EVDS 683.46 Fall 2018 H (3-0)

Advanced Special Topics in Environmental Design (Smart Communities)

LEC 1 M 10:40 - 13:50 PF 3176

Instructor Contact Information:

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Office hours: After class, by email, and by appointment.

Thematic inquiry and design related to environmental design topics.
This course may be repeated for credit.

Introduction

Smart Communities may be large or small, physical or virtual, and the concept is about much more than simply acquiring and using the latest high-tech gadgets. In many ways, smartness is a "platform technology" to develop and implement leading-edge ideas that involve goals that are broader than technological efficiency. The social, economic, technical, design and ethical aspects must all be considered, and sometimes difficult decisions must be made.

The NYC-based Intelligent Community Forum (http://www.intelligentcommunity.org/) defines Intelligent Communities as those which are responding astutely to the challenges presented by globalization, the enormous changes in communications and information technology that have taken place over the past few decades, and the resulting economic transformations.

They note that these communities tend to display six key indicators:
• Excellent access to high speed communications
• An extensive knowledge workforce
• A culture of innovation in businesses, governments, and institutions such as universities and hospitals
• Digital equality in both technology access and skills
• Sustainability, in terms of improving living standards without comprising the ability of future generations to do the same
• Advocacy to encourage others to embrace change as well as the courage and determination to help drive it.

Increasingly, thought leaders in this field are distinguishing between “smart” and “intelligent” communities. The former use technology in innovative ways to *run their towns or cities better*, providing valuable services to citizens and gaining efficiencies. The latter also take technology into account, then use it (or not) to *make better communities*. Putting a surveillance camera on every street corner would be “smart” in terms of improving citizen safety, but might not be “intelligent” if it had a chilling effect on privacy and impacted the use of public spaces.

As another example, Christchurch, NZ deployed an extensive network of sensors to provide early warning of future earthquakes. They then realized that these sensors could also be used to monitor traffic, and even the movements of people, with serious privacy implications. Those seeking to bring smart technologies into play need to be cognizant of all aspects of a “smart” technology before implementing it.

This course will involve a study of Smart Communities principles as well as how existing and proposed communities are trying to be “smart” and “intelligent”. Each student will make presentations on topics of personal interest. Then, singly or in small groups, students will formulate a well-informed personal vision of what makes a community “smart” and “intelligent”. This knowledge, understanding and wisdom may provide a significant advantage as you pursue your chosen career, be it Planning, Architecture, or something else.

This course is suitable for graduate students in any of the course or thesis-based programs of EVDS, as well as from other faculties. Diversity of backgrounds is definitely a strength in this seminar.

Objectives

1. To create a personal definition of “Smart Community” and “Intelligent Community” that is consistent with, and expands upon, the generally accepted ones, and relates, in a meaningful way, to the student’s own interests.

2. To acquire sufficient technological background to appreciate the decisions that must be made in becoming a Smart/Intelligent Community

3. To critically evaluate existing communities that claim to already be, or in the process of becoming, a Smart/Intelligent Community.

4. To understand the relationship between Smart/Intelligent Communities and concepts such as urban sprawl, energy conservation, economic opportunity, and sustainability.

5. To appreciate the past, present and future of the Smart Community movement, and how it relates to, and differs from, concepts such as Teleports, Creative Cities and infrastructure projects such as Alberta’ SuperNet and Australia’s NBN.

6. To complete a substantial research project relating to the design of an actual or envisioned Smart Community, as well as an annotated “Resource Binder”.

Teaching Approach

This is a seminar course. Active participation will be expected. No specific technical background is required as relevant concepts will be introduced in class and through background readings.

The course will begin with a brief immersion in information and communications technology, intended to prepare those with only a general knowledge of this field to adequately understand and evaluate the technological issues and decisions involved in building and sustaining a Smart/Intelligent Community. Existing communities that make claims will be assessed through written materials, their web pages, interviews and guest speakers.

Students will prepare both a minor and a major presentation, the first on a very limited topic area chosen in consultation with the instructor, and the latter on a vision and roadmap for creating a specific Smart Community. The major presentation will also be documented in written form. Students may opt to work in groups of two for the major presentation and written paper. In doing so, they agree to accept the grade assigned to their group as their own grade for these components and acknowledge that the expectation for the quantity and quality of these components is substantially higher if two students are working on it.

Content: Topic Areas and Detailed Class Schedule

1. ICT primer for non-specialists, covering the terminology and concepts of information and computer technology, especially as it relates to Smart Community applications.

2. The definition(s) of a Smart/Intelligent Community and why everyone aspires to it.

3. Applications that foster Smart/Intelligent Communities.

4. The non-commercial and NGO Smart Communities movements

5. Commercial Smart community programs, e.g. IBM’s Smarter Planet, Cisco’s Smart+Connected Communities, Watson applied to urban planning, etc.

