UP 460: SUSTAINABLE URBAN TRANSPORTATION AND LAND USE POLICY

Fall 2020, Department of Urban and Regional Planning, University of Illinois at Urbana-Champaign

CLASS MEETINGS:  Monday and Wednesday, 1:00 pm – 2:20 pm
                 Online (Occasionally Room TBH 225)

INSTRUCTOR:      Bumsoo Lee, bumsoo@illinois.edu
OFFICE HOURS:    12:00 pm – 12:50 pm on Wednesday and by appointment, Online

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 investment entailing more automobile use unpopular. Instead, planners are increasingly turning to alternative policies that involve changing development patterns and land use 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 – influence subsequent development patterns? How do physical urban form and land use patterns influence travel patterns? 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 to learn more foundational transportation planning skills are advised to take UP 430 Urban Transportation Planning and UP 431 Travel Behavior Analysis.

TEXTBOOK

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

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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<thead>
<tr>
<th></th>
<th>Undergraduate students</th>
<th>Graduate students</th>
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<tbody>
<tr>
<td>Class Participation/Attendance</td>
<td>10 %</td>
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<tr>
<td>Assignments</td>
<td>40 %</td>
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<tr>
<td>Research paper presentation &amp; discussion leader</td>
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<tr>
<td>Best practice presentation &amp; discussion</td>
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<td>Case study term paper &amp; presentation</td>
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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 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): Various assignments will be given throughout the semester, including short essays and analysis papers. All homework assignments are due by 1pm on due dates and late submission of homework assignments will be penalized by 10% per day, up to 50%.

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. Students can choose the same topic as in their best practice presentations, but should have significant 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 2] Three-page progress report documenting what has been done and what needs to be done, expected findings, and expected content in the final paper.
[Nov 30, Dec 2, 7, & 9] Research/Case Study presentation. PPT file is due by noon on the presentation day.
[Dec 14, Monday] Term paper due by Noon.
### COURSE AT A GLANCE

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Assignment Due</th>
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<tbody>
<tr>
<td>Aug 24</td>
<td>Course overview</td>
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<tr>
<td>Aug 26</td>
<td>Contemporary issues and debate—Land use/transportation connection</td>
<td>Assignment #1 due</td>
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<td>Aug 31</td>
<td>Transportation, energy, and the environment</td>
<td>Assignment #1 due</td>
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<td>Sep 2</td>
<td>The context of urban travel, mobility to accessibility [1 SLD]</td>
<td>Assignment #2 due</td>
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<td>Sep 7</td>
<td>No class, Labor Day</td>
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<td>Sep 9</td>
<td>Theories of travel demand [2 SLD]</td>
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<td>Sep 14</td>
<td>Influence of land use on travel—Case study &amp; cross-sectional study [2 SLD]</td>
<td>Assignment #2 due</td>
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<td>Sep 16</td>
<td>Influence of land use on travel—More on operationalizing urban form [1 SLD]</td>
<td>Assignment #2 due</td>
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<td>Sep 21</td>
<td>Influence of land use on travel—Longitudinal &amp; meta-analysis [2 SLD]</td>
<td>Assignment #3 due</td>
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<td>Sep 23</td>
<td>Influence of land use on travel—Self-selection &amp; regional spatial structure [1 SLD]</td>
<td>Assignment #3 due</td>
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<td>Sep 28</td>
<td>Influence of land use on travel—Market for smart growth [2 SLD]</td>
<td>Assignment #3 due</td>
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<td>Sep 30</td>
<td>Influence of land use on travel—Integrated T/LU planning [3 BPP]</td>
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<td>Oct 5</td>
<td>Transportation investment and urban development—A longer view</td>
<td>Term paper abstract due</td>
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<td>Oct 7</td>
<td>Transportation investment and urban development—Case studies [1 SLD]</td>
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<td>Oct 12</td>
<td>Transforming cities with transit, global best cases [3 BPP]</td>
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<td>Oct 14</td>
<td>TOD—Definition, impacts &amp; design principles [1 SLD]</td>
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<td>Oct 19</td>
<td>TOD—Strategic, regional &amp; corridor planning</td>
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<td>Oct 21</td>
<td>TOD—Tools, finance &amp; affordable housing</td>
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<td>Oct 26</td>
<td>TOD—Best cases [3 BPP]</td>
<td>Assignment #4 due</td>
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<td>Oct 28</td>
<td>Travel demand management &amp; nudge</td>
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<td>Nov 2</td>
<td>Travel demand management &amp; nudge—Case studies [1 SLD] [1-2 BPP]</td>
<td>Progress report due</td>
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<td>Nov 4</td>
<td>Road pricing—Fundamental economics</td>
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<td>Nov 9</td>
<td>Road pricing—Equity [2 SLD]</td>
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<td>Nov 11</td>
<td>Road pricing—Case studies [3 BPP]</td>
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<td>Nov 16</td>
<td>Minimum parking requirement &amp; alternatives [1 SLD] [1-2 BPP]</td>
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<td>Nov 18</td>
<td>Parking pricing [1-2 BPP]</td>
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<td>Nov 23</td>
<td>Fall Break</td>
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<td>Nov 25</td>
<td>Fall Break</td>
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<td>Nov 30</td>
<td>Research/Case Study Presentation</td>
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<td>Dec 2</td>
<td>Research/Case Study Presentation</td>
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<td>Dec 7</td>
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<td>Dec 9</td>
<td>Research/Case Study Presentation</td>
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**Final Paper due on Dec 14, Monday by NOON**

