

USP 570: Transportation and Land Use

Portland State University, Winter 2025

Room and Time: URBN 220
Mon 6:40 - 9:20 pm

Instructor: Professor Liming Wang

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Office Hours: Thursdays 2-3:45pm over zoom (<https://pdx.zoom.us/j/5037255130> ↗) or in person (URBN 350D)

Course Website: <https://canvas.pdx.edu>

Course Description

This course will examine the interactions of the transportation system with land use. We will define “land use” broadly to include many dimensions and scales of the built environment. We will only be looking at topics and issues where transportation and land use intersect. Other classes cover transportation and land use policy and planning more broadly and specifically, but separately, e.g. USP 556, 544, and 542. This course tries not to duplicate what is covered in those courses. The course is intended for MURP and MUS/PhD students and assumes some previous coursework, including micro-economics (e.g. USP 515) and statistics (e.g. USP 535, 634). In addition, knowledge of GIS is useful for some of the class project options, but not required.

By the end of the course, students should:

- Understand the theories behind transportation and land use interactions, including travel behavior, accessibility, urban structure and location theory;
- Understand the impacts of transportation infrastructure and policies on land use and the impacts of land use and the built environment on travel patterns;
- Be able to critically evaluate policies aimed to influence transportation and land use; and
- Know about various policy instruments that aim to influence travel through land use or land use through transportation investment and policies.

Course Requirements

TEXTBOOK AND READINGS

Readings for the course draw from a few sources:

- Kevin J. Krizek and David A. King, *Advanced Introduction to Urban Transport Planning*, Northampton, MA, 2021. Henceforth UTP;
- David M. Levinson and Kevin J. Krizek, *Metropolitan Transport and Land Use Planning for Place and Plexus*, Routledge, New York, 2018. Henceforth PPP;
- Additional articles and web links posted on the canvas course website;
- The case studies provided by your fellow classmates, posted on the class website by 5 pm the Thursday before their case study presentation.

Two non-academic books touching upon the transportation and land use connection I recommend

- Charles Montgomery, 2013. *Happy City: Transforming Our Lives through Urban Design*. FSG, New York
- Jeff Speck, 2012. *Walkable City*. FSG, New York.

GRADING

Class participation	10%
Case study	25%
Accessibility exercise	20%
Integrated modeling exercise	20%
Analytical research paper	25%

CLASS PARTICIPATION (10%)

This portion of your grade is separate from the case study presentation. Participation can occur in class and on the course web site. “Satisfactory” participation means that you attend class regularly, pay attention, and ask questions. “Excellent” class participation means that you make an original contribution, such as sharing examples that relate to the topics covered in class and expanding the discussion.

Case Study (25%)

You will be assigned to a group of two to develop and present a particular case study. Each case study is intended to be particularly relevant for a topic covered in the class. Your case study products should address the following questions:

1. Why is this case important to land use and transportation?
2. How is this case relevant to a theoretic framework/topic from the readings?
3. What are the policy/implementation mechanisms in this case, i.e. how does it work?
4. For cases that are not specific to a particular location, provide some examples from a variety (2-4) of locations.
5. What is the evidence that demonstrates the efficacy of the program? How was evidence used in the adoption and/or implementation of the case/policy? What is the quality of the evidence?
6. In your team’s opinion, how well does the case/policy serve its intended purpose?

Each group will do the following for their case study:

Forum Thread (15%): Using the course’s Canvas Discussions forum, you will create a forum topic (in the Discussions section of the Canvas website) to share with the rest of the class about the case. The original content (i.e. what you write) of the thread should equate to about five single-spaced written pages. The post must be up by 5 pm the **Thursday before** you are scheduled to present on Monday.

The forum thread should include the following:

- Background about the case. This should include a short narrative written by the team, along with links to web sites or other documents (produced by others and appropriately cited).
- Answers to the questions above. This should include narrative written by the team, with links to relevant materials produced by others.
- Additional readings. Include links to 2-4 academic articles that relate to the case study. These may be integrated into the answers to the questions above. Your narrative should refer to the

readings, demonstrate that you understand them, and apply the findings to the case.

