

Urban Infrastructure, Transportation & Land Use

EVDS 616 (3-0)

Winter 2014

Instructor: Dr. Larissa Muller (lmuller@ucalgary.ca)
Date/Time: Thursdays (9:30 am - 12:20 pm)
Location: PF 2140

Introduction

For the first time in history, more people live in cities than in rural areas. In order to meet the needs of this urban population and foster economic activities, cities need to provide key infrastructure systems, such as transportation, water and waste management, parks and open space, industrial space, and energy. Planners and urban designers need to be knowledgeable about the inner workings of infrastructure that allow cities to function, and to understand the implications and relationships for the distribution of land use and development. This course is designed to acquaint students with the key infrastructure systems of a city and its relationship with land use and sustainability objectives. It examines current standards and practices, challenges, and innovations in the various infrastructure sectors, and the implications for the quality of life, economic development, spatial structure, and the environment. The course also examines various financial and institutional frameworks for delivering infrastructure systems, and how they vary across different contexts. Topics will be presented through instructor and guest lectures, student presentations, and site visits.

Objectives:

1. To acquaint students with the different systems that comprise urban infrastructure, and the main issues related to cost and long term sustainability.
2. To understand the relationship between infrastructure and land use, and how it impacts quality of life, economic development, urban form and the environment.
3. To examine new trends and alternatives in technology, institutions and financing to deliver urban infrastructure.

Teaching Approach

The course format will involve a mix of instructor and guest lectures, seminar discussions, site visits, student research and presentations, and assigned reading.

Content: Topics and Schedule

Jan 9-23

I. OVERVIEW & FRAMEWORK

What is infrastructure and why is it so important to a city?
Relationship between infrastructure and urban form
Key infrastructure provision challenges

Jan 30-Feb 13

II. URBAN TRANSPORTATION SYSTEMS

Trends and global comparisons
Mobility vs. accessibility
Street Layouts, Connectivity and Parking
Transit Cities
Non-Motorized Transportation Systems
Aerotropolis & Railopolis

Feb 20

NO CLASSES – READING / BLOCK WEEK

Feb 27-Apr 3

III. OTHER INFRASTRUCTURE SYSTEMS

Water, Wastewater and Flood Management Systems (incl. green systems)
Parks & Open Space
Zero-Waste Cities: Waste Management and Recycling
Energy (incl. district heating, micro-FIT grid, passive heating)
Eco- | Industrial Parks
Digital Cities & Smart Infrastructure

Apr 10

IV. SUSTAINABLE CITY & SUMMING UP

Readings

To be discussed in class

Expectations

- Students are expected to attend all classes and participate in discussions. Absence from 3 consecutive classes for other than medical reasons may result in required withdrawal from the course. Please contact the course instructors if there are issues likely to affect your class attendance and participation.
- Please contact the course instructors if you are having any assignment-related questions or problems well before the assignment due dates so that assistance can be provided in a timely manner.
- Course Readings are required reading and are a critical component of course instruction and student learning. Course Instructors will identify important course readings in the context of specific course content and assignments and it is the student's responsibility to ensure this reading is done.
- Compliance with all applicable academic regulations including intellectual honesty is expected. For definitions of plagiarism, cheating and academic misconduct, and associated penalties see the 'notes' section below and please refer to the 2013-14 University Academic Calendar <http://www.ucalgary.ca/pubs/calendar/current/k-2.html>

Academic Accommodation

Under University of Calgary policy, it is the student's responsibility to request academic accommodation. Student's with a documented medical condition or disability who may require

academic accommodation must register with the University of Calgary’s Disability Resource Centre. Please contact their office at 403-220-8237. Unless registered with the Centre, students are not eligible for formal academic accommodation. Students requiring accommodation must inform their course instructors no later than fourteen (14) days after the start of a course.

Means of Evaluation

Student evaluation will be based on participation and four assignments:

- Participation: Class Discussion & Presentation Commentator 10%
 - 2 Critical Commentary based on Topic Readings (15% each) 30%
 - Class Presentation of a Case Study 20%
 - Case Study Term Paper 40%
- Total = 100%**

Students will choose an infrastructure system (transportation or other) and examine current practices and issues in and around a city of their choice, or general emerging trends and innovations, and conduct a critical analysis. The course evaluation will be based, in part, on the presentation of the case study to the class (presented the same week as the corresponding topic), and a corresponding term paper, embodying feedback from class discussion. Students will serve as the assigned commentator for another student’s presentation, which together with their participation in class discussions, will count towards the participation portion of their grade. In addition, students will prepare two short written critical commentaries (less than 2 pages each), one on a transportation topic and the other on one of the other infrastructure systems (but different from their case study), based on the corresponding class readings. Each commentary will be due 2 hours before the corresponding class starts. Students will sign up for case study, critical commentary and commentator topics within the first couple weeks of class.

Please note that a passing grade is required in each individual assignment in order to pass the course as a whole.

Grading Scale

Letter Grade	4-Point Scale	4-Point Range	Percent	Description
A+	4.00	4.00	92.5-100	Outstanding - evaluated by instructor
A	4.00	3.85-4.00	85-92.49	Excellent - superior performance showing comprehensive understanding of the subject matter
A-	3.70	3.50-3.84	80-84.99	Very good performance
B+	3.30	3.15-3.49	76-79.99	Good performance
B	3.00	2.85-3.14	73-75.99	Satisfactory performance
B-	2.70	2.50-2.84	70-72.99	Minimum pass for students in the Faculty of Graduate Studies
C+	2.30	2.15-2.49	66-69.99	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	63-65.99	
C-	1.70	1.50-1.84	60-62.99	
D+	1.30	1.15-1.49	56-59.99	
D	1.00	0.50-1.14	50-55.99	
F	0.00	0-0.49	0-49.99	

Note: A student who receives a B- or lower in two or more courses will be required to withdraw regardless of their grade point average unless the program recommends otherwise. Individual programs may require a higher minimum passing grade. A grade point value of 3.0 on the 4-Point Scale is the minimum acceptable average that a graduate student must maintain throughout the program as computed at the end of each registration anniversary year of the program. A student who receives a grade of F will normally be required to withdraw unless the program recommends otherwise.

Please Note:

- The above assignment weighting cannot be changed during the session or at the time of grade reporting
- Except for medical or compassionate grounds, late assignments will not be accepted or graded.
- The written quality and content of assignments is expected to be at a graduate level. If you have difficulty with writing or with writing in English, it is recommended that you seek remedial instruction or assistance through University of Calgary student programs as soon as possible. Poorly written work will be evaluated accordingly.
- No final exam will be scheduled for this course.
- Do not book end of term travel until after the last day class in the Winter 2014 term as identified in the University Calendar.