

QUINNIPIAC GAME DESIGN & DEVELOPMENT

GDD200

INTRO TO GAME DEVELOPMENT



PROFESSOR
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DISCORD

TELEFRAG_ENTERTAINMENT

ROOM

CAS1 - 339

DESCRIPTION

This course provides an overview of game development through project work. Students examine different game genres, game mechanics and playability, sound, level/ and interface design.

Through project work, students gain an understanding of the game development process.

LEARNING OUTCOMES

Students in GDD 200 will:

- Learn the how to use core features of the Unity game engine.
- Learn the basics of writing scripts in C#
- Learn how to use their scripts to create interactive experiences in Unity.
- Create games.

PHILOSOPHY

Creating a digital game is a complex undertaking. Although game engines simplify the process, they have a steep learning curve. By starting from scratch and focusing on individual topics in isolation, this class allows students to learn incrementally, building a strong foundation for the tools and concepts needed to create games.

Daily exercises give students hands-on experience solving problems within the engine, quizzes ensure students retain essential material, and individual projects ask students to creatively apply this knowledge, encouraging them to combine what they have learned in new and different ways.

STRUCTURE

The class will be divided into six two-week Assignment Sets.

Each Assignment Set will cover a different aspect of the Unity engine (e.g., physics, prefabs, UI, animation).

Most Assignment Sets will consist of **three days of lecture and in-class work, homework, a quiz, and a project.**

Assignment sets will be due at the conclusion of each module and will **consist of exercises and one larger project.**

Projects are the most important part of class and should be treated as such. It gives students the opportunity to use the knowledge gained in class and incorporate it into their own creative process.

USER ACCOUNTS

A number of the programs we use will require you to create a personal user account. Please use your Quinnipiac email and usernames when signing up.

For example, if your name is John Smith Doe, please sign up with the following credentials:

Name: John Doe

Username: jsdoe

Email: John.Doe@quinnipiac.edu.

Be sure to keep your password in a safe place.

GDD STORAGE

GDD is a program in which you will be generating a great deal of digital content. Safe storage of this material is essential to your success in the GDD program.

Do not leave work on the hard drives of the machines in the lab as these machines can crash or have the drives wiped unpredictably. As professionals in this field, **we expect you to understand that lost or damaged files are not an excuse for missing or late work.** Backup your work and archive it regularly.

Organizing your work efficiently is a skill that will serve you both in your time in this program, and in your career.

I recommend using a structure designed for long term use and efficiency, consider setting up a series of folders on your PC like so:



As you continue through the program, keep building out your folder structure using an organized system. This will make it easy to find work and help prevent you from losing work.

STUDENT WORK

GDD keeps an archive of student work which may be displayed on the program website and used to publicize and promote our students and our program. At the end of each semester, you are responsible for turning in your completed projects with all associated code and media, to your professor.

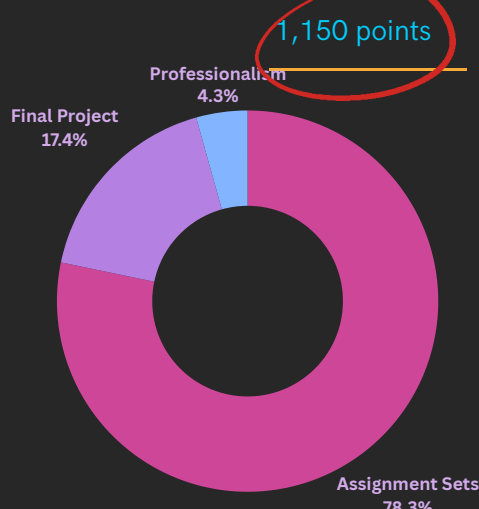
Any content that you use in your work which you did not create must be obtained with permission from the creator and properly credited in your work.

GRADING BREAKDOWN

Assignment Sets: 150 points x 6

- Exercises: 50 points
- Quizzes: 25 points
- Projects: 75 points

Final Project: 200 points
Professionalism: 50 points



CHECKING GRADES

It is your responsibility to keep track of your grades throughout the semester. Grades will be posted on Blackboard and may be checked at any time. If you are not doing as well as you would like to be, you can meet with me to discuss extra credit projects **before** the final week of the course. If you feel that I have made a mistake recording a grade or failed to enter a grade that you earned correctly, **please email me so that I can correct it.**

GRADING RUBRIC

Grades will use the following scale:

100(A) Excellent work. You went above and beyond the assignment. Professional quality.

