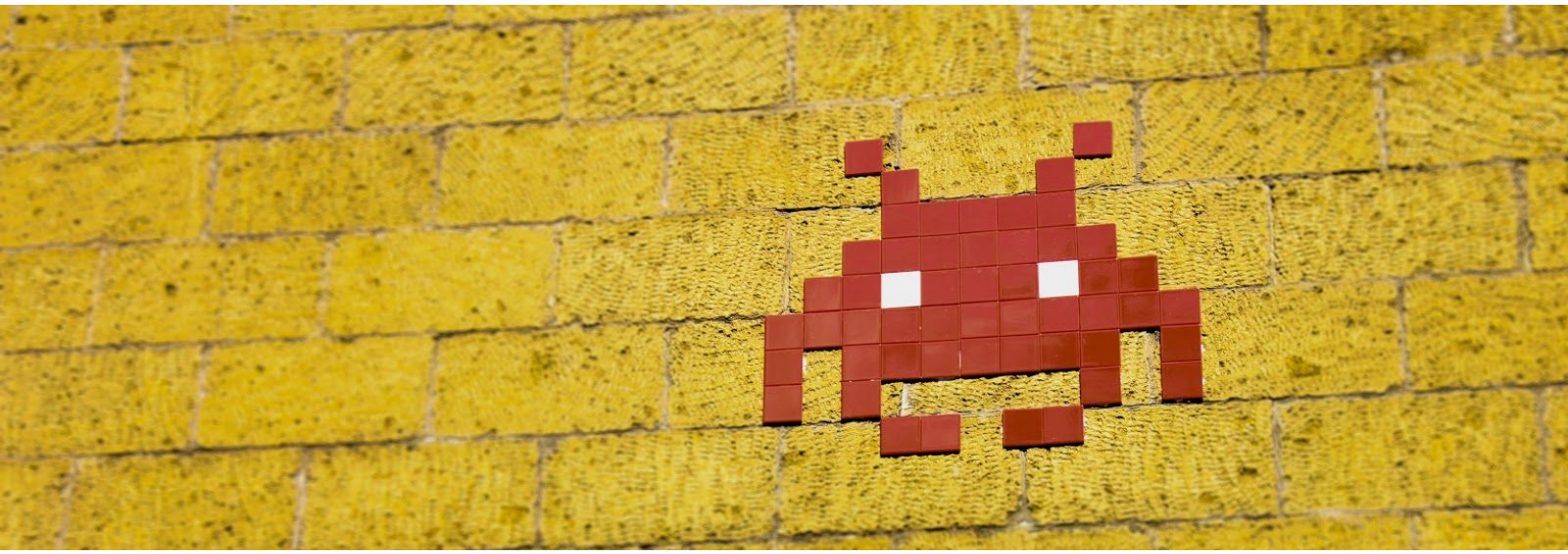
Intro to Game Programming

CS-UY 3113



Hello!

My name is Carmine T. Guida and welcome to Game Programming! Games have existed for thousands of years and the advent of video games provides a new medium for expressing your creativity through programming. **What you build in this class will be unique to you!**

Email me cguida@nyu.edu with any questions or concerns. Always use your @nyu.edu email address.

What will I learn and be able to do by the end of this course?

You will be able to create simple 2D games. You will learn about vectors, coordinate systems, sprites, collisions, physics, audio and handling input. This will all be done with C++ programming and utilizing the SDL (Simple DirectMedia Layer) libraries along with OpenGL.

Where can I find the resources, libraries, assets, lecture slides for this course?

All of the above are available in the following GitHub repository. Note that lecture slides and project requirements may be delivered as we go:

https://github.com/carmineguida/CS3113

I noticed this class is online. Is there a specific time or day the class is held?

This class is delivered asynchronously. **Every week there are lecture videos** provided. You can watch these videos during the week at a time and day that works for your schedule. However, be aware that **there are deadlines** and something is usually **due every week** if not every other week. There is no textbook for this course. All instruction is through the lectures videos.

What kind of computer and software do I need?

You need to use either a Mac or Windows computer. You do not need a powerful machine as we are not writing anything super complicated. For Mac users, you'll be using Xcode. For Windows, you will be using Visual Studio. These are both freely available.

What is the schedule of topics covered in this course?

The schedule of topics covered are as follows:

- Introduction
- Linear Algebra
- Basic Graphics with OpenGL
- Input, Time-Based Movement
- Sprites and Sprite Animation
- Game Physics and Fixed Timestep
- Audio
- AI Programming
- Platformer Levels
- Effects and Shaders
- Particle Systems
- Introduction to 3D Graphics
- Advanced 3D Graphics
- Prototyping and Polishing

How does the grading work in this class?

