THE
NEW
SCHOOL

PARSONS
PARIS

MFA D+T

Creativity and Computation Lab   **PGTE 5250 / Fall 2015**
Parsons Paris. 45 rue Saint-Roch, 75001 Paris.

Mondays 12:20 - 3:00 pm   **Room 302**

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Course website: http://portfolio.newschool.edu/mfadtlab/
Office Hours: by appointment

Course Description

This course is an introduction to various approaches and platforms for creative computing. Students will build a foundation in programming while exploring the creative potential of algorithms, microcontrollers, interactivity, sensors, and other unconventional inputs and outputs. We will work within the domains of the web (Javascript), physical computing (Arduino) and desktop applications (Processing/openFrameworks).

Learning Outcomes

1. Understand the underlying concepts of logic, procedure, and objects as they apply to code and design using Processing
2. Use code to express ideas visually and interactively through the development of project
3. Develop skills to independently research code and prototyping techniques
4. Effectively communicate ideas/concepts for projects through presentations
5. Demonstrate the ability to document projects through code, image, video and text
6. Render interaction on screen and in physical form, using electronic circuitry and embedded computing
7. Demonstrate the ability to prototype their own ideas
8. Demonstrate effective collaboration with peers

Course Requirements:

Weekly Assignments:
Throughout the course there will be weekly programming and reading/response assignments that will be due the following week.

Midterm Project:

Concept / ideas due: October 5

Presentation of work: October 19

Delivery of documentation: October 26

Final Project:
Concept due: November 9
Presentations of work: December 7
Delivery of documentation: December 14

Projects Outline

Week 1 / 4   Programming basics / Processing
Week 5 / 8   Arduino
Week 9 / 12   Interactivity and Web
Week 13 / 15   OpenFrameworks

Course Schedule

Part I: Processing Fundamentals

Week 1 / August 31

Activity:
Course introduction. Review of syllabus.
Review of programming basic. Processing introduction.

Week 2 / September 7

Activity:
Using Functions in Processing.
Introduction to Objects and Classes in Processing.
Git / Github introduction.

Week 3 / September 14

Activity:
Motion objects, trigonometry, importing images, exporting Processing sketches.
Midterm assignment.

Week 4 / September 21

Activity:
Basic particle system
Audio analysis / reactive audio.
Introduction to computer vision, motion detection and OpenCV.

Part II: Introduction to Arduino

Week 5 / September 28

Activity:
Introduction to electronics / microcontrollers.
Introduction to Arduino.

Week 6 / October 5

Activity:
Read / write to Arduino.
Midterms ideas due.

Week 7 / October 12

Activity:
Sensor input.
Servo motors.
Working on midterm presentations

Week 8 / October 19

Activity:
Midterm presentations

Due for next week:
Delivery of documentation

Part III: Interactivity and Web

Week 9 / October 26

Activity:
HTML5 and CSS review.
Introduction to Javascript / jQuery.
Introduction to Canvas.

Week 10 / November 9

Activity:
Making animation with canvas.
Introduction to Paper.js
Final project concepts due.

Week 11 / November 16

Activity:
Introduction to Node.js

Week 12 / November 23

Activity:
Web API and json format.
Introduction to p5.js

Part IV: Introduction to OpenFrameworks

Week 13 / November 30

Activity:
Introduction to OpenFrameworks.
Final project working day.

Week 14 / December 7

Activity:
Final presentations.

Week 15 / December 14

Activity:
Delivery of documentation.
Feedback session.

Recommended Resources:

http://processing.org/
http://www.openprocessing.org/
http://natureofcode.com/
https://www.arduino.cc/
https://www.arduino.cc/en/Tutorial/HomePage
http://playground.arduino.cc/

https://developer.mozilla.org/en/docs/Web/JavaScript
https://jquery.com/
http://api.jquery.com/
http://paperjs.org/
http://p5js.org/
https://nodejs.org/

http://www.openframeworks.cc/
http://www.ofxaddons.com/

http://www.instructables.com/
http://www.ecogex.com/delectable/
http://www.siteinspire.com/
http://www.makery.info/en
http://makezine.com/category/electronics/
http://formandcode.com/
http://www.creativeapplications.net/

http://manovich.net/index.php/projects/the-algorithms-of-our-lives

Making Thing See, Greg Borenstein
Processing: A Programming Handbook for Visual Designers and Artists, Casey Reas and Ben Fry
Generative Design, Hartmut Bohnacker, Benedikt Gross, Julia Laub, and Claudius Lazzeroni
Visual Complexity: Mapping Patterns of Information, Manuel Lima
 JavaScript: The Definitive Guide, David Flanagan
Making Things Talk, Tom Igoe
Conditional Design Workbook, Conditional Design
From Counterculture to Cyberculture, Fred Turner

