Fall 2018—Smart City Syllabus

PA 388K What is a Smart City/ CRP386 Smart City
Instructor: Prof. Sherri Greenberg/Prof. Junfeng Jiao

(Title: Smart City Component; Source: IoT Agenda - TechTarget)

General Information

<table>
<thead>
<tr>
<th>Title</th>
<th>PA 388K: What is a Smart City?</th>
<th>CRP386: Smart City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique Number</td>
<td>60830</td>
<td>01348</td>
</tr>
<tr>
<td>Faculty</td>
<td>Sherri Greenberg</td>
<td>Junfeng Jiao</td>
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<tr>
<td>Credit</td>
<td>3.0</td>
<td>3.0</td>
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<tr>
<td>Class Time</td>
<td>Thursday, 9:00-12:00</td>
<td>Thursday, 9:00-12:00</td>
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<tr>
<td>Location</td>
<td>LBJ School SRH</td>
<td>LBJ School SRH</td>
</tr>
<tr>
<td>Office</td>
<td>LBJ 3.252</td>
<td>SUT 3.120</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:srgreenberg@austin.utexas.edu">srgreenberg@austin.utexas.edu</a></td>
<td><a href="mailto:jjiao@austin.utexas.edu">jjiao@austin.utexas.edu</a></td>
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</tbody>
</table>

Introduction

With the development of computer technology, wearable devices, Internet of Things (IoT) etc, understanding smart community concepts and being able to analyze smart community/city cases is important for urban planners, managers and policymakers. What is a smart city? What is a smart community? Being smart is not just about technology; a city and a smart community enables better service delivery and quality of life for all of its residents. This seminar class will provide hands on experience for interested students in public policy, planning, administration, and others.
This seminar class first will introduce the smart community concept and analyze different smart community cases in the US and globally. Each student will write one short memo on a smart city concept, and each student will write one longer memo/paper analyzing a specific city. Then, students will be split into teams. Each team will do a real world smart community project with an Austin entity. Data will be provided by the entity and/or the instructors. The overall goals of this seminar class are:

- To obtain basic knowledge of smart communities
- To learn how to analyze and compare existing smart community projects.
- To learn how to analyze smart community data using GIS and other related software.

This seminar course is organized into two parts: 1) introduction to smart communities; 2) real world smart community team projects. During the first half of the semester, the course will provide a detailed introduction to smart communities and the current status and development. The instructors will invite planners, engineers, business leaders, government officials, and others, as guest speakers for specific topics. Students will compare and contrast different smart community cases across the world. In the second phase, students will learn how to analyze smart community data in team projects with Austin entities.

COURSE CONTENT

General

Students must read the assignments in advance of class and come to class prepared to discuss them. Also, we will have guest speakers in several of our classes, and students must come to class prepared to engage with them. Class participation, oral presentations, writing and team work will be important in this class.

One individual short paper and one individual longer paper in the form of memoranda will be due during the semester. Students will be able to choose their own course related topics with the approval of the professors. Also, each student will present the second memo/paper to the class. There will not be a midterm or a final; instead, students will participate in a team research project that will have a written report and a class presentation component.

Your written assignments will be evaluated on content and writing style. Both what you say and how you say it matter. There is a writing instructor at the LBJ School who can assist you. Also, I would suggest reviewing a copy of The Elements of Style by Strunk and White, and a grammar source, such as Minimum Essentials of English by Barron’s. I will have additional information on writing and presentation in Canvas.

Introduction to Smart Community

During the first half of the semester, the course will include the following important smart community concepts:

- Concept of Smart Community
- Smart Transportation
- Smart Building and Home Device
- Smart Health
- Smart Government
• Smart Energy and Water
• Cybersecurity, Safety, and Privacy
• Internet of Things, Blockchain, Artificial Intelligence, Alternate Reality, Virtual Reality

Students will submit their two individual memoranda during the first half of the semester.

**Smart Community Analysis—Final Project**

After students develop some basic knowledge about smart communities, the course will become more of a workshop environment. The instructors will work with students to apply their smart community knowledge in real projects with Austin entities, such as Texans for the Arts, and the City of Austin. Students will form research teams and data will be provided by the Austin entities and the instructors. This could include open data, financial data, GIS etc., in the following areas:

• Transportation
• Health
• Neighborhoods
• Public Safety
• Finance
• Arts
• Others

At the end of the semester, each team will turn in a final report and make a final presentation to related stakeholders (planners, city officials, business leaders, engineers...).

**GRADING**

Memo 1: 15%
Memo 2: 25% (including class presentation)
Class Participation: 15%
Group Research Project: 40% (including written report & class presentation)

**ASSIGNMENTS – DUE DATES**

All assignments are due as both hard copy and pdf at the beginning of the assigned class. Pdf should be upload to the canvas website.

