MIT Department of Urban Studies and Planning

1.251/11.526: Comparative Land Use and Transportation Planning
Spring 2022 | M/W: 9:30-11:00
Room: 9-255 (For remote lectures: Zoom room: https://mit.zoom.us/j/91817934087

Instructor: Fábio Duarte, Lecturer and Principal Research Scientist, DUSP
fduarte@mit.edu | office hours: Fridays, 13:00-15:00 office hours sign up (must have MIT certificates): https://cronlasso.mit.edu/hours/p.lasso?t=1:2:0&rec=fduarte#fduarte

Course Description

This course focuses on the interaction between land use and transportation at multiple scales, ranging from the metropolitan lens to the curbside. It covers examples from different countries and highlights how land use and transportation influence the social organization of cities, assigning privileges to certain groups, and segregating or negating access to the city to other groups.

The course aims to develop an understanding of relevant theories, analytical techniques, and a critical approach to contemporary challenges we face in order to make the integration of land use and transportation planning serve the whole society. This entails the understanding of the historic role of land use and transportation in shaping the social organization of urban spaces, as well as the hidden values and possible consequences of new technologies.

The course will cover topics such as accessibility; the use of data, algorithms, and bias; travel demand and travel behavior; governance; Transit Oriented Development; autonomous vehicles; transportation and real estate; and social, environmental, and health implications of land use and transportation.

Students will present case studies addressing different topics discussed during the course, building on real cases in different contexts.

Learning Objectives

By the end of the course, students should have developed:

- An understanding of transportation and land use interaction, including issues related to forms of segregation, accessibility, travel demand, and urban structure;
- An ability to interpret the influence of land use on travel behavior, accounting for potential variation due to the spatial scale of analysis and data used;
- An ability to critically evaluate policies aimed to influence the transportation-land use interaction, and its spatial and social consequences;
- A knowledge of relevant policy instruments, institutional settings, and analytical tools.
Course Requirements

The course meets twice a week for lectures, classwork, and discussions. There are no formal prerequisites for the course. Students are expected to come to class having read the required readings for the week.

Course Materials

All of the course readings are listed on the syllabus below and are available online: https://canvas.mit.edu/courses/12645

Additional readings are optional and are listed for your benefit.

Special Accommodations

If you have a documented disability, or any other problem you think might affect your ability to perform in class, please see the instructor early in the semester so that arrangements may be made to accommodate you.

Unless MIT policies change, the course will be fully in person—even when guest lecturers join us on Zoom.

If you are sick or isolating due to Covid-19, please, contact me for specific arrangements.

Inclusive Class and Classroom

MIT values an inclusive environment. I hope to foster a sense of community in this classroom and consider it to be a place where you will be treated with respect. I welcome individuals of all backgrounds, beliefs, ethnicities, national origins, gender identities, sexual orientations, religious and political affiliations – and other visible and nonvisible differences. All members of this class are expected to contribute to a respectful, welcoming, and inclusive environment for every other member of the class. If this standard is not being upheld, please contact me.

MIT’s Land Acknowledgement Statement

The lands which MIT occupies are the traditional unceded territories of the Wampanoag Nation and the Massachusetts Peoples. We acknowledge the painful history of genocide and forced occupation of these territories, as well as the ongoing processes of colonialism and dispossession in which we and our institution are implicated. Beyond the stolen territory which we physically occupy, MIT has long profited from the sale of federal lands granted by the Morrill Act, territories stolen from 82 Tribes including the Greater and Little Osage, Chippewa, and Omaha Peoples. As we honor and respect the many diverse Indigenous people connected to this land from time immemorial, we seek to Indigenize our institution and the field of planning, offer Space, and leave Indigenous peoples in more empowered positions.
Class exercises, Assignments, and Grading

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<thead>
<tr>
<th>Assignment</th>
<th>Value</th>
<th>Posted</th>
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<tbody>
<tr>
<td>Assignment 1 [individual] Land use and transportation in your neighborhood</td>
<td>10%</td>
<td>1/31</td>
<td>2/7</td>
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<tr>
<td>Assignment 2 [individual] Transportation and segregation</td>
<td>10%</td>
<td>2/2</td>
<td>2/21</td>
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<tr>
<td>Assignment 3: Accessibility [pair] 5-slide analysis of accessibility project</td>
<td>25%</td>
<td>2/23</td>
<td>3/16</td>
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<tr>
<td>Assignment 4: Transit Oriented Development [pair/group] Analysis &amp; proposal for a TOD project in the Boston Area</td>
<td>30%</td>
<td>4/6</td>
<td>5/4 + 9</td>
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* When not otherwise marked, assignments are individual. Late submissions for all assignments will be penalized, except in cases of documented disabilities or arrangements with the instructor.

