UNIVERSITY OF CALGARY
FACULTY OF SCIENCE

CPSC 585 - Games Programming - Winter 2025
COURSE OUTLINE

The University of Calgary, located in the heart of Southern Alberta, both acknowledges and pays tribute to the traditional territories of the peoples of Treaty 7, which include the Blackfoot Confederacy (comprised of the Siksika, the Piikani, and the Kainai First Nations), the Tsuut'ina First Nation, and the Stoney Nakoda (including Chiniki, Bearspaw, and Goodstoney First Nations). The City of Calgary is also home to the Métis Nation of Alberta (Districts 5 and 6).

A. **Course Information**

1. **Course Coordinator(s)**

   Not Applicable

2. **Lecture Section(s)**

   Lecture 01 : MTWRF 09:00 - 17:00 in ICT 516

Instructor	Email	Phone	Office	Student/Office Hours
Dr. Richard Zhao	richard.zhao1@ucalgary.ca	Zoom or Discord	ICT 748	Thursdays 2-3pm and by appointment

3. **Lab and Tutorial Sections**

Lab 01 F 09:00 - 10:50 in MS 139	Lab 02 F 11:00 - 12:50 in MS 139	Lab 03 F 13:00 - 14:50 in MS 139

4. **Scheduled Out-Of-Class Activities**

   There are no scheduled out of class activities for this course.

5. **Additional Course Delivery Details**

   This course provides an introduction to video game development. Its main objective is to expose the students to the processes and techniques of creating video games. Teams of students will experience a condensed version of the entire video game development process, designing and developing a game from scratch, including its underlying game engine.

   Lectures: Monday, Jan 6 to Friday, Jan 10, 2025 (9:00am to 5:00pm, with an hour break for lunch) in ICT 516.

   Prerequisite: CPSC 453 - Computer Graphics

   Students must apply for permission to enroll in the course through a web form at

   https://cspages.ucalgary.ca/~richard.zhao1/cpsc585.html

6. **Course Site & Materials**

   D2L: CPSC 585 - (Winter 2025) - Games Programming

   Supplementary website: https://cspages.ucalgary.ca/~richard.zhao1/cpsc585.html

   Technology:

   In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:
   - A computer with a supported operating system, as well as the latest security, and malware updates;
   - A current and updated web browser;
   - Webcam/Camera (built-in or external);
   - Microphone and speaker (built-in or external), or headset with microphone;
   - Current antivirus and/or firewall software enabled;
   - Stable internet connection.

   For more information please refer to the UofC ELearning online website.

   Course materials will be provided to students through D2L.

7. **Approved Mandatory & Optional Course Supplemental Fees**

There are no mandatory or optional course supplemental fees for this course.

8. **Requisites**

See section 3.5.C in the Faculty of Science section of the online Calendar.

Prerequisite(s) Department Consent Required.

9. **Course Learning Outcomes**

- Write a document that describes a unique game that they will create.
- Plan the development of the game that they have described.
- Prioritize the features that they plan to implement.
- Work effectively with other students to design and create a large software artifact.
- Create a game using low level development tools and libraries that is fun to play with an appropriate level of difficulty for a novice player.
- Evaluate the benefits and drawbacks of different implementation strategies for the main loop architecture, techniques for managing game time, communication between entities and different third-party libraries.
- Locate or create suitable game assets such as music, sound effects, models and textures.

B. **Assessment and Evaluation Information**

1. **Assessment Components**

The University policy on grading and related matters is described in F.1and F.2 of the online University Calendar.

In determining the overall grade in the course the following weights will be used:

Course Component	Weight	Due Date (duration for exams)	Modality for exams	Location for exams
Milestone 1[1]	10%	Jan 24 2025		
Milestone 2[2]	15%	Feb 14 2025		
Milestone 3[3]	15%	Mar 07 2025		
Milestone 4[4]	10%	Mar 28 2025		
Play Test[5]	5%	Apr 02 2025		
Milestone 5[6]	45%	Apr 18 2025		

[1] 1pm MST

[2] 1pm MST

[3] 1pm MST

[4] 1pm MST

[5] Each student needs to sign up for a time to play test and gather feedback.

[6] 1pm MST

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

2. **Assessment & Grading**

Reappraisal of Graded Term Work and Final Grades:

See Section I of the University Calendar and https://science.ucalgary.ca/current-students/undergraduate/program-advising/grade-reappraisals-and-appeals .

3. **Examination Policy**

This course does not have any exams.

See also Section G of the Calendar, on Academic Assessments and Examinations.

4. **Missed Components of Term Work**

Late policy:

10% of total grade deduction per day for the entire group that a sprint submission is late.

See also Sections G2.3 and M.1.1 of the Calendar, on Absence from In Course Assessments and Supporting Documentation for Absences.

