UP 460: SUSTAINABLE URBAN TRANSPORTATION AND LAND USE POLICY

Class Meetings: Monday and Wednesday, 9:00am – 10:20am
TBH 225

Instructor: Bumsoo Lee, bumsoo@illinois.edu
Office Hours: 10:30am – 11:20am on Wednesday and by appointment

Course Overview

Congestion in auto-oriented US cities has been worsening for decades. However, the government’s ability to finance new transportation infrastructure has become increasingly constrained. Further, the climate change and energy issues make any policy and public investments increasing automobile dependency unpopular. Instead, planners are increasingly turning to alternative policies that involve changing development patterns and land uses to solve transportation problems. There is ample evidence that downtown workers and residents drive less and use more sustainable modes than suburban residents. If we design and develop suburban neighborhoods like downtown neighborhoods, – with higher density, mixed land use, and transit and pedestrian friendly street layout – would people drive less?

This course is designed to discuss integrated approaches to sustainable urban transportation and land use planning and policy. It emphasizes the need to understand how the built environment and transportation system interact. How new investments on transportation infrastructure – highway or transit – subsequent development patterns? How do physical urban form and land use patterns affect the way people travel? To address these questions, students will learn land use/transportation theories and models, review empirical studies, compare different transportation/land use policies and planning techniques, and conduct their own research.

Topics to be covered in the course include:
1. Contemporary urban transportation and land use policy debates and issues
2. Theories of travel demand and behavior
3. Influences of urban form (land use) on travel patterns
4. Impacts of transportation investment on urban development
5. Integrated transportation/land use planning and smart growth
6. Travel demand management
7. Transit oriented development (TOD)

This course focuses on the interaction between transportation and land use, and is research oriented. Students who seek a more traditional transportation planning course are advised to take UP 430 Urban Transportation Planning and UP 431 Urban Transportation Modeling.

Textbook

- Additional readings or the links to them will be posted on the Canvas course website.
- In most sessions, a lecture will be accompanied by discussion often led by graduate students based on reading assignments. Students should read ALL reading assignments before class.

Prerequisite

There is no prerequisite for this course. However, this course is open only to juniors, seniors, and graduate students.


**EVALUATION**

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<th>Undergraduate students</th>
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<tr>
<td>Class Participation/Attendance</td>
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<td>Assignments</td>
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**COURSE AT A GLANCE**

1 Aug 23  Course overview
1 Aug 25  Contemporary issues and debate—Land use/transportation connection
          Assignment #1 due
2 Aug 30  Transportation, energy, and the environment
2 Sep 1   The context of urban travel, mobility to accessibility [1 SLD]
3 Sep 6   No class, Labor Day
3 Sep 8   Theories of travel demand [2 SLD]
4 Sep 13  Influence of land use on travel—Case study & cross-sectional study [2 SLD]
          Assignment #2 due
4 Sep 15  Influence of land use on travel—More on operationalizing urban form [1 SLD]
5 Sep 20  Influence of land use on travel—Longitudinal & meta-analysis [2 SLD]
5 Sep 22  Influence of land use on travel—Self-selection & regional spatial structure [1 SLD]
6 Sep 27  Influence of land use on travel—Market for smart growth [2 SLD]
          Assignment #3 due
6 Sept 39 Influence of land use on travel—Integrated T/LU planning [3 BPP]
7 Oct 4   Transportation investment and urban development—A longer view
7 Oct 6   Transportation investment and urban development—Case studies [1 SLD]
10 Oct 25 TOD—Best cases [3 BPP]
          Assignment #4 due
10 Oct 27 Road pricing—Fundamental economics
11 Nov 1  Road pricing—Equity [2 SLD]
11 Nov 3  Road pricing—Case studies [3 BPP]
12 Nov 8  Travel demand management & nudge—Case studies [1 SLD] [1-2 BPP]
12 Nov 10 Travel demand management & nudge
13 Nov 15 Minimum parking requirement & alternatives [1 SLD] [1-2 BPP]
13 Nov 17 Parking pricing [1-2 BPP]
14 Nov 22 Fall Break
14 Nov 24 Fall Break
15 Nov 29  Term Paper Presentation
15 Dec 1   Term Paper Presentation
16 Dec 6   Term Paper Presentation
16 Dec 8   Term Paper Presentation

Final Paper due on Dec 13, Monday by NOON

[SLD] – Graduate student-led research paper presentation and discussion.
[BPP] – Best practice presentation led by undergraduate students.
COURSE REQUIREMENTS

The format for this course is a combination of lecture and discussion. Required reading and student-led presentation & discussion are central to the learning experience of this course.

