

## Commuting Communities: Envisioning an Equitable-Transit-Oriented-Development Loop connecting Kitchener-Waterloo-Cambridge with the Greater Toronto Area (GTA)

### Course Information

*Course Number:* ARCH 392 – W2023

*Class hours:* Mondays and Thursdays 9:30am - 12:30pm, 1:30pm-5:30pm

*Course Instructors:* Samantha Eby ([sam.eby@uwaterloo.ca](mailto:sam.eby@uwaterloo.ca)), David Fortin (course coordinator - [dtfortin@uwaterloo.ca](mailto:dtfortin@uwaterloo.ca)), Rick Haldenby ([erhalden@uwaterloo.ca](mailto:erhalden@uwaterloo.ca)), Marie-Paule Macdonald ([mpmacdonald@uwaterloo.ca](mailto:mpmacdonald@uwaterloo.ca)), Di Tang ([di.tang@uwaterloo.ca](mailto:di.tang@uwaterloo.ca)), Shiyu Wei ([s23wei@uwaterloo.ca](mailto:s23wei@uwaterloo.ca))

*Teaching Assistants:* Elizabeth Yeoh ([ehmyeoh@uwaterloo.ca](mailto:ehmyeoh@uwaterloo.ca)), Madeleine Reinhart ([mrreinhart@uwaterloo.ca](mailto:mrreinhart@uwaterloo.ca))

*Office Hours:* Varies, contact instructors and TAs by email

### Territorial Acknowledgement

We acknowledge that the School of Architecture is located on the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples. The University is situated on the Haldimand Tract, the land promised to the Six Nations that includes 10 kilometers on each side of the Grand River. This studio is centrally concerned with the rights of all people to affordable housing, environmental justice, and equity. Across all of the sites that we will be focusing on throughout the semester, there have been ongoing issues of disparity and oppression that were initiated through violent processes of European colonization that included the displacement of Indigenous peoples from the lands that sustained them across Turtle Island (North America), including this region. These processes also brought non-European African and Asian people to North America to work in slavery and indentured servitude. Within this studio we will seek ways to recognize and respect the traditional territory of Indigenous people of this region and their inherent right to be 'at home' in the cities now occupying their lands, while also considering ways to address the systemic bias that still organizes Canadian urban spaces, in order to design a more accessible, ecologically sound, and economically sustainable home for all people.

### Course Description

The earliest understanding of the verb "commute" comes from the 15th century when it was defined as "to change (something into something else), transform" (etymonline.com). By the late 19th century it was instead being used to refer to "going back and forth for work" because the train tickets for multi-use rides were called "commutation tickets" (related to changing from successive single train payments to single sum payments). If we combine the various historical understandings of what it means to "commute", we can identify the transformational impact that public transit has had on urban life over many generations. It is well documented that thoughtful and strategic transit-based urbanism can create a higher quality of life for its citizens by providing broader access to amenities for a greater number of people with shorter commute times and requiring less overall energy to move them around while feeling 'at home' in the city.

This is why transit will play a foundational role in the future development of the Kitchener-Waterloo-Cambridge region. By 2051 the region is projected to reach just under a million residents with growing

pressure to prepare for enough affordable housing and improved public transit in advance. As stated by Grand River Transit and the Waterloo Region,

Over the next 20 years, growth will continue as we expect 200,000 new residents to move to our community...Where will these 200,000 new residents live and how will they travel in and around our community? Our traditional pattern of suburban sprawl and single-occupancy car travel is not sustainable as we prepare to add the equivalent of another City of Kitchener to our community. The Region of Waterloo recognizes the need to look at new and improved ways to prepare for the future. (<https://rapidtransit.regionofwaterloo.ca/en/resourcesGeneral/ION-Story-Fall-2016-access.pdf>)

This studio will explore this future within the Kitchener-Waterloo-Cambridge region by focusing on the planned Stage 2 ION project to extend the existing light rail train from Kitchener into downtown Galt by 2032. In 2016, Stats Canada reported that approximately 11,000 people were commuting from Cambridge to Toronto for work, while 6,500 were commuting from Toronto to Cambridge. The School of Architecture exhibits a similarly high frequency of commutes between our community and the GTA. If we zoom out of the immediate context, the long term implications of public transit that connects the K-W-C region to Toronto and Brantford/Hamilton is significant.