95(A) Excellent work. You demonstrate deep engagement with the subject matter.

90(A-) Great work. You demonstrate mastery of the subject matter.

85(B) Very good work. You demonstrate basic mastery of the subject matter.

80(B-) Good work. You understand the subject matter and demonstrate proficiency. The work is solid, but not original or creative.

75(C) Satisfactory work. You show understanding of basic concepts but have occasional lapses.

70(C-) Poor work. Barely adequate. Shows major gaps in understanding.

60(D) Unsatisfactory. Does not satisfy the learning requirements.

0(F) You didn't hand in your work before the due date.

GRADING SCALE

Your final letter grade is based on the Quinnipiac Grading Scale as follows:

A 93-100 B+ 87-89 B- 80-82 C 73-76 D 60-69
A- 90-92 B 83-86 C+ 77-79 C- 70-72 F 0-59

NOTE: A grade of C- or better is required in all game design and development courses and prerequisites. Students with a GPA of less than 2.0 will be put on probation. After two semesters on probation, students will be advised to change majors.

Plagiarism

CREDIT THE CREATORS!

If you want to use something in your work that you did not create you must:

- Ensure that it is licensed for you to use. Look for assets in reputable places and identify the license before using. If there is no license available, contact the creator and ask them for permission.
- In your work, credit the original creator by providing their name (or username) and a URL to where you found their work.

Academic Integrity

At Quinnipiac, our community has chosen integrity as one of its guiding principles. Our academic integrity policy is based on the five fundamental values outlined by the Center for Academic Integrity: honesty, trust, responsibility, fairness and respect. "Double Dipping" (Multiple Uses of the Same Work) or presenting the same or substantially the same written work (or portion thereof) as part of the course requirement for more than one project or course, requires the express prior written permission of the instructor(s) involved. Any violation will be dealt with according to the Integrity policy, which can be found at:

<https://myq.quinnipiac.edu/Academics/Academic%20Integrity/Pages/default.aspx>

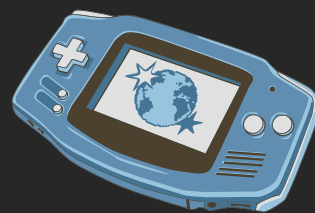
COURSE CONTENT



Course Intro

- Begin creating a portfolio website for showcasing your work in the course.
- Install the necessary applications to build games in Unity.

- Learn how to navigate the Unity Editor.
- Discuss the GameObject/Component system that Unity uses.
- Begin working with sprites to create 2D art for our games.
- Write your first C# script.



Assignment Set 1



Assignment Set 2

- Utilize the Unity physics engine in 2D and 3D.
- Learn how to use the Package Manager to add features.
- Use ProBuilder to assemble 3D levels.
- Create collisions and triggers.
- Create and navigate to additional levels.

- Create Prefabs to enable many instances of common GameObjects.
- Use Instantiation to spawn GameObjects into the scene during play.
- Use collections like Arrays and Lists.
- Add Randomness to your game.



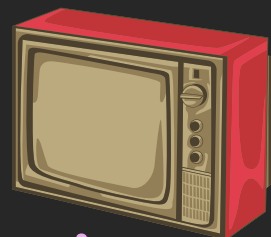
Assignment Set 3



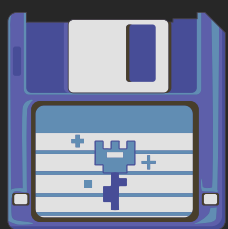
Assignment Set 4

- Explore Sprites.
- Create Sprite Sheets for frame-based animation.
- Use the Animator component to animate a Sprite.

- Create a User Interface.
- Properly anchor UI elements to work at any resolution.
- Explore examples of various UI systems.



Assignment Set 5



Final Project

- Create a game!



CREATING AN INCLUSIVE ENVIRONMENT

GDD is committed to maintaining an environment in which all members are treated equitably, feel fairly represented, and are comfortable discussing topics, particularly controversial ones, with civility and open-mindedness.

We are working to build a community of diverse individuals who can celebrate our differences while building on what we have in common.

