

Green Transportation

Winter 2022 Syllabus

Tues/Thurs 11-12.15, Public Affairs 2343

Instructors

Prof. Adam Millard-Ball (he/him)
E-mail: adammb@ucla.edu
Office hours: Weds 10-12
Sign up: <https://goo.gl/X7vFOD>

Sam Speroni
Email: ssperoni@ucla.edu
Office hours: Tues 12.30-1.30, Thurs 9.45-10.45
Sign up: <http://ssperoni.youcanbook.me>

Course Description

This course provides an introduction to transportation planning and policy from the environmental perspective. We will consider how urban transportation systems can encourage alternatives to the private car and reduce air pollution and greenhouse gas emissions. We will examine innovations in transit planning, parking policy, and bicycle and pedestrian design, and consider the potential for new technologies such as autonomous vehicles.

I acknowledge our presence on the traditional, ancestral and unceded territory of the Gabrielino/Tongva peoples.

Learning Outcomes

After completing this course, you should be able to:

- Understand key policies and planning principles that can improve urban transportation in a city and reduce its environmental impacts
- Critically evaluate the merits of different approaches to designing streets, transit systems, parking management, and urban development
- Appreciate and critically analyze policy and planning tradeoffs through the lens of transportation
- Develop written and oral communication skills to communicate with policymakers

Course Tools

All the readings, recordings, and assignments will be posted on **Bruin Learn** (i.e., Canvas). We will also use **hypothes.is** – a collaborative annotation system – to discuss the readings before coming to class.

Field Trips

Field trips are an important part of a class such as this. They enable you see and/or hear first-hand about specific transportation challenges, envision potential solutions, and develop spatial reasoning skills. Given the constraints of covid-19, however, field trips may not be possible this quarter. If we are able to hold any, they will be optional.

Readings

We will use some chapters from the following textbook. A digital copy is available through the UCLA Library. All other required readings will be posted on Bruin Learn.

Genevieve Giuliano and Susan Hanson (eds). 2017. *The Geography of Urban Transportation*, 4th edition. The Guilford Press.

Class Participation

Class sessions will usually include a mixture of lecture, discussion, and problem-solving activities. Your active participation is essential to making this course successful and enjoyable.

To help seed the discussion, all students should use hypothes.is to annotate 1-3 brief discussion questions and/or comments on the readings for that class. These are due at 9AM the day of class. Your annotations might include a question that was sparked by one of the readings, a broad comment on or reaction to the readings, or an example that further illustrates a concept from the readings. These posts have three purposes: (i) encouraging you to engage actively with the readings, (ii) helping us all appreciate different perspectives on the course material; and (iii) helping me shape the structure of each class. Please engage with the comments of others as well as writing your own.

Graded Assignments

Detailed instructions and grading criteria are available on Bruin Learn.

Homework assignments	20%
Case study	20%
Planning analysis memo (outline)	5%
Planning analysis memo (draft)	10%
Planning analysis memo (final)	30%
Class participation (on hypothes.is and in class)	15%

Homework assignments

Short homework assignments will be due roughly every 2 weeks. Potential assignments will ask you to analyze your own travel patterns, analyze the proceedings in a public meeting or official hearing, or do a sketch plan design for a specific intersection.

I will drop the lowest grade, meaning that you can miss one assignment without penalty.

Planning analysis memo

You will write a memo that critically analyzes a proposed transportation project or planning effort. This assignment is partly a research paper, but then applies that research to analyzing a real-world project. For example, you might analyze the research literature on promoting bicycling, and then use those findings as a benchmark to assess a city's bicycle plan.

Case study

Working in pairs, you will develop a case study of sustainable transportation initiatives in a specific city. You should address why this city is an interesting example. If it has a reputation for promoting cycling, for example, to what extent is that justified? What are the specific practices, policies or projects that other cities can learn from and emulate? What are the most important lessons learned? This is an oral assignment – you will present your case study in class, thinking of your target audience as a mayor, city council member or similar policy maker. Choose a case study from the approved list, or suggest your own to the instructor. Sign up during the second week of the class for a case study and presentation slot.

Class Participation

Your class participation grade will consider active participation in class, and the quality of your comments and discussions on hypothes.is.

Course Policies

Accessibility and Disabilities

If you require any accommodations because of a disability, please talk to me within the first two weeks of the quarter if possible. The sooner that I am aware of any accessibility needs, the quicker I can try and accommodate them.

