

**ECI 165 - Transportation Policy
CRN 53435**

**University of California, Davis
Department of Civil and Environmental Engineering
Fall 2017 • TTh 1:40-3 PM • 26 Wellman Hall**

Instructor: Daniel Sperling
Office: 1715 Tilia St, Room 1109
Office Hours: Monday. & Wednesday 2-3:30 or by appointment

TAs: Aria Berliner
Office: 1590 Tilia St, Next to Room 1113
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Office: 1715 Tilia St, ITS Graduate Student Workspace
Office Hours: Thursday, 9:00am – 12:00pm or by appointment

Course Description

This course will introduce students to the complex world of transportation policy in an era of shrinking federal funding, suburbanization, and environmental pressures. The course is designed for advanced undergraduate students in engineering, environmental planning and policy and related majors who wish to understand the role of transportation in U.S. society, the design and effectiveness of transport policy, current technology, land use, and environmental challenges, and tools for addressing them. It provides an in depth look at key policy issues in the transportation of people and goods and the institutional context in which transportation policy is made. Major course themes include the evolution of transportation systems and urban development; transportation usage patterns; mobility contributions of different modes; transportation governance and finance; the relationship between transportation and climate change; and wider linkages between transportation and urban land use, technology, social equity, and the economy.

Course Goals

- Understand evolving demand for movement of people and goods
- Articulate key issues and challenges in the provision of transportation
- Evaluate relative role of various policies and applications for addressing these challenges
- Improve analytical skills for interpreting information, thinking and writing

Assignments and Grading

Grade Calculation:

- Three (3) quizzes (30%) – dates in syllabus
- Two (2) short papers (40%)
- Final exam (30%)

1. Required Reading

All readings assignments are available on Canvas, organized according to course topics as presented in the syllabus.

2. Three Quizzes

The quizzes will cover assigned readings and lectures.

Quiz 1: 10/12/2017

Quiz 2: 11/2/2017

Quiz 3: 11/21/2017

3. Two Short Papers

Students will prepare two papers, each less than two pages single-spaced, selecting from a forthcoming list of topics in transportation policy (or a relevant topic of student's choosing, if approved by instructor). You should use relevant required readings as a starting point, but must utilize additional sources identified independently (with guidance available from the instructor and TAs).

Term Paper 1: Due 10/31 by 1:40pm

Term Paper 2: Due 11/30 by 1:40pm

4. Final Exam

The final exam, scheduled for Tuesday December 12, 2017 from 1:00pm – 3:00pm, will account for 30 percent of the course grade.

5. Late Assignment Policy

- Late submission of the papers will receive a one grade point deduction for each day after the due date.
- Quizzes – Missed quizzes cannot be made up unless prior notice has been received and approved (see below).
- Final Exam – The final exam cannot be made up unless prior notice has been received and approved (see below).
- Acceptable reasons for missing a quiz or rescheduling the final exam:
 - Treatment by a physician- a doctor's note must be provided.
 - Personal or family crisis- must be approved beforehand by Professor Sperling

Important Information about Academic Honesty

Now as students and later as practicing engineers, policymakers, planners and scholars, you will frequently consult the analyses, research, and ideas produced by others. Indeed, we often count on using others' findings to inform our own work for a given assignment or task. This is expected and desirable; it means knowledge is being shared and applied. However, a very bright line separates the appropriate use and acknowledgement of another's work from plagiarism – the inappropriate presentation of another's work or ideas as one's own. With the availability of full text reports, articles, presentations, and more on the internet, it is increasingly easy to borrow another's words and ideas inappropriately. Be aware that the same technology that makes such inappropriate borrowing easy also makes it easy to detect.

The U.C. Davis Code of Academic Conduct states that it is the student's responsibility to “[k]now what plagiarism is and take steps to avoid it. When using the words or ideas of another, even if paraphrased in your own words, you must cite your source. Students who are confused about whether a particular act constitutes plagiarism should consult the instructor who gave the assignment.” <http://sja.ucdavis.edu/cac.html>

Proper use of quotations and proper citation of sources is the way to avoid problems with plagiarism. The Turabian Guide for citing references is one commonly used style. Please see: http://www.press.uchicago.edu/books/turabian/turabian_citationguide.html.

