

THE NEW SCHOOL

PARSONS SCHOOL OF DESIGN: COMMUNICATION DESIGN CREATIVE COMPUTING PUCD 2035

Section F

CRN: 2755

Fall 2019

Tuesdays 7:00 pm - 9:40 pm

2 W 13th Room 1011

Instructor: Robby Kraft, kraftr@newschool.edu

COURSE DESCRIPTION

Creative Computing is designed to introduce students to programming as a creative medium—as a way of making and exploring. The coursework focuses on developing a vocabulary of interaction design principles which can then be applied across a range of platforms. Students are encouraged to experiment with various media, tools, and techniques, ultimately producing a portfolio of interactive and visual projects designed for the screen. An emphasis is placed on typography as it applies to a screen context, research-based problem solving and a “learning through making” approach to technical skill building. Historical and current interaction design precedents will be discussed.

LEARNING OUTCOMES

Students will be able to:

- apply skills in HTML and CSS, including modern design practices like flexbox and the box model, modern CSS selector practices, and W3C standards.
- Demonstrate familiarity with basic computation using Javascript, including handling different data types and simple data structures, storing and retrieving information, and processing incoming data from the web.
- apply skills in Javascript as it relates to website design, generating the DOM, targeting and modifying elements, animation, and interactivity.
- demonstrate familiarity working with different media types, web fonts, color spaces, FTP and HTTP, SEO, interfacing with APIs.
- demonstrate the ability for continued education, including possessing a basic vocabulary and the ability to ask the right questions to unfamiliar technical topics.

CLASS OVERVIEW

Class meets 15 times between August 27th and December 10th.

Students should expect about 10 weekly homework assignments throughout the term, each one assigned and to be due the following class.

Weeks 1–2: Computing fundamentals

In the first few weeks, students are given a broad understanding of fundamental computing principles from file storage and file types, compression, encoding, and parsing. This groundwork encourages students to be comfortable handling different types of digital media and provide a firm foundation to learn a programming language for the first time. Students will be equipped with tools like a code editor, a version control system, and gain a general intuition how computers succeed and fail at interpreting instructions.

Weeks 3–6: Markup language

Students will make applications using HTML and CSS and develop an understanding for representing a visual design in code. Students learn modern design practices like flexbox, good CSS stylesheet selector structure, W3C standards, and accessibility.

Week 7–11: Javascript

In this period students learn to augment their static websites by incorporating Javascript. These weeks serve as a comprehensive introduction to computation, including data types, memory, scope, arithmetic, control flow, functions, function arguments. Additionally, this period introduces Javascript as a tool to manipulate the DOM, W3C DOM level 1 methods like createElement and querySelectorAll.

Week 12–15: Interaction

In the final few weeks students are introduced to non-linear event-based programming, including user-input interaction and asynchronous retrieval of information from the web.

SCHEDULE IN DETAIL

August 27

Introduction to parsing, language tokens, regular expressions, markup languages, reverse engineer the rich-text file format.

Homework: none

September 3

Github and introduction to terminal, file types, character encoding, ASCII and Unicode, hex editors. Introduction to HTML, elements.

Homework: nested-structures in the real world

September 10

More HTML, element attributes, nested containers, linking between HTML files, images, narrative structures.

Homework: *HTML story*

September 17

Introduction to CSS, selectors, style, fonts, color, simple alignment.

Homework: *style the html story*

September 24

Box model, divs, advanced alignment, absolute and relative positioning, flexbox.

Homework: *full-screen painting with divs*

October 1

CSS animations, CSS pseudo-classes.

Homework: *Josef Albers animated*

October 8

Introduction to Javascript day 1: storing memory, recalling memory, simple variable types, the Javascript console, arithmetic.

Homework: *strange Javascript arithmetic*

October 15

Introduction to Javascript day 2: control flow, conditionals, loops.

Homework: *none*

October 22

Javascript and the DOM. W3C DOM level 1 methods, createElement, setAttribute, querySelector, querySelectorAll.

Homework: *random color palette*

October 29

Complex Javascript data types, arrays, objects.

Homework: *simple generative poetry*

November 5

Advanced control flow, functions. Interfacing with JSON and raw text, revisit file formats and best practices when creating data.

Homework: *Markov generated poetry*

November 12

User input, keyboard and mouse, asynchronous operations, event handlers, function arguments.

Homework: *TV*

November 19

Drawing with canvas and SVG. Using CSS and DOM level 1 with SVG.

Homework: *none*

November 26, Thanksgiving break, no class

December 3

HTML5 Fetch, capturing data from the web, build an API, processing and visualizing data.

Homework: personal homepage

December 10

Share homepage projects and wrap up term.

