CREATIVE PROGRAMMING 1

DETAILS

Instructor: Tuba Ozkan
Email: tuba.ozkan@stevens.edu
Meeting times: Fridays 9.00am-12.50pm
Office/hours: Thursdays 1pm-2pm
Location: Video-Call or email
Course materials: https://github.com/ozkantuba/CreativeProgrammingI

* The course materials are mainly built upon 2017 Fall Creative Programming Course materials designed by *Jeffrey Thomson*.

COURSE DESCRIPTION

In this class, we will explore the computer as a tool capable of powerful creative possibility, not via pre-built software, but instead by writing code ourselves. We will look at the basic structures and affordances of code as inspiration for making artworks, as a tool capable of creating things that would be impossible by hand, and as a fallible system that encapsulates our cultural and personal biases.

During the course of the semester, you'll learn how to write code for a variety of visual projects including image, text, animation, and interaction. We'll primarily be using the Processing platform, a toolkit created specifically for artists and designers built on the language Java, and a brief exploration of Python as a tool for building Twitter bots. Then, we will briefly explore p5.js, which is a javascript library inspired by processing, and will make a small sound visualization project. Along the way, we'll also look at historical and contemporary figures in the arts and computer science who have shaped how we use computers as creative tools, and we'll explore code from a critical, humanistic perspective.

We'll be starting from scratch, so if you don't know anything about writing software that's totally ok! For those that have experience coding, we'll be using ideas from graphics programming that might be new to you, and I encourage you to take the cool things you know and apply them to our projects. For everyone in the class: talk to and help each other. Classes shouldn't be one-way information machines, but a way to share ideas and skills between each other.

ATTENDANCE

Attendance is mandatory. You are allowed **two absences** per semester to use at your discretion – each additional absence will result in your final grade being lowered by ó-letter. Late arrivals will be marked tardy, with 3 tardies equaling one absence. The only exception is severe illness – if this is the case, please let me know as soon as possible and provide a doctor's note documenting your illness.

HOMEWORK

Homework in this class is meant to be exploratory, a way to expand on the experiences and ideas in class. I encourage wide ranging interpretation of assignments: consider ways that you can complete the project that are creatively and intellectually exciting for you, not fulfilling the basic requirements. (That said, some assignments will have restrictions on them – these kinds of constraints can spur creativity, so embrace them!)

You should expect the material to be rigorous and thorough. Unlike tests, projects require considerable engagement and thoughtful work on your own, and I want to see you working each week on projects. All assignments are due by the start of class and should be turned in on

Canvas –details of projects will be available on the class GitHub page (see link on the first page of this syllabus) including details about how to turn in specific projects, what's to be included, etc.

You will have 24/7 access to the Lab and Studio, and use of the Fab Lab during open hours for printing and equipment checkout.

GRADING

The goal of all assignments is for you to think and make.
Everyone comes from a different background and experience, so I'll be looking for improvement, curiosity, engagement, and a willingness to experiment. A grading rubric will be provided with each assignment to help you understand what is expected and how you did.

To get a C (an average grade) you should:
+ Put time into your projects each week
+ Complete everything on time

+ Participate in critiques and discussions

For a B or an A, you should additionally:
+ Take risks and try things enthusiastically
+ Be an active and unsolicited participant in critiques and discussions
+ Take assignments beyond their minimum requirements

Final grades will be determined as follows:
+ Homework: 50%
+ Class participation: 25%
+ Final project: 25%

BLOG

Considering the fact that most part of your grade will come from your weekly assignments. We will have a blog for our class where you will post your assignments to this blog.

REQUIRED MATERIALS

Required and suggested readings will be provided as PDFs on GitHub – there is no required textbook.
+ Laptop capable of running Processing/Java and with reliable internet connection, plus a charger – bring every week, please!
+ A notebook or sketchbook for taking notes and drawing ideas – bring every week, too!
+ Some kind of writing implement – an assortment of various pens and pencils may be helpful for working on project ideas
+ Other art supplies (paper, etc) and printing as needed

RESOURCES

+ Processing: A Programming Handbook for Visual Designers and Artists, by Casey Reas and Ben Fry. ISBN: 0262182629.
+ Nature of Code, by Dan Shiffman. ISBN: 9780985930806. http://natureofcode.com
+ Getting Started with p5.js, by Lauren McCarthy, Casey Reas, and Ben Fry. https://p5js.org/books/

LEARNING ACCOMMODATIONS

The goal of this class is for everyone to succeed. Stevens and the VA&T program are dedicated to providing appropriate accommodations to students with documented disabilities. The Office of Disability Services (ODS) works with undergraduate and graduate students with learning disabilities, attention deficit-hyperactivity disorders,

physical disabilities, sensory impairments, psychiatric disorders, and other such disabilities in order to help students achieve their academic and personal potential. They facilitate equal access to the educational programs and opportunities offered at Stevens and coordinate reasonable accommodations for eligible students. These services are designed to encourage independence and self advocacy with support from the ODS staff. The ODS staff will facilitate the provision of accommodations on a case-by-case basis.
If you have any questions about learning accommodations, please don't hesitate to talk with me during or outside of class.

