
OFFICE HOURS:	TBA		

CALENDAR DESCRIPTION:

Graphical input and output devices; segments; interactive input techniques; user interface design; windowing and clipping; 2D and 3D transformation; 3D modelling and viewing; hidden-line and hidden-surface removal.

PREREQUISITE(S)/COREQUISITE: CS1150 or CS2010

REQUIRED TEXT/RESOURCE MATERIALS:

Course notes and a curriculum page with Computer Graphics topics will be provided. Computer Graphics, Principles and Practice 3rd Edition by Foley et al, and The OpenGL Programming Guide 8th Edition by Shreiner et al, are recommended books for anyone interested in computer graphics.

DELIVERY MODE(S):

This course includes 3-hours of lecture per week and a 3-hour lab per week

Lectures:	**A2**	**G111 - Monday**	**10:00 - 11:20**
		G111 - Wednesday	**10:00 - 11:20**
Labs:		**G112 - Thursday**	**14:30 – 17:20**

COURSE OBJECTIVES:

Understand the mathematics used in computer graphics
Be able to use OpenGL and GLSL

LEARNING OUTCOMES:

Students will be able to design and implement reasonably complex interactive 3D computer graphics applications, using OpenGL (3.3+) with modelling, viewing, lighting, shading, texturing and rendering techniques.

TRANSFERABILITY:

UA, UC, UL, AU, KUC.

*Warning: Although we strive to make the transferability information in this document up-to-date and accurate, **the student has the final responsibility for ensuring the transferability of this course to Alberta Colleges and Universities**. Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at Alberta Transfer Guide main page http://www.transferalberta.ca or, if you do not want to navigate through few links, at http://alis.alberta.ca/ps/tsp/ta/tbi/onlinesearch.html?SearchMode=S&step=2

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

EVALUATIONS:

Your final grade will be determined in the following manner:

Quiz	10%
Assignments	30%
Midterm Exam	25%
Final Exam	35%

GRADING CRITERIA:

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines	Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	90-100	C+	2.3	67-69
A	4.0	85-89	C	2.0	63-66
A-	3.7	80-84	C-	1.7	60-62
B+	3.3	77-79	D+	1.3	55-59
B	3.0	73-76	D	1.0	50-54
B-	2.7	70-72	F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

1	Introduction and Mathematics Review
2	2D Geometric Modeling and Viewing Transforms
3	Scan Conversion and Clipping
	Quiz (topics 1 through 3)
4	3D Geometric Modeling Transforms
5	3D Viewing Transforms
	Midterm (topics 1 through 5)
6	OpenGL 3.3, Windowing systems, and GLEW
7	Lighting and Shading with the programmable graphics pipeline using GLSL 3.0+
8	Texturing
9	Data Structures and Complex Models
10	Buffers, Blending, Mirrors, and Shadows
	Final Exam (topics 1 through 10)

STUDENT RESPONSIBILITIES:

Refer to the GPRC College Policy on Student Rights and Responsibilities

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the College Calendar at http://www.gprc.ab.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at https://www.gprc.ab.ca/about/administration/policies

**Note: all Academic and Administrative policies are available on the same page.