



CSCI 4168 – Game Design and Development - Syllabus

Instructor Information

Instructor: Dr. Stephen Brooks
Online Office Hours: Mona Campbell Rm 4207, Friday, 10:30am-11:30am
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Course Information

Class Meeting Time: Tuesdays & Thursdays 13:05-14:25,
CHEMISTRY 226
Course Homepage: web.cs.dal.ca/~sbrooks/csci4168/
Course Brightspace: dal.brightspace.com/d2l/home/280086

Teaching Assistant Help

- TA help times **(in person in the learning center)** – with Ben Lee
 - Tuesdays, 10am - 11pm
 - Thursdays, 3pm - 4pm
- TA Office hours **(online on Brightspace)**
 - Friday, 1pm - 2pm

Important Dates

- Individual Assignment:
 - due at 11:59pm on Oct. 9th
- Project Proposal:
 - due at 11:59pm on Oct. 18th
- Project Update:
 - due at 11:59pm on Nov. 10th
- Final Project:
 - due at 11:59pm on Dec 3rd

Course Description

This course teaches students the fundamentals of digital game design with an emphasis on team-based development. In this course students will produce a significant game using techniques and principles derived from established state-of-the-art industry practices. Topics include an examination of game design theories, programming architectures, audio-visual design and game production.

Learning Outcomes

- Explain the origins of modern digital games.
- Discuss the demographics and sociology of games and online communities.
- Produce documentation for a game design.
- Design an appropriate interface for a given game genre.
- Design game levels and challenge hierarchies.
- Discuss the role of diegetic and non-diegetic game elements
- Construct and iterate through a paper based simulation.

- Develop a multi-level game as part of a team.
- Script object and character interactions.
- Construct and program in-game particle systems.
- Develop and integrate character animations.
- Setup and script physics interactions.
- Test and debug an interactive game.

Class Format and Course Communication

- Content will be delivered via lectures in class.
- Labs will be unstructured and serve as a forum for getting help with the Teaching Assistant as a group
- Course announcements will be posted to the course mail list, which comprises the instructor's and students' Dal emails. It is the student's responsibility to check their Dal e-mail on a daily basis. To access your Dal e-mail see: <https://www.dal.ca/dept/its/o365/services/email.html>

Evaluation Criteria

- 25% Individual Programming Assignment
- 10% Group Project Proposal
- 10% Group Project Progress Report
- 55% Group Final Project Report, Demo and Presentation

Late Submission Policy

- Late assignments will be penalized 5% per day (or part thereof).
- You may not receive credit for work that is more than 3 days late.
- The Project CANNOT BE HANDED IN LATE (no exceptions).

Texts and Resources (not required)

- General Game Design & Development in Unity
 - Introduction to Game Design, Prototyping, and Development: From Concept to Playable Game with Unity and C#
- Game Design Only
 - Game Design Workshop: A Playcentric Approach to Creating Innovative Games
 - The Art of Game Design: A book of lenses
 - Level Up!: The Guide to Great Video Game Design
- Game Development in Unity Only
 - Unity Game Development in 24 Hours, Sams Teach Yourself
 - Unity Cookbook
- Specific Topics
 - Game Mechanics: Advanced Game Design
 - Google Sketchup for Game Design: Beginner's Guide
 - Unity Shaders and Effects Cookbook
 - The Ultimate Guide to Video Game Writing and Design
- Additional assistance is available from the Student Learning Centre
 - <https://learning.cs.dal.ca/>
- Course Resource Webpage
 - <https://web.cs.dal.ca/~sbrooks/csci4168/reference/index.html>

Prerequisites

- CSCI 2110 Data Structures and Algorithms
- CSCI 3130 Introduction to Software Engineering

Student Declaration of Absence

The Student Declaration of Absence policy shall apply. https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/academic-policies/student-absence.html The student has a maximum of two (2) SDAs per course per semester. The student **must** notify the instructor of their inability to meet a deadline **before** the deadline by contacting the instructor or submitting the completed SDA. Upon notification the student has 3 days after the deadline to submit the SDA.

Academic Standards

Failure to properly attribute sources in your work will be treated as an academic standards issue and points may be deducted for not following citation requirements. For example, forgetting to quote text taken from other sources, failure to include in-text citations, or a failure to include required information in the citations or references. Please see the resources on proper citation provided by the Dalhousie Writing Center (<https://dal.ca/libguides.com/c.php?g=257176&p=5001261>).

Please note that if it appears that the error was made with intent to claim other people's work as your own such as a lack of both citations and references, an allegation of plagiarism will be submitted to the Faculty Academic Integrity Officer, which could result in consequences such as a course failure.