Late Submission of Assignments

Students can make a formal request to the instructor for special consideration for an extension to an assignment due date. This request should be received at least 48 hours in advance. Otherwise, **one partial grade** will be deducted for every 24-hour period an assignment is late. For example, an A- will go to a B+.

Academic Integrity

UCLA's policy about plagiarism is clear: the sources of all ideas, text, pictures, or graphics that are not your (or your team's) own must be fully cited, all passages copied from other sources must be in quotation marks with the source cited, and you absolutely cannot submit materials that have previously been submitted by other students in previous iterations of this course, even if you have re-worked this material for your submission. Being in this class constitutes an acknowledgment and willingness to abide by UCLA's academic integrity policies.¹ Should you have any questions about these policies, go to: <http://www.studentgroups.ucla.edu/dos/students/integrity/>.

Absences

I aim for most classes to be interactive, including work in pairs or small groups. I do not expect that video recording will be feasible, and in any case, watching a recording of a class is not a good substitute for participating in person. I ask you to find a class buddy during Week 1 who can brief you and bring you up to speed if you need to miss a class for health or other reasons. If you are able, please also participate in the discussions on hypothes.is.

¹ Thank you to Prof. Michael Manville for permission to use this text.

Course Schedule and Readings

The schedule is preliminary and subject to change, depending on how quickly or slowly we move through the material, which is not always easy to predict.

For most of the readings, I provide guiding questions on Bruin Learn. I realize that it's not always clear why I am assigning a particular reading, nor what I want you to focus on or get out of it. The guiding questions are not intended to be exhaustive, but rather to help you in the reading process.

January 6, 11 13: Introduction

We will introduce some key patterns and trends in the transportation system, and discuss how people make decisions on how and when to travel. We'll also examine the history and roots of transportation's environmental impacts, and how they have evolved over the years—from horse manure, to smog, to climate change.

Required Readings

Wachs, Martin, Peter Sebastian Chesney, and Yu Hong Hwang. 2020. *A Century of Fighting Traffic Congestion in Los Angeles*. UCLA Luskin Center for History and Policy. <https://luskincenter.history.ucla.edu/2020/10/05/lchp-research-fellows-release-report-on-history-of-traffic-congestion-in-los-angeles/>

Banister, David, Karen Anderton, David Bonilla, Moshe Givoni, and Tim Schwanen. 2011. "Transportation and the Environment." *Annual Review of Environment and Resources* 36(1), pp. 247-70.

Giuliano and Hanson, Ch 3

Morris, Eric. 2007. "From Horse Power to Horsepower," *Access* 30, pp. 2-9.

January 18, 20: Streets

Streets are the basic building block of a transportation system. How does the design of streets shape the possibilities for sustainability?

Required Readings

Colville-Anderson, Mikael. 2019. *The arrogance of space*. <https://colvilleandersen.medium.com/the-arrogance-of-space-93a7419b0278>

Sadik-Khan, Janette. 2016. *Street Fight. Handbook for an urban revolution*. Viking. Chs 1 and 4

Steuteville, Robert. 2016. *The new science of street design*. <https://www.cnu.org/publicsquare/new-science-street-design>

NACTO 2013. *Urban Street Design Guide*. <https://nacto.org/publication/urban-street-design-guide/> Skim.

January 25, 27: Buses and trains

How can public transit systems be designed to improve the experience for existing riders, and draw new riders out of their cars? We'll discuss principles of bus and rail planning, and examine several proposals in Los Angeles including the Sepulveda Pass. And what about a Hyper Loop?

Required Readings

Giuliano and Hanson, Ch 8

Higashide, Steven. 2019. *Better Buses, Better Cities*. Island Press. Chs 1-3.

Small, A. 2017. How Seattle Bucked a National Trend and Got More People to Ride the Bus. *Citylab*. <https://www.bloomberg.com/news/articles/2017-10-16/how-seattle-got-more-people-to-ride-the-bus>

February 1, 3: Cycling, walking, and scooters

What policies and design changes will get people to travel under their own power, by bicycle and foot? We'll also look at the potential and the pitfalls of e-scooters.

Required Readings

Buehler, Ralph and Pucher, John (eds). 2021. *Cycling for Sustainable Cities*. MIT Press. Chs 1, 5.

Sadik-Khan, Janette. 2016. *Street Fight. Handbook for an urban revolution*. Viking. Ch 8.