[SLD] – Graduate student-led research paper presentation and discussion.

[BPP] – Best practice presentation led by undergraduate students.

### POLICIES

**SPECIAL ACCOMMODATIONS**

This course will accommodate students with documented disabilities. Please refer to [http://disability.illinois.edu/disability-resource-guide](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 [http://studentcode.illinois.edu/article1_part4_1-401.html](http://studentcode.illinois.edu/article1_part4_1-401.html) 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 RECOMMENDATIONS
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, http://police.illinois.edu/emergencyplanning/general/

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/

COURSE SCHEDULE
* Optional reading for undergraduate; strongly suggested for graduate students.

Week 1
Aug 24 Introduction and Course Overview
Aug 26 [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 31 Transportation, Energy, and the Environment

Sep 2 Context of Urban Travel, Mobility to Accessibility
Hanson, Susan. Ch.1 Introducing Urban Transportation. In Giuliano & Hanson (2017).
[SLD] Levine J, Grengs J, Shen Q, 2012, "Does Accessibility Require Density or Speed?" Journal of the
American Planning Association 78: 157-172.

Week 3

Sep 7 No Class, Labor Day

Sep 9 Theories of Travel Demand

Miller, Harvey. Ch. 5 Theories and Models in Transportation Planning. In Giuliano & Hanson (2017).


WEEK 4

Sep 14 Influence of Land Use on Travel—Introduction, case study & cross-sectional study


Sep 16 Influence of Land Use on Travel—more on operationalizing urban form


WEEK 5

Sep 21 Influence of Land Use on Travel —longitudinal and meta-analysis


Sep 23 Influence of Land Use on Travel—residential self-selection, regional spatial structure


WEEK 6

Sep 28 Influence of Land Use on Travel—market for smart growth


Sep 30 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 5 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 7 Transportation Investment and Urban Development—case studies


Week 8

Oct 12 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 14 TOD—definition, impacts & design principles


Oct 19 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 21 TOD—tools, finance & affordable housing

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

Week 10

Oct 26 TOD—Best Practices

[BPP] 3 Best practice presentations on successful TOD

Oct 28 Travel Demand Management & Nudge


Week 11

Nov 2 Travel Demand Management & Nudge—Case Studies

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

Nov 4 Road Pricing—Fundamental Economics


Week 12

Nov 9 Road Pricing—Equity


**Nov 11 Road Pricing—Case Studies**


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

**Week 13**

**Nov 16 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 18 Parking—pricing parking**


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

**Week 14**

Nov 23 Fall Break

Nov 25 Fall Break

**Week 15**

Nov 30 Student Research/Case Study Presentations

PPT file is due by noon on your presentation day

Dec 2 Student Research/Case Study Presentations

**Week 16**

Dec 7 Student Research/Case Study Presentations

Dec 9 Student Research/Case Study Presentations

**Final Paper due on Dec 14 Monday by NOON**