Fall – Autumn - 2018
AET310: Foundations of Creative Coding – Unique #: 20884
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Office Hours: 9:30 – 11:30 PLAI LAB/DFA 4.132E (Or by appointment)

Tuesday & Thursday 8:00-9:30am
DFA 4.112

Required Textbook: Learning Processing, 2nd ed, Daniel Shiffman

OVERVIEW

In this class we look at building the foundations of creative thinking and practical coding. The class serves as an introduction to coding and creative process on a whole. Examining the use of computers as an artist medium in contemporary art.

Using the graphical language 'processing' we develop the key skills required to program and realise an artistic or creative vision via code.

Later weeks explore future of creative coding and alternative outlets for artistic creation.

COURSE DESCRIPTION

This practical lab class introduces students to use code to realise and implement artistic vision.
Exploration of the uses of computers in the development and creation of contemporary art and design, students will leave with a practical understanding of the uses of creative coding in the real world.

Development and learning in the graphical language 'processing' will give students a foundation in using code for artistic creation.

Later weeks will develop a practical understanding of further creative coding applications and alternative development environments.

At the conclusion of this course, students will meet the requirements for a number of upper AET courses and classes.

LEARNING OUTCOMES

By the end of the semester, students will be able to:
- Critically analyse and discuss the qualities of computer-generated art;
- Demonstrate practical development, creation and implementation of creative coding;
- Gain experience in various industry software;

COURSE REQUIREMENTS

- Participation (15%): Students should be prepared to raise ideas, critique designs and add to class discussions, this is expected weekly.
- Technical challenges (40%): Compounded learning from class in the form of homework/lab challenges to implement and develop upon discussed techniques. These challenges are given out from week 3 onwards, expected to be return the following Thursday (9 days per challenge). Each task is worth 3%, with an additional 1% for a creative or bonus addition. – Final submission due week 14 (11/27/18)
- Project (40%): Created during the instructed lab sessions, students will end with a complete game built within processing. This will be developed during class learning and lab time, final submission will be graded week 15 (04/12/18 & 06/12/18)
- Attendance (5%): Attendance is taken during every class

<u>CLASS POLICIES</u>

UT ELECTRONIC MAIL NOTIFICATION POLICY

Electronic mail (e-mail) is a mechanism for official University and instructor communication to students. Students are expected to check e-mail on a frequent and regular basis in order to stay current with University- and course-related communications, recognizing that certain communications may be time-critical. It is recommended that e-mail be checked daily, but at a minimum, twice per week.

It is the responsibility of every student to keep the University and instructor informed of changes in his or her official e-mail address (do so at https://utdirect.utexas.edu/utdirect/bio/address_change.WBX). Consequently, e-mail returned to the University with "User Unknown" is not an acceptable excuse for missed communication. Similarly, undeliverable messages returned because of a full inbox or use of a spam filter will be considered delivered without further action required of the University or instructor.
(see http://www.utexas.edu/cio/policies/university-electronic-mail-student-notification-policy)

ATTENDANCE

Attendance and punctuality are professional attributes. This class is designed to provide students skills for a more practical and professional future career.

You are allowed three absences for illness or personal reasons; however, you will likely miss points for in-class assignments or activities as a result, and these generally cannot be made up. However, if a serious medical or personal crisis (hospitalization, death in the family, etc.) impacts your attendance, please inform me as soon as possible. In addition, see the exception below for religious holy days.

Arriving more than ten minutes late at the beginning of class or after a break, leaving class without permission, and leaving class prior to dismissal for the day all count as being tardy. Three tardies equals an absence. Four absences will lower your course grade by one letter grade. Additional absences may result in failure of the course.

Learning, research and development within the class all build on knowledge gained from previous lessons, you are responsible for making up for work missed during any absence. It is your responsibly to obtain any notes or assignments from one of your classmates.

RELIGIOUS HOLIDAYS

Section 51.911 of the Texas Education Code states that a student shall be excused from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence. University policy requires students to notify each of their instructors at least fourteen days prior to the date they will be absent from scheduled classes to observe a religious holy day.
(from http://www.utexas.edu/provost/policies/religious_holidays/1555_001.pdf)

SERVICES FOR STUDENTS WITH DISABILITIES (SSD)

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact Services for Students with Disabilities (512-471-6259, ssd@austin.utexas.edu, http://ddce.utexas.edu/disability/, or videophone 512-471-6644). Please provide documentation of your needs during the first week of class, if possible, so that I can make the necessary accommodations promptly.

CLASSROOM ETIQUETTE

1. Be on time at the start of class time and after any breaks
2. This class is a place for artistic discussion and critique, not texting on your phone – please turn them on silent
3. Discussion is good, distraction is bad – I reserve the right to reduce marks for that day's assigned work for repeat offenders
4. Consider bringing headphones/earphones for any periods of solo work, such as class work sessions

COURSE COMMUNITACTION

The syllabus and assignments will be posted on the course Canvas site. All communications outside class hours is via Canvas.

This class is designed around discussion and group learning, it will help everyone if you post questions in the discussion area wherever possible. I will post, comment and otherwise add to the discussion wherever relevant, or with topics to help steer general discussion in class.

I will attempt to respond to all private communications within 24 hours on weekdays.

I normally check emails twice per day, once in the afternoon, once in the evening.

- Always ask questions where there is doubt. Do not make assumptions.