Butler, Tamika. 2020. Why We Must Talk About Race When We Talk About Bikes. *Bicycling*. <https://www.bicycling.com/culture/a32783551/cycling-talk-fight-racism/>

February 8, 10: Highways

Is widening highways a solution to congestion and pollution? We'll also discuss the role of pricing road use.

Required Readings

Barth, Matthew, and Daniel Sperling. 2019. "Environmentally Sustainable Transportation." Ch 14 in *Bending the Curve. Climate Change Solutions*, edited by V. Ramanathan, A. Millard-Ball, and M. Niemann. Oakland: California Digital Library. <https://bit.ly/2k27qqy>

Handy, Susan. 2015. *Increasing Highway Capacity Unlikely to Relieve Traffic Congestion*. Policy Brief. <https://escholarship.org/uc/item/58x8436d>

Manville, Michael. 2019. The fairness of congestion pricing. *Transfers*. <https://transfersmagazine.org/magazine-article/issue-3/longer-view-the-fairness-of-congestion-pricing/>

February 15, 17: Environmental injustices

Environmental justice is a continuous theme throughout the course, but here we will focus on questions of inequity and environmental racism more explicitly.

Required Readings

Schweitzer, Lisa, and Abel Valenzuela. 2004. "Environmental Injustice and Transportation: The Claims and the Evidence." *Journal of Planning Literature* 18(4):383–98.

Fleischer, Matthew. 2020. Want to tear down insidious monuments to racism and segregation? Bulldoze L.A. freeways, *Los Angeles Times*, June 24 2020.

Lugo, Adonia. 2014. "Can Human Infrastructure Combat Green Gentrification?: Ethnographic Research on Bicycling in Los Angeles and Seattle." Ch 12 in *Sustainability in the Global City*. <https://doi.org/10.1017/CBO9781139923316.021>

Untokening Collective. 2018. *Untokening Mobility: Beyond Pavement, Paint and Place*. <http://www.untokening.org/updates/2018/1/27/untokening-mobility-beyond-pavement-paint-and-place>

February 22, 24: Land use and parking

How do patterns of land use, for example density and parking, affect people's travel decisions, and how can cities shape these patterns to promote sustainable transportation?

Required Readings

Giuliano and Hanson, Ch 9

Levinson, David. 2020. The 30-minute city. *Transfers*.

<https://transfersmagazine.org/magazine-article/issue-5/the-30-minute-city/>

Handy, Susan. 2018. Enough with the “Ds” Already — Let’s Get Back to “A”. *Transfers*.

<https://transfersmagazine.org/enough-with-the-ds-already-lets-get-back-to-a/>

Boarnet, Marlon et al. 2021. Rich versus Poor, Near versus Far from Transit: Who Travels More? *Transfers*. <https://transfersmagazine.org/magazine-article/issue-7/rich-versus-poor-near-versus-far-from-transit-who-travels-more/>

Friedman, Laura and Shoup, Donald. 2021. Cities Need Housing. Parking Requirements Make it Harder. *CityLab*, <https://www.bloomberg.com/news/articles/2021-04-26/to-save-the-planet-kill-minimum-parking-mandates>

March 1, 3: Power and governance for sustainable transportation

How do cities make decisions about transportation projects? We'll look at some of the political dynamics and how individuals are taking decisions into their own hands.

Required Readings

Tinoco, Matt. 2018. “How to Kill a Bike Lane.” *CityLab*. <https://www.bloomberg.com/news/articles/2018-05-08/when-a-bike-lane-battle-goes-nuclear>

Gray, Nolan. 2021. “How Californians Are Weaponizing Environmental Law,” *The Atlantic*. <https://www.theatlantic.com/ideas/archive/2021/03/signature-environmental-law-hurts-housing/618264/>

Lydon, Mike and Garcia, Anthony. 2015. *Tactical Urbanism*. Chs 1 and 4.

March 8, 10: The future

We'll discuss what the future might hold, with particular reference to the rise of ridehailing services such as Uber and Lyft, and the potential for autonomous vehicles.

Required Readings

Clewlow, Regina. 2019. Disruptive Transportation: The Adoption, Utilization, and Impacts of Ride-Hailing in the United States. *Transfers*. <https://transfersmagazine.org/magazine-article/issue-3/disruptive-transportation-ride-hailing/>

Freemark, Yonah, Anne Hudson, and Jinhua Zhao. 2019. “Are Cities Prepared for Autonomous Vehicles?” *Journal of the American Planning Association*, 85(2): 133-151.