Existing Public Transit Relationship Between Kitchener-Waterloo-Cambridge and Downtown Toronto

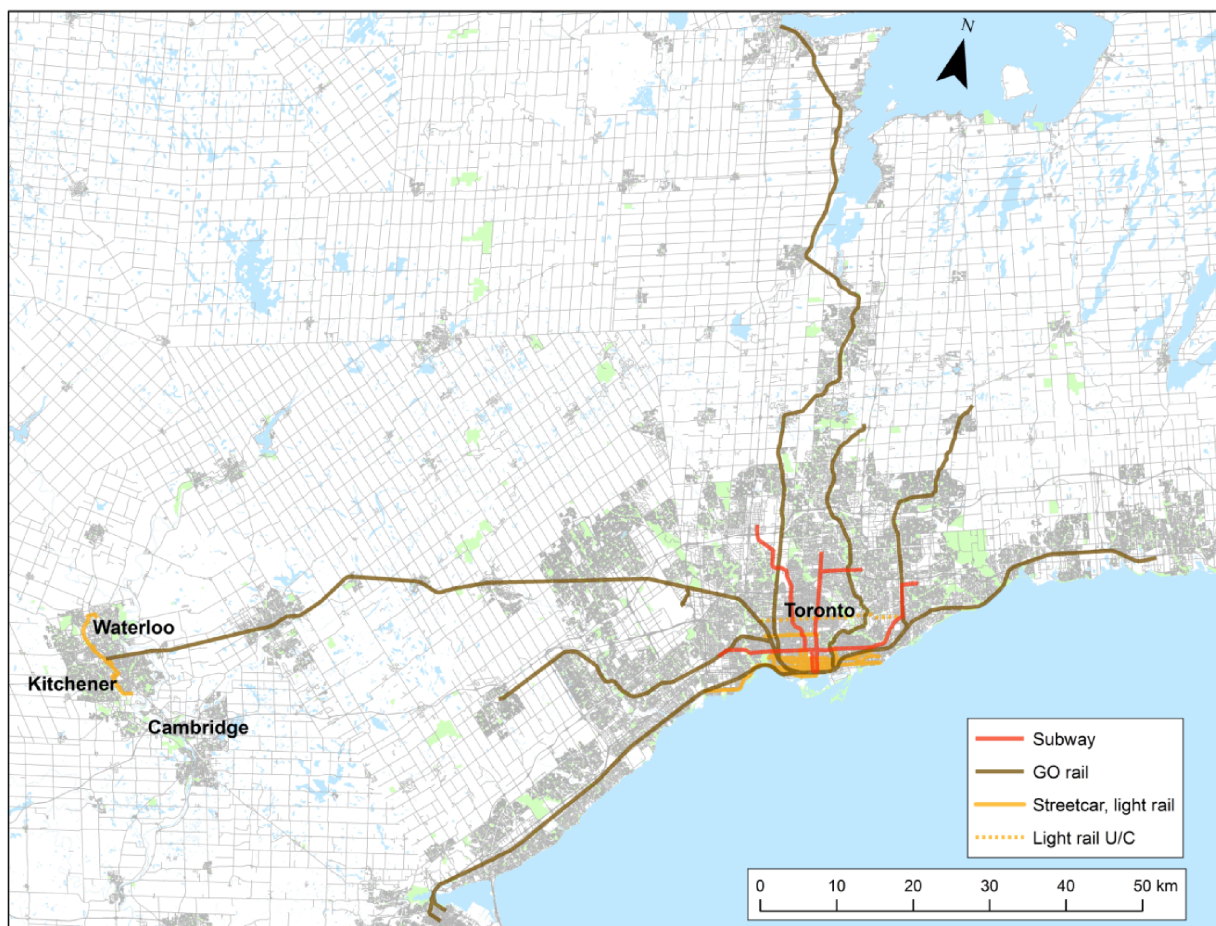
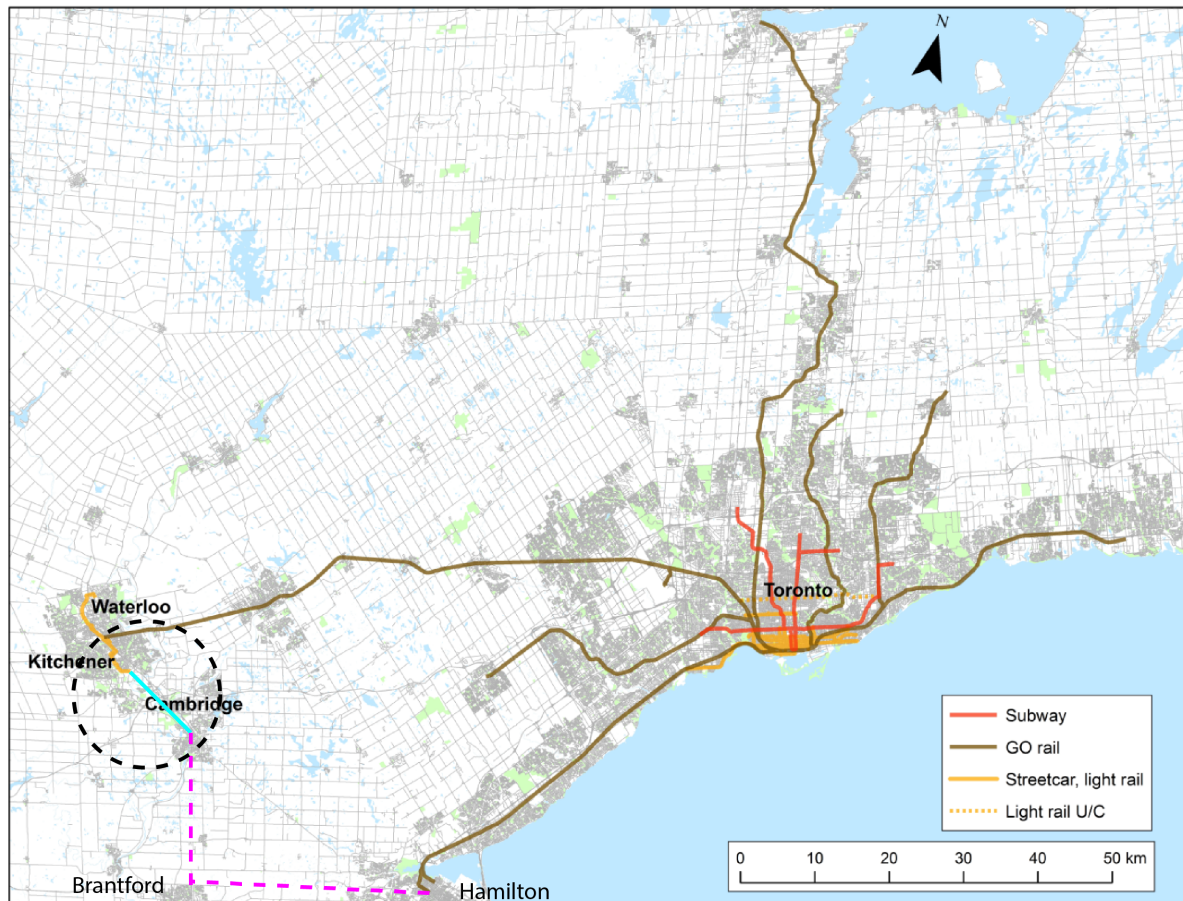


