



**DEPARTMENT OF SCIENCE**  
**COURSE OUTLINE – CS 3110 3(3-0-3)**  
**INTRODUCTION TO COMPUTER GRAPHICS**

**INSTRUCTOR:** David Gregg  
**OFFICE:** C 427  
**OFFICE HOURS:** TBA

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**PREREQUISITE(S)/CO-REQUISITE:** CS 1150 or CS 2010

**REQUIRED TEXT/RESOURCE MATERIALS:**

Course notes and a curriculum page with computer graphics hyperlinks will be provided.

**CALENDAR DESCRIPTION:**

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

**CREDIT/CONTACT HOURS:** 3(3-0-3) This course is 3 credits. The course consists of 3 lab hours and 3 lecture hours per week.

**DELIVERY MODE(S):** class-room

**OBJECTIVES:**

By the end of the course successful students will be able to design and implement reasonably complex interactive 3D computer graphics applications, using OpenGL with modeling, viewing, lighting, shading, texturing and rendering techniques.

**TRANSFERABILITY:**

University of Alberta (CMPUT 2XX); University of Calgary (Sr. CPSC); Athabasca University (COMP 390); University of Lethbridge. (CPSC 3710).

See the GPRC College Calendar and the Alberta Transfer Guide for further information regarding the transferability of this course.

**GRADING CRITERIA:**

The following Grading Conversion chart will be used to convert final marks to letter grades.

**GRANDE PRAIRIE REGIONAL COLLEGE  
GRADING CONVERSION CHART**

Alpha Grade	4-point Equivalent	Percentage Guidelines	Designation
A <sup>+</sup>	4.0	90 – 100	EXCELLENT
A	4.0	85 – 89	
A <sup>-</sup>	3.7	80 – 84	FIRST CLASS STANDING
B <sup>+</sup>	3.3	77 – 79	
B	3.0	73 – 76	GOOD
B <sup>-</sup>	2.7	70 – 72	
C <sup>+</sup>	2.3	67 – 69	SATISFACTORY
C	2.0	63 – 66	
C <sup>-</sup>	1.7	60 – 62	
D <sup>+</sup>	1.3	55 – 59	MINIMAL PASS
D	1.0	50 – 54	
F	0.0	0 – 49	FAIL
WF	0.0	0	FAIL, withdrawal after the deadline

**EVALUATIONS:**

Quiz	15%
Assignments	25%
Midterm Exam	25%
Final Exam	35%

**STUDENT RESPONSIBILITIES:**

Assignments are to be handed in and/or demonstrated in the scheduled lab on the due-date. Late assignments will be penalized by 50%. Late assignments may not be accepted after the end of classes. Some assignments may be weighted differently than others. Students will be eligible for a passing grade, only if they obtain 37.5 out of a possible 75 marks (on exams and quizzes).

**STATEMENT ON PLAGIARISM AND CHEATING:**

Refer to the Student Conduct section of the College Admission Guide at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at [www.gprc.ab.ca/about/administration/policies/\\*\\*](http://www.gprc.ab.ca/about/administration/policies/**)

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

**COURSE SCHEDULE/TENTATIVE TIMELINE:**

	<b>Topic</b>
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	Introduction to OpenGL, Glut, and Glew
7	Lighting and Shading (GLSL 3.0+)
8	Texturing
9	Data Structures and Complex Models
10	Buffers, Blending, Mirrors, and Shadows
	Final Exam (topics 1 through 10)