Criteria for evaluation
You will receive feedback on the following areas:

1. **Communication:** How well have you been able to express your ideas, verbally, through your design, and in written form?
2. **Critical Thinking:** To what degree have you demonstrated and developed critical thinking skills over the course of the semester? Is critical thinking evident in your work, in critiques and presentations, and in written assignments?
3. **Design Process:** What are the strengths and weaknesses of your design process? Are you able to evaluate the work at different points in the process and to identify areas for future development?
4. **Contextualization and Connection:** To what degree have you been able to connect the themes and core concepts of the course to concepts introduced in other classes? Have you been able to connect your work and ideas to historical and contemporary precedents, and to situate your work within the larger discourse surrounding ideas of game design, level design, collaboration, social organization, and personal expression?
5. **Self-Directed Learning:** To what extent have you been able to identify and capitalize on areas of personal interest in ways that contribute to the shared learning of the group? In what ways have you developed strategies for integrating your own interests and questions in the course outcomes?

Assignments & Grading

Assignment sheets will be handed out and posted for review for all assignments. Below is a breakdown of the overall composition of your final grade. All grades will be given as letter grades per the New School grading system.

Class Attendance / Participation: 20%
Weekly assignments: 20%
Midterm project: 25%
Final project: 35%

Graduate Grade Scale Descriptions

A   Work of exceptional quality.
A-   Work of high quality.
B+   Very good work.
B   Good work; satisfies course requirements. Satisfactory completion of a course is considered to be a grade of B or higher.
B-   Below average work-. Academic Warnings will be given at any time during the semester for any level work below a B.
C+   Well below average work
C   Poor work; lowest possible passing grade for the course.
F   Failure. Failing grades are given for required work that is not submitted, and for incomplete final projects.

Grade of W

The grade of W may be issued by the Office of the Registrar to a student who officially withdraws from a course within the applicable deadline. There is no academic penalty, but the grade will appear on the student transcript. A grade of W may also be issued by an instructor to a graduate student (except at Parsons and Mannes) who has not completed course requirements nor arranged for an Incomplete.

Grade of WF

The grade of WF is issued by an instructor to a student (all undergraduates and all graduate students) who has not attended or not completed all required work in a course but did not officially withdraw before the withdrawal deadline. It differs from an "F," which would indicate that the student technically completed requirements but that the level of work did not qualify for a passing grade. The WF is equivalent to an F in calculating the grade point average (zero grade points), and no credit is awarded.

Grades of Incomplete

The grade of I, or temporary incomplete, may be granted to a student under unusual and extenuating circumstances, such as when the student's academic life is interrupted by a medical or personal emergency. This mark is not given automatically but only upon the student's request and at the discretion of the instructor. A Request for Incomplete form

must be completed and signed by student and instructor. The time allowed for completion of the work and removal of the "I" mark will be set by the instructor with the following limitations:

Undergraduate students: Work must be completed no later than the seventh week of the following fall semester for spring or summer term incompletes and no later than the seventh week of the following spring semester for fall term incompletes. Grades of "I" not revised in the prescribed time will be recorded as a final grade of "WF" by the Office of the Registrar.

Responsibility
Students are responsible for all assignments, even if they are absent. Late work, failure to complete the assignments, and lack of preparedness for presentations will jeopardize your successful completion of this course.

Participation
Class participation is an important part of class and includes: active participation in in-class assignments, and coming to class regularly and on time.

Class Blog and Assignments
All class assignments and projects should be posted on the course blog. Work that includes additional files or documentation (ie. Projects I and II) should be compressed as .zip file (labeled appropriately) and shared via Google Drive.