**Research Paper Presentation and Discussion Leader (Graduate Students):** Each graduate student is required to present and lead discussion on one chosen research paper that is included in reading assignments. These reading assignment papers are marked as [SLD] in the course schedule below. A written report is not a part of the requirement. Detailed guidelines and a sign-up Google Sheet will follow.

**Best Practice Presentation and Discussion (Undergraduate Students):** Each undergraduate student is required to present one case study of best practices and lead discussion in a chosen area in the following: integrated transportation and land use planning, transforming cities with transit, TOD, travel demand management (TDM) and nudge for sustainable transportation, congestion pricing, and parking policy & program. These presentation schedules are marked as [BPP] in the course schedule below. A written report is not a part of the requirement. Detailed guidelines and a sign-up Google Sheet will follow.

**Homework Assignments (All Students):** Four homework assignments will be given throughout the semester, including short essays and analysis papers. All homework assignments are due by 9am on due dates and late submission of homework assignments will be penalized by 10% per day, up to 30%.

**Term Paper Case Study & Presentation (Undergraduate Students):** Undergraduate students are required to conduct and present a case study, and submit a 10-page report. A study case can be a specific policy program, project, or city that highlights a successful (or not successful) implementation of sustainable transportation and land use policies. Students can choose the same topic as in their best practice presentations, but should demonstrate further development, including in-depth first-hand analysis and evaluation. Detailed instructions will follow. Students are strongly encouraged to discuss with the instructor as often as needed about the term paper research topic.

**Term Paper Research & Presentation (Graduate Students):** Graduate students are required to conduct and present term paper research, and submit a 15-page paper. The term paper must address a topic on sustainable transportation and land use. Students can do a case study, an empirical study, policy evaluation, or any other type of research or analysis on the topics covered in class. Detailed instructions about the term paper will follow. Students are strongly encouraged to discuss with the instructor as often as needed about the term paper research topic, methods, data sources, etc.

Schedules for term paper deadlines:
[Nov 1] Three-page progress report documenting what have been done and what need to be done, expected findings, and expected content in the final paper.
[Nov 29, Dec 1, 6, & 8] Research/Case Study presentation. PPT file is due by noon on the presentation day.

POLICIES

COVID-19  
Following University policy, all students are required to engage in appropriate behavior to protect the health and safety of the community. Students are also required to follow the campus COVID-19 protocols. Students who feel ill must not come to class. In addition, students who test positive for COVID-19 or have had an exposure that requires testing and/or quarantine must not attend class.
FACE COVERINGS

All students, faculty, staff, and visitors are required to wear face coverings in classrooms and university spaces. This is in accordance with CDC guidance and University policy and expected in this class.

BUILDING ACCESS

In order to implement COVID-19-related guidelines and policies affecting university operations, instructional faculty members may ask students in the classroom to show their Building Access Status in the Safer Illinois app or the Boarding Pass. Students are required to show only the Building Access Screen, which shows compliance without specifying whether it was through COVID-19 vaccination or regular on-campus testing.

Students who fail to abide by these rules will first be asked to comply; if they refuse, they will be required to leave the classroom immediately. If a student is asked to leave the classroom, the non-compliant student will be judged to have an unexcused absence and reported to the Office for Student Conflict Resolution for disciplinary action. Accumulation of non-compliance complaints against a student may result in dismissal from the University.

SPECIAL ACCOMMODATION

This course will accommodate students with documented disabilities. Please refer to http://disability.illinois.edu/disability-resource-guide for more information and provide the appropriate documentation at the beginning of the semester.

ACADEMIC INTEGRITY

This course follows the guidelines set forth by the University student code. See https://studentcode.illinois.edu/article1/part4/1-402/ for specific guidelines, examples, and punishment associated with academic dishonesty.

CLASS CLIMATE

The Department of Urban and Regional Planning (DURP) is committed to creating an environment of inclusion and opportunity that is rooted in the very goals and responsibilities of practicing planners. Conduct that interferes with the rights of another or creates an atmosphere of intimidation or disrespect is inconsistent with the environment of learning and cooperation that the program requires. By enrolling a course in the Department of Urban and Regional Planning, students agree to be responsible for maintaining a respectful environment in all DURP activities, including lectures, discussions, labs, projects, and extracurricular programs. We will be governed by the University Student Code. See Student Code Article 1—Student Rights and Responsibilities, Part 1. Student Rights: §1-102 In the Classroom.