In-class presentation (10%). Each group will present the case in-class. Plan for a 30-minute interactive presentation followed with 10 minutes for Q&A.

To receive an “A” grade on this assignment, your group must go beyond a description of the case, even an in depth one. You must apply the applicable theory (theories) using the academic literature and independently evaluate the case using multiple sources. Also, the highest graded presentations will be interactive, and not one-directional.

ACCESSIBILITY EXERCISE (20%)

In this exercise, we will apply and analyze the 20-minute neighborhood accessibility measure to City of Portland. Evaluate and critique the 20-minute neighborhood (or complete neighborhood) measure.

MODELING EXERCISE (20%)

In this exercise, you will gain hands-on experience of applying models in the planning process by working with a land use - transportation interaction (LUTI) model for a scenario planning exercise. We will use actual data and an operational model to do “what if” analyses for future scenarios.

Research Paper (25%)

In this paper, you will explore a topic or a project of your choosing in depth, using a wide range of literature and your own analysis. Your objective is to develop and write-up an original insight based on your own (quantitative or qualitative) analysis of original data.

The topic or project must relate to transportation and land use and one or more of the theories/policies presented in the textbook. Your paper could answer a broad question using a specific data source. (e.g. How should we measure sprawl? How does regional urban form affect commuting behavior? How does a rail line or bike path influence property values?) Alternatively, you would take a specific project or policy and evaluate it or develop or design a project or policy for a community. Your topic or project cannot simply duplicate your case study, but they could be related.

The paper must include some original analysis. This most likely will be analysis of secondary data, such as the Census, a travel survey (e.g. 2011 OHAS), the American Housing Survey, GIS data (e.g. RLIS), etc. Examples of previous class project topics include:

- Effects of Portland Eastside Streetcar Extension on Real Estate Development
- TOD and Employment Growth: A case study of MAX station areas
- Accessibility of Bike Share Stations in Portland and Its Impacts
- An exploration of correlations between Transit access and household income, housing tenure status, school quality, and crime rates in major US cities

The paper must include a literature review that includes at least five academic (i.e. peer reviewed journal articles) sources.

Details:

- 10-20 pages, double-spaced, not including figures, tables, or references.
- Initial topic due in class on January 27th. This should include a brief description of the topic or project, a list of key references (including academic literature), specific question(s) you plan to look into, and the data source(s) you plan to use.

- Paper updates due on February 24st. This should include a draft of the introduction/background sections, the literature review, and the methodology.
- Final paper due Friday, March 14th.

The best papers (high A grades) will be worthy of submission to an academic journal. Use empirical journal articles as a model to follow in terms of format, style, etc.

Citations You must cite all of your sources in your work. Please review this web site about citations: http://library.pdx.edu/citing_sources.html

I am flexible about which style of citations you use, e.g. MLA, APA, Chicago, etc. – just be consistent. The general rule is that you must include enough information that the reader could find the original source. I discourage the use of numbered footnotes for the types of writing you will do for this class. I recommend a style that places the author's name and the year of the publication in parentheses after the quote or reference, e.g. (Dill, 2005).

GRADING POLICIES

According to the *PSU Bulletin*, “the grading system at the graduate level is defined as follows: A—Excellent; B—Satisfactory; C—Below graduate standard.” Therefore, simply doing the required work does not warrant an A grade. Your work must be excellent to receive an A grade.

Incomplete grades. I will only assign an incomplete (I) grade when circumstances are consistent with PSU's policy on incomplete grades, shown below. “Circumstances must be unforeseen or beyond [your] control.” In other words, I do not give incompletes for poor planning on your part, e.g. you got too busy with work and your other classes. If you do encounter unforeseen circumstances, approach me as soon as possible about entering into a written agreement for an incomplete grade. From the PSU Bulletin:

“A student may be assigned an I grade by an instructor when all of the following four criteria apply:

- Quality of work in the course up to that point must be C level or above.
- Essential work remains to be done. “Essential” means that a grade for the course could not be assigned without dropping one or more grade points below the level achievable upon completion of the work.
- Reasons for assigning an "I" must be acceptable to the instructor. The student does not have the right to demand an "I". The circumstances must be unforeseen or be beyond the control of the student. An instructor is entitled to insist on appropriate medical or other documentation. In no case is an “Incomplete” grade given to enable a student to do additional work to raise a deficient grade.
- A written agreement, signed by both the student and the instructor, should include a statement of the remaining work to be done to remove the "I" grade, and the date, not to exceed one year from the end of the term of enrollment for the course, by which work must be completed in order to earn credit toward the degree. The instructor may specify the highest grade which may be awarded upon completion; the grade awarded should not exceed the level of achievement attained during the regular course period.”