Reading Assignments

- 1: **Course Overview: Why Transport Policy** (9/28)
 - America's Transport Infrastructure: Life in the Slow Lane. (2011, April 30). *The Economist*, 29-31.
 - Sperling, D. and Deborah Gordon, *Two Billion Cars*, Oxford University Press, 2009, pp. 13-18 (regarding the “car monoculture”).

- 2: **History of Transportation and Land Use** (10/3)
 - Muller, P. (1995). Transportation and Urban Form: Stages in the Spatial Evolution of the American Metropolis. In S. Hanson & G. Giuliano (Eds.), *The Geography of Urban Transportation* (pp. 59-85). New York: Guilford Press.
 - Gordon, P., & Richardson, H. (1997). Are Compact Cities a Desirable Planning Goal? *Journal of the American Planning Association*, 63(1), 95-106.
 - Ewing, R. (1997). Is Los Angeles-Style Sprawl Desirable? *Journal of the American Planning Association*, 63(1), 107-126.

- 3: **Moving People: Patterns and Trends** (10/5)
 - Pisarski, (2007), "Commuting in America". *Issues in Science and Technology*.

- Michael Manville, David A. King & Michael J. Smart (2017) The Driving Downturn: A Preliminary Assessment, *Journal of the American Planning Association*, 83:1, 42-55.
- Brian Taylor (2017), Traffic Congestion Is Counter-Intuitive, and Fixable” *Access* 51, Spring.

4: Transportation Finance (10/10)

Guest Lecture: Aria Berliner

- Federal Highway Administration Office of Policy Development. (1998). *Highway Trust Fund Primer*. Washington, D.C.: U.S. Department of Transportation. [Pages 1-12]
- Boarnet, M. (2016) *Policy Approaches for California’s Transportation Future*. Los Angeles, CA.

Further reading:

- Wachs, M. (2003). A Dozen Reasons for Raising Gasoline Taxes. *Public Works Management and Policy*, 7(4).
- Sorensen and Brian Taylor (2005), Paying for Roads: New Technology for an Old Dilemma. *Access*.
- Congressional Budget Office. (2011). *Alternative Approaches to Funding Highways*. Washington, D.C.: The Congress of the United States. [Pages 1-21]

5: Public Transportation **Quiz #1** (10/12)

- Lave (1994), It Wasn’t Supposed to Turn Out Like This. *Access*
- Steve Polzin and D. Sperling, Upgrading Transit for the Twenty-First Century, Ch 5 in *Three Revolutions*. [Pages. 1-5]
- Walker, J. (2012). Ridership or Coverage? The Challenge of Service Allocation, Ch 10 in *Human Transit*. [Pages. 117-134]

Further reading:

- Pickrell (1992), A Desire Named Streetcar. *Journal of the American Planning Association*, 58 (2), 158-176.

6: Public Transportation: A Local Real-World Perspective (10/17)

Guest Speaker: Anthony Palmere, Unitrans (ret.)

7: Air Quality, Energy, Greenhouse Gas Emissions (10/19)

- Ewing, R., et. al. (2007). *Growing Cooler: The Evidence on Urban Development and Climate Change*. Washington, D.C.: Urban Land Institute. [Chapter 2]
- Federal Highway Administration. (2010). *Freight and Air Quality Handbook*. Washington, D.C.: U.S. Department of Transportation. [Chapter 2, Pages. 3-24]
- Madsen, T. et al (2010). Clean Cars in California: Four Decades of Progress in the Unfinished Battle to Clean Up Our Air. Environment California Research & Policy Center. [Pages 10-14]

8: Vehicle Technology and Fuels (10/24)

Guest Lecture: Dr. Scott Hardman, ITS-Davis

- Sperling, D. & Gordon, D. (2009). *Two Billion Cars*. New York: Oxford University Press. **Chapter 4:** In Search of Low-Carbon Fuels (pp. 79-111)
- Sperling, Electric Vehicles: Approaching the Tipping Point, Ch 2 in *Three Revolutions*

9, 10, 11: *Transition to Shared and Automated Vehicles* (10/26, 10/31, 11/2)

- Guest Speaker (10/26): Austin Brown, UC Davis Policy Institute for Energy, Environment, and the Economy
- Sperling, Susie Pike, and Robin Chase, Will the Transportation Revolutions Improve Our Lives—or Make Them Worse?, Ch 1 in *Three Revolutions*
 - Shaheen (2018), Shared Mobility: The Potential of Ride Hailing and Pooling, Ch 3 in *Three Revolutions*
 - Sperling, Ellen van der Meer, and Susan Pike (2018), Vehicle Automation: Our Best Shot at a Transportation Do-Over?, Ch 4 in *Three Revolutions*
 - Polzin and Sperling, Upgrading Transit for the Twenty-First Century, Ch 5 in *Three Revolutions*, pp. 5-14.

