VA345: Creative Coding

Course Instructor: Assoc. Prof. Dr. Selcuk ARTUT (www.selcukartut.com)

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Class Hours: 10:40 pm - 13:30 pm Mondays

GitHub: https://github.com/selcukartut/VA345CreativeCoding

Course Description: The course explores code at a conceptual level with the aim of using computation as an expressive and creative tool. It addresses topics such as generative audio-visuals, computational art, and scripting for standard media tools. Some acknowledged conceptual frameworks for interaction with computers in a creative context are introduced in detail.

Course Objectives:

Explore innovative ways of computational thinking

Becoming familiar with theoretical and practical tools for exploring creative systems

Learn the essence of Creativity in Computational Approaches

Earn the skills to use creative coding for developing projects that involve computational creativity

Describe and explore some conceptual frameworks for interaction with computers in a creative context

Resources: Generative Design: Visualize, Program, and Create with Processing by Hartmut Bohnacker, Benedikt Gross

Generative Art Paperback – by Matt Pearson

The Nature of Code: Simulating Natural Systems with Processing by Daniel Shiffman <http://natureofcode.com/>

Processing: A Programming Handbook for Visual Designers and Artists by Casey Reas, Ben Fry

When the Machine Made Art: The Troubled History of Computer Art by Grant D. Taylor, Bloomsbury Academic

Equipment Required: Compass, Straight edge, Ruler, A3 paper, Colored Pens, Computers, Grid Paper

Grading

Assignments (8 in total) 60% + Final Project 30% + Participation 10% (3 misses looses 10%)

Weekly Schedule Tentative

Week 1: Introduction, Course Objectives, Students’ Expectations

03.10.2022 What is Creativity?

 How do we incorporate creativity in computational disciplines?

 What is Computational Creativity? Who are the pioneers?

Video Lecture: History of the Future, Art & Technology from 1965 - Yesterday | Casey Reas | The Gray Area Festival

Week 2: Automatons

10.10.2022 Self-operating systems

 Screening: Pierre Jacquet-Droz Androids

 Food for thought: Pathfinder – Generative geometry as a creative impulse

Assignment 1: Building a Tessellation

Week 3: Algorithmic Forms in Art / Generative Art

17.10.2022 Performance Art / Temporal Art

Artists on focus: Theo Jansen, Jean Tinguely, Alexander Calder, Alvin Lucier, John Cage

Screening:

Science in a Golden Age - Al-Khwarizmi- The Father of Algebra

BBC Documentaries - The Secret Rules of Modern Living: Algorithms

Food for thought: Joachim Sauter - Media Artist and Designer

Creative Coding Essentials

Week 4: Programming Platforms

24.10.2022 Drawing Basic Shapes

Coordinate Systems (Polar, Cartesian)

Variable Types, Scopes

Colors

Randomness

Building Functions

Loops

Using Noise (Perlin Noise, Naturalistic Forms)

Food for thought: Casey Reas

Assignment 2: Programming with p5.js: Use Perlin Noise to create a P5.js Sketch that moves basic shapes smoothly over time.

Week 5: Conditions, Iteration, Looping

31.10.2022 Proliferating Forms with Iterations

 Generative Structures

 Building Islamic Patterns

 Simple Interaction with Mouse and Keyboard

Food for thought: Sougwen Chung

Assignment 3: Draw this exercise below with Illustrator and p5.js

Drawing an Islamic Geometric Pattern / Elhambra, Granda Spain (1302-1391)

Week 6: Transformations

07.11.2022 Translate, Rotate, Scale matrix operations

Food for thought: Aaron Koblin

Assignment 4: Creating Interactive Generative Art Forms: Use transformations to create complex shape visuals.

Week 7: Arrays

14.11.2022 Arrays / Array Functions

 Final Project Theme: Islamic Geometric Patterns

Assignment 5: Draw a Persian Orosi Glass Islamic Geometric Pattern

Week 8: Using Libraries

21.11.2022 SVG Export Example

Using GUI

Islamic Geometric Patterns

Food for thought: Zach Lieberman

Week 09: Exhibition Production Briefing

28.11.2022 Final Project Overview

Food for thought: Joshua Davis

Week 10: Exhibition Production Briefing

05.12.2022 Methods, implementations

Week 11: Exhibition Production

12.12.2022 Final Project Presentations

Week 12: Exhibition Production

19.12.2022 Final Project Reviews and Assessments

Week 13: Exhibition Production

26.12.2022 Final Project Reviews and Assessments

Week 14: Exhibition Production

02.01.2023 Final Project Reviews and Assessments

Week 15: Exhibition Production

09.01.2023 Final Project Submissions

**Course Policies**

Students are expected to

* come to class on time.
* be attentive and engaged in class.
* spend an adequate amount of time on the homework each week, making an effort to solve and understand each problem.
* engage with both the abstract and computational sides of the material.
* seek help when appropriate.

Plagiarism means using words, ideas, or arguments from another person or source without citation. Cite all sources consulted to any extent (including material from the internet), whether or not assigned and whether or not quoted directly.

Any form of cheating will immediately earn you a failing grade for the entire course.