Image Source: <https://www.liberallandscape.org/2019/08/20/the-new-ion-light-rail-line-in-kitchener-and-waterloo-ontario/>

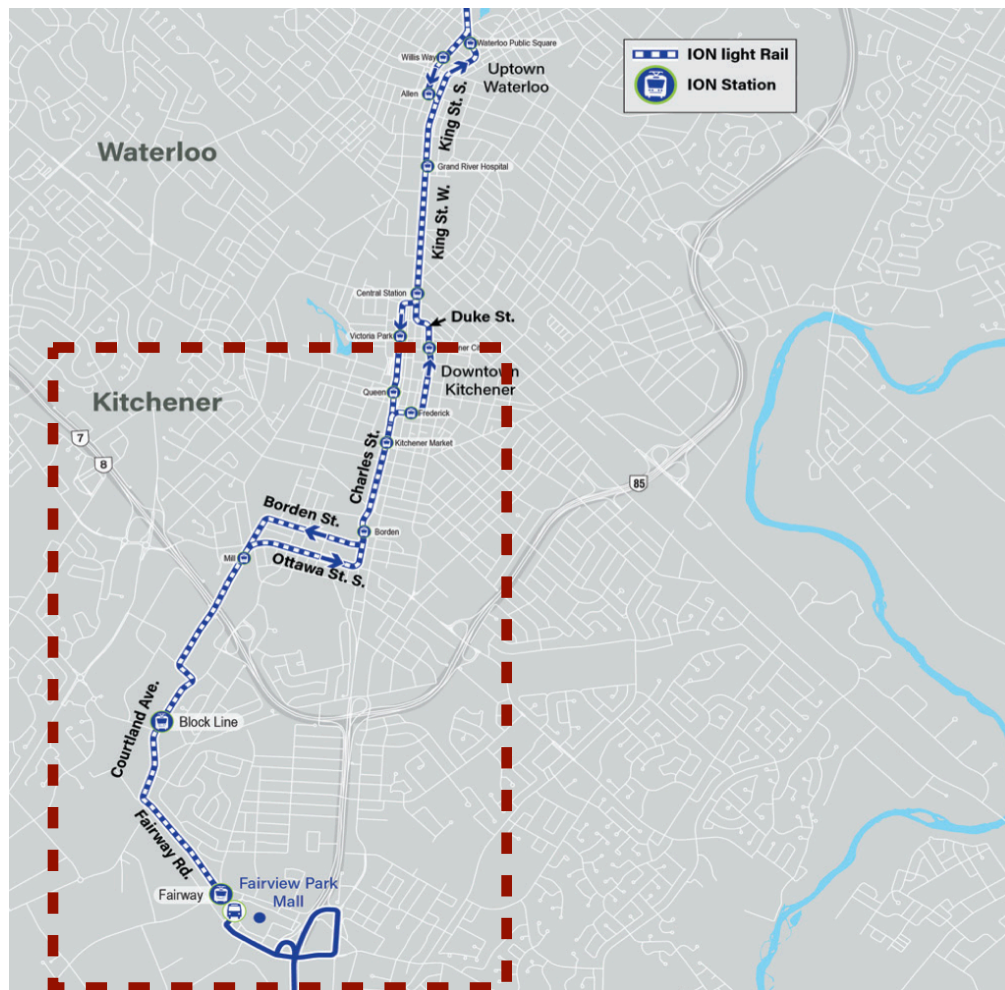
Future Public Transit Between Cambridge and Downtown Toronto could eventually lead to a regional loop connecting KWC to Brantford, Hamilton and Downtown Toronto



The black dotted circle in the above map identifies our focus area during this term while the magenta dotted line speculates a long-term transportation linkage between Cambridge, Brantford and Hamilton.

