



Source: Global Designing and Cities Initiative (<https://globaldesigningcities.org>)

Instructor: Mathis Natvik • Email: mathis.navik@ucalgary.ca
Teaching Assistants: TBA

Lecture timeslot: 09:00-12:00, Wednesdays
Classroom: PF2165

Zoom link and passcode for lectures (if/when online lectures are conducted):

<https://ucalgary.zoom.us/j/3671473933>

Meeting ID: 367 147 3933

Passcode (Case Sensitive): **PLAN612**

Introduction

Welcome to the winter 2022 offering of Urban Infrastructure and Planning! In this course students will be acquainted with the key infrastructure systems of a city. We will examine current policies, standards and practices, challenges, and innovations in the following infrastructure sectors:

- Drinking Water Supply
- Sewage Treatment
- Waste Management
- Energy Generation & Supply
- Transportation Mix
- Food Supply & Distribution

We will discuss the relationship between infrastructure systems and land use, and its impacts on quality of life, economic development, spatial structure, and the environment. The course will also examine various financial and institutional frameworks for delivering infrastructure systems. Emphasis will be given to sustainable, low-carbon infrastructure development.

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 sustainable low-carbon infrastructures.
4. Perform basic calculations related to urban infrastructure design.



Teaching Approach

The course incorporates a variety of teaching and learning approaches and includes lectures, guest lectures, fieldtrips and project-based learning. Students will be given the opportunity to apply critical and creative thinking to the topics in the course.

Readings: Course readings: to be provided as required on a weekly basis. Check D2L

Means of Evaluation

The course evaluation will be based on the 3 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.

Assignment 1: Urban Futures: Infrastructure for a Climate Emergency	30%	Due: Feb 04
Assignment 2: Sustainable Infrastructure Precedents	30%	Due: Mar 04
Assignment 3: Designing Infrastructure Futures: Manchester (Group)	40%	Due: April 06 or April 13
TOTAL:		100%

Grading Scale

Grade	GPV	GPV Range	%	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
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 graduate students
C+	2.30	2.15-2.49	65-69.99	Failure at graduate level

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.



- WK1 **Wednesday, January 12 Lecture:**
Course Introduction, Overview of Topics & Assignments
City of Calgary, Low-Carbon Economy Policy and Planning
Review of readings for next week's guest lectures, Introduce Assignment#1
- WK2 **Wednesday, January 19 Lecture:**
9:00 AM GUEST: **Gian-Carlo Carra**, City of Calgary – *State of Infrastructure in Calgary*
10:30 AM GUEST: **Travis Gaede, Sr.** Transport Engineer, COC – *Transportation Planning*
- WK3 **Wednesday, January 26 Lecture:**
Drinking Water Supply & Wastewater Treatment
Infrastructure and Land Use FAR, UPI, Population density
- WK4 **Wed, Feb 2 Lecture:**
Stormwater Management
Disaster Planning: Flood, Fire, and other disasters
Food Systems – Food distribution, food hubs, food processing, urban agriculture
Fri, Feb 4: Assignment#1 Due by 11:59 PM
- WK5 **Wed, Feb 09 Lecture:**
9:00 AM GUEST: **Sandra Kotch** – *Bonnybrook Water Treatment Plant Virtual Tour*
10:30 AM GUEST: **Ryan Martinson** – *Active Transportation Networks (Integrating Infrastructure for Pedestrian, Cycling, Public Transit, and Private Vehicles)*
- WK6 **Wed, Feb 16 Lecture:**
9:00 AM GUEST: **Nicholas Dykstra**, O2 – *Planning, Design and Financing of Urban Infra.*
10:30 AM GUEST: **Charlie Lund** – *Flood of 2013 and State of Flood Mitigation in Calgary*
- WINTER BREAK (No Classes!) - Feb 21-25**
- WK7 **Wed, Mar 02 Lecture:**
Solid Waste Management, ENVAC, Recycling, Reuse (Closing the loop)
Urban Agriculture and Infrastructure
Friday, March 4: Assignment#2 Due by 11:59 PM
- WK8 **Wed, Mar 09 Lecture:**
9:00 AM GUEST: **Kristi Peters**, City of Calgary – *City of Calgary Food Systems*
10:30 AM: Group Networking
- SAPL BLOCK WEEK (No Classes!) - Mar 14-18**
- WK9 **Wed, Mar 23 Lecture:**
9:00 AM: Group Networking
10:30 AM GUEST: **Heather MacKenzie**, Executive Director, - *Solar Integration*
- WK10 **Wed, Mar 30 Lecture:**
9:00 AM: Group Networking
10:30 AM GUEST: **Christina Seidel**, *Recycling Council of Alberta*
- WK11 **Wed, Apr 06 Lecture: Student Presentations (Assignment#3)**
- WK12 **Wed, Apr 13 Lecture: Student Presentations (Assignment#3)**



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 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. **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>).