Our submission rule is very simple: NO LATE SUBMISSION

- September 6: Memo 1 Topic Due
- September 27: Memo 1 Due
- October 4: Memo 2 Topic Due
- October 25: Memo 2 Due and Five Minutes Class Presentation
- November 1: Final Project Topic Due
- December 6: Team Research Project Reports Due & Team Research Project Presentations
CLASS PARTICIPATION

You must let instructors know in advance if you are going to be absent from a class.

Class participation is neither about the person who flaps his or her gums the most, nor about being an introvert or an extrovert. In this class, participation is about quality engagement. Students will be expected to lead some class discussions. To participate you must read and contemplate prior to class. Good class participation involves the following: active listening, consideration of your peers, making comments, asking questions, taking risks and giving opinions. Our class will be a safe environment, and I will be assessing whether you can back up your comments by applying the readings and course concepts.

All cell phones, PDA's, and other hand held devices must be turned off during class. Laptops/tablets will be allowed in class only for the purpose of taking notes or consulting course readings, unless I advise you otherwise. Surfing the web, texting or sending emails during class is prohibited; it is a breach of professionalism and will result in a loss of laptop/tablet privileges.

ADDITIONAL INFORMATION

Students with Disabilities:

Qualified students with disabilities may request appropriate accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities at http://www.utexas.edu/diversity/ddce/ssd/ or 471-6259.

Academic Dishonesty/Plagiarism:

Students are expected to respect the LBJ School’s standards regarding academic dishonesty. You owe it to yourself, your fellow students, and the institution to maintain the highest standards of integrity and ethical behavior. A discussion of academic integrity, including definitions of plagiarism and unauthorized collaboration, as well as helpful information on citations, note taking, and paraphrasing, can be found at the Office of the Dean of Students web page. (http://deanofstudents.utexas.edu/conduct/) and the Office of Graduate Studies (http://www.utexas.edu/ogs/ethics/transcripts/academic.html). The University has also established disciplinary procedures and penalty guidelines for academic dishonesty, especially Sec. 11.504 in Appendix C of the Institutional Rules on Student Services and Activities section in UT's General Information Catalog.

Emergency Evacuation Routes:

The following recommendations regarding emergency evacuation from the Office of Campus Safety and Security, 512-471-5767, http://operations.utexas.edu/units/csas/terms.php:

a. Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.

b. Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.
c. Students requiring assistance in evacuation shall inform their instructor in writing during the first week of class. In the event of an evacuation, follow the instruction of faculty or class instructors.
d. Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.
e. Behavior Concerns Advice Line (BCAL): 512-232-5050
f. Link to information regarding emergency evacuation routes and emergency procedures can be found at: https://preparedness.utexas.edu/emergency-plans

Religious Holidays:

By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

Campus Safety and Wellness Resources:

More information on how to sign up for emergency text alerts, contact information for various UT offices, wellness resources, and campus initiatives relating to safety and/or wellness can be found at https://www.utexas.edu/campus-life/safety-and-security
## Class Schedule
*(Subject to Change Due to Guest Speaker Schedules)*

