SCHOOL OF ARCHITECTURE

LAR7415: SCRIPTING CIVIC ENGAGEMENT

Web Technologies for Designers

COURSE INFO—

LAR 7415
Scripting Civic Engagement:
Web Technologies for Designers
Fall 2018
3 credit hour elective

INSTRUCTOR—

Andrea Hansen Phillips
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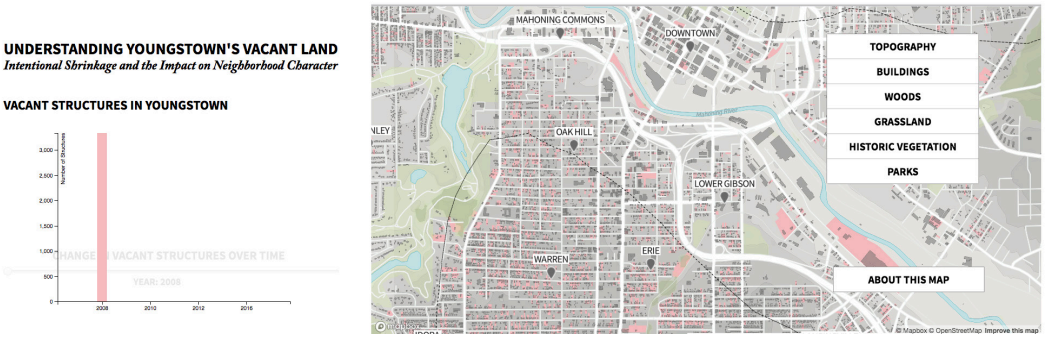
Office hours by appointment

MEETING TIME—

Thursdays, 1:00 -3:30 pm
CAM 305 (lectures, 1-2:00)
CAM425 (workshops, 2-3:30)



Understanding Youngstown's Vacant Land (Liz Camuti, Scripting Civic Engagement Fall 2017)

INTRODUCTION—

Within the disciplines of landscape architecture, architecture, and planning, and in both academia and in practice, scripting and coding are increasingly prevalent as tools for analysis, design, and communication. While some forms of scripting and parametric design have worked their way into the mainstream for both analysis and design purposes, most of those who design the public realm do not actually code. However, those who do have used computer programming for a range of innovative applications that have the potential to expand the scope and reach of these professions quite dramatically beyond site design into the realm of community engagement and participation tools, web-based site analysis and mapping platforms, mobile and web apps, video games, and more.

These technologies become even more important when one considers the current cultural, environmental, and political context. Web tools and technologies can be extremely potent drivers of activism and change, and the use of these tools can help us become advocates for the role of spatial designers in solving BIG problems. This seminar views the current social, cultural, and environmental context as the catalyst for the proactive use of technology to reach a larger audience and use our profession's spatial analysis and design skills towards the greater good. Throughout the semester, we will consider many different case studies covering issues ranging from gentrification, racism and gun violence to natural disasters, climate change and sea level rise. These case studies try to tackle big problems in many different ways—sometimes neutrally, sometimes with a strong stance but always through the innovative use of technology. In addition, students will be tasked with researching and presenting additional precedents that address issues meaningful to their own research or design agendas.

Being able to communicate through a variety of media is of critical importance to designers, and as new forms of media become more mainstream, designers who gain fluency in these new media will have a leg up. Fluency in code—the language of the internet—allows designers to be able to communicate directly with a much bigger and broader audience, and to communicate in real time. This presents a difficult yet worthy challenge: being a good programmer and web designer forces you to understand complex and technical programming languages while simultaneously being able to write clear and concise human language (website copy) that many difference audiences can understand.