Late assignments will be marked down – 5 percentage points per day late.

Schedule and Readings (Subject to Adjustments)

TF - Theoretic Framework; P - Policies; M - Methods

Date	Topics	Readings	Deadline
1/6	Course overview	1. UTP Chapter 1-2 2. <u>Brown, J. E. Morris, and B. Taylor, 2009. Planning for Cars in Cities: Planners, Engineers, and Freeways in the 20th Century. Journal of the American Planning Association, Volume 75 (2), Pages 161-177.</u> ↗	
1/13	M1: Measures: Mobility, Connectivity, and Accessibility	1. UTP Chapter 3 2. Karst T. Geurs, Bert van Wee, Accessibility evaluation of land-use and transport strategies: review and research directions, Journal of Transport Geography, Volume 12, Issue 2, June 2004, Pages 127-140, http://dx.doi.org/10.1016/j.jtrangeo.2003.10.005 ↗ 3. <u>Litman, T. (2003). Measuring transportation: Traffic, mobility and accessibility. Institute of Transportation Engineers. ITE Journal, 73(10), 28-32.</u>	Accessibility Exercise assigned;
1/20	No class		
1/27	TF1	1. UTP Chapter 4-5	
2/3	TF2	1. UTP Chapter 6-7 2. <u>Boarnet, M.G., 2011. A Broader Context for Land Use and Travel Behavior, and a Research Agenda, Journal of the American Planning Association Volume 77, 2011 Issue 3. 197-213.</u> ↗	Initial paper topic due
2/10	P1: Transit and Affordable Housing	1. Adkins, A. et al. How Location Efficient Is LIHTC? Measuring and Explaining State-Level Achievement, Housing Policy Debate, 27:3, 335-355. 2. Dong, H. Rail-transit-induced gentrification and the affordability paradox of TOD, Journal of Transport Geography, 63, 2017, pp 1-10.	Accessibility Exercise due
2/17	M2: Evaluation	1. PPP. Chapter 10. Evaluation 2. Difference in Difference Estimation: http://healthcare-economist.com/2006/02/11/difference-in-difference-estimation/ ↗	

🔗 and

<https://www.youtube.com/watch?v=J7q2H8aB8bQ> 🔗



3. Musaad A. K. Dueker, and J. Strathman. Light rail transit stations and property values: A hedonic price approach. Transportation Research Record, 1400 (1993), pp. 90–94. 🔗

1. UTP Chapter 9

2. SHRP2 C16 Report: The Effect of Smart Growth Policies on Travel Demand. <http://onlinepubs.trb.org/onlinepubs/shrp2/SHRP2prepub> 🔗

[C16.pdf](#) 🔗

3. SmartGAP User Guide:

<https://www.nap.edu/download/22597>

Paper updates due (2/24); Modeling Exercise assigned

1. Why Streetcars Aren't About Transit: The Economic Development Argument for Trams

<https://nextcity.org/features/view/why-streetcars-arent-about-transit> 🔗

2. The Case for the Tram: Learning from Portland [www.sxd.sala.ubc.ca/8_research/sxd FRB06 tram.pdf](http://www.sxd.sala.ubc.ca/8_research/sxd_FRB06_tram.pdf) 🔗

3. Washington, DC's pointless streetcar service finally opens 🔗

4. The Great Streetcar Conspiracy <http://www.cato.org/publications/policy-analysis/great-streetcar-conspiracy> 🔗

1. Shoup, D., 1999. The trouble with minimum parking requirements. Transportation Research Part A 33 (1999) 549-574.

2. Shoup, D., The High Cost of Free Parking, Journal of Planning Education and Research. Vol 17, Issue 1, pp. 3 – 20.
3. Wenyu Jia and Martin Wachs, 1998. Parking and affordable housing, Access, Vol 13.

