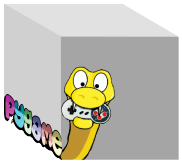

CSI 102: Introduction to Game Programming w/ Python

Hamed Yaghoobian

Fall 2021

Class hrs: MWF 8:00-9:15am or 9:30-10:45am
Student hrs: W 2:30-3:30 pm
Course webpage: kutt.it/cs102

Class location: Trumbower 48
Office location: Trumbower 143
Email: hamedyaghoobian@muhlenberg.edu

Course Description

An introduction to Computer Science (CS) through the programming of games. Emphasis is placed on the creation of arcade style games incorporating animation, user interaction, and sound effects. Students learn to use game development, audio, and image manipulation software in designing and constructing their games. The course is intended for those with *no prior experience in computer science* but with a desire to hone problem solving and computational thinking skills with a focus on game programming.

Learning Objectives

Upon completion of CSI 102, you will be able to:

- use problem-solving methods to develop and implement algorithms using Python,
- implement programs using the tools, abilities and concepts provided by Python – a widely used, structured programming language,
- use features provided by Pygame to extend the capabilities of Python,
- apply methods and algorithms to the basic techniques of game design and implementation,
- collaborate effectively with colleagues to accomplish specific goals,
- design, code, debug, and document programs using good practices of programming style and structure.

Textbooks

- Downey, Allen B. *Think Python: How to Think Like a Computer Scientist, 2nd Edition*, Green Tea Press, 2012.
- Gaddis, Tony. Starting Out with Python, 3/4th Edition, Pearson, 2015/2018.

Grading Breakdown

- **Lab**: 15%
- **Homeworks**: 15%
- **Quizzes**: 10%
- **Exam i**: 20%
- **Exam ii**: 20%
- **Final Project**: 20%

Course Policies

Attendance Policy

> *Showing up is 80 percent of life* — Woody Allen, via Marshall Brickman

Attendance is not directly recorded. However, it is counted toward your grade for participation. Missing discussions may affect your projects' quality, papers, and thus your total grade indirectly. I assume you are enrolled because you are interested in the topic and wish to learn. Therefore, I assume you will not skip class frivolously. I will work with you to address conflicts and emergencies on a case-by-case basis but expect you to attend class. Participation hinges on engaging thoughtfully with the readings and your peers' analysis of them. Please notify me before the scheduled class time if you must miss a class, and I will consider ways in which you may compensate for your absence.

Collaboration Policy

For each exam, quiz, and project all work is expected to be your own and no collaboration is allowed, unless otherwise stated in the instructions. However, for the weekly labs and any non-graded, practice assignments, students are encouraged to work together to solve problems.

Email Policy

I try to respond to email as promptly as possible. However, please allow up to 24 hrs for a reply on work-days.

Academic Honesty Policy

We are required to abide by Muhlenberg's Academic Integrity Code. The general rule of thumb is **if you use other material to support your own, make sure to cite the source properly.** If you are unsure as to what constitutes plagiarism, please contact me before submitting your assignment.

Laptop & Technology Statement

You will need a computer to do the assignments. We will be using e-devices in different capacities in class. Please make sure to silence your e-devices during the meetings.

Disabilities Policy

If you are a student with a disability or health-related issue who needs class accommodation, please make sure to complete a multi-faceted determination process through the Office of Disability Services prior to the development and implementation of accommodations, auxiliary aids, and services. Each Accommodation Plan is individually and collaboratively developed between the student and the Office of Disability Services. If you have not already done so, please contact them.

Financial Hardship

If you are experiencing financial hardship, have difficulty affording groceries or accessing sufficient food to eat every day or do not have a safe and stable place to live, I would urge you to contact the CARE Team through the Dean of Students Office for support. You can also discuss your concerns with me if you are comfortable doing so.

Student Bill of Rights

You deserve:

- To be addressed according to the name and pronouns you choose.
- To be accepted and celebrated for who you are.
- To be treated fairly, inclusively, and respectfully.
- To be free from discrimination, harassment, and violence.
- To receive support overcoming barriers to learning.
- To learn in a community that upholds academic integrity.

Syllabus Policy

This course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Tentative Schedule

Week 01, 08/30 - 09/03: **Personal Introductions, syllabus, and course overview**

Week 02, 09/06 - 09/10: **Introduction to CS & Python Basics**

Week 03, 09/13 - 09/17: **Conditionals**

Week 04, 09/20 - 09/24: **Loops**

Week 05, 09/27 - 10/01: **Lists**

Week 06, 10/04 - 10/08: **Lists (cont'd)**

Week 07, 10/11 - 10/15: **Functions**

Week 08, 10/18 - 10/22: **File I/O & Exam 1**

Week 09, 10/25 - 10/29: **Exception Handling & Tuples, and Dictionaries**

Week 10, 11/01 - 11/05: **History of Games and Game Design**

Week 11, 11/08 - 11/12: **Game Dev Basics**

Week 12, 11/15 - 11/19: **Colors and Shapes & User Interaction**

Week 13, 11/22 - 11/26: **Objects and Sprites**

Week 14, 11/29 - 12/03: **Collision Detection, Animation, and Fonts & Exam 2**

Week 15, 12/06 - 12/10: **Final Project Presentations**