Art 22 Fall 2015: Introduction to Computer Programming for the Arts

Time: T/Th 1:00-3:50pm
Location: Arts 2220 | eStudio
Instructor: Ryan McGee <ryan@mat.ucsb.edu>
TA: Sölen Kiratli <solenk@gmail.com>
Class Website: http://www.ryanmcgee.com/Art22

<Description>

Using a project-based approach, the basic components of web development and computer programming are explored in different languages such as HTML/CSS, JavaScript, and Processing. The class is intended to create a general understanding of computer programming, its use and cultural implications, as well as provide a foundation for utilizing programming in a wide range of projects, from traditional to new media. No prerequisites.

<Assignments>

- 3 Programming Exercises (covering Processing and HTML/CSS/JavaScript development)
- Online Readings for in-class discussion
- Final Project Proposal (2 page research and design document)
- Final Project (a website and/or app incorporating HTML/CSS/JavaScript and/or Processing)

<Grading>

- 30% Weekly Programming Exercises
- 10% Final Project Proposal
- 40% Final Project
- 20% attendance and participation

In addition, the class grade is mitigated by attendance. If you miss more than 2 classes, your grade will be lowered. You cannot pass the class if you miss 6 or more classes. To help you progress through the class, projects and assignments must be turned in on the due dates.

<Tentative Schedule>
//Readings, Assignments, and Due Dates will be posted on the course website

Week 1 [9/24]
- Introduction. Define course goals, expectations, and content. Overview of programming languages and creative coding. Download and install Processing.

Week 2 [9/29 and 10/1]
- Introduction to programming and Processing: variables, operators, functions, scope, syntax
- Pixel and color spaces, shape primitives, keyboard and mouse interactivity

Week 3 [10/6 and 10/8]
- Arrays, Loops, Conditionals, and Timers
- Coding animation, randomness, and probability

Week 4 [10/13 and 10/15]
- Object-oriented programming
- In class example: coding a simple game in Processing

Week 5 [10/20 and 10/22]
- Setting up FTP webspace for HTML/CSS/JavaScript development
- Basic HTML tags and page content, modifying HTML with CSS and JavaScript

Week 6 [10/27 an 10/29]
- HTML 5 Input, Canvas, and Audio tags
- Introduction to P5.js, a JavaScript implementation of Processing

Week 7 [11/3 and 11/5]
- In class example: (ex)porting Processing sketches for the web
- Intro to mobile and touch enabled webpages

Week 8 [11/10 and 11/12]
- Individual meetings and discussion of final project proposals
- Using other JavaScript APIs and additional topics as requested

Week 9 [11/17 and 11/19]
- Beyond JavaScript and Processing: overview of other creative programming environments
- Additional topics to aid realization of final projects

Weeks 10/11 [11/24, 12/1, and 12/3]
- Open Lab: In class work on final projects.

Final Projects Due with Presentation at 1pm on 12/8