3/14

Modeling
Exercise
due

3/17

Final paper
due

Acknowledgments

The materials of this course are adapted from those used by Drs. Kelly Clifton and Jennifer Dill.

I am grateful to them for letting me use their materials to develop this course.

Access and Inclusion for Students with Disabilities

PSU values diversity and inclusion; we are committed to fostering mutual respect and full participation for all students. My goal is to create a learning environment that is equitable, useable, inclusive, and welcoming. If any aspects of instruction or course design result in barriers to your inclusion or learning, please notify me. The Disability Resource Center (DRC) provides reasonable accommodations for students who encounter barriers in the learning environment.

If you have, or think you may have, a disability that may affect your work in this class and feel you need accommodations, contact the Disability Resource Center to schedule an appointment and initiate a conversation about reasonable accommodations. The DRC is located in 116 Smith Memorial Student Union, 503-725-4150, drc@pdx.edu, <https://www.pdx.edu/drc>.

If you already have accommodations, please contact me to make sure that I have received a faculty notification letter and discuss your accommodations.

Students who need accommodations for tests and quizzes are expected to schedule their tests to overlap with the time the class is taking the test.

For information about emergency preparedness, please go to the Fire and Life Safety webpage (<https://www.pdx.edu/environmental-health-safety/fire-and-life-safety>) for information.

Title IX Statement

Title IX is a federal law that requires the university to appropriately respond to any concerns of sex/gender discrimination, sexual harassment or sexual violence. To assure students receive support,

faculty members are required to report any instances of sexual harassment, sexual violence and/or other forms of prohibited discrimination to PSU's Title IX Coordinator, Julie Caron. If you would rather share information about these experiences with an employee who does not have these reporting responsibilities and can keep the information confidential, please contact one of the following campus resources (or visit this link):

- Women's Resource Center (503-725-5672) or schedule online at <https://psuwrc.youcanbook.me> • Center for Student Health and Counseling (SHAC): 1880 SW 6th Ave, (503) 725-2800
- Student Legal Services: 1825 SW Broadway, (SMSU) M343, (503) 725-4556

PSU's Title IX Coordinator and Deputy Title IX Coordinators can meet with you to discuss how to address concerns that you may have regarding a Title IX matter or any other form of discrimination or discriminatory harassment. Please note that they cannot keep the information you provide to them confidential but will keep it private and only share it with limited people that have a need to know. You may contact the Title IX Coordinators as follows:

- PSU's Title IX Coordinator: Julie Caron by calling 503-725-4410, via email at titleixcoordinator@pdx.edu or in person at Richard and Maureen Neuberger Center (RMNC), 1600 SW 4th Ave, Suite 830
- Deputy Title IX Coordinator: Yesenia Gutierrez by calling 503-725-4413, via email at yesenia.gutierrez.gdi@pdx.edu or in person at RMNC, 1600 SW 4th Ave, Suite 830
- Deputy Title IX Coordinator: Dana Walton-Macaulay by calling 503-725-5651, via email at dana26@pdx.edu or in person at Smith Memorial Union, Suite, 1825 SW Broadway, Suite 433

For more information about the applicable regulations please complete the required student module Creating a Safe Campus in your D2L.

Technology access

Proficiency in the use of canvas, PSU email, Zoom, and part of google suite is required for this course. This course requires consistent access to functioning computer equipment and Internet access throughout the length of the course. Reliance on a cellular connection may not provide reliable and fast access to online learning resources. Here are some broadband programs that are free or low-cost:

<https://www.hightspeedinternet.com/resources/are-there-government-programs-to-help-me-get-internet-service>

Have feedback on Diversity, Equity or Inclusion (DEI) at the Toulon School? We welcome kudos, ideas, and concerns, related to this particular class or other issues in the Toulon School.

Students are welcome to submit anonymous feedback [here](#), and/or communicate with the DEI committee members directly.