EMERGENCY RESPONSE

The Department of Homeland Security and the University of Illinois at Urbana-Champaign Office of Campus Emergency Planning recommend the following three responses to any emergency on campus: RUN > HIDE > FIGHT

For more information, https://police.illinois.edu/emergency-preparedness/emergency-response-guide/

COUNSELING CENTER

The Counseling Center is committed to providing a range of services intended to help students develop improved coping skills in order to address emotional, interpersonal, and academic concerns. The Counseling Center provides individual, couples, and group counseling. All of these services are paid for through the health services fee. The Counseling Center offers primarily short term counseling, but they do also provide referrals to the community when students could benefit from longer term services. https://counselingcenter.illinois.edu/
Week 1

Aug 23 Introduction and Course Overview

Aug 25 [Discussion] Contemporary Issues and Debates – land use and travel connection matters?
[Assignment #1 due]

*Moore, A., S. Staley, and R. Poole. 2010. The role of VMT reduction in meeting climate change policy goals. Transportation Research A 44 (8), 565–574.

Week 2

Aug 30 Transportation, Energy, and the Environment

Sep 1 Context of Urban Travel, Mobility to Accessibility
Hanson, Susan. Ch.1 Introducing Urban Transportation. In Giuliano & Hanson (2017).

Week 3

Sep 6 No Class, Labor Day

Sep 8 Theories of Travel Demand
Miller, Harvey. Ch. 5 Theories and Models in Transportation Planning. In Giuliano & Hanson (2017).

WEEK 4

Sep 13 Influence of Land Use on Travel—Introduction, case study & cross-sectional study


Sep 15 Influence of Land Use on Travel—more on operationalizing urban form


**WEEK 5**

*Sep 20 Influence of Land Use on Travel —longitudinal and meta-analysis*


*Sep 22 Influence of Land Use on Travel—residential self-selection, regional spatial structure*


**WEEK 6**

*Sep 27 Influence of Land Use on Travel—market for smart growth*


*Sep 29 Influence of Land Use on Travel—integrated transportation and land use planning*

[BPP] 3 Best practice presentations selected from Litman (2016) and Sabouri, et al. (2019).


**Week 7**

*Oct 4 Transportation Investment and Urban Development—a longer view*

Muller, Peter O. 2017. Ch.3 Transportation and urban form: Stages in the spatial evolution of the American metropolis. In Giuliano & Hanson (2017).

Giuliano, Genevieve. Ch.9 Land use impacts of transportation investments. In Giuliano & Hanson (2017).
**Oct 6 Transportation Investment and Urban Development—case studies**


**Week 8**

**Oct 11 Transportation Investment and Urban Development—transforming cities with transit, global best cases**

[BPP] 3 Best practice presentations selected from Suzuki, et al. (2013) or other sources.  
Suzuki, Cervero & Iuchi. 2013. Transforming Cities with Transit: Transit and Land Use Integration for Sustainable urban Development. Ch. 2 Lessons from sustainable transit-oriented cities (pp. 49-91).

**Oct 13 TOD—definition, impacts & design principles**

Center for TOD. 2008. TOD202 Station area planning: How to make great transit-oriented places  

**Week 9**

**Oct 18 TOD—strategic planning, regional planning & corridor planning**

Center for TOD. 2011. TOD204 Planning for TOD at the regional scale.  
Center for TOD. 2011. TOD203 Transit corridors and TOD: Connecting the dots.  
* City of Denver 2014 *Transit Oriented Development Strategic Plan*.  

**Oct 20 TOD—tools, finance & affordable housing**

Center for TOD. 2009. TOD201 Mixed income housing near transit: Increasing affordability with location efficiency.

**Week 10**

**Oct 25 TOD—Best Practices**

[BPP] 3 Best practice presentations on successful TOD

**Oct 27 Road Pricing—Fundamental Economics**

Planning Association. Appendix C. Surface transportation: how it works.

**Week 11**

**Nov 1 Road Pricing—Equity**


**Nov 3 Road Pricing—Case Studies**

[BPP] 3 Best practice presentations on successful road pricing related programs.

**Week 12**

**Nov 8 Travel Demand Management & Nudge**


**Nov 10 Travel Demand Management & Nudge—Case Studies**

[BPP] 1-2 Best practice presentations on travel demand management and nudge programs

**Week 13**

**Nov 15 Parking—minimum parking requirement & alternatives**

* Cutter, W. B., & Franco, S. F. (2012). Do parking requirements significantly increase the area dedicated to parking? A test of the effect of parking requirements values in Los Angeles County. Transportation Research Part A, 46(6), 901-925.
[BPP] 1-2 Best practice presentations on successful parking programs.

**Nov 17 Parking—pricing parking**


[BPP] 1-2 Best practice presentations on successful parking programs.

**Week 14**

Nov 22 Fall Break
Nov 24 Fall Break

**Week 15**

Nov 29 TERM Paper Presentations
Dec 1 TERM Paper Presentations

**Week 16**

Dec 6 TERM Paper Presentations
Dec 8 TERM Paper Presentations

*Final Paper due on Dec 13 Monday by NOON*