****Term Paper 1 Due** 10/31**

****QUIZ #2** 11/2 (Inclusive of readings through 11/2)**

12: *California Transportation Greenhouse Gas Policy* (11/7)

- D. Sperling and Mary Nichols, California’s Pioneering Transportation Strategy, *Issues in Science and Technology*, Winter 2012, pp. 59-66

13: *History of Federal and metropolitan transportation planning* (11/9)

- Guest Lecture: James Corless, Exec Director, SACOG
- Gian-Claudia Sciara (2017), Metropolitan Transportation Planning: Lessons From the Past, *Institutions for the Future, JAPA*, 83:3, 262-276.

14: *Changing Land Use to Reduce VMT* (11/14)

- Guest Lecture: Susie Pike, UC Davis
- L Bedsworth, E.Hanak, J Kolko (2011). Driving Change: Reducing Vehicle Miles Traveled in California, Public Policy Institute of California.
 - LaPlante, J., & McCann, B. (2008). Complete Streets: We Can Get There from Here. *ITE Journal*(May), 24-28.
 - John Pucher & Ralph Buehler (2017): Cycling towards a more sustainable transport future, *Transport Reviews*.

Further Reading:

- Giuliano, G. (1995). The Weakening Transportation Land-Use Connection. *Access*, 6 (Spring), 3-11.
- Committee on Transitions to Alternative Vehicles and Fuels (2013) *Transitions to Alternative Vehicles and Fuels [Chapter 6]*. National Academies Press
- Handy, S. L. (2006). The Road Less Driven. *Journal of the American Planning Association*, 72(3), 274-278.

- Jacobs, J. (1961). Erosion of Cities or Attrition of Automobiles, *The Death and Life of Great American Cities* (pp. 338-371). New York: Vintage Books
- Pucher, J., & Kurtz, S. (1995). Making Transit Irresistible: Lessons from Europe. *Transportation Quarterly*, 49(1), 117-128.
- Shoup, D. (2005). Chapter 1: Introduction *The High Cost of Free Parking* (pp. 1-18). Chicago: Planners Press.
- Small, K. (2005). Unnoticed Lessons from London: Road Pricing and Public Transit. *Access*, 26, 10-15.
- Ewing, R., et. al. (2008). *Growing Cooler: The Evidence on Urban Development and Climate Change*. Washington, D.C.: Urban Land Institute. [Chap. 4 Determinism vs. Selection (pp. 96-101)]

15: California’s Sustainable Communities Act (SB375): Success or Failure? (11/16)

- Chapter 4 (The Sustainable Communities and Climate Protection Act (SB 375) in *Achieving California’s Greenhouse Gas Goals: A Focus on Transportation* (2015), pp.46-66

16: Local efforts to reduce transportation emissions **Quiz #3** (11/21)
 Guest lecture: Rob Davis, Mayor of City of Davis

17: Transportation Equity (11/28)

- Schweitzer, L., & Valenzuela Jr., A. (2004). Environmental Injustice and Transportation: The Claims and the Evidence. *Journal of Planning Literature*, 18(4), 383-398.
- Michael Manville and Emily Goldman, Would Congestion Pricing Harm the Poor? Do Free Roads Help the Poor?, *Journal of Planning Education and Research*, 1–16, 2017
- Paul Krugman. (2013). Stranded by Sprawl. *New York Times*.

Further Reading:

- Litman, T. (2002) *Evaluating Transportation Equity* [Pages 50-62]

18: Economics of Transportation (11/30)

- DeLucchi, M. (2000). Should We Try to Get the Prices Right? *Access*, 16, 14-21.
- Robert Poole, Interstate Tolling: New Support—and Old Misconceptions, *Surface Transportation Innovations*, Issue 164, June 2017
- Downs, A. (2004). Why Traffic Congestion Is Here to Stay. .. and Will Get Worse, *Access*, 25, 19-25.

Term Paper 2 due – 11/30 by 1:40PM

19: Sustainable Freight Transportation (12/5)

- TBD

20: Summary and Review: Failures and Successes (12/7)

Final Exam: December 12, 2017, 1:00PM- 3:00PM, 26 Wellman