6. The social, economic, political and other implications of being Smart/Intelligent.

7. Privacy and security aspects of Smart Communities

8. Networking among Smart Communities.

9. Are virtual Smart Communities the same or different from geographical ones?

10. Future trends

Course Expectations and Means of Evaluation

Students will be expected to attend all seminar meetings and should notify the instructor by email if an emergency prevents attendance. Students will also be expected to read assigned readings and come to class prepared to discuss the issues and concepts raised in the readings and other assignments. Discussions will be respectful of all opinions.

Quality of writing (spelling, grammar, clarity) or effective oral communication will be a component of the assessment of all assignments.

The course components and weights are as follows:

1. Open book quiz on information technology concepts	**10%**
2. Class presentation and discussion facilitation on a technology topic	**25%**
3. Annotated Resource Binder (to be described in class)	**15%**
4. Class presentation on your vision of a Smart/Intelligent Community	**15%**
5. Written report on your vision of a Smart/Intelligent Community	**35%**
Total	**100%**

There will be no final exam.

It is not necessary to pass any specific component to obtain a passing grade in the course.

Readings

All required materials will be supplied electronically, though students are encouraged to supplement their work with other research materials they find. References and encouraged, and should be properly cited in a standard format, preferably APA style.

Special Budgetary Requirements

None, aside from having access to a suitable computer which can be accomplished by using the “on campus” facilities.

Grading Scale

All components of this course will be graded with letter grades. Percentage grades will not be used in this course.

Final grades will be reported as letter grades, with the final grade calculated according to the 4-point range.

Grade	Grade Point Value	4-Point Range	Percent	Description
A+	4.00	4.00	95-100	Outstanding - evaluated by instructor
A	4.00	3.85-4.00	90-94.99	Excellent - superior performance showing comprehensive understanding of the subject matter
A-	3.70	3.50-3.84	85-89.99	Very good performance
B+	3.30	3.15-3.49	80-84.99	Good performance
B	3.00	2.85-3.14	75-79.99	Satisfactory performance
B-	2.70	2.50-2.84	70-74.99	Minimum pass for students in the Faculty of Graduate Studies
C+	2.30	2.15-2.49	65-69.99	All final grades below B- are indicative of failure at the graduate level and cannot be counted toward Faculty of Graduate Studies course requirements.
C	2.00	1.85-2.14	60-64.99	
C-	1.70	1.50-1.84	55-59.99	
D+	1.30	1.15-1.49	50-54.99	
D	1.00	0.50-1.14	45-49.99	
F	0.00	0-0.49	0-44.99	

Notes:

- A student who receives a "C^{+}" or lower in any one course will be required to withdraw regardless of their grade point average (GPA) unless the program recommends otherwise. If the program permits the student to retake a failed course, the second grade will replace the initial grade in the calculation of the GPA, and both grades will appear on the transcript.

Notes:

1. Written work, term assignments and other course related work may only be submitted by e-mail if prior permission to do so has been obtained from the course instructor. Submissions must come from an official University of Calgary (ucalgary) email account.

2. Academic Accommodations. Students who require an accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to their Instructor or the designated contact person in EVDS, Jennifer Taillefer (jtaillef@ucalgary.ca). Students who require an accommodation unrelated to their coursework or the requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Vice-Provost (Student Experience). For additional information on support services and accommodations for students with disabilities, visit www.ucalgary.ca/access/

3. Plagiarism - Plagiarism involves submitting or presenting work in a course as if it were the student's own work done expressly for that particular course when, in fact, it is not. Most commonly plagiarism exists when:(a) the work submitted or presented was done, in whole or in part, by an individual other than the one submitting or presenting the work (this includes having another impersonate the student or otherwise substituting the work of another for one's own in an examination or test),(b) parts of the work are taken from another source without reference to the original author,(c) the whole work (e.g., an essay) is copied from another source, and/or,(d) a student submits or presents work in one course which has also been submitted in another course(although it may be completely original with that student) without the knowledge of or prior agreement of the instructor involved. While it is recognized that scholarly work often involves reference to the ideas, data and conclusions of other scholars, intellectual honesty requires that such references be explicitly and clearly noted. Plagiarism is an extremely serious academic offence. It is recognized that clause (d) does not prevent a graduate student incorporating work previously done by him or her in a thesis. Any suspicion of plagiarism will be reported to the Dean, and dealt with as per the regulations in the University of Calgary Graduate Calendar.

4. Appeals: If a student has a concern about the course, academic matter, or a grade that they have been assigned, they must first communicate this concern with the instructor. If the concern cannot be resolved with the instructor, the student can proceed with an academic appeal, which normally begins with the Faculty: http://www.ucalgary.ca/provost/students/ombuds/appeals

5. Information regarding the Freedom of Information and Protection of Privacy Act (http://www.ucalgary.ca/secretariat/privacy) and how this impacts the receipt and delivery of course material

6. Emergency Evacuation/Assembly Points (http://www.ucalgary.ca/emergencyplan/assemblypoints)

7. Safewalk information (http://www.ucalgary.ca/security/safewalk)

8. Contact Info for: Student Union (https://www.su.ucalgary.ca/contact/); Graduate Student representative(http://www.ucalgary.ca/gsa/) and Student Ombudsman's Office (http://www.ucalgary.ca/ombuds/).