FORMAT—

The aim of this seminar is to introduce the fundamentals of coding and web-based technologies which can enable designers to promote civic engagement through the analysis and activation of public space. The course is intended to be interactive and interdisciplinary, combining hands-on tutorials covering tools such as Mapbox, d3, SVG, and HTML/CSS/JS and techniques such as storyboarding and user experience design, combined with contemporary case studies in placemaking, activism, and civic tech. **No prior coding knowledge required.**

This course is a three-credit elective which meets from 1:00-3:30 pm on Thursday afternoons. Classes are intended to be highly interactive, and will typically begin with a lecture, case study presentation, and/or reading discussion in Campbell 305 from 1-2pm, followed by a workshop from 2-3:30pm in Campbell 425. Additionally, some class meetings will be entirely devoted to collaborative hackathons or project presentations (digital pinups) intended to kickstart or provide feedback on student projects. Finally, lectures from guests will be interspersed throughout the semester, to provide opportunities for practitioners and academics in affiliated fields such as computer science, geography, and cartography to present their work and review yours.

The course will be loosely divided into four topical modules, each considering a different set of web technologies of interest to spatial designers. Each module will include lectures, tutorials, and an assignment through which students will apply the technologies covered in class to a project or topic of personal importance to them:

1. Design Thinking: UX and Prototyping
2. The Bones of the Web: HTML/CSS/JavaScript
3. Critical Cartographies: Web Mapping and APIs
4. Data Stories: Beyond the Infographic

COMPUTING REQUIREMENTS—

While this course is technically intensive, computing requirements are minimal. Students must have a Mac (preferred) or Windows computer with the following software installed, all of which are free or open source.

- Text editor (tutorials will be given using Sublime Text 3, https://www.sublimetext.com/)
- Adobe Creative Suite (**Make sure you have installed Adobe xD**)
- Mapbox Studio – (Web-only, https://www.mapbox.com/mapbox-studio/)
- Javascript libraries (instructions for downloading or linking via CDN will be given in class, there is no need to install anything)
    - Leaflet.js – http://leafletjs.com/
    - Mapbox GL JS – https://www.mapbox.com/mapbox-gl-js/api/
    - d3.js – https://d3js.org/
    - Bootstrap – https://getbootstrap.com/

TRAINING AND TUTORIALS—

It is assumed that students have little or no prior experience in coding or web development, therefore care will be taken to move slowly in order to ensure students understand the fundamentals of each tool listed above. However, while in-class tutorials will strive to provide a strong foundation in web development, it is impossible to cover every aspect of the fundamentals of coding. Therefore, students will be assigned a series of take-home tutorials to complement in-class workshops, and to allow us to spend classtime focusing on specific techniques most relevant to architecture, landscape, and planning. These take-home tutorials will make use of many excellent online resources that are generally available for free, though some take-home tutorials will have optional additional resources that require payment. Specific tutorial series will be provided in class, however the following resources are recommended as excellent resources for elementary and advanced coding tutorials:

- Lynda.com – https://www.lynda.com/
- Code School – https://www.codeschool.com/
- Treehouse – https://teamtreehouse.com/
- Codecademy – https://www.codecademy.com/
- Udemy – https://www.udemy.com/
- Stack Overflow – https://stackoverflow.com/ (not a resource for tutorials, but rather the web's premier resource for code troubleshooting. If you have a question or get stuck, Google it and chances are you'll find your answer on Stack Overflow.)

* As an aside, it has been a few years (which is a long time in internet time) since I learned how to code, and while I will make every effort to provide you with up-to-date resources, there are likely to be other resources out there which you may prefer over the ones I suggest. You are welcome to use these alternative resources, I just ask that you let me know what they are so I can share with the group.

READINGS/RESOURCES—

Specific readings will be assigned in class to complement each week's lecture and/or workshop. In addition, the following books will help provide context and grounding:

- Goldstein, Brett and Dyson, Lauren. *Beyond Transparency: Open Data and the Future of Civic Innovation.* Code for America Press, 2013.
- Goldsmith, Stephen and Crawford, Susan. *The Responsive City: Engaging Communities Through Data-Smart Governance.* Jossey-Bass, 2014.
- Gordon, Eric. *Civic Media: Technology, Design, Practice.* MIT Press, 2016.
- Ratti, Carlo and Claudel, Matthew. *The City of Tomorrow: Sensors, Networks, Hackers and the Future of Urban Life.* Yale Unversity Press, 2016.
- Townsend, Anthony. *Smart Cities: Big Data, Civic Hackers, and the Quest for a New Utopia.* W.W. Norton & Company, 2014.

