11.320 Digital City Design Workshop – DRAFT

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Units
12 (3-0-9)

Teaching Team
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Course Description
The Digital Revolution is changing the way we live today as radically as the Industrial Revolution did almost two centuries ago. As urbanization accelerates across the world, digital media and information technologies hold huge potential for understanding, designing, and managing cities. Over the last few years, the Senseable City Lab has aimed to anticipate the needs and opportunities that now exist in our cities as they incorporate these new technologies into the built environment, as research insights and new design solutions.

This seminar looks at issues faced in two sites that are made available to the class through Senseable City Lab and MIT China Future City Lab partnerships: Paris and Shenzhen. Students will conduct and present background research, identify relevant questions, develop project ideas, and evolve them to a detailed set of digital technology and design scenarios.

In order to capture the multi-disciplinary nature of such projects, students are challenged to draw on diverse fields for their proposals, such as city planning, architecture, engineering, computer science, and social science. Projects developed in the seminar will be personally evaluated and critiqued throughout the semester. The concepts discussed in the seminar will be evaluated and critiqued throughout the semester by fellow students, stakeholders and guest experts.

Workshop structure
The workshop includes three modules (please see workshop schedule for further information):

Module I // Background and Technology Research
The beginning of the course is intended to familiarize students with research by the Senseable City Lab and the emerging field of digital urban systems. It is followed by background study and preparation for travel to the sites. Lectures will focus on covering the field of urban design and
planning in the context of pervasive technologies. Readings and in-class discussions will tie research and precedents in the field with the challenges on-site.

Module II // Site Visit and Project Proposal Development

Students on each team will visit the sites, where they will meet the local partners and present their preliminary project ideas. This will be a time for data collection, sharing ideas, and reality testing of the concept on-site. During and after the trip, we will revise project briefs and proposals. Students will continue to develop concepts iteratively, through feedback from instructions and peers, and from representatives of the sites. Students will present project work at a mid-term review with guest critics. Additional lectures will focus on state-of-the-art technologies and further examples from the field.

Module III // Project Development

Following the mid-term presentations, we switch into production mode. Participants further develop and implement ideas. Throughout this process, feedback on projects and technical supervision is provided by Lab members as well as outside collaborators. At the end of the semester, participants present their projects at MIT to representatives from our project partners.

Deliverables

During the workshop students are required to hand in the following materials:

- Interim assignments for each session of Module I
- A project proposal/brief formatted according to given specifications
- A fieldwork plan for data collection and design investigations on site
- Mid-term project presentation--Design scenario or Prototype/demo + documentation
- Final project presentation--in publication format (to be provided)

A digital copy of all assignments should also be uploaded to the course Stellar site.

Grading

Attendance and Class Participation 25%
Interim Assignments 25%
Midterm Presentation 20%
Final Presentation 30%

Final grades are based on a weighted average for the term.

Projects will be graded on presentation quality, innovation, potential feasibility, and appropriateness to the site and its brief.

Team work

The workshop projects may be pursued individually or in teams; we strongly encourage individual projects to expand the range of ideas that result from the workshop. For team projects, we will ask each team member to do a self-assessment of their own and others’ contribution to the work.
Individual Weekly Assignments

During the first half of the course, students will be assigned brief assignments weekly to develop and document their ideas and design process. These include site research before and after travel, fieldwork plans, and the design brief that will guide individual contributions to the final project. Students will also be assigned one short group presentation on a set of readings that frame the theoretical approach of the class. Students will also work together to create an online catalog of sensing technologies that will serve as a resource for the class.

Attendance

We expect students to attend every class session, since questions and feedback from each student will contribute to the educational experience for every student. Students should inform the instructors beforehand if they cannot attend a session. Beyond class participation, each student is required to schedule at least one meeting with an instructor during each of the modules of the class to discuss progress on assignments and receive personal feedback.

Academic Conduct

Plagiarism and cheating are both academic offensives. If you should turn in an assignment you did not write yourself or previously turned in for another class, it may result in a failing grade for the workshop, and possibly suspension. Anyone caught cheating or plagiarizing will be reported to the Provost in line with recognized university procedures.

Travel Policy

Our collaborators in these cities are supporting this workshop; the resources of a community are being devoted to this course. It goes without saying that our ambition is to provide great ideas to these communities. As such, we will rely on the standard practice of requiring student outcomes from the course. Should a student wish to drop the course after travel has been taken, that student will be responsible for reimbursing the costs related to their travel before s/he may be allowed to drop the course.

Workshop Schedule

Module I – Background and Project Proposal

1  02.09  Introduction. Sensing and Actuation.  
     Syllabus and Admissions Criteria

2  02.16  What does it mean to live in a digital paradigm?  
     Background and Goals for Sites. Developing a Brief.  
     _Assignment 01 due: Digital–Physical Interfaces_

3  02.23  Space, Interactions, and Location.  
     _Assignment 02 due: Analyzing the topic_
4  03.02  Qualitative Analysis (in a Day).
Trip Preparation + Reviewing the Brief.

Assignment 03 due: Group Brief
Assignment 04 due: Revise a past project

Module II – Site Visit and Project Proposal Development

5  03.09  Tentative travel week: Fieldwork Debrief, Observations and Changes.

Assignment 05 due: Personal research plan (before departure)
Assignment 06 due: Catalog of sensors (before departure)

6  03.16  Data visualization.

Assignment 07 due: Creating/curating your initial ideas

7  03.23  Midterm Presentations.

Module III – Project Development

8  03.30  Spring Break

9  04.06  Personal Interactions and Paper Prototyping.

Assignment 08 due: Introduction, project description

10  04.13  Urban Interactions and Analyzing Data. Student Reviews.

Assignment 09 due: Personal interactions

11  04.20  Storyboard Presentations. Student Reviews, focused on Technical Aspects.

Assignment 10 due: Urban interactions

12  04.27  Student Reviews.

Assignment 11 due: Technology description

13  05.04  Mockup Reviews. Student Reviews.

Assignment 12 due: Book chapter mockup

14  05.11  Final Review.