



**DEPARTMENT OF SCIENCE
COURSE OUTLINE – FALL 2015
CS3110—INTRODUCTION TO COMPUTER GRAPHICS
3 (3-0-3) UT**

INSTRUCTOR: David Gregg **PHONE:** (780) 539-2976
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OFFICE HOURS: TBA and by appointment

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**

PREREQUISITE: 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.

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.

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.

COURSE OBJECTIVES:

Understand the mathematics used in computer graphics
Be able to use OpenGL (3.3+) and GLSL

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)

EVALUATIONS:

Your final grade will be determined in the following manner:

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

GRADING CRITERIA: Your final Alpha Grade will be determined using the following approximate percentage conversion:

GRADING CONVERSION CHART			
Alpha Grade	4-point Equivalent	Percentage Guidelines	Designation
A⁺	4.0	90 – 100	EXCELLENT
A	4.0	85 – 89	
A⁻	3.7	80 – 84	FIRST CLASS STANDING
B⁺	3.3	77 – 79	
B	3.0	73 – 76	GOOD
B⁻	2.7	70 – 72	
C⁺	2.3	67 – 69	SATISFACTORY
C	2.0	63 – 66	
C⁻	1.7	60 – 62	
D⁺	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

STUDENT RESPONSIBILITIES:

Refer to the College Policy on Student Rights and Responsibilities at www.gprc.ab.ca/d/STUDENTRIGHTSRESPONSIBILITIES

STATEMENT ON PLAGIARISM AND CHEATING:

Refer to the College Student Misconduct: Academic and Non-Academic Policy at www.gprc.ab.ca/d/STUDENTMISCONDUCT

**Note: all Academic and Administrative policies are available at www.gprc.ab.ca/about/administration/policies/

UNIVERSITY TRANSFER:

**** 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.**

Please refer to the Alberta Transfer guide for current transfer agreements:

www.transferalberta.ca