ASSIGNMENTS AND GRADING—

The following is a breakdown of the types of assignments in this course and their contribution to the semester grade.

1. **Case Studies**: students are responsible for researching and presenting one detailed case study over the course of the semester (students will have the choice of either a web mapping or data visualization case study of their choosing). The case study presentations should take the form of a PDF presentation, no more than 5 minutes, including photos, references, and text description, as well as web/mobile demos where relevant. Please refer to the assignment handout and template for case study PDFs, which will be provided.

    - Case Study Presentation 5%

2. **Assignments**: to accompany in-class workshops, students will be give a series of cumulative smaller assignments which together will help to develop a comprehensive semester project. The assignments are as follows:

    - Assignment 1: Ideation Exercise 10%
    - Assignment 2: Precedent UX Study 10%
    - Assignment 3: UX Prototype 15%
    - Assignment 4: Web Map 15%

3. **Semester Project**: for the final semester project, each student will create a fully functioning website or mobile application involving interactive maps and data visualization to address an issue relevant to the student's research and design agenda. This project will build off of the four previous assignments rather than serving as a completely new assignment.

    - Semester Project 30%

4. **Attendance and Participation**: semester grades are a reflection on the student's performance as a whole, and reflect attendance, punctuality, participation, cooperation and collaboration, performance on assignments, and overall intellectual curiosity and engagement. Final grades will also be a reflection of growth and progress throughout the semester.

    - Attendance and Participation 15%

* Note that evaluation of all assignments will focus primarily on the student's ability to apply technologies and techniques to larger social and environmental issues. In other words, students will not be graded on technical competency, but rather on inventiveness, approach, and creativity.

SCHEDULE—

08.30 Course Introduction + Design Thinking Workshop

- Hansen Phillips, Andrea, "The New Maker Culture: Landscape architects coding tools for design and participation," *Codify: Computation and Landscape Architecture* ed. Bradley Cantrell and Adam Mekies (London: Routledge, 2018).
- Chris Bentley, "Follow the Script: Computation Reshapes Landscapes—And Thinking," *Landscape Architecture Magazine*, July 2016, 70.

09.06 Design Thinking: UX and Prototyping 1 (Adobe xD)

09.13 The Bones of the Web: HTML/CSS/JavaScript 1: Intro

09.20 The Bones of the Web: HTML/CSS/JavaScript 2: Hackathon

09.27 The Bones of the Web: HTML/CSS/JavaScript 3: jQuery

10/4* Critical Cartographies: Web Mapping and APIs 1: Mapbox Studio

10.11 Critical Cartographies: Web Mapping and APIs 2: Leaflet + Mapbox GL JS

10.18 Critical Cartographies: Web Mapping and APIs 2: Leaflet + Mapbox GL JS

10.25 Critical Cartographies: Web Mapping and APIs 3: Leaflet + Mapbox GL JS

11.01 Data Stories: Beyond the Infographic 1: Intro to Data Visualization

11.08 Data Stories: Beyond the Infographic 2: d3

11.15 Data Stories: Beyond the Infographic 3: Other tools for DataViz

11.22 NO CLASS (Thanksgiving)

11.29 Hackathon/Desk crits

12.06 Final project presentations

* Class during the week of 10/4 will need to be rescheduled as I will be out of town for a previous commitment that Thursday.

ATTENDANCE—

Attendance and prompt arrival at 1:00pm for all class meetings is mandatory. Students who are excessively late to class will be penalized accordingly.

