CSC404: Video Game Design

Course topics include: game history & genres, "ludology" (theory of fun, story creation, optimal experience), character & level design, industry tools & processes, graphics & animation, modelling techniques, collision detection, visual effects, scripting (passive & active), HCI & interface design, verification & playtesting, business of gaming. Material & projects based on real-world processes.

Instructor Information

Name	Email
Elias Adum	elias@cs.toronto.edu (put "CSC404" in the subject)

Class Information

- **Lecture:** Wednesday 5:00 PM – 8:00 PM (MY330)
- **Tutorial:** Wednesday 8:00 PM – 9:00 PM (MY330)
- **Office hours:** Wednesday 4:00 PM – 5:00 PM or by appointment (BA2272 / Discord)

Course Materials

- **Web Page:** Quercus (Discord for some presentations, itch.io for submissions)
- **TA Contact:** csc404ta@cs.toronto.edu
- **Engine:** Recommended engines are: Unity and Unreal.
- **Discord:** https://discord.gg/JPaYSG9EXy

Course Schedule

Week of	Topics	Milestone(s)
Sep 13	Course Intro, Ludology Part 1, Game Mechanics	**Game Jam Assignment 1**
Sep 20	Ludology Part 2, Pitch Prep	**Game Jam Assignment 2 & Game Ideas**
Sep 27	**Pitch Presentation**	Milestone 1: **Pitch & Creative Brief**
Oct 04	Character & Level Design, Design Docs Prep	**Tech Demo**
Oct 11	**Design Document Presentation**	Milestone 2: **Design Document**
Oct 18	Project Management, Prototyping, Playtesting & Game Design Research	**Tutorial Level**
Oct 25	UI/UX for Games**,** AI for Games, Alpha Prep	
Nov 01	**Alpha Presentation**	Milestone 3: **Alpha**
Nov 08	**Reading Week**	
Nov 15	Production & Publishing**,** Game Backends, Beta Prep	**Updated Game Demo**
Nov 22	**Beta Presentation**	Milestone 4: **Beta & Playtesting Report**
Nov 29	Mobile Game Design, Business of Games, Final Prep	
Dec 06	**Final Presentation**	Milestone 5: **Final Builds, Itch.io page, Dev Logs, Trailer, Peer Evaluations**

Course Deliverables

Note: *For all presentation milestones, groups must provide feedback when not presenting.*

Game Jam Assignments — 10% (5% each)

- One-day online hackathon events held at Centennial College.

Game Brainstorming — 3%

- Submitting ideas for potential games for the project.

Milestone #1: Game Pitch & Creative Brief — 5% & 3%

- Present main game idea and how it targets the theme and the audience.
- Describe game mechanics, secret ingredients, and what a completed final product will look like.
- Include: mock-ups, mood boards, sketches, game inspirations, etc.
- **Submit:** Creative brief document.

Milestone #2: Design Document & Prototype — 10% & 5%

- Present all pre-coding design details of the final game.
- Include: mock-ups, storyboards, mood boards, sketches, data models, etc.
- Also include technology proof-of-concept (presentation), and task breakdown (document)
- **Submit:** Design document, Tech demo build on the itch.io page.

Milestone #3: Game Alpha — 10%

- In-class demo of playable prototype.
- Describe plans for upcoming sprints, and goals for final product.
- Include: Assets and animations for the main characters, at least one fully playable level, music & SFX.
- **Submit:** Alpha build on the itch.io page.

Milestone #4: Beta Release & Playtesting Report — 10% & 5%

- In-class demo of completed product, and playtesting results.
- Produce tutorial, with descriptions of gameplay and controls.
- **Submit:** Playtesting Report, Beta build on the itch.io page.

Milestone #5: Playtesting Demo & Final Items — 10% & 5%

- Testing & evaluation by industry professionals
- Final reflections on development process and final product.
- Include: Finalized tutorial, finalized game assets, finalized gameplay features, and all levels.
- **Submit:** Finalized Itch.io page, Final Game Build, Video Trailer, Peer Evaluations.

Tech Demo, Tutorial Level, Updated Game Demo — 9% (3% each)

- Progress checks to demonstrate current state of the game.

Itch.io Page — 5%

- A development journal, outlining your group's weekly progress, challenges, and setbacks.

Participation — 10%

- Participating in online classes, online presentations, online discussions, providing feedback to other groups, etc.

Peer Evaluations

This course uses peer evaluations to inform adjustments to your final project mark. As a result, the mark that you receive for your project is contingent on your active and equal contribution to the milestones and your group. The peer evaluations are a measure of the quantity and quality of your contributions and inform us to potential adjustments that might be necessary.

At the end of the course, we ask everyone in the class to provide peer evaluations of their group members (including themselves). If a group member performs above expectations, a multiplier is applied that can increase their project mark by up to 15%. If a group member's contribution is negative or absent, the multiplier will reduce their project mark (by no more than 15%, except in extreme cases).

Serious negative evaluations will involve a follow-up discussion with the course instructor.

Lecture Recordings Policy

Online lectures & tutorials for this course (including your participation) may be recorded on video and may be available to students in the course for viewing remotely and after each session. Course videos and materials from this semester and previous semesters belong to your instructor, the University, and/or other source depending on the specific facts of each situation and are protected by copyright.

In this course, you are permitted to download session videos and materials for your own academic use, but you should not copy, share, or use them for any other purpose without the explicit permission of the instructor. For questions about recording and use of videos in which you appear please contact your instructor

Generative AI

In this course, you may use generative artificial intelligence (AI) tools, including ChatGPT and GitHub Copilot, as learning aids and to help complete deliverables. While some generative AI tools are currently available for free in Canada, please be warned that these tools have not been vetted by the University of Toronto and might not meet University guidelines or requirements for privacy, intellectual property, security, accessibility, and records retention. Generative AI may produce content which is incorrect or misleading, or inconsistent with the expectations of this course. They may even provide citations to sources that don't exist—and submitting work with false citations is an academic offense. These tools may be subject to service interruptions, software modifications, and pricing changes during the semester.

Generative AI is not required to complete any aspect of this course, and we caution you to not rely entirely on these tools to complete your coursework. Instead, we recommend treating generative AI as a supplementary tool only for exploration or drafting content. Ultimately, you (and not any AI tool) are responsible for your own learning in this course, and for all the work you submit for credit. It is your responsibility to critically evaluate the content generated, and to regularly assess your own learning independent of generative AI tools. Overreliance on generative AI may give you a false sense of how much you've actually learned, which can lead to poor performance in this course, in later courses, or in future work or studies after graduation.