Game design is a creative practice, so we encourage wide-ranging explorations of what is possible while respecting practices that work toward the greater good. We ask all members of the community to think about the work they are producing and ask themselves if they are consciously or unconsciously reproducing or reinforcing stereotypes, bias, or other elements that reinforce systemic racism, sexism, bigotry or other inequalities.

Games can change the world; let's make sure we are changing it in a positive way.

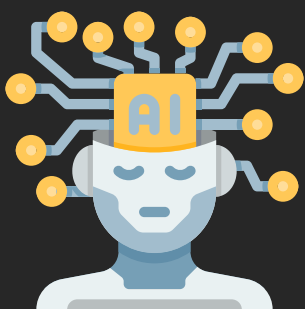
I do not tolerate any kind of bigotry in my classroom. Please contact me if you have any questions or concerns regarding this topic, these issues can be difficult to manage but talking about them is important. If absolutely necessary, I will govern what material is shown in the classroom, but we've found that issues can generally be handled with civil conversation.

POLICY ON DISABILITIES

Quinnipiac University is committed to creating a learning environment that meets the needs of its diverse student body. If you anticipate or experience any barriers to learning in this course, please feel welcome to discuss your concerns with me.

If you have a disability, or think you may have a disability, you may also want to meet with the Office of Student Accessibility, to begin this conversation or to request reasonable accommodations. Quinnipiac University complies with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. Please contact the Office of Student Accessibility by emailing access@qu.edu, or by calling (203) 582 – 7600. If you have already been approved for accommodations through the Office of Student Accessibility, please meet with me so we can develop an implementation plan together.





POLICY ON AI

The utilization of AI tools such as ChatGPT and StableDiffusion provide significant capabilities for game developers. These tools are rapidly advancing and expanding in functionality. As students, it is essential to stay on top of this technology and understand how and when to apply it. If you intend to incorporate generative AI into your work, follow these guidelines:

- Consult your instructor to determine if your use of the technology aligns with the assignment requirements.
- Verify that the model you are employing was trained on data voluntarily provided by the creator.

You are expected to be in class ready to work at the beginning of the scheduled class time. PROMPT ARRIVAL TO CLASS IS EXPECTED. Three late arrivals to class will equal one absence. PLEASE NOTE: IF YOU HAVE 6 OR MORE ABSENCES YOU MAY BE ASKED TO WITHDRAW FROM THE COURSE. 7 ABSENCES DURING THE SEMESTER WILL RESULT IN A FAILING GRADE. Attendance for the last class meeting scheduled during Finals Week is required.

There is no distinction between "excused" or "unexcused" absences - missed course work, content and class participation are an issue in any absence and can negatively impact the rest of the class members. In the case of extenuating circumstances, such as an ongoing illness or the death of a loved one, the professor should be consulted as soon as possible, and documentation from the Student Affairs office may be required. In such circumstances the faculty and student can negotiate the possibility of granting an "Incomplete." In the rare cases where a student is allowed to take an "Incomplete" as the result of extenuating circumstances, the student must follow the guidelines and timelines stipulated in the University catalog.

Game Design & Development Program Assignments Policy

The assignments for this class must be turned in complete and on-time. NO LATE WORK IS ACCEPTED. If you have a medical or family emergency, which will prevent you from getting your work done, it is your obligation to notify the professor of this fact and provide him/her with the appropriate documentation BEFORE the due date of the assignment. If your work is not turned in on time and you have not provided an excuse prior to the due date, do NOT email the professor with justifications. You will simply not receive credit for the assignment.

STUDENT HANDBOOK

The Quinnipiac University Student Handbook is intended to serve as a source of information on the many services, activities and policies of Quinnipiac. The handbook can be found at:

<http://www.quinnipiac.edu/student-experience/health-and-safety/>

The Learning Commons is a place for students to go when they want to achieve a level of performance they can't reach on their own. In a setting of practice and growth, student resources are provided through Peer Educator programs, the Office of Student Accessibility, and Academic Development & Outreach professional staff. The Learning Commons can be found at the Mount Carmel Campus in the North wing of the Arnold Bernhard Library; and at the North Haven Campus on the third floor of the Law School (SLE-340). Students are encouraged to visit The Learning Commons for support with class content, to improve study skills, to consult on academic success strategies, and for general developmental advising needs.

Phone: 203-582-8628

Email: LearningCommons@Quinnipiac.edu

Website: <http://www.qu.edu/student-resources/academic-support.html>