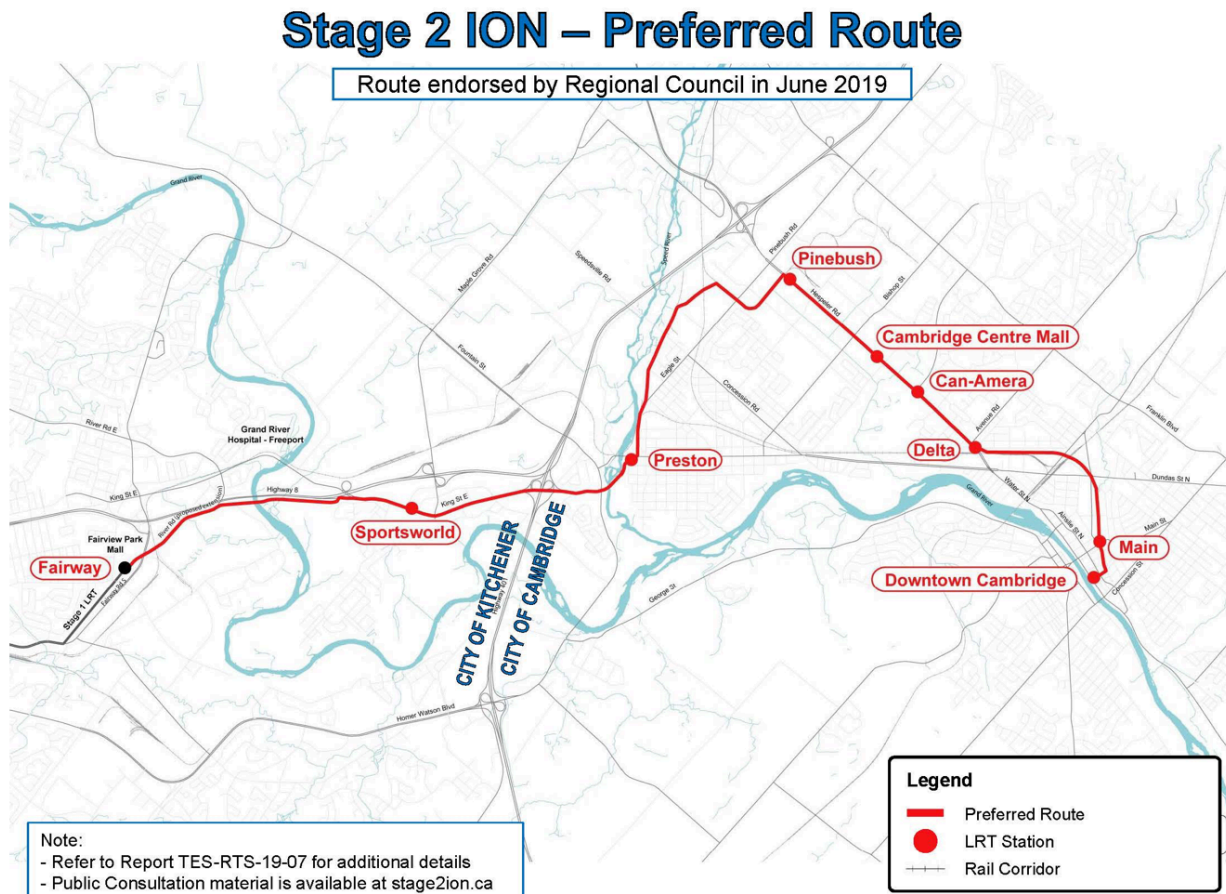


The existing ION map connecting Kitchener and Waterloo has been added below, with the highlighted focus area for this studio within Kitchener. There are 8 stations between Central Station (just a few blocks from the Kitchener GO Station with direct access to Union Station In Toronto) and the Fairway Station at the southern edge of Kitchener.



To Cambridge

Stage 2 ION (map below) is projected to add 8 more stations, with a terminal station located in Downtown Cambridge/Galt, across the river from the School of Architecture. (See [here](#))



This studio will study the possible trajectories for future housing along this transit line between Kitchener's Central Station and Downtown Cambridge. Each station will have its own unique urban context that will require its own response in terms of housing typologies and planned urban amenities and services. Most importantly, beyond adding an adequate number of units to fulfill critical housing needs, how can this be done in a way that ensures there is equitable opportunity for all demographics of residents to live within walking distance of the stations, including affordable housing that provides for a high quality of life and dignity? Furthermore, could there be strategies to carefully integrate housing for the region's Indigenous population in a way that helps move reconciliation forward?

To guide these studies, we will explore Equitable Transit-Oriented Design (ETOD), which is described by the [City of Chicago](#) as the following:

...development that enables all people regardless of income, race, ethnicity, age, gender, immigration status or ability to experience the benefits of dense, mixed-use, pedestrian-oriented development near transit hubs. ETOD elevates and prioritizes investments and policies that close the socioeconomic gaps between neighbourhoods that are predominately people of colour and those that are majority white. ETOD projects and processes elevate community voice in decision making processes and in realizing community-focused benefits such as affordable housing, public health, strong local businesses, and environmental sustainability, to name a few. When centred on racial inclusion and community wealth building, ETOD can be a driver of positive transformation for more vibrant, prosperous, and resilient neighbourhoods connected to opportunities throughout the city and region.

In order to ground the studies in a way that responds to the needs of the communities, we will engage with regional housing organizations such as YIMBY, the Kitchener Better Tent City, O:we Kenhionhata:tie/ Land Back Camp, and the Kitchener-Waterloo Wigwam Project. We will also work with planners with expertise in equitable urban planning strategies. A series of talks and discussions with these groups, combined with rigorous research, will allow all studio projects to better understand the needs of the community in developing appropriate housing strategies along the ION Phase 2 project. ETOD represents a path forward to thinking about how we can collectively transform our communities by envisioning a more equitable and accessible future for all.



<https://medium.com/digital-blue-foam/real-time-collaboration-for-transit-oriented-developments-83f87d731feb>

## Project Descriptions

The work to be completed in this studio is divided into the following 3 phases: 1) in groups, analyze the existing inter-urban context for existing and proposed stations along the Phase 2 ION expansion, 2) design a neighbourhood-scale strategy for the area surrounding one of the stations (in smaller groups), and 3) design one specific housing complex for that site. This project will promote design that responds to the value of environmental justice, reconciliation, and the human right to housing as well as offering



healthier ecological, social, and cultural relationships that will benefit the broader community in significant ways over many generations to come.

The final projects will demonstrate how, through thoughtful design, the site surrounding the stations will provide housing in a way that achieves the following intertwined focus areas:

1) Social: Consider the economic, cultural, and social interests of the people who live in the community, and the people who will live on the site. Aim to create an urban environment that enables a vibrant and affirmative public realm, that resists gentrification, while promoting the development of positive social relationships through an urban environment accessible and welcoming for all.