PRONOUNS

As this course includes lots of interaction between students, it's important for us to create an environment of inclusion and mutual respect. This includes the ability for all students to have their chosen gender pronouns and chosen name affirmed. If the class roster does not align with your name and/or pronouns, please inform me of the necessary changes.

INCLUSION STATEMENT

Stevens and the VA&T program believe that diversity and inclusiveness are essential to excellence in academic discourse and creativity. In this class, the perspective of people of all races, ethnicities, gender expressions and gender identities, religions, sexual orientations, disabilities, socioeconomic backgrounds, and nationalities will be respected and viewed as a resource and benefit throughout the semester. Suggestions to further diversify class materials and assignments are encouraged. If any course meetings conflict with your religious events, please do not hesitate to reach out to me to make alternative arrangements.

COURSE CALENDAR

Please note this is subject to change – be sure to check GitHub and your email regularly. Homework and readings are listed for the days they are assigned.
Topics noted with ⊨ are short explorations of topics that jump off from or surround programming in a creative context. The symbol⊨ is used in the field of logic to mean that an idea semantically entails another

COURSE OUTLINE

		Topic	**Homework**
Week 0	08/31/18	**INTRODUCTION & WARM-UP** Meeting, Syllabus overview Introduction to Coding, why Processing? What are other programs? Artworks+Samples Conceptual overview: Variables, Syntax, Functions etc. Pseudocode In-class drawing activity	Install Processing (from processing.org), test to make sure it works, Instruction Drawings
Week 1	09/07/18	**DRAWING BY PIXELS & COORDINATE SYSTEMS** Creating sketches/Flow, "Hello World," RGB color, drawing shapes, fill and stroke, saving images, getting help	Drawings of Robots
Week 2	09/14/18	**ITERATION & LOOPS** For loops, nested loops, driving parameters with loops, push/popMatrix(), creating functions, historical quilt research	Algorithmic Quilts
Week 3	09/21/18	**RECURSION & FRACTALS** Creating recursive functions, Pythagoras Tree, Koch Snowflake, the pixel array	Recursion Exploration
Week 4	09/28/18	**TIME** Conditionals, strings,	Excerpts from Coding Freedom

		fonts and text, exporting video files	(Coleman Debian Constitution Clocks
Week 5	10/05/18	**INTERACTIVITY I** Discuss readings, contributing to *open source* projects Events: mouseX/Y, mousePressed()/Dragged(), background with alpha, importing fonts	Animated Letterforms
Week 6	10/12/18	**RANDOMNESS I** random(), map() and constrain(), arrays, writing to PDF	Begin Randomness project, install Python
Week 7	10/19/18	**RANDOMNESS + INTERACTIVITY** Cellular automata Work day Check if Python is working for everyone	Finish Randomness project
Week 8	10/26/18	**LANGUAGE I** PYTHON Creating a Python script, printing "Hello World," running a script in the Terminal, loops and conditionals, lists, cleaning text, templating strings, saving to file	Begin Bot project, create a Twitter account
Week 9	11/02/18	**LANGUAGE II** PYTHON Installing Python modules, creating an app on Twitter, OAuth, posting to Twitter automatically, bot	Finish Bot project

		sever demo	
Week 10	11/09/18	**INTERACTIVITY + ANIMATIONS** Object-oriented programming, Classes, ArrayLists, Simulating motion	Final Project proposal
Week 11	11/16/18	**INTERACTIVITY + p5.js** Download sublime Intro to Html+P5.js Import p5.js library Use terminal to run p5.js website Demo in-class: Sound visualization	Sound Vis. Project with p5.js + Rough Final Project prototype
	11/23/18	THANKSGIVING NO CLASS	
Week 12	12/30/18	Work Session - Q.A. *We might have a field trip this week (TBD)	Work on Final
Week 13	12/07/18	**FINAL CLASS** In class work session, Q&A	Work on Final
Week 14	12/08/18- 12/21/18	**EXAM PERIOD: FINAL CRITIQUE** Date TBD, please don't book travel until after exam period ends! Crits - presentations	Finals due by start of class **(Presentation mandatory)**