READINGS

A Brief Rant On The Future Of Interaction Design, Bret Victor
The Gears of My Childhood, Seymour Papert

WORKS CITED

New York Times 2018: The Year in Visual Stories and Graphics
Five Thirty Eight: The Atlas of Redistricting
The Largest Vocabulary In Hip Hop

MATERIALS, SOFTWARE

Every student is required to bring a laptop to class.

These are the free and cross-platform software we'll be using throughout the term, please download them:

- Sublime Text sublimetext.com
- Google Chrome google.com/chrome/

We will also be using Github <http://github.com>, please create an account.

GRADES

50% in-class participation

50% homework

Grades are based on class participation and homework. Class participation makes up half the grade, the other 50% is divided evenly across each homework assignment.

Attendance and participation in every class is important to success in this course. Each lesson builds upon the previous class.

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| A | Work of exceptional quality, which often goes beyond the stated goals of the course |
| A- | Work of very high quality |
| B+ | Work of high quality that indicates higher than average abilities |
| B | Very good work that satisfies the goals of the course |
| B- | Good work |
| C+ | Above-average work |
| C | Average work that indicates an understanding of the course material; passable * Satisfactory completion of a course is considered to be a grade of C or higher. |
| C- | Passing work but below good academic standing Below-average work that indicates a student does not fully understand the assignments; Probation level though passing for credit |
| F | Failure, no credit |

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.

Z

The grade of Z is issued by an instructor to a student 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.

I

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: 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.

RESOURCES

The university provides many resources to help students achieve academic and artistic excellence. These resources include:

- University Libraries: <http://library.newschool.edu>
- University Learning Center: <http://www.newschool.edu/learning-center>
- University Disabilities Service: www.newschool.edu/student-disability-services/

In keeping with the university’s policy of providing equal access for students with disabilities, any student with a disability who needs academic accommodations is welcome to meet with me privately. All conversations will be kept confidential. Students requesting any accommodations will also need to contact Student Disability Service (SDS). SDS will conduct an intake and, if appropriate, the Director will provide an academic accommodation notification letter for you to bring to me. At that point, I will review the letter with you and discuss these accommodations in relation to this course.

- Student Ombuds: <http://www.newschool.edu/intercultural-support/ombuds/>

The Student Ombuds office provides students assistance in resolving conflicts, disputes or complaints on an informal basis. This office is independent, neutral, and confidential.

UNIVERSITY, COLLEGE/SCHOOL, AND PROGRAM POLICIES

Academic Honesty and Integrity

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.

Students are responsible for understanding the University’s policy on academic honesty and integrity and must make use of proper citations of sources for writing papers, creating, presenting, and performing their work, taking examinations, and doing research. 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. The full text of the policy, including adjudication procedures, is found at <http://www.newschool.edu/policies/>

Resources regarding what plagiarism is and how to avoid it can be found on the Learning Center’s website:

<http://www.newschool.edu/university-learning-center/avoiding-plagiarism.pdf>

Intellectual Property Rights: <http://www.newschool.edu/provost/accreditation-policies/> *Grade Policies:* <http://www.newschool.edu/registrar/academic-policies/>

ATTENDANCE

“Absences may justify some grade reduction and a total of four absences mandate a reduction of one letter grade for the course. More than four absences mandate a failing grade for the course, unless there are extenuating circumstances, such as the following: an extended illness requiring hospitalization or visit to a physician (with documentation); a family emergency, e.g. serious illness (with written explanation); observance of a religious holiday.

The attendance and lateness policies are enforced as of the first day of classes for all registered students. If registered during the first week of the add/drop period, the student is responsible for any missed assignments and coursework. For significant lateness, the instructor may consider the tardiness as an absence for the day. Students failing a course due to attendance should consult with an academic advisor to discuss options. Divisional and/or departmental/program policies serve as minimal guidelines, but policies may contain additional elements determined by the faculty member.”

COURSE POLICIES

Responsibility

Students are responsible for all assignments, even if they are absent. Late papers, failure to complete the readings assigned for class discussion, and lack of preparedness for in-class discussions and presentations will jeopardize your successful completion of this course.

Participation

Class participation is an essential part of class and includes: keeping up with reading, contributing meaningfully to class discussions, active participation in group work, and coming to class regularly and on time.

Canvas

Use of Canvas 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.

STUDENT COURSE RATINGS

During the last two weeks of the semester, students are asked to provide feedback for each of their courses through an online survey. They cannot view grades until providing feedback or officially declining to do so. Course evaluations are a vital space where students can speak about the learning experience. It is an

important process which provides valuable data about the successful delivery and support of a course or topic to both the faculty and administrators. Instructors rely on course rating surveys for feedback on the course and teaching methods, so they can understand what aspects of the class are most successful in teaching students, and what aspects might be improved or changed in future. Without this information, it can be difficult for an instructor to reflect upon and improve teaching methods and course design. In addition, program/department chairs and other administrators review course surveys. Instructions are available online at <http://www.newschool.edu/provost/course-evaluations-student-instructions.pdf>.