2) Ecological: Consider the intensive and extensive energetic and material flows within the web of life and non-life, considering: 1) the differential thermal, light, and sonic energies of the site, and the varied ambiances these produce, and 2) material life cycle impacts and qualities of the biotic and abiotic materials used, and the sites from which they have been extracted and transported.

## Course Goals and Learning Outcomes

This course will allow students to develop skills and competencies in the following areas:

### Key Concepts:

- An understanding of how ETOD can guide a more equitable housing future for urban environments at varying scales within the framework of ecological justice and housing
- Concepts of human rights within the planning and design process
- Critical thinking about how the existing process of planning, architecture and development contributes to climate emergency, the housing crisis, and systemic bias
- Accessibility and living in the city

### Urban Analysis:

- The analysis of urban morphology and its relation to social systems as well as accessibility
- The analysis of architectural typology
- An understanding of the actors involved in shaping the physical and programmatic form of urban spaces
- A better understanding of the guidelines and legislations that structure the relationships between buildings and urban space
- Representation of urban space and the relationship between buildings of varying scale, including an emphasis on figure ground, section and energy diagramming

### Environmental Justice:

- Ecological planning strategies for urban design
- Urban/architectural design to encourage healthier social, economic, and cultural relationships
- Design of environmental performance of buildings as it relates to: Embodied carbon and energy of specific material assemblages, their material life cycles and potential to participate in a circular economy; Operational carbon and energy, using passive heating and cooling strategies, including thermally active surfaces

## Housing Design:

- The design of multiple unit housing complexes
- Individual housing unit design
- Accessible housing design

## Required Text

Any required readings will be uploaded to LEARN and identified in individual assignments. Selected resources are included at the end of this document.

## Course Requirements and Assessment

**P1 - Urban Analysis** of an individual station neighbourhood in the study area – 1.5 weeks – 15% (in groups of 5-6)

Digital submission due in LEARN 9:00am Thursday January 19

### P2 - Transit, Equity, and Housing

a) Designing for urban life in transit-oriented neighbourhoods – 3 weeks – 30% (in groups of 4-5)

Digital submission due in LEARN 6:00pm Monday, February 13th

b) Station, Neighbourhood/Street and Building Ecological Section – 2 weeks – 5% (in groups of 2-3)

Digital submission due in LEARN 9:00pm Monday, March 6th

c) Towards an Architecture of ETOD in K-W-C – 5 weeks – 50% (individual work)

Digital submission due in LEARN 6:00pm Wednesday, April 12th

**Note:** More comprehensive descriptions of these assignments will be provided as they are issued.

## Topics & Schedule

Week	Day	Month	Date	Description	Faculty	% of Final Grade
1	M	Jan	9	9:30-10:30 – Course Introduction 10:30-11:30 – Introduction to P1 and Lecture on Social Analysis - Cheryl Case	SE, DF, RH, MM, DT, SW, CC	
				1:30-2:30 - Faculty Presentations on TOD Development 9:30-4:30 - Visit to Kitchener and ION Stations		
	Th	Jan	12	10-11:30am – Guest Lecture – School of Pharmacy, 10 Victoria St S A, Kitchener – Dr. Brian Doucet, UW	SE, DF, RH, MM, DT, SW	
2	M	Jan	16	9:30-10:30 – Faculty Lecture (Rick Haldenby) – Transit, Development, and Commuter Communities	SE, DF (until 11am), RH, MM, DT, SW	
	Th	Jan	19	<b>P1a Due W Jan 18th @ 9:00pm</b> Project Review in LECTURE HALL (9:30-5pm) on 19th 5pm – Introduction to P2	SE, DF, RH, MM, DT, SW, CC	15%



