Programming for Artists | IDC 3500C / 6505C

Spring 2017, University of Florida SA + AH

Instructor: Thomas R Storey (tstore)
Room: FAC 306
Email: thomasrstorey@ufl.edu
Office Hours: Thursday, 5pm-7pm, FAD 209 (or by appointment)
Class Website: http://git.thomasrstorey.net/pfa-s17
Time: M/W period 11 (6:15pm - 7:05pm)
Credit: 3

Course Description

This course introduces the use of the computers and programming to create art. It assumes minimal prior experience in programming, and asks for only a little math (If you remember some algebra and trigonometry you'll be ahead of the curve). Programming for Artists will be highly practice/project based. Most class periods will be organized in workshop-style format where the students will follow along as the instructor demonstrates some concept or technique. Homework will largely consist of readings, both theoretical and technical, as well as assignments intended to show mastery of material shown in class or communicated in readings. The class will culminate in a *Final Project* in which you will explore a selection of the material covered over the course of the class more deeply and produce a unique, worthwhile art piece using computational media. This class will not make you a computer scientist, but if you apply yourself with interest and enthusiasm, you will start on your way to becoming a programmer.

Objectives

Students taking this course will:

- Practice the basics of programming languages and structure.
- Develop and implement software projects.
- Implement basic object-oriented programming techniques.
- Practice professional programming best-practices and documentation.
- Gain a proficiency in JavaScript and other programming languages.
- Harness concepts of computational aesthetics in artmaking.
- Interface custom code with existing APIs and libraries.
- Apply basic trigonometry and linear algebra to graphics and interactive programming.
- Survey past and contemporary computational art.
- Analyze, deconstruct and build potential solutions for projects/problems.

Course Components

As a student in this class, you are expected to:

- Attend every class and being attentive and enthusiastic! :grinning:
- Work on programming exercises and activities in class.
- Work on programming projects and assignments in and out of class.
- Turn in your work on time via git to the appropriate project and group.
- Read, watch videos and engage in discussion about computer art in and out of class.

Topical Course Outline

Week 1

- Introduction to the class.
- How to use git and turn in homework.
- Introduction to JavaScript and p5.js
- Your first program - drawing with code.
- Readings:
  YDKJS - Up & Going Chapter 1, through **Variables** section.
  Make - Chapter 1 - 3 Tim Berners-Lee, Long Live the Web

Week 2

- Program flow
- What's a function?
- Variables
- Basic interaction
- Moving things around
- Load and display an image
- Readings:
  Make - Chapter 4 (sections 1-4), 5 (section 1-5), 6, 7 (sections 1-3), 8 (sections 1-5)

Week 3

- Conditionals
- Control flow / loops
- More interesting interaction
- Readings:
  YDKJS - Up & Going Chapter 1, **Blocks** through **Loops** section.
  Make - Chapter 4 (sections 5-13), 5 (section 5-23)

Week 4

- Functions
- defining and invoking functions
- modularity, resuability
- returning
- recursion YDKJS - Up & Going Chapter 1, **Functions** through **Review** section.
  Make - Chapter 9 Walter Benjamin, The Work of Art in Age of Mechanical Reproduction

Week 5

- Objects & Arrays
- Object literals and constructors
- What's *this*?
- Array literals
- Using arrays
- Readings:
  YDKJS - Up & Going Chapter 2, through **Conditionals** section.
  Make - Chapter 10, 11

Week 6

- DOM interaction with p5
- Intro to HTML/CSS
- Readings:
  HTML and CSS tutorial Beyond the Canvas Tutorial

Week 7

- Data and APIs
- Loading local data
- Loading remote data
- Readings:
  Make - Chapter 10, 11
  Jer Thorp, Art and the API
  Kate Crawford, The Anxieties of Big Data

Week 8

- Video and Sound
- Live capture
- Playback
- Readings:
  Make - Chapter 12

Week 9

- **Start working on your final project proposals!**
- Making things for mobile
- Mobile web workflow
- touch
- other mobile APIs

Week 10

:fire::pray::tada:*SPRING BREAK GET LIT*:fire::pray::tada:
(just kidding, stay home and work on your **final project proposals!** :books:)

Week 11

- **Present Final Project proposals**
- Server-side JavaScript
- Hosting static files
- Routing requests
- Processing a form
- Work on final projects

Week 12

- Topics by request
- Work on final projects

Week 13

- Topics by request
- Work on final projects

Week 14

- Work on final projects
- User testing sessions

Week 15

- Work on final projects

Week 16

- Present Final Projects (Schedule TBA)

Required Textbooks, Materials, and Equipment

- Make: Getting Started with p5.js, by Lauren McCarthy
- You Don't Know JavaScript: Up & Going, by Kyle Simpson
- Atom or other text editor
- p5.js

Recommended Readings and Resources

- The Rest of Kyle Simposon's You Don't Know JavaScript Series
- JavaScript: The Good Parts, by Doug Crockford
- Eloquent JavaScript: A Modern Introduction to Programming, by Marjin Haverbeke
- EYEBEAM
- Rhizome
- FAT (R.I.P. :cry:)
- codecademy
- p5.js Reference
- p5.js Libraries
- p5.js Tutorials
- p5.js Examples

Grading Breakdown

Regular Assignments: 40%
Participation and Attendance: 40%
Final Project: 20%

Attendance Policy

Attendance is required. I am going to take roll at the start of class each day, and if you're not here at that time, you are considered tardy. If you miss more than half the class, you're absent. Tardies and absences will deduct from your participation grade. This class is extremely in-class-work intensive - missing a day could potentially set you back significantly. Be smart. Come to class. You will have a much better semester for it. If you absolutely must be absent or late for some event or emergency, **please let me know**, and if it is a legitimate excuse for being late or absent, I'll see what I can do for you.