Academic Integrity

Plagiarism and cheating are not tolerated. Never (1) turn in an assignment that is not your own original work, or (2) turn in an assignment for this class that you previously turned in for another class. Anyone caught cheating on an assignment will be reported to the provost in line with recognized university procedures. This may result in a failing grade for the class, and possibly even suspension from MIT. Please see the instructor if you have any questions about what constitutes plagiarism, and visit the MIT policy on Academic Integrity: http://web.mit.edu/academicintegrity/

Calendar

**Lecture 1:** January 31

Course overview: objectives, expectations, logistics, student interests.

Assignment 1: Explore the land use-transportation interaction [your hometown, individual]  

**MODULE 1: PRINCIPLES AND CRITICAL PERSPECTIVE**

**Lecture 2:** February 2

Talk: The bridge, the expressway, the manager, the activist: the philosophical principles of land use and transportation planning

Required Readings and resources


**Additional Readings and resources**


Vox (2016). How highways wrecked American cities. At [https://youtu.be/odF4GSX1y3c](https://youtu.be/odF4GSX1y3c) [video, 5 minutes]


**Assignment 2: Transportation and segregation [Miro]**

<table>
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<tr>
<th>Lecture 3: February 7</th>
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<td><strong>Talk</strong>: Land use and segregation: an international perspective</td>
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**Required Readings**


**Additional Readings**


**Assignment 1 DUE**

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<tr>
<th>Lecture 4: February 9</th>
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<tr>
<td><strong>Talk</strong>: Transportation infrastructure and race [Guest lecturer: Karylin Crocket, DUSP]</td>
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**Required Readings,**


Additional Readings


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**Lecture 5: February 14**

**Talk:** Suburbia and periphery: how transportation and land use influence social mobility and segregation

**Required Readings**


**Additional Readings**


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**Lecture 6: February 16**

**Individual work Assignment 2** [remote, assistance over zoom]

**Holiday:** February 21 (President's Day)
MODULE 2: ACCESSIBILITY

Lecture 7: February 23

Talk: Accessibility: concept and operationalization

Required Readings

Additional Readings and Resources

Assignment 3: Accessibility assessment
Assignment 2 DUE

Lecture 8: February 28

Talk: Mobility/Accessibility = f(Land Use)

Required Readings
Additional Readings

Lecture 9: March 2

Talk: Accessibility: data bias and gendered cities

Required Readings and Resources

Additional Readings and Resources
Singh, Y. (2018). The gender gap affects women's access to key activities. [TEDx video, 5:58]

Lecture 10: March 7

Talk: Accessibility and bike-sharing programs

Required Readings
**Additional Readings and Resources**


**Lecture 11: March 9**

**Talk:** Accessibility and transit deserts

**Required Readings**


**Additional Readings and Resources**


**Assignment 5:** Essay / case study

**Lecture 12: March 14**

Group work and in-class review

**Lecture 13: March 16**

Group presentation: accessibility

**Assignment 3 DUE**

**Spring Break:** March 21-25
## Module 3: Impacts of LUTP

### Lecture 14: March 28

**Talk:** Environmental impacts of land use and transportation choices

**Required Readings**


**Additional Readings and Resources**


### Lecture 15: March 30

**Talk:** Health impacts of land use and transportation choices

**Required Readings and Resources**


**Additional Readings**


**Lecture 16: April 4**

**Talk:** Transportation infrastructure and real estate [**Guest lecturer:** Adriano Costa, INSPER, São Paulo and MIT CRE; and Camila Ramos DUSP ’21]

**Required Readings**

**Additional Readings**

**MODULE 4: TRANSIT ORIENTED DEVELOPMENT**

**Lecture 17: April 6**

**Talk:** Transit Oriented Development: concept, and planning and financial tools

**Required Readings**

**Additional Readings**
Assignment 4: TOD analysis and proposal

Lecture 18: April 11

Talk: Transit Oriented Development: social inclusion and gentrification

Required Readings

Additional Readings

MODULE 5: CURRENT PERSPECTIVES

Lecture 19: April 13

Talk: Urban science: transportation and land use [Guest lecturer: Paolo Santi, SCL]

Required Readings

Additional Readings

**Holiday:** April 18 (Easter Monday)

**Lecture 20:** April 20

**Talk:** Travel Behavior and nudging

**Required Readings**


**Additional Readings**


**Lecture 21:** April 25

**Talk:** Autonomous Vehicles: planning and policy impacts  **[Guest lecturer:** Annie Hudson, MIT Mobility Initiative]**

**Required Readings**


**Additional Readings**


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<th><strong>Lecture 22</strong>: April 27</th>
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<td>Group work and in-class review</td>
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<th><strong>Lecture 23</strong>: May 2</th>
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<tr>
<td>Talk: Defunding Transit  [Guest lecturer: Lindiwe Rennert, PhD candidate London School of Economics]</td>
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**Required Readings**

**Assignment 5 DUE**

**FINAL PRESENTATIONS**

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<th><strong>Lecture 24</strong>: May 4</th>
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<td>Student Presentation: TOD analysis [Assignment 4]</td>
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<th><strong>Lecture 25</strong>: May 9</th>
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<td>Student Presentation: TOD analysis [Assignment 4]</td>
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