Absence for whatever reason, including participation on a site visit or other school-related activity, does not relieve a student from the responsibility of any instruction or work covered in class. **If you must be absent for any reason, please notify the course instructor in advance and in writing.** It is the responsibility of the student to inform the course instructor of conflicts caused by religious holidays. Students must request this accommodation during the first week of classes or whenever the date(s) of final deadlines are announced.

Students are permitted one unexcused absence (absence without prior written notification and approval). Having 2 or more unexcused absence will result in significant penalties to an individual's semester grade.

DEADLINES + EXTENSIONS—

All deadlines are final. Please read exercise briefs carefully to ensure that you are aware of the requirements for a given deadline. Printing/plotting difficulties are not an excuse for missing a deadline.

Requests for extensions due to medical reasons should be submitted in writing to your course instructor. The deadline extension request must include an official note from a physician and a schedule specifying a proposed completion date of the course work.

Requests for extensions due to other circumstances should also be submitted in writing to your course instructor. The deadline extension request must include a note explaining the reason for the extension request and a schedule specifying the proposed completion date of the course work. The utmost discretion protecting your privacy will be assured. The final decision for any extension request will be made by the course instructor.

GRADING SYSTEM—

Grades should reflect professional standards of ethics, timeliness, group cooperation and participation, while also allowing room for intellectual and material experimentation by students. The typical grade for a course is a B. Exceptional work can be recognized with an A or A–, but this work must exceed the expectations of the course and not merely meet those expectations. Brief descriptions for each letter grade are offered below.

A : The grade of A is given very rarely, and used to indicate that a student has exceeded the expectations of the course to a very unusual degree. It indicates that a student has exceeded the expectations of the course in terms of comprehension, while also maintaining a high professional standard for ethical behavior, participation in studio events, completeness, and timeliness. The student's demonstrated comprehension of spatial, representational, and process issues must be truly exceptional.

A– : The grade of A– is also given rarely. It indicates that a student has exceeded the expectations of the course in terms of comprehension, while also maintaining a high professional standard for ethical behavior, participation in studio events, completeness, and timeliness.

B+ : The grade of B+ is given to students who have completed their work in a professional and timely manner, and have exceeded the expectations of the course in some specific way that deserves special recognition, but have not exceeded expectations in all areas.

B : The grade of B is given to students who have completed their work in a professional manner, including demonstrating an ability to pursue questions and issues independently of their design explorations.

B– : The grade of B– is given to students whose work or performance has been slightly less than fully professional in terms of completeness, timeliness, and participation but shows promise in some other way.

C+ : Grades less than B– are considered failing grades in this graduate program; and in the sense that students must repeat these courses until they receive a B– or higher. Students whose performance is incomplete or repeatedly late, or who are unprofessional in ethical terms, unwilling to cooperate with peers in group settings, or whose work shows serious gaps in comprehension will receive grades lower than B–.

F : Students who clearly do not complete a course or whose work does not meet professional standards will receive a failing grade.

HONOR POLICY—

We trust every student in this course to fully comply with all of the provisions of the UVa Honor System. By enrolling in this course, you have agreed to abide by and uphold the Honor System of the University of Virginia, as well as the following policies specific to this course:

- All graded assignments must be pledged.
- You may not access any notes, study outlines, problem sets, old exams, answer keys, or collaborate with other students without the course instructor's explicit permission.
- When given permission to collaborate with others, do not copy answers from another student.
- Always cite any resources or individuals you consult to complete an assignment.
- All suspected violations will be forwarded to the Honor Committee, and at the course instructor's discretion, you may receive an immediate zero/fail on the assignment, regardless of any action taken by the Honor Committee.

Please let the course instructor know if you have any questions regarding the course honor policy. If you believe you may have committed an honor offense, you may wish to file a Conscientious Retraction by calling the Honor Offices at (434) 924 – 7602. For your retraction to be considered valid, it must, among other things, be filed with the Honor Committee before you are aware that the act in question has come under suspicion by anyone. More information can be found at www.virginia.edu/honor.