

Programming through Python: Pygame

Presented by AcademiaEdge

Teacher: Jan Pilař (9th)

Assistant Teacher: Maxwell Ye (10th)

Date and Timings: 2/21 - 5/2 on Sunday from 1-2 P.M. EST

Contact Email: contact@academiaedge.com

Requirements: Students ages 11 and up. Students must have a prior understanding of Python and/or participated in the Introduction to Python course.

About the Teacher:

I am a 15 year old student from the Czech Republic. I am interested in coding, technology, and gaming. View my past projects at: <https://github.com/RenegadeLeaf4>

Class Description:

This course is a beginner course to a popular Python module named Pygame used for game development in Python! Pygame is a first step in learning game development. In this course, we will teach students about Pygame and how to create old school games like Flappy bird and games of their own. Students can ask questions at any time during the class and the assistant or teacher will answer them. Additionally, students may message teachers via google classroom or by email and our teachers will respond as soon as possible. In order to give this individualized experience filled with fun projects and assignments guided towards students, classes will be limited to 10-20 students so that teachers can give high-quality attention to each student. Sign up is first come first serve and a waitlist may be created if there is excessive student participation. This course will be guided towards students ages 11 and up, but any student may join if interested. We can't wait to help your child create their own website!

Syllabus:

First Class Schedule (special):

10 minutes	Introduction to the Teacher and Course
20 minutes	Introduction to lessons mechanics
20 minutes	Coding
10 minutes	Summarize

General Class Schedule:

5 min	Warm up
10 min	Reviewing last class
30 min	Lecture and Project Time
10 min	Summarize
5 min	Preparation for the next lesson

Course Content

1. First Class
 - a. Downloading Pygame, Creating First Window, Sublime text
 - b. Class Resources, Policies, Expectations
2. Introduction to Game Development
 - a. Creating Objects, Game Mechanics
3. Checking input
 - a. Keyboard input and Creating Boundaries
4. First Project
 - a. Collisions
 - b. Creating game Pong!
5. Adding other game elements
 - a. Adding Sounds and Text
 - b. Rectangles in Pygame
6. Second Project
 - a. Creating a Snake game!
7. Sprites
 - a. Adding Sprites, Mask Collisions
8. Third Project
 - a. Creating Space Invaders!
9. Making game more advanced
 - a. Particle System
 - b. Background/Side scrolling
10. Final Project: Part 1
 - a. Adding Assets
 - b. Basic game Mechanics
11. Final Project: Part 2
 - a. Finishing Final Project

Rules and Expectations

Classroom Procedures:

Students are to stay muted at all times except if they have a question or when asked to be unmuted. The student may temporarily unmute himself to ask his/her question. Alternatively, if the student would not like to speak in front of the class, then the student may ask his/her question in the Zoom chat. We encourage students to ask questions and regularly participate in class. Also, we would like students to be respectful to their classmates and teachers.

Students, please do not:

- Eat or drink with your microphone turned on
- Be disrespectful to teachers or other students
- Put inappropriate pictures on your webcam
- Send inappropriate messages in the class chat

Please do:

- Ask questions
- Be attentive
- Be engaged and active throughout the class
- Have your camera on throughout the class
- Do assignments thoroughly
- Submit assignments before the deadline
- Have Fun!

Google Classroom Layout:

Each lesson's recording will be found on google classroom along with the class's slides and notes. Homework assignments will be assigned and submitted via google classroom as well. Students can ask questions through the messaging system in google classroom or via email.

Homework procedures:

Students will be given homework in google classroom via google docs, which will consist of inserting screenshots or short-answer/multiple-choice questions, or google forms. The google forms will mainly be used for knowledge checks, while the google docs will be used for general homework assignments. Each assignment is due 24 hours before the next class to give ample time for teachers to grade students' assignments. Students should send a message or an email if they are unable to turn in their homework by then with a valid explanation of why they will not be able to turn in their homework by the deadline, and the teachers will come up with a possible solution. This also applies to missing a class. Course projects will also be assigned and submitted through Google Classroom. If a student misses an assignment deadline repeatedly an email will be sent to his/her parents.