

**SOL PRICE SCHOOL OF PUBLIC POLICY
UNIVERSITY OF SOUTHERN CALIFORNIA**

PPD 634 SYLLABUS

PPD 634: Institutional and Policy Issues in Transportation
4 units, Fall 2016

COURSE DESCRIPTION

Instructor:	Professor Genevieve Giuliano	Office:	RGL 216
Time:	Monday 2:00 – 5:30 PM	Phone:	213-740-3956
Place:	RGL 209	Email:	giuliano@usc.edu
Office hours:	Monday, 10 AM - Noon, or by appointment		

Purpose and Objectives: The purpose of this course is to provide the student with an introduction to the nature and history of transportation problems and policy issues. *The goal is to understand transportation problems and how they might be solved.* The focus of the course is urban transportation, and US policy issues are emphasized. Urban transportation is examined in the context of general economic, social and spatial trends. Particular attention is placed on the public decision making process and how it affects policy choices.

Cross-listed Course: This course is cross-listed as CE 634. It is the gateway course for the MPL Transportation and Infrastructure Planning specialization, a core course for the Certificate in Transportation Systems, and an elective course for the MSCE-Transportation. Students in all Price and civil engineering masters programs who are considering a career in transportation are encouraged to take this course.

Background: Transportation is critical to the functioning of our economy and our own daily mobility. Governments around the world invest in airports, railroads and highways to generate economic growth in an ever more interconnected global economy. Metropolitan areas are the engines of economic growth. In the US, large metropolitan areas – those with 1 million population or more – are home to 60% of the population and 65% of GDP. They serve as international gateways and major global transportation hubs. They account for nearly 90% of the nation's transit passengers, 80% of domestic flight departures, and over 90% of freight shipment origins and destinations by value. Well-functioning streets and highways, transit systems, railroads, airports, ports, and border crossings are critical to the efficient movement of people and goods, and hence urban mobility.

Among the developed countries of the world, the US is an exception in many ways. US households own more cars and drive more miles than households in Europe or Canada or Australia. You may be surprised to know that nearly 9 out of every 10 trips people make are in private vehicles, while the share of trips on public transit is less than 4 percent, even taking into consideration recent increases in transit use. These numbers have remained rather stable, despite major efforts to change our behavior by providing more public transit, redesigning our urban

streets around people rather than cars, and promoting transit-oriented development.

With the dominance of the automobile comes a long list of environmental and social concerns -- air pollution, job access for inner city youth, pedestrian safety, global climate change – to name just a few. Some problems are highly localized (walk access to local shops and services), others are global (world transport energy demand). Responses to these problems reflect many different and often conflicting perspectives. We heavily subsidize public transit to attract people out of their cars, but at the same time make driving cheap and convenient. There is great concern about our deteriorating transport infrastructure and many calls for new investments, yet raising the fuel tax or imposing other user fees remain a political “non-starter.” Underlying these conflicting policy responses are more fundamental questions of the roles of governments and markets.

In order to develop effective solutions, we need to understand the nature of the problem. Part 1 of this course provides the context: a discussion of travel demand, the relationship between travel and social, economic and spatial trends, and the institutions involved in transportation policy. In Part 2 we discuss major topics in transportation policy, using the materials of Part 1 to examine each topic and consider solutions.

Learning objectives: The student will learn:

1. The fundamentals of how people travel and the theories developed to explain travel behavior
2. How the spatial form of cities has evolved and how transport flows are related to spatial form
3. The role of government and politics in planning, financing, operating and regulating transportation systems
4. The history of public transportation and its role in contemporary metropolitan areas
5. The nature of selected specific transportation problems, such as energy, environmental impacts, or social equity, and potential solutions.
6. Trends in transportation and their implications for the future.
7. How to use empirical evidence to analyze transportation problems in the context of travel behavior, urban form, and public policy.

Required text: There is no required text for this course. All required and optional readings are provided on the Blackboard course site. Readings will include chapters from Giuliano, G. and S. Hanson, eds. (2016) *The Geography of Urban Transportation*, 4th edition. New York: Guilford Press, forthcoming.

Prerequisites: None.

