Urban Infrastructure and Land Use

Tuesday and Thursday 9:30 AM – 11:00 PF 2165
Instructor: Noel Keough • Telephone: (403) 220-8588 • Email: nkeough@ucalgary.ca; PF 4176; hrs. by appointment
TA : Hannah Allawi; hannah.alawi@ucalgary.ca

Introduction

Acquaints students with the key infrastructure systems of a city. Examines current policies, standards and practices, challenges, and innovations in the following infrastructure sectors: water, sewage, waste management, open space, energy, transportation, and communication. Discusses the relationship between infrastructure systems and land use, and its impacts on quality of life, economic development, spatial structure, and the environment. Emphasis is given to green infrastructure development. The course also examines various financial and institutional frameworks for delivering infrastructure systems, and how they vary across different contexts

Objectives

By the end of the course students will be able to…

1. Describe the planning and design processes for major urban infrastructure
2. Identify, evaluate and critique current approaches and emerging innovations in urban infrastructure
3. Construct methods for, and approaches to, conceptual design of integrated green infrastructures
3. Perform basic calculations for urban infrastructure design

Teaching Approach

The course incorporates a variety of teaching and learning approaches and includes lectures, guest lectures, field-trips and project-based learning. Students will be given the opportunity to apply critical and creative thinking to the topics in the course. A seminar format will be used to promote discussion of a variety of readings and allow students the opportunity to present and lead discussion on their own research. Field and project-based assignments will provide a hands-on and experiential element to the course.

Please Note: Students are expected to punctually attend all site visits, if unable to, they need to communicate this to the teaching team a few days in advance.

Means of Evaluation

The course evaluation will be based on the 4 assignments completed during the term. There will be no final examination. Students must achieve a passing grade in all assignments to complete the course successfully.[1]

Assignment 1: The Future of Calgary Transportation: Report Critique	10%	Due January 25
Assignment 2: Issues in Urban Infrastructure Provision	30%	Due February 16
Assignment 3: Green Infrastructure Precedents	30%	Due March 9
Assignment 4: Designing Infrastructure Futures (Group)	30%	Due March 27
Total	**100%**	

Readings: Course readings: to be provided first week of class

Weekly Schedule

January 9	Course Introduction
January 11	State of the Art: Infrastructure and Land Use
January 16	City of Calgary, Low-Carbon Economy Policy and Planning
January 18	Transportation Planning
January 23	Pine Creek Waste Facility (Field Visit)
January 25	District Energy U of C (Field Visit)
January 30	Smart Cities
February 1	City of Calgary Food Systems (Kristi Peters Snider, City of Calgary)
February 6	District Energy – Enmax (Field Visit)
February 8	Solid Waste (Jason London, City of Calgary)
February 13	Flood and Resilience (Field Visit)
February 15	Planning, Design and Financing of Urban Infrastructure: CMLC (Field Visit)
February 20	Mid-Term Break
February 22	Mid-Term Break
February 27	Active Transportation Networks (Ryan Martinson, Stantec)
March 1	Socio-Technical Transitions
March 6	Land Use Mix and Density
March 8	Housing Transportation Food Systems
March 13	Project Work
March 15	Project Work
March 20	Project Work
March 22	Project Work
March 27	Student Presentations
March 29	Student Presentations
April 3	Student Presentations
April 5	Student Presentations
April 10	Student Presentations
April 12	Student Presentations

Grading Scale

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	

Grading 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.

General 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. 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

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

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