3	M	Jan	23	9:30-10:30 – Guest Lecture and Workshop Discussions (Cheryll Case) - A Human Rights Approach to Development	SE, DF, RH, MM, DT, SW, CC	
				11am-12:20pm - Salon with AE Students - Multiple student discussions about AE students' housing project massing studies		
	Th	Jan	26	9:30-11:00 – Round Table on Housing Issues facing Kitchener-Waterloo-Cambridge	SE, DF, RH, MM, DT, SW, CC	
				Guests to include: Lee Ann Hundt, Kitchener-Waterloo Wigwam Project, YIMBY – Yes in my back yard, and Better Tent City - Kitchener		
4	M	Jan	30	11am-12:20 – Faculty Lecture (Sam Eby) and Q/A – Housing Affordability and Development Practice (with AE Students)	SE, DF, RH, MM, DT, SW	
	Th	Feb	2		SE, DF, RH, MM, DT, SW	
5	M	Feb	6	9:30-11:30 – Guest Lecture – Amy Smoke and Bangshimo, Land Back Camp (TBC)	SE, DF, RH, MM, DT, SW	
				10:30-11:30 – Faculty Lecture (David Fortin) – Indigenous peoples and the City		
	Th	Feb	9		SE, DF, RH, MM, DT, SW	
6	M	Feb	13	11-12:20 - ARCH students to review AE students on early schematic design	SE, DF, RH, MM, DT, SW	30%
				<b>P2a Due</b> – 9:00pm (Printing Feb 14th-15th)		
	Th	Feb	16	<b>P2a Reviews</b> in Loft (9:30-5pm)	SE, DF, RH, MM, DT, SW, CC	
7				<b>Feb 20-24 – Reading Week, No classes</b>		
8	M	Feb	27	9:30-11am - Introduction to P2b - Ecological Sections - Carbon and Energy Talks by Faculty	SE, DF, RH, MM, DT, SW	
				11am -12:30pm – Faculty Lecture (Marie-Paule Macdonald) – Designing Housing Units, Accessibility (with AE Students)		
	Th	Mar	2	9:30-10:30 – Guest Lecture – Jungmin Nam – Housing density, housing projects in South Korea	SE, RH, MM, DT, SW	
9	M	Mar	6	<b>P2b Due Mar 6th</b> – 9:00pm	SE, DF, RH, MM, DT, SW	
	Th	Mar	9	<b>P2b Reviews</b> in Loft, Mar 9th (9:30-5pm)	SE, DF, RH, MM, DT, SW + Guests	5%
10	M	Mar	13	9:30-10:30 – Faculty Lecture (Di Tang) – Innovative affordable housing design strategies	SE, DF, RH, MM, DT, SW	
				11am-12:20pm - Salon with AE students offering feedback to ARCH students		
				9:30-10:30 – Guest lecture on structures by Cory Zurell, P.Eng (Lecturer, UW)		
	Th	Mar	16	10:30-11:30 - Faculty Lecture (Shiyu Wei) – Timber Structural Design	SE, DF, RH, MM, DT, SW	

11	M	Mar	20	Structural Pinup 11am-12:20pm – AE students will also offer feedback to ARCH students during this time	SE, DF, RH, MM, DT, SW	
	Th	Mar	23		SE, DF, RH, MM, DT, SW	
12	M	Mar	27	Interim pin-up	SE, DF, RH, MM, DT, SW	
	Th	Mar	30		SE, DF, RH, MM, DT, SW	
13	M	Apr	3		SE, DF, RH, MM, DT, SW	
	Th	Apr	6	Pin-up of Presentation Work	SE, DF, RH, MM, DT, SW	
14	M	Apr	10	Last Class	SE, DF, RH, MM, DT, SW	
	W	Apr	12	<b>Final Project Due</b> - digital files uploaded to LEARN by 6:00pm		
	M	Apr	17-18	<b>9:30-5:30 – Final Reviews</b>	SE, DF, RH, MM, DT, SW + Guests	50%

## Course Delivery Platforms & Communication

This course will be in-person. To organize materials and communication outside of weekly in-person sessions, we will use the following:

LEARN – Official communication, work submission, and grade recording and release.

MS TEAMS – May be used for supplementary discussions outside of in-person class time.

Students will be added to the course Team as required.

## COVID-19 Special Statement

Given the on-going situation around COVID-19, students are to refer to the University of Waterloo's developing information resource page (<https://uwaterloo.ca/coronavirus/>) for up-to-date information on academic updates, health services, important dates, co-op, accommodation rules and other university level responses to COVID-19.

## Fair Contingencies for Emergency Remote Teaching

To provide contingency for unforeseen circumstances, the instructor reserves the right to modify course topics and/or assessments and/or weight and/or deadlines with due and fair notice to students. In the event of such challenges, the instructor will work with the Department/Faculty to find reasonable and fair solutions that respect rights and workloads of students, staff, and faculty.

## Late Work

Assignments that are handed in late will receive an initial penalty of 5% on the first calendar day late and a 5% penalty per calendar day thereafter. After 5 calendar days, the assignment will receive a 0%.

Only in the case of a justified medical or personal reason will these penalties be waived, and only if these have been officially submitted to the [Undergraduate Student Services Co-Ordinator](#) and accepted by the Undergraduate Office.

