

INLS 073
Smart Cities
Spring 2018

Tue/Thu, 9:30 – 10:45, Manning 304

Instructors:

Arcot Rajasekar & Cor Rademaker

Office: Manning 021

Office Hours: 11:00 – 12:01 PM Tue/Thu, and by appointment

Email: rajasekar at unc dot edu and corrademaker at gmail dot com;

Course Description: The seminar will present students with topics and trends in sustainable and smart cities and connected communities. Role of information in the design of network resources and impact on urban design, development and urban living will be explored.

Prerequisite(s): None

Grading Scheme:

- | | |
|-------------------------------------|-----------------|
| 1. Class attendance & participation | 20% |
| 2. Personal Digital Library | 20% |
| 3. Project Assignment | 40% |
| 4. Exams | 20% (two exams) |

1. Course Objectives

A smart city is one where the needs of a populace meet the needs of environmental sustainability. The balance between the social and environmental issues is governed by Information and Communication Technologies (ICT) that power a smart city infrastructure. In this course, we learn about the influence of urban networks, smart city urban planning, energy as a catalyst of sustainable development, smart city infrastructure, sustainable transportation, flow of information and communications, smart grids, digital infrastructure and the role of data and information technology. We will discuss criteria for measuring the smartness of a city, including quality of life, citizen governance, and discuss issues that go towards the making of a future smart city. Several case studies will be presented with guest lecturers invited to present on critical thinking and practices in smart city development.

2. Graded Work

Your grade will be based the following:

Attendance and Participation

We require all students to participate actively in class discussions throughout the class. Attendance is required. Every three unexcused absence will drop a grade. For each class, there will be some material to read before coming to class. One or two students will be randomly asked to lead discussion on the topics covered by the reading material. Rest of the class will participate in the discussions. Apart from this, as the class proceeds, we will be looking for questions, comments and a lively dialogue on the material presented by the instructor. Don't be afraid of asking questions, raising doubts or making a point. We want everyone to participate and equally guide the discussions.

Personal Digital Library

Each student is expected to maintain a personal digital library where one will keep all materials related to this course, gathered during the course or elsewhere. We expect material beyond the reading list to be part of your PDL. Current events and class discussion topics can also be part of it. We also expect students to annotate their library with descriptive metadata for each material as an outcome of your

reading the material. It is strongly recommended to use of the SILS Lifetime Library (<http://lifetime-library.ils.unc.edu/>) for maintaining the PDL as it provides all features needed to maintain a PDL. This will be a persistent digital library that may help you later after the course and which you can grow as you gather more relevant material. Information about how to use the Lifetime library will be presented in class. Please apply for an account as soon as possible at the website.

Project Assignment

We plan to give a term-long assignment related to smart cities. These assignments will involve group participation and will require research and writing on topics chosen by the instructors. We will provide information about the assignment in class.

Exam

There will be two exams, one mid-term and a final. Each will carry equal weight.

3. Grading Policies

The following grade scale will be used AS A GUIDELINE (subject to any curve):

A 100-90%

B 89-80%

C 79-70%

D 69-60%

F Below 60%

This scale will be used as a GUIDELINE ONLY. The final grade scale may differ.

Requests for Extensions and Absences

If a serious illness or other events prevents you from coming to any of the classes, send your instructors an e-mail message, or a friend with a note, describing your condition before the class or as soon as possible. Also, to establish a valid excuse for an illness you must get a note from a physician or the University infirmary.

4. Course Communication (Sakai)

Sakai-based course website has been set up and it is the responsibility of every student to **check the Sakai website regularly** for announcements, presentation materials and other digital handouts. Your instructor may announce tests, assignments, or changes to assignments in class, but there is no guarantee or promise that such announcements will be made in class. The sakai website is the **only** official, reliable source for announcements, changes, etc. from the instructor. If something the instructor says in class conflicts with information posted by the instructor on the website, then the information posted on by the instructor **on the Sakai website takes precedence**. Verbal instructions are easily misinterpreted, and they do not leave a documentation trail. All students should be able to access the system.

5. Honor Code

The UNC Honor Code is in effect for all work in this course. When work or ideas are not your own, you must attribute them. Unless otherwise stated, all non-project assignments in this class are individual assignments, meaning that the substance of the work you turn in must be your own. If you have any doubts or questions about a course of action or a specific situation, please ask for clarification. Students should NOT receive (or give) major creative assistance or ongoing minor support on individual assignments. If you have any questions about this, please ask us.

6. Special Accommodations

If any student needs special accommodations, please contact the instructor during the first week of classes.

7. Course outline (tentative schedule)

CI No	Date	Topics in Smart Cities	Topics in Information Science
1	Jan 11	Introduction	
2	Jan 16	Smart City	
3	Jan 18		What is Data?
4	Jan 23	Smart Living	
5	Jan 25	Smart Environment	
6	Jan 30		Data Organizations & Databases
7	Feb 01	Smart Governance	
8	Feb 06	Smart People	
9	Feb 08		Sensor Networks
10	Feb 13	Smart Mobility	
11	Feb 15	Smart Economy	
12	Feb 20		Data Grids
13	Feb 22	Exam – 1 (In Class)	
14	Feb 27	Smart Energy	
15	Mar 01		Data Networks
16	Mar 06	Urban Network	
17	Mar 08		Information Analytics
18	Mar 20	Urban Planning - History and Future	
19	Mar 22	Guest Lecture – 1	
20	Mar 27		Cloud Computing
21	Mar 29	Cohesion and Efficiency of Smart Cities	
22	Apr 03		Visual Informatics
23	Apr 05	Standards & Normalization	
24	Apr 10		Perspectives
25	Apr 12	Guest Lecture – 2	
26	Apr 17	Future of Smart Cities	
27	Apr 19	Presentations	
28	Apr 24	Presentations	
29	Apr 26	WrapUp	
30	May 04 FRIDAY	Final Exam (Exam-2) In Classroom: FRIDAY	8:00-9:00 AM (note change in date/timing)