Attendance Policy
The University has a strict Attendance policy that encourages faculty to fail students who do not attend a minimum number of class sessions. As this course addresses sometimes complex technical problems, being present is vital to learning. Four absences will be grounds for failure. Tardiness, especially chronic tardiness, will constitute absences at the discretion of the faculty. A letter grade may be deducted from your final grade based on frequent tardiness. The faculty will deliver a mid-term report to disclose the number of absences and late arrivals recorded. Absence at either the mid-term or final review is grounds for failure.

Canvas
Use of the Canvas online learning management system may be an important resource for this class. Students should check it for announcements before coming to class each week.

Delays
In rare instances, I may be delayed arriving to class. If I have not arrived by the time class is scheduled to start, you must wait a minimum of thirty minutes for my arrival. In the event that I will miss class entirely, a sign will be posted at the classroom indicating your assignment for the next class meeting.

Academic Honesty Policy

The university's student code of conduct covers academic honesty. Plagiarism is grounds for failure and punitive review per the Office of Student Rights and Responsibilities. In the Design and Technology program, plagiarism is not limited to text, but can include all forms of media and code. When in doubt, credit.
See http://www.newschool.edu/studentservices/rights/

Academic Integrity

This is The New School's Statement on Academic Integrity: "Plagiarism and cheating of any kind in the course of academic work will not be tolerated. Academic honesty includes accurate use of quotations, as well as appropriate and explicit citation of sources in instances of paraphrasing and describing ideas, or reporting on research findings or any aspect of the work of others (including that of instructors and other students). These standards of academic honesty and citation of sources apply to all forms of academic work (examinations, essays, theses, computer work, art and design work, oral presentations, and other projects)."

It is the responsibility of students to learn the procedures specific to their discipline for correctly and appropriately differentiating their own work from that of others. Compromising your academic integrity may lead to serious consequences, including (but not limited to) one or more of the following: failure of the assignment, failure of the course, academic warning, disciplinary probation, suspension from the university, or dismissal from the university.

Every student at Parsons signs an Academic Integrity Statement as a part of the registration process. Thus, you are held responsible for being familiar with, understanding, adhering to and upholding the spirit and standards of academic integrity as set forth by the Parsons Student Handbook.

Guidelines for Written Assignments

Plagiarism is the use of another person's words or ideas in any academic work using books, journals, internet postings, or other student papers without proper acknowledgment. For further information on proper acknowledgment and plagiarism, including expectations for paraphrasing source material and proper forms of citation in research and writing, students should consult the Chicago Manual of Style (cf. Turabian, 6th edition). The University Writing Center also provides useful on-line resources to help students understand and avoid plagiarism. See http://www.newschool.edu/admin/writingcenter/.

Students must receive prior permission from instructors to submit the same or substantially overlapping material for two different assignments. Submission of the same work for two assignments without the prior permission of instructors is plagiarism.

Guidelines for Studio Assignments

Work from other visual sources may be imitated or incorporated into studio work if the fact of imitation or incorporation and the identity of the original source are properly acknowledged. There must be no intent to deceive; the work must make clear that it emulates or comments on the source as a source. Referencing a style or concept in otherwise original work does not constitute plagiarism. The originality of studio work that presents itself as "in the manner of" or as playing with "variations on" a particular source should be evaluated by the individual faculty member in the context of a critique.

Incorporating ready-made materials into studio work as in a collage, synthesized photograph or paste-up is not plagiarism in the educational context. In the commercial world, however, such appropriation is prohibited by copyright laws and may result in legal consequences.

Student Disability Services
Students Disability Services (SDS) assists students with disabilities in need of academic and programmatic accommodations as required by the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Federal Rehabilitation Act of 1973.

In keeping with the university's policy of providing equal access for students with disabilities, any student with a disability who needs academic accommodations must contact Edward Mills in the Office of Student Life and Advising (located in room 102 in the 45, rue St. Roch, Paris 75001 building), in order to start the process with Student Disability Services (SDS), based in New York. SDS will conduct an intake and, if appropriate, you will be provided an academic accommodation notice for you to bring to me. This letter is necessary in order for classroom accommodations to be provided. Once you provide me with this letter, we will have a private discussion about the accommodations in relation to this course. You may also access more information through the University's web site at

http://www.newschool.edu/studentservices/disability/.

ARC: Academic Resource Center
Find the Laser cutter, 3D Printer and other useful resources at :
https://sites.google.com/a/newschool.edu/student-technical-resources/