UNIVERSITY of VIRGINIA SCHOOL OF ARCHITECTURE

LAR5500: SCRIPTING CIVIC ENGAGEMENT

Web Technologies for Designers

COURSE INFO—

LAR 5500
Scripting Civic Engagement:
Web Technologies for Designers
Fall 2017
3 credit hour elective

INSTRUCTOR—

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Office hours by appointment

MEETING TIME—

Thursdays, 9:00 -11:30 am
CAM 425

Within the discipline of landscape architecture, 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 landscape architects 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 landscape architecture 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 recent cultural events such as the racially-charged protests and counter-protests in Charlottesville in August 2017. This tragedy is the latest to join a range of critical issues such as climate change, gentrification, vacancy and blight, deurbanization, and more which are massively important to landscape architects, and for which landscape architects have just begun the process of advocating on a larger stage. 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. And with 3.7 billion users and counting, there is no better platform on which to advocate for our cities, territories, and environment than the Internet. Now is the time for landscape architects to master the language of the Internet: code.

This course introduces the fundamentals of coding in order to open up the use of 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, UX, SVG storytelling, and prototyping, with contemporary case studies in placemaking, activism, and civic tech. **No prior coding knowledge is required.**

FORMAT—

This course is a three-credit elective which meets from 9:00-11:30 am on Thursday mornings. Classes are intended to be highly interactive, with a combination of lectures and tutorials presented by the course instructor, case studies presented by students, and collaborative reading discussions, pinups, and project demos. Additionally, some class meetings will be entirely devoted to collaborative hackathons, or intensive group work sessions intended to kickstart student projects. Finally, lectures from guests will be interspersed throughout, to provide opportunities for practitioners and academics in affiliated fields such as computer science, geography, and cartography to present their work.

The course will be loosely divided into three topical modules, each considering a different set of web technologies of interest to landscape architects. 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. Critical Cartographies: Web Mapping and APIs

2. Data Visualization and Digital Storytelling: Charts, Graphs, and Data Stories

3. Apps and Prototyping: User Experience Across Physical and Digital Sites

COMPUTING REQUIREMENTS—

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

- Text editor (Sublime Text 3 **strongly** recommended – https://www.sublimetext.com/)
- Mapbox Studio – https://www.mapbox.com/mapbox-studio/
- Leaflet.js – http://leafletjs.com/
- d3.js – https://d3js.org/
- Processing – https://processing.org/
- Plus additional software programs which should be installed later since they may require use on a limited free-trial basis

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 to make sure students understand the fundamentals of each tool listed above. However, while in-class tutorials will strive to provide a strong foundation, it is impossible to cover every aspect of these tools during classtime. Therefore, students are expected to make use of the online tutorials provided in advance of each module. Specific tutorials will be listed on each project brief, 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/
- 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.)

ASSIGNMENTS AND CASE STUDIES—

This course will include three different types of assignments:

1. **Case Studies**: students are responsible for researching and presenting three (3) case studies over the course of the semester, one for each of the three topical modules. Students will sign up to present case studies of their own choosing on the first day of class. 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 demos where relevant. Please refer to the provided template for case study PDFs.

2. **Module Assignments**: each of the three modules has a corresponding assignment through which students will apply the technologies covered in class to a project or topic of personal importance to them. Project briefs for each module assignment will be passed out at the beginning of each module.

3. **Final Project**: for the final semester project, students may work individually or in pairs to use the technologies covered in class to create a comprehensive website or mobile application addressing a topic of importance as to both the student(s) and the field of landscape architecture as a whole. The final project brief will be passed out in class on November 9th.

Evaluation of these 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—

08.25 Course Introduction

Readings:
- 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.

08.31 Critical Cartographies I: Introduction to Mapbox Studio

09.07 Critical Cartographies II: Leaflet.js

09.14 Critical Cartographies III: Introduction to APIs

09.21 Critical Cartographies III: Google Fusion Tables; Carto

09.28 Data Visualization and Digital Storytelling I: Intro to d3

10.05 Data Visualization and Digital Storytelling II: More d3

10.12 Data Visualization and Digital Storytelling III: SVG storytelling

10.19 Hackathon: Apps for Landscape Architects

10.26 Apps and Prototyping I: Introduction to UX (User Experience) Design

11.02 Apps and Prototyping II: Prototyping Tools

11.09 Hackathon / Introduce Final Assignment

11.16 Final project in-progress presentations/desk crits

11.23 NO CLASS (Thanksgiving)

11.30 Final project presentations

ATTENDANCE—

Attendance and prompt arrival at 9:00am 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—

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. The breakdown of semester grades is as follows:

- Case Studies 5%
- Assignment 1: Critical Cartography 15%
- Assignment 2: Data Visualization 15%
- Assignment 3: Mobile App 15%
- Final Assignment 30%
- Attendance and Participation 20%

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.