

defining smart cities: visions of urbanism for the 21st-century

Architects and engineers of smart cities will need to draw on both informatics and urbanism simultaneously... To be effective at getting their designs built, they will need to deeply understand smart systems and their risks and benefits, and be able to explain it all to non-expert stakeholders.

— Anthony Townsend (2013), *Smart Cities*

Sustainability is not only about technological adaptation; it's also about enhancing social fabric, the patient extension and augmentation of our mutual connections, and our ability to function as a society. It's about weaving change with what people know instead of venerating it as a disruptive, violent force.

— Damon Rich (2015) in *Designed for the Future*

Classroom & Time

Wednesday 4:30-6PM
Shriram 104

Teaching Team

Deland Chan
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Kincho Law
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Office Hours

Building 120, Room 160
M 9:30am – 11:30am

Y2E2, Room 277A
Tu/Th 4:30pm – 6:00pm

Course Description

In a rapidly urbanizing world, "the city" plays an outsized role in human development and ecological sustainability. But what does it mean for a city to be "smart"—to be "sustainable", "resilient", or "livable"? Municipalities around the world are deploying innovative technologies and experimenting with diverse possibilities as we speed toward our collective urban future(s).

At the same time, an ongoing debate is shifting our multidimensional understanding of cities: agglomerations of human beings, engines of economic opportunity, hallmarks of human civilization, networks of engineering and infrastructure, burgeoning civic communities—and much more.

This seminar, led by an interdisciplinary teaching team from Urban Studies and Civil & Environmental Engineering, will explore different conceptions of cities and delve into current debates about urbanism.

The goal of this seminar is to provoke vigorous discussion and to foster an understanding of cities that is at once humanistic, scientific, and ecologically sound. Each week, we will feature guest experts in topics such as big data, human-centered design, new urbanism, natural capital, infrastructure engineering, art and design, and more. We will discover how urban spaces can be shaped—for better or worse—by the complex interaction of human societies, cutting-edge technologies, and the natural environment.

Recommended Reading

Chan, D. (2016). *Defining Smart Cities Seminar: A Guiding Framework*.

Goldsmith, S., & Crawford, S. (2014). *The Responsive City: Engaging Communities Through Data-Smart Governance*. John Wiley & Sons.

Mele, N. (2013). *The end of big: How the Internet Makes David the New Goliath*. Macmillan.

Picon, A. (2015). *Smart Cities: A Spatialised Intelligence*. John Wiley & Sons.

Schwab, K. (2017). *The Fourth Industrial Revolution*. Crown Publishing Group.

Townsend, A. M. (2013). *Smart cities: Big data, civic hackers, and the quest for a new utopia*. WW Norton & Company.

Grading & Course Requirements

This course is offered for 1 unit credit OR 2 units for a letter grade. It is open to undergraduate and graduate students.

To receive 1-unit / Credit:

1. Attend all class sessions.
2. Speak up during class discussions.
3. Submit a written assignment: During the quarter, you are responsible for writing one 500-750 word reflection that responds to the guest speaker's presentation of a week of your choosing. You must include an analysis of the topic (not simply summarizing the talk), including questions you may have or future areas of research that you would like to be involved with. CEE225 students should seek out 1-2 additional readings to cite in the written reflection. **Deadline: December 11.**

Make-up assignments: If you miss a class, you should watch the recorded lecture and submit a 500-word reflection for each session that you have missed.

To receive 2 units / Letter Grade:

1. Complete course requirements for 1-unit listed above; AND
2. Design and complete an independent research project throughout the quarter, such as providing a detailed case study of a smart city; conducting informational interviews with a smart city practitioner or researcher; or producing a literature review exploring aspects of the smart city.
3. Prepare a midterm paper to describe your research topic and proposal. **Deadline: October 18.**
4. Write a 2,500 word paper about your topic (8-10 pages, double-spaced). For CEE225 students: 4,000 word paper (15 pages, double-spaced). **Deadline: December 11.**
5. Give a brief presentation about your research project to the class. **Deadline: December 6.**

Course Schedule

September 27 What is a Smart City?	Deland Chan, Urban Studies, Stanford University Kincho Law, Civil and Environmental Engineering, Stanford University
October 4 Digital Cities Initiative	Michael Steep, Digital Cities Program at the Stanford Global Projects Center
October 11 Community Resilience in the Age of Disasters and Data	Ahmad Wani, One Concern
October 18 Smart Cities & Advocacy	Samuel Sinyangwe, Campaign Zero Mapping Police Violence Nani Friedman and Flora Wang, Stanford University For students taking the course for 2 units: Research Proposal Due
October 25 Improving Urban Quality of Life: the Startup Perspective	Noah Budnick, Public Policy and Government Affairs, Zendrive
November 1 Data: The Streets are Paved in Gold	Rich Lechner, The INSIGHT Group
November 8 Living in the Mobility Transition	Jane Yeonjae Lee, Asia-Pacific Research Center at Stanford University
November 15 Visions of an Empathetic City: Architecture & Planning	Preeti Talwai, Google Julia Grinkrug, Designing Justice + Designing Spaces
<i>November 22 Thanksgiving Break</i>	<i>No Class</i>
November 29 Technology, Aging, and Longevity	Diana Miller, Department of Aging and Social Services, Santa Clara County
December 6 Your Involvement in the Smart City Future	All Students: Attend the Human Cities Expo For students taking the course for 2 units: Presentation or Research Poster Due