



CS 733 – COMPUTER GRAPHICS & ANIMATION

Territorial acknowledgement: The University of Regina is situated on the territories of the nêhiyawak, Anihšînāpēk, Dakota, Lakota, and Nakoda, and the homeland of the Métis/Michif Nation. The Regina campus is on Treaty 4 lands, and Saskatoon classes are on Treaty 6 lands.

Course Instructor: Dr. Daryl Hepting
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Lectures: The class will be delivered in-person M,W: 10:00-11:15 am in AH 348.

Website: <https://urcourses.uregina.ca/course/view.php?id=29240>

Office hours: Tuesdays and Thursdays 10:00-11:30 am. If these times don't fit your schedule, please email me (daryl.hepting@uregina.ca) to set up an appointment.

Course description: Techniques and software for generating computer graphics and animations. Topics include geometric and mathematical modelling, image rendering and synthesis, principles of animation, and graphics and animation frameworks.

Learning outcomes:

1. Understand basic concepts of computer graphics and animation.
2. Demonstrate your ability to apply computer graphics and animation techniques in software that you write.
3. Understand how to apply graphics and animation frameworks in your work

Textbook: Interactive Computer Graphics, A Top-Down Approach with WebGL, 8th edition, by Edward Angel and Dave Shreiner (online only, but earlier editions may be available in print)
<https://www.pearson.com/en-ca/subject-catalog/p/interactive-computer-graphics-a-top-down-approach-with-webgl/P200000003526/9780135217160>
<https://www.interactivecomputergraphics.com>
Additional material to be posted and made available on UR Courses.

Grading

Assignments	40%
Participation	10%
Midterm exam	10%
Final exam	40%

Exam modality

The midterm and final exams will be in-person, written exams.

Lecture syllabus: all dates and topics are subject to change, as necessitated by illness, closures, or other unforeseen circumstances.

Week of	Topic and/or textbook chapter	Items of note
August 28 th	Introduction to class, WebGL and three.js	Term starts Aug. 30 th
September 4 th	Sampling and quantization, discrete vs. continuous	
September 11 th	Chapter 1: Graphics Systems and Models	Sept. 13 th – add/drop date Sept. 11 th -- Midterm date to be chosen from Oct 18, 23, or 25.
September 18 th	Chapter 2: Graphics Programming	
September 25 th	Chapter 3: Interaction and Animation	
October 2 nd	Chapter 4: Geometric Objects and Transformations	Assignment 1 due
October 9 th	Reading break – no classes	
October 16 th	Chapter 5: Viewing	Assignment 2 due
October 23 rd	Chapter 6: Lighting and Shading, Midterm	
October 30 th	Chapter 6: Lighting and Shading	
November 6 th	Chapter 7: Texture Mapping	Assignment 3 due
November 13 th	Chapter 8: Working with Framebuffers	
November 20 th	Chapter 9: Modelling and Hierarchy	Assignment 4 due
November 27 th	Selected topics from Chapters 10, 11, and 12	
December 4 th	Selected topics from Chapters 10, 11, and 12, review	Assignment 5 due, Final exam will be on Wednesday, Dec.13 @ 9am

Late assignments/missed exam policy: Late assignments will be penalized by a percentage of the assigned grade. If the midterm test is missed, extra weight will be placed on the final. If you miss the final exam, you will receive an NP.

Attendance policy: Attendance at lectures is expected. Students can record their own attendance in UR Courses.

Academic integrity: Academic integrity requires students be honest. Assignments and exams are to help students learn; grades show how fully this goal is attained. Thus, all work and grades should result from a student's own understanding and effort. Acts of academic misconduct violate academic integrity, and are considered serious offences by the University. Examples include, but are not limited to, cheating on tests or exams, plagiarizing, copying from others, and submitting the work of others as your own. Instances of academic misconduct will be reported to the Associate Dean in the FGSR (Faculty of Graduate Studies and Research) for investigation. More details are provided on the FGSR website:
<https://www.uregina.ca/gradstudies/current-students/academic-integrity/index.html>

Accommodations: Students in this course who may have need for specialized accommodations, should contact the Centre for Student Accessibility (Riddell Centre 229, 585-4631), and must discuss their accommodation letter with their Instructor before any accommodations will be granted.

Grades: All grades will be assigned according to the Graduate Calendar: Grading System (<https://www.uregina.ca/gradstudies/current-students/grad-calendar/grading-system.html>):

95-100: An exceptional performance.

90-94: An outstanding performance.

85-89: An excellent performance.

80-84: A very good performance.

75-79: A good or satisfactory performance.

70-74: A minimally acceptable performance or marginal pass.

0-69: An unacceptable or failing performance.