Course requirements: This is primarily a reading course. You are expected to read all required materials *before* class. Active participation is emphasized. You should be prepared to answer and ask questions on the readings, and participate in class discussions. For most topics there will be optional readings; these are intended to provide a more comprehensive and deeper understanding of the topic for those who are interested.

Lectures will take place as needed; they will cover theoretical concepts and information not available in publications. Students will be asked to lead class discussions and critique class readings, and to develop arguments for or against specific policy proposals. You already have many views and opinions about transportation; our class discussions and debates will focus on logic and evidence.

In addition to class participation, course requirements include 4 assignments, in-class group assignments, and a term paper. Students may also be asked to attend relevant lectures, local conference sessions, or participate in field trips.

Course Blackboard site: All readings, assignments, instructions for in-class group assignments, and other materials needed for class preparation are available on the course Blackboard site. Powerpoint or other graphic materials included in class sessions will also be posted on Blackboard.

Attendance: Attendance is mandatory. Any planned absence requires my approval in advance and a strong justification. If you are ill, let me know before class, and submit a healthcare provider's note upon your return. The class meets from 2:00 PM to 5:30 PM. Please arrive on time and stay for the duration of the class. There will be a 15 minute break during each class. Please refrain from entering or leaving while class is in session.

Laptops and cell phones: You are welcome to bring and use laptops *for class purposes*. In order to reduce the temptation of checking emails, Instagram, Twitter, or doing your holiday shopping, please download class materials you need and stay offline during class. Phones need to be on silent and in your bag/purse/pocket.

How to get the most out of this class (and make it fun for the rest of us): Here are some suggestions for getting the best value for your time and effort.

1. Come to class having read the week's reading assignment and prepared to ask at least two questions on each reading. Actively participate in class discussions and policy debates.
2. Be an active participant in group projects and presentations. Your future professional world is all about collaboration and communication.
3. Become informed: transportation is all around you:
 - a. Transit ridership is declining in the Los Angeles region, despite enormous investments in new transit infrastructure. Why is transit ridership declining? If transit ridership is declining, why are there not enough cars on the Expo Line to service the demand?
 - b. Miles of sidewalks in Los Angeles are no longer passable, but city leaders have been unable to come up with an acceptable way to pay for fixing them. How did this happen? Who should pay to fix the sidewalks?
 - c. CicLAvia is fast becoming a local institution. What is the purpose of CicLAvia? Is it having any impact?
 - d. The California High Speed Rail Authority is requesting additional funding due to

escalating costs on the current segment. What is the explanation for these additional costs? What do they imply for the future of the project?

4. Become an astute field observer and ask yourself questions about what you observe. Why do some cities provide bike lanes and bike facilities, but others don't? Why are bridges tolled, but freeways not?
5. Be a courteous class member. Arrive on time, observe breaks, avoid leaving while class is in session, and put away (and mute) all handheld devices.

Assignments: The class includes four individual assignments, five in-class assignments, and one term paper. All assignment instructions are available on Blackboard.

Grading: The course grade will be calculated as follows:

Item	Description	Percent
Assignment 1	Seminar presentations	5
Assignment 2	Travel diary	10
Assignment 3	Transportation finance	15
Assignment 4	Capital project case study	15
In-class assignments (5)	Travel behavior, role of government, energy futures, transit, next-gen transport	15
Term paper	Abstract	5
Term paper	Bibliography	5
Term paper	Final paper	25
Class participation		5

Academic integrity: USC is committed to academic integrity. The USC code of ethics is available on the class Blackboard site. General principles of academic honesty include the concept of respect for intellectual property of others, the expectation that all work is individual work unless otherwise allowed by the instructor, and the obligations to both protect one's own academic work from misuse as well as to not represent another's work as one's own. For a description of academic integrity offenses and consequences, see the university governance section of *SCampus*, which can be accessed at <http://web-app.usc.edu/scampus/university-governance>. Academic integrity sanctions will be followed in this class. Here are some additional links that may be helpful:

•Learn about the fundamentals of academic integrity at <https://integrity.mit.edu/> and <http://www.usc.edu/student-affairs/SJACS/forms/AcademicIntegrityOverview.pdf>.