Your grade is based on the following:

Participation / Project Reflections	5%
Project 1: Draw a Simple 2D Scene	10%
Project 2: Pong	10%
Project 3: Lunar Lander	15%
Project 4: Rise of the AI	15%
Project 5: Platformer	20%
Final Project: Students' Choice	25%

All work is to be done on your own. There are no group projects.
There is no Extra Credit in this course and the grades are **not curved.**

Participation?

You are **required** to post in the forums as part of your grade. You will discuss various topics and write a reflection for each project. Discussions are meant to be timely and will be **locked after 1 week**.

What are the due dates and how are the projects submitted?

Look at NYU Classes to see the due dates. It is your responsibility to know the due dates.

You must submit your code by the due date as a link to a **GitHub** repository. You will post the links to the Assignments area in NYU Classes. **Do not share your code!**

Due by 11:59pm means your project was successfully uploaded by that time. Start uploading your project at least an hour before the deadline. **Projects received 1 minute late are considered to be a day late**.

If there are any issues with uploading your project, you must **email me before the due date**.
While I check email regularly, **do not expect a response over the weekend or close to deadlines**.
Your code must compile. Code that does not compile will receive a grade of 0.
Late projects will have **10 points deducted per day**. Late projects will **not be accepted after 2 days**.

I'm stuck working on my project and can't figure something out. How can I get help?

Students can reach out to me anytime: cguida@nyu.edu - If you are emailing me for help with your projects, **upload your entire project to github** and email me with the link (I need to see everything so I can help you). **Do not email screenshots of your code.**
Additionally, there is a forum in NYU Classes where **students can help each other**.

Plagiarism is strictly forbidden!

All work in this class is to be your own! If you use code that is not your own, use someone else's project as a reference, use any code you found online or in any kind of tutorial, you will get a 0.

Moses Center Statement of Disability

If you are a student with a disability who is requesting accommodations, please contact New York University's Moses Center for Students with Disabilities (CSD) at 212-998-4980 or mosescsd@nyu.edu. You must be registered with CSD to receive accommodations. Information about the Moses Center can be found at www.nyu.edu/csd. The Moses Center is located at 726 Broadway on the 3rd floor.

NYU School of Engineering Policies and Procedures on Academic Misconduct – complete Student Code of Conduct here

A. Introduction: The School of Engineering encourages academic excellence in an environment that promotes honesty, integrity, and fairness, and students at the School of Engineering are expected to exhibit those qualities in their academic work. It is through the process of submitting their own work and receiving honest feedback on that work that students may progress academically. Any act of academic dishonesty is seen as an attack upon the School and will not be tolerated. Furthermore, those who breach the School's rules on academic integrity will be sanctioned under this Policy. Students are responsible for familiarizing themselves with the School's Policy on Academic Misconduct.

B. Definition: Academic dishonesty may include misrepresentation, deception, dishonesty, or any act of falsification committed by a student to influence a grade or other academic evaluation. Academic dishonesty also includes intentionally damaging the academic work of others or assisting other students in acts of dishonesty. Common examples of academically dishonest behavior include, but are not limited to, the following:

1. Cheating: intentionally using or attempting to use unauthorized notes, books, electronic media, or electronic communications in an exam; talking with fellow students or looking at another person's work during an exam; submitting work prepared in advance for an in-class examination; having someone take an exam for you or taking an exam for someone else; violating other rules governing the administration of examinations.
2. Fabrication: including but not limited to, falsifying experimental data and/or citations.
3. Plagiarism: intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise; failure to attribute direct quotations, paraphrases, or borrowed facts or information.
4. Unauthorized collaboration: working together on work meant to be done individually.
5. Duplicating work: presenting for grading the same work for more than one project or in more than one class, unless express and prior permission has been received from the course instructor(s) or research adviser involved.
6. Forgery: altering any academic document, including, but not limited to, academic records, admissions materials, or medical excuses.

NYU School of Engineering Policies and Procedures on Excused Absences – complete policy here

A. Introduction: An absence can be excused if you have missed no more than **10 days of school**. If an illness or special circumstance has caused you to miss more than two weeks of school, please refer to the section labeled Medical Leave of Absence.

B. Students may request special accommodations for an absence to be excused in the following cases:

1. Medical reasons
2. Death in immediate family
3. Personal qualified emergencies (documentation must be provided)
4. Religious Expression or Practice

Deanna Rayment, deanna.rayment@nyu.edu, is the *Coordinator of Student Advocacy, Compliance and Student Affairs* and handles excused absences. She is located in 5 MTC, LC240C and can assist you should it become necessary.

NYU School of Engineering Academic Calendar – complete list here.

(This course does not have a final exam.)

Please pay attention to notable dates such as Add/Drop, Withdrawal, etc. For confirmation of dates or further information, please contact Susana: sgarcia@nyu.edu