Responsible Computing Policy

Usage of all computing resources in the Faculty of Computer Science must be within the Dalhousie Acceptable Use Policies (https://www.dal.ca/dept/university_secretariat/policies/information-management-and-technology/acceptable-use-policy-.html) and the Faculty of Computer Science Responsible Computing Policy. For more information please see https://www.dal.ca/content/dam/dalhousie/pdf/faculty/computerscience/policies-procedures/fcs_policy_local.pdf

Use of Plagiarism Detection Software

All submitted code may be passed through a plagiarism detection software, such as the plagiarism detector embedded in Codio, the Moss (<https://theory.stanford.edu/~aiken/moss/>) Software Similarity Detection System, or similar systems. If a student does not wish to have their assignments passed through plagiarism detection software, they should contact the instructor for an alternative. Please note, that code not passed through plagiarism detection software will necessarily receive closer scrutiny. https://cdn.dal.ca/content/dam/dalhousie/pdf/dept/university_secretariat/policy-repository/OriginalitySoftwarePolicy.pdf

Use of Artificial Intelligence Tools

While you may use tools for learning in general, the specific assessments in this course **do not permit** the use of AI-driven tools. This is because a graduate must be able to analyze, assess and produce work unassisted by AI technology. Due to the nature of this course, it would be impractical and more difficult to assess students properly if AI tools were allowed. For this reason, and even if these tools will be valuable tool in your career, their use is restricted so as your learning may be assessed. Using AI-driven tools when producing submitted work constitutes an academic offence.

Student Health and Wellness

Taking care of your health is important. As a Dalhousie student, you have access to a wide range of resources to support your health and wellbeing. Students looking to access physical or mental health & wellness services at Dalhousie can go to the Student Health & Wellness Centre in the LeMarchant Building. The team includes: registered nurses, doctors, counsellors and a social worker. Visit dal.ca/studenthealth to learn more and book an appointment today.

Students also have access to a variety of online mental health resources, including telephone/texting counselling and workshops/training programs. Learn more and access these resources at dal.ca/mentalhealth.

Culture of Respect¹

Every person has a right to respect and safety. We believe inclusiveness is fundamental to education and learning. Misogyny and other disrespectful behaviour in our classrooms, on our campus, on social media, and in our community is unacceptable. As a community, we must stand for equality and hold ourselves to a higher standard.

What we all need to do:

1. **Be Ready to Act:** This starts with promising yourself to speak up to help prevent it from happening again. Whatever it takes, summon your courage to address the issue. Try to approach the issue with open-ended questions like “Why did you say that?” or “How did you develop that belief?”
2. **Identify the Behaviour:** Use reflective listening and avoid labeling, name-calling, or assigning blame to the person. Focus the conversation on the behaviour, not on the person. For example, “The comment you just made sounded racist, is that what you intended?” is a better approach than “You’re a racist if you make comments like that.”
3. **Appeal to Principles:** This can work well if the person is known to you, like a friend, sibling, or co-worker. For example, “I have always thought of you as a fair-minded person, so it shocks me when I hear you say something like that.”
4. **Set Limits:** You cannot control another person’s actions, but you can control what happens in your space. Do not be afraid to ask someone “Please do not tell racist jokes in my presence anymore” or state “This classroom is not a place where I allow homophobia to occur.” After you have set that expectation, make sure you consistently maintain it.
5. **Find or be an Ally:** Seek out like-minded people that support your views, and help support others in their challenges. Leading by example can be a powerful way to inspire others to do the same.
6. **Be Vigilant:** Change can happen slowly, but do not let this deter you. Stay prepared, keep speaking up, and do not let yourself be silenced.

University Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and the Senate.

academiccalendar.dal.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=111&loaduserredits=False

¹ Source: Speak Up! © 2005 Southern Poverty Law Center. First Printing. This publication was produced by Teaching Tolerance, a project of the Southern Poverty Law Center. Full “Speak Up” document found at: <http://www.dal.ca/dept/dalrespect.html>. Revised by Susan Holmes from a document provided April 2015 by Lyndsay Anderson, Manager, Student Dispute Resolution, Dalhousie University, 902.494.4140, lyndsay.anderson@dal.ca www.dal.ca/think.

Territorial Acknowledgement

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.

Internationalization

At Dalhousie, 'thinking and acting globally' enhances the quality and impact of education, supporting learning that is "interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders." <https://www.dal.ca/about-dal/internationalization.html>

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect. As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. (read more: http://www.dal.ca/dept/university_secretariat/academic-integrity.html)

Accessibility

The Student Accessibility Centre is Dalhousie's centre of expertise for matters related to student accessibility and accommodation. If there are aspects of the design, instruction, and/or experiences within this course (online or in-person) that result in barriers to your inclusion please contact: https://www.dal.ca/campus_life/academic-support/accessibility.html for all courses offered by Dalhousie with the exception of Truro.

Conduct in the Classroom — Culture of Respect

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

Diversity and Inclusion — Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2). (read more: <http://www.dal.ca/cultureofrespect.html>)

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution. (read more: https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-con.html)

Fair Dealing Policy

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copy-

right owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. (read more: https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy-.html)

Originality Checking Software

The course instructor may use Dalhousie's approved originality checking software and Google to check the originality of any work submitted for credit, in accordance with the Student Submission of Assignments and Use of Originality Checking Software Policy. Students are free, without penalty of grade, to choose an alternative method of attesting to the authenticity of their work, and must inform the instructor no later than the last day to add/drop classes of their intent to choose an alternate method. (read more: https://www.dal.ca/dept/university_secretariat/policies/academic/student-submission-of-assignments-and-use-of-originality.html)

Student Use of Course Materials

These course materials are designed for use as part of the CSCI courses at Dalhousie University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g. uploading material to a commercial third party website) may lead to a violation of Copyright law.

Learning and Support Resources

Please see https://www.dal.ca/campus_life/academic-support.html