ASSIGNMENTS

- All assignments will be given out and discussed during class time and available to view on Canvas.
- Some classes will have specific technical assignments with focus on students learning specific skills in a software or working with a hardware. Additional smaller assignments may be made throughout the semester as the need arises.
- You are responsible for making up for any class work missed – specifically technical challenges completed during class time as these, and the homework assignment contribute heavily to the final grade.
- It is your responsibility to ask and inquire if you are unclear about what is required or when.

ASSIGNMENTS DEADLINES

- It is vital that you do not get behind in this class as all work builds upon previous work.
- As a general rule all projects, reading, research and homework assignments must be completed begore the beginning of each class period. However, many class assignments have a due date and time in the evening before class. This allows time for review and feedback, as well as discussion based upon the submitted work during the next lesson. Any work not submitted on time will still receive feedback but will not benefit from peer review in class time.
- All work is due as specified in the assignment listed on canvas. Work not completed before the canvas deadline will be considered late.
- Any work turned in late, without prior consent and valid reason will result in a single grade drop from the deserved reward (an A submission will reward a B etc).
- Technical challenges are given from week 3 onwards on the Tuesday session, expected to be returned on the following Thursday session. Each challenge is worth a maximum 4% of your total grade. Late or no submission will result in no grade for that challenge.
- The class project is a game created throughout the length of the class lab sessions. With directed development week 1 through 6. A grading scheme will be given out in week 7 for what to expect and what you may need to add extra for exemplar grades. Final projects will be graded in class at the end of semester in week 15 (12/04/18 & 12/06/18).

CLASS SCHEDULE

Week	Days	Topics	Homework/assessments	
1				
	30-Aug	Course Introduction Creative Coding Demo		
2	04-Sep	Week 2 (chapters 1-3) Pixels Processing Interaction		
	06-Sep	Lab		
3	11-Sep	Week 3 (chapters 4-6) Variables Conditionals Loops	Challenge 1	
	13-Sep	Lab		
4	18-Sep	Week 4 (chapters 7-8) Functions Objects	Challenge 2	
	20-Sep	Lab		Challenge 1 due
5	25-Sep	Week 5 (chapter 9) Arrays	Challenge 3	

	27-Sep	Lab		Challenge 2 due
6	02-Oct	Week 6 (chapters 10-12) Algorithms Debugging Libraries	Challenge 4	
	04-Oct	Lab	Project grading scheme	challenge 3 due
7	09-Oct	Week 7 (chapters 13-14) Mathematics Translation and Rotation (in 3D)	Challenge 5	
	11-Oct	Lab		challenge 4 due
8	16-Oct	Week 8 (chapters 15-16) Images Videos	Challenge 6	
	18-Oct	Lab		challenge 5 due
9	23-Oct	Week 9 (chapters 17-19) Text Data Input Data Streams	Challenge 7	
	25-Oct	Lab		challenge 6 due
10	30-Oct	Week 10 (chapters 20-21) Sound Exporting	Challenge 8	
	01-Nov	Lab		challenge 7 due
11	06-Nov	Week 11 (chapter 22) Advanced Object-Orientated Programming	Challenge 9	
	08-Nov	Lab		challenge 8 due
12	13-Nov	Week 12 (No book) Other Creative programming languages	Challenge 10	
	15-Nov	Lab		challenge 9 due
13	20-Nov	Alternative Creative Coding tools - 1		
	22-Nov	Thanksgiving - no class		
14	27-Nov	Alternative Creative Coding tools - 2 Lab		challenge 10 due
	29-Nov	Lab		
15	04-Dec	Project Presentations		Project due
	06-Dec	Project Presentations		Project due
16	11-Dec	No Class		
	13-Dec	No Class		

EVAULATION & GRADING
Neatness, scholarship and presentation will all count towards your final grade:
Being able to visually communicate ideas is part of the process.

YOU WILL BE GRADED ON
- Reading, discussion, Participation (15%);
- Technical challenges (10*4% = 40%);
- Project (40%);
- Attendance (5%)

This course does not have a final exam.

GRADING SCHEME
To ensure fairness, all numbers are absolute, and will not be rounded up or down at any stage. Thus a B- will be inclusive of all scores of 80.000 through 83.999... The University does not recognize the grade of A+. Thus, the conversion from percentage value to letter grade is as follows:

- A =   94+
- A- =   90 – 93.999...
- B+ =   87 – 89.999...
- B =   84 – 86.999...
- B- =   80 – 83.999...
- C+ =   77 – 79.999...
- C =   74 – 76.999...
- C- =   70 – 73.999...
- D+ =   67 – 69.999...
- D =   64 – 66.999...
- D- =   60 – 63.999...
- F =   0 – 59.999...

PRIVACY
This class is designed to be an open space for discussion, critique and learning. What is said about each other's work during this class should remain in the classroom. It will not be published in a blog or any other personal website, tweeted or posted on social networks.

MOBILE DEVICES
Mobile devices of any kind must be silenced and out of sight.
There may be times when using a mobile is appropriate, such as aiding in discussion – these times will be very obviously announced. Texting, talking or otherwise using a mobile device is never appropriate during class.

RESOURCES AND EQUIPMENT
This class will make use of processing, a free to use & develop programming language available at: processing.org

Other useful links:
- Processing.org - main site for Processing
- Processing.org - tutorials
  - hello.processing.org - great starting point
- Processing.org - reference
- Processing.org - libraries
- Processing.org - IDE reference
- Learningprocessing.com - website for the textbook
- Sketchpad.cc - an online processing editor
- Awesome Creative Coding list by TerkelG on GitHub

Lab class for this class will require the 'Learning Processing, 2nd edition' text book by Daniel Shiffman.