Students seeking accommodations due to COVID-19, are to follow Covid-19-related accommodations as outlined by the university here: (<https://uwaterloo.ca/coronavirus/academic-information#accommodations>).

## Passing Grades

The standard minimum passing grade in each ARCH course is 50% with the following exceptions: the minimum passing grade is 60% for all studio courses (ARCH 192, ARCH 193, ARCH 292, ARCH 293, **ARCH 392**, ARCH 393, ARCH 492, and ARCH 493). Grades below the specified passing grade result in a course failure.

## Mental Health Support

All of us need a support system. We encourage you to seek out mental health supports when they are needed. Please reach out to Campus Wellness (<https://uwaterloo.ca/campus-wellness/>) and Counselling Services (<https://uwaterloo.ca/campus-wellness/counselling-services>).

We understand that the demands of your studies can be troubling, and that you may need to speak with someone for emotional support. Good2Talk (<https://good2talk.ca/>) is a post-secondary student helpline based in Ontario, Canada that is available to all students.

## Academic integrity, grievance, discipline, appeals and note for students with disabilities:

**Academic integrity:** In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. [Check [the Office of Academic Integrity](#) for more information.]

**Grievance:** A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70, Student Petitions and Grievances, Section 4](#). When in doubt, please be certain to contact the department's administrative assistant who will provide further assistance.

**Discipline:** A student is expected to know what constitutes academic integrity to avoid committing an academic offence, and to take responsibility for his/her actions. [Check [the Office of Academic Integrity](#) for more information.] A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course instructor, academic advisor, or the undergraduate associate dean. For information on categories of offences and types of penalties, students should refer to [Policy 71, Student Discipline](#). For typical penalties, check [Guidelines for the Assessment of Penalties](#).

**Appeals:** A decision made or penalty imposed under Policy 70, Student Petitions and Grievances (other than a petition) or Policy 71, Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72, Student Appeals.

**Note for students with disabilities:** [AccessAbility Services](#), located in Needles Hall, Room 1401, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with [AccessAbility Services](#) at the beginning of each academic term.

**Turnitin.com:** Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin in this course.

It is the responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit the alternate assignment.

## Selected Course Resources

### Books

Bozikovic, A., Case, C., Lorinc, and Vaughn, A. ds.. 2019. *House Divided: How the missing middle can solve Toronto's affordability crisis*. Toronto: Coach House.

Chapple, K., and Loukaitou-Sideris. 2019. *Transit-Oriented Displacement or Community Dividends?: Understanding the Effects of Smarter Growth on Communities*. MIT: Open Access. <https://direct.mit.edu/books/book/4195/Transit-Oriented-Displacement-or-Community>

Hofmeister, S. ed. 2018. "Affordable Housing: Cost-effective models for the future." *Detail*. Munich: DETAIL Business Information GmbH. Partially available online: [https://issuu.com/detail-magazine/docs/bk\\_978-3-95553-448-6\\_affordablehaus](https://issuu.com/detail-magazine/docs/bk_978-3-95553-448-6_affordablehaus). Full book available in Musgetes Library.

### Online Resources

<https://www.regionofwaterloo.ca/en/exploring-the-region/stage2ion.aspx>

[https://www.infrastructureontario.ca/uploadedFiles/\\_CONTENT/What\\_We\\_Do/Development/Transit-Oriented\\_Communities\\_\(Subways\)/TOC\\_Feb2022.pdf](https://www.infrastructureontario.ca/uploadedFiles/_CONTENT/What_We_Do/Development/Transit-Oriented_Communities_(Subways)/TOC_Feb2022.pdf)

<http://www.tod.org/>

<https://www.hamilton.ca/sites/default/files/2022-09/pedpolicies-transit-oriented-development-vol2.pdf>

<https://www.cip-icu.ca/Files/Awards/Planning-Excellence/2013-35-Translink-Transit-FULL-PLAN.aspx>

<https://allincities.org/toolkit/equitable-transit-oriented-development>

<https://www.metroplanning.org/work/project/30/subpage/5>

<https://www.liberallandscape.org/2019/08/20/the-new-ion-light-rail-line-in-kitchener-and-waterloo-ontario/>

### News

<https://www.cbc.ca/news/canada/kitchener-waterloo/ion-lrt-phase-2-to-cambridge-update-1.6553870>

<https://www.therecord.com/opinion/editorials/2022/01/28/light-rail-gamble-proving-its-worth.html>

### Films

Friedrichs, C. dir. 2011. *The Pruitt Igoe Myth*. <https://www.kanopy.com/en/uwaterloo/video/126559>