Late Policy

- Assignments are due at 11:59pm on Sunday night each week. I check what is turned in first thing in the morning on Monday, and if it's there, it's turned in.
- Final Project is due before the class period in which you present. Any required revisions are due before the end of finals week. (11:59pm, April 28)
- No late submission. *No late submission!* **No. Late. Submission.** I don't have time to grade your late work!

Grading Criteria – Assignments

- Feature completeness: 60%
  Does your project meet the feature requirements of the assignment?
- Documentation/Code Quality: 40%
  Runs without errors.
  Complete documentation and comments
- Inventiveness: BONUS 10%
  Did you go beyond the basic requirements of the project or try new techniques?

Grading Criteria – Final Project

- Concept: 30% What is the conceptual/theoretical underpinning of your work/why should I care about it? This must be documented in a readme.md file in your git repository, and present in critique.
- Implementation: 50%
  The quality of your code. Please leave plenty of comments to make my life easier. The harder it is for me to read your code, the harder it will be for you to earn a favorable grade.
- Presentation: 20%
  Your level of preparedness on the day of critique.

UF Grading Policies

University of Florida official grading policies can be found at:
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	S
4.00	3.67	3.33	3.00	2.67	2.33	2.00	1.67	1.33	1.00	0.67	0

Students with Disabilities

Students requesting classroom accommodation must first register with the Dean of Students Office. The DSO will provide documentation to the student who must then provide this document to the instructor. The DSO can be contacted at: 352-392-1261 or http://www.dso.ufl.edu/drpSA + AH Health and Safety Policy.

The School of Art and Art History Safety Manual will be reviewed in class. Students and instructors are responsible for following policy and procedures for making art safely at all times. The entire document is available online at http://saahhealthandsafety.weebly.com/handbook.html. All students are required to sign and turn in the signature page to the instructor on the first day of class.

Digital Media Area Rules

All users of the studio classrooms are expected to follow studio area rules at all times. If you have any questions, ask your instructor.

- Follow all SA+AH Health and Safety handbook guidelines (the handbook should be reviewed by your instructor and

can be found at: www.arts.ufl.edu/art/healthandsafety)

- Follow the SA+AH Satellite Waste Management Chart in the classroom and other health & safety guidelines posted for your media.
- In case of emergency, call campus police at 392-1111
- File an incident report (forms may be found in the SAAH H&S handbook, the SAAH faculty handbook and in the main office.)
- Turn completed forms into the SAAH Director of Operations within 48 hours of the event.
- Alcohol is forbidden in studios
- Familiarize yourself with the closest eyewash unit.
- No eating or drinking in the computer lab.
- Do not use spray adhesive in the studios or in the building. There is a professional and safe paint spray booth in FAC-211A for your use.
- Do not store anything on the floor. This impedes cleaning and creates a hazard.
- Installations must be removed as soon as possible after critique.
- Clean up spills immediately.
- Take items which do not fit into the trash to the dumpster, follow dumpster guidelines.
- Follow the SA+AH CONTAINER POLICY(see policy below)
- Shoes must be worn at all times.
- Protective equipment must be worn for hazardous work.
- Do not block aisles, halls or doors with stored items or when working. This is a violation of fire codes.

White

All new and or used products in containers (hazardous or what might be perceived as hazardous - i.e. watered down gesso, graphite solutions, satellite containers of solvents, powders, spray paints, fixatives, oils, solvents, etc...) must be labeled within the SA+AH to identify their contents. Labelscan be found at the MSDS box in each studio and work area. All containers must be marked with the user's name, contents and date opened. All secondary/satellite containers for hazardous materials must be marked with content, your name and the date opened. All unmarked containers are subject to immediate disposal.

Yellow

WHEN HAZARDOUS ITEMS ARE DESIGNATED AS WASTE.

- All containers must have a yellow label identifying the contents that are designated as trash for weekly EHS pick up.
- Flammable solid containers (red flip top) must have a yellow hazardous waste label on the outside (top).
- 5 gallon jugs must have a yellow hazardous waste label on the outside.
- Fibrous containers must have a yellow hazardous waste label on the outside (top).
- Each item in the blue bin must have a yellow hazardous waste label. Note: Hazardous Waste labels should include all constituents in the waste mixture as well as an approximate percentage of the total for that item and must add up to 100%. Labels should also include the Bldg and room number of the shop generating the waste along with the Waste Manager for your area, this is located on the SWMA sign posted at the sink or at the Waste Management Area.

Academic Honesty Policy

The university's policies regarding academic honesty, the honor code, and student conduct related to the honor code will be strictly enforced. Full information regarding these policies is available at http://www.registrar.ufl.edu and http://www.dso.ufl.edu.

Online Course Evaluations

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at https://evaluations.ufl.edu. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at http://evaluations.ufl.edu/results/.