5. **Letter Grade Conversion**

The conversion between a percentage grade and letter grade is as follows.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Minimum % Required	%	92 %	85 %	82%	78%	75 %	72 %	68%	65%	60 %	55 %

A grade of A+ would be awarded to a truly exceptional project.

Group members will be individually graded based on their own contributions to the project and their participation in weekly meetings.

Students will be given the opportunity to evaluate the other members in their group. The information gathered through these evaluations may result in individual group members' grades being adjusted up or down relative to the grade awarded to the project as a whole.

Students must attend all 5 days of the block week lectures to receive a passing grade (D or higher) in the course.

The University of Calgary offers a flexible grade option, Credit Granted (CG) to support student's breadth of learning and student wellness. Faculty units may have additional requirements or restrictions for the use of the CG grade at the faculty, degree or program level. To see the full list of Faculty of Science courses where CG is not eligible, please visit the following website: https://science.ucalgary.ca/current-students/undergraduate/program-advising/undergraduate-processes

C. **Course Policies & Procedures**

1. **Equity Diversity & Inclusion**

The University of Calgary is committed to creating an equitable, diverse and inclusive campus, and condemns harm and discrimination of any form. We value all persons regardless of their race, gender, ethnicity, age, LGBTQIA2S+ identity and expression, disability, religion, spirituality, and socioeconomic status. The Faculty of Science strives to extend these values in every aspect of our courses, research, and teachings to better promote academic excellence and foster belonging for all.

2. **Course Communication**

Students must use their U of C account for all course correspondence.

3. **Academic Integrity and Misconduct**

Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional Code of Conduct and promote academic integrity in upholding the University of Calgary's reputation of excellence. Some examples of academic misconduct include but are not limited to: posting course material to online platforms or file sharing without the course instructor's consent; submitting or presenting work as if it were the student's own work; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. Please read the following to inform yourself more on academic integrity:
Student Handbook on Academic Integrity
Student Academic Misconduct Policy and Procedure
Faculty of Science Academic Misconduct Process
Research Integrity Policy

Additional information is available on the Student Success Centre Academic Integrity page

4. **Acceptable & Prohibited Tools and Resources**

Artificial Intelligence (AI) Usage Policy:

Students may use AI tools in this course as learning aids or to help with solving specific errors encountered during assignments, but not for generating blocks of code for the project.

Students are ultimately accountable for the work they submit. Use of AI tools must be documented with each submission. The documentation should include what tool(s) were used, how they were used, and how the results from the AI were incorporated into the submitted work. Failure to cite the use of AI generated content will be considered a breach of academic integrity and subject to Academic Misconduct procedures.

5. **Writing Across the Curriculum**

Writing skills are not exclusive to English courses and, in fact, should cross all disciplines. The University supports the belief that throughout their University careers, students should be taught how to write well so that when they graduate their writing

abilities will be far above the minimal standards required at entrance. Consistent with this belief, students are expected to do a substantial amount of writing in their University courses and, where appropriate, members of faculty can and should use writing and the grading thereof as a factor in the evaluation of student work. The services provided by the Writing Support , part of the Student Success Centre, can be utilized by all undergraduate and graduate students who feel they require further assistance. See also Section E.2 of the University Calendar.

6. **Academic Accommodations**

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation-for-Students-with-Disabilities-Procedure.pdf.

Students needing an accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, by filling out the Request for Accommodation in Academic Courses Form and sending by email to science@ucalgary.ca preferably 10 business days before the due date of an assessment or scheduled absence.

7. **Instructor Intellectual Property.**

All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright (ucalgary.ca/legal-services/university-policies-procedures/acceptable-use-material-protected-copyright-policy) and requirements of the copyright act (laws-lois.justice.gc.ca/eng/acts/C-42/index.html) to ensure they are aware of the consequences of unauthorized sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy.

8. **Recording of Lecture**

Audio recording of lectures, other than where an audio recording is an accommodation, shall be permitted for individual private study only at the discretion of the instructor. For any other use, whether by duplication, transcription, publication, sale or transfer of recordings, written approval must be obtained from the instructor for the specific use proposed. Any use other than that described above constitutes academic misconduct and may result in suspension or expulsion. For more information, see Section E.6 Recording of Lectures of the University Calendar.

9. **Freedom of Information & Privacy**

This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see Legal Services website.

10. **Human & Living Organism Studies Statements**

Students will not participate as subjects or researchers in human studies.

See also Section E.5 of the University Calendar.

D. **Copyright Legislation**

All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or non-academic misconduct, in addition to any other remedies available at law.

E. **Support & Resources**

Student well-being and safety resources that are not course-specific can be found on the Office of the Registrar's website: https://www.ucalgary.ca/registrar/registration/course-outlines

Electronically Approved - Dec 05 2024 09:26

Department Approval