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<thead>
<tr>
<th>Week</th>
<th>Thursday</th>
<th>In-class</th>
<th>Note</th>
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<tbody>
<tr>
<td>1</td>
<td>30-Aug</td>
<td>Lecture 1—Introduction</td>
<td>First Class (Prof. Greenberg &amp; Prof. Jiao)</td>
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</tbody>
</table>
|      |          | - What is a Smart City?  
  ➢ Definition  
  ➢ Equity & Accessible  
  ➢ Technology (AR, VR, IoT, Drone)  
- Writing memos & Making Presentations  
  ➢ Memos  
  ➢ Presentation | |
| 2    | 6-Sep    | Lecture 2 Smart Cities Marco View & Case Studies | Memo 1 Topic Due (5pm) (Prof. Greenberg) |
|      |          | -Guest: Chelsea Collier, Digi City – To be confirmed  
- Guest: Ron Baker, IBM Distinguished Engineer, and Smarter Cities Strategist – To be confirmed | |
| 3    | 13-Sep   | Lecture 3 – City Politics & Governance & Finance & Participation | (Prof. Greenberg) |
| 4    | 20-Sep   | Lecture 4 – Smart City Planning & Performance | (Prof. Greenberg & Prof. Jiao) |
|      |          | - Guest: Mike Trimble, City Austin Capital Planning Officer  
- Guest: Kim Springer Olivares, City of Austin Performance Officer | |
| 5    | 27-Sep   | Lecture 5 – Open Data & Analytics | Memo 1 Due (5pm) (Prof. Jiao) |
|      |          | -Guest: Ted Lehr, City of Austin Data Architect – To be confirmed  
- Guest: Dustin Haisler, Chief Innovation Officer e.Republic - To be confirmed | |
| 6    | 4-Oct    | Lecture 6 - GIS and Geo Data | (Prof. Jiao) |
|      |          | -Guest: ESRI company (To be confirmed) | |
| 7    | 11-Oct   | Lecture 7 – Cybersecurity and privacy | Memo 2 Topic Due (5pm) (Prof. Greenberg) |
|      |          | -Guest: Kevin Williams—City of Austin—CIS (To be confirmed)  
- Guest: Tech Company—To be confirmed | |
<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Activity</th>
<th>Instructor(s)</th>
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<tbody>
<tr>
<td>8</td>
<td>Thursday</td>
<td>Review smart city project. Team project ideas/In class discussion</td>
<td>(Prof. Greenberg &amp; Prof. Jiao)</td>
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<tr>
<td>9</td>
<td>Thursday</td>
<td>Lecture 8 – Healthcare and Wellness</td>
<td>Memo 2 Due and Five Minutes Class presentation(5pm) (Prof. Greenberg)</td>
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<td></td>
<td></td>
<td>-Guest: Tech Company—To be confirmed</td>
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<tr>
<td></td>
<td></td>
<td>-Guest: Health Care—To be confirmed</td>
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<tr>
<td>10</td>
<td>Thursday</td>
<td>Lecture 9 – Transportation</td>
<td>Final Project Teams &amp; Topics Due (5pm) (Prof. Jiao)</td>
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<td></td>
<td></td>
<td>-Guest: Jason John Michael, City of Austin Transportation – To be confirmed</td>
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<td></td>
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<td>-Guest: Kristie Chin, UT Center for Transportation Research – To be confirmed</td>
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<td></td>
<td>Tech Company—To be confirmed</td>
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<tr>
<td>11</td>
<td>Thursday</td>
<td>Lecture 10 – Smart Buildings</td>
<td>(Prof. Jiao)</td>
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<td>Guest Speaker from Austin Energy – To be confirmed</td>
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<td>Energy--Austin Energy, Karl Popham</td>
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<td>Water/Building—UT CEE</td>
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<td>Others Tech—To Be confirmed</td>
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<td>12</td>
<td>Thursday</td>
<td>Lecture 11 – Social Media &amp; Digital Inclusion</td>
<td>(Prof. Jiao)</td>
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<td></td>
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<td>Guest Speaker from Austin Energy – To be confirmed</td>
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<td></td>
<td></td>
<td>Energy--Austin Energy, Karl Popham</td>
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<td>Water/Building—UT CEE</td>
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<td>Others Tech—To Be confirmed</td>
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<tr>
<td>13</td>
<td>Thursday</td>
<td>No Class</td>
<td>Happy Thanksgiving</td>
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<tr>
<td>14</td>
<td>Thursday</td>
<td>Lecture 13 –Final Project Development</td>
<td>(Prof. Greenberg &amp; Prof. Jiao)</td>
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<td>15</td>
<td>Thursday</td>
<td>Final Group Project Presentation</td>
<td>Final Project Due (5pm) Final Presentation</td>
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<td></td>
<td>To Smart City Practitioners from Academia, Industry, Government and others</td>
<td>(Prof. Greenberg &amp; Prof. Jiao)</td>
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**Book List Reading List**

The following are books on Canvas for this class of which we are using all or substantial portions. I suggest that you look at which ones you want to purchase. See below:

*Transforming City Governments for Successful Smart Cities*, Editor: Manuel Pedro Rodriguez-Bolivar
ISBN: 978-3-319-03166-8

*Smart Cities: Big Data and the Quest for a New Utopia*, Anthony M. Townsend,
ISBN: 978-0-393-08287-6
Beyond Transparency: Open Data and the Future of Civic Innovation, Editors: Brett Goldstein with Lauren Dyson

Beyond Smart Cities: How Cities Network, Learn and Innovate, Tim Campbell
ISBN: 978-1-84971-426-6

Start-Up City, Gabe Klein

Building Smart Cities: Analytics, ICT and Design Thinking, Carol L. Stimmel,
ISBN: 978-1-4987-0276-8

Smart Cities for a Bright Sustainable Future: A Global Perspective, Shark, Toporkoff and Levy
ISBN: 978-1-4973-3945-6

A New City O/S: The Power of Open, Collaborative and Distributive Governance, Goldsmith and Kleiman
ISBN: 978-0-8157-3286-0

The New Localism: How Cities Can Thrive in the Age of Populism, Katz and Nowak
ISBN: 978-0-8157-3164-1