Learn how to avoid plagiarism at <http://isites.harvard.edu/icb/icb.do?keyword=k70847&tabgroupid=icb.tabgroup106849>.

Students with disabilities: Any student requesting accommodations based on a disability is required to register with USC Disability Services and Programs (DSP) each semester (www.usc.edu/disability). A letter of verification for approved accommodations can be obtained from DSP. Please deliver that letter to me no later than Week 3 of the semester. DSP is located in VPD 115 and is open 8:30 AM – 4:30 PM, Monday through Friday. The phone number for DSP is (213) 740-0776.

COURSE SCHEDULE

Here are the topics and reading assignments for the semester. All readings are available on the course Blackboard site. Optional readings are suggestions for those with particular interest in the topic. Information on data sources is provided for some topics. *Reminder: Readings are to be completed before each class meeting.* Please come to each class with at least two questions on each reading. Full references for all readings follow the course schedule.

PART 1

Week 1	8/22/16	Introduction Course overview, why study transportation, role of travel, some travel trends Discussion: Transportation in your city
Readings		Hanson, 2016, chapter 1 in Giuliano and Hanson Optional Shen, 2015 (transportation planning) TRB, 2013 (critical issues)
<u>Assignment 1</u> Prep for next class		<i>Academic seminars</i> Group assignments and instructions for Week 2 in-class assignment

Week 2	8/29/16	<p>Travel trends and theory Travel patterns and socio-demographics; theories of travel behavior</p> <p>Lecture: theories of travel behavior</p> <p>Class discussion: travel behavior and demographics</p> <p>Data resources: National Household Travel Survey, http://nhts.ornl.gov/ American Community Survey, https://www.census.gov/programs-surveys/acs/</p>
Readings		<p>Santos et al, 2011 (review tables and figures) Dargay, Gately and Sommer, 2007 Scheiner and Holz-Rau, 2013</p> <p>Optional McDonald, 2015 (millennials) Kuhnimhof, Zumkeller and Chlond, 2013 (peak car)</p>
<p><u>Assignment 2</u></p> <p><u>Term Paper Assignment</u></p>		<p>Your personal 7 day travel diary</p>

Week 3	9/5/16	LABOR DAY HOLIDAY – NO CLASS
		Conduct your travel diary

Week 4	9/12/16	<p>The urban context Evolution of US metro areas, current and future trends</p> <p>Lecture: agglomeration economies and the polycentric city</p> <p>Class discussion of Muller, Glaeser readings</p>
Readings		<p>Muller, 2014, chapter 3 in Giuliano and Hanson Agarwal, Giuliano and Redfearn, 2012 Glaeser, 2011, Introduction</p> <p>Optional Puga, 2010 (agglomeration economies)</p>
<p><u>Assignment 2 due</u></p> <p><u>Term Paper Abstract due</u></p> <p>Prep for next class</p>		<p>Instructions for Week 5 in class assignment</p>
Field Trip 9/17/16		Foothill Transit, Pomona Transit Center

Week 5	9/19/16	<p>The policy context Public and private sector roles; who plans and who decides; primer on transportation planning history; governments and markets</p> <p>Lecture: History of transportation planning</p> <p>Class discussion of readings</p> <p>Class discussion: role of national governments</p>
Readings		<p>Handy and Sciara, 2016, chapter 6 in Giuliano and Hanson Giuliano, 2007 Button, 2005</p> <p>Optional Winston, 2013 (performance and finance) Summary of MAP-21 https://www.fhwa.dot.gov/map21/summaryinfo.cfm Summary of FAST Act https://www.transportation.gov/fastact</p>
<u>Assignment 3</u>		What should replace the gas tax?
<u>Assignment 2 results</u>		Class discussion

PART 2

Week 6	9/26/16	<p>Transportation finance and pricing Finance and public policy, devolution, future of the gas tax</p> <p>Class discussion of readings</p>
Readings		<p>Taylor, 2016, chapter 11 in Giuliano and Hanson Puentes and Prince, 2005 Wachs, 2009</p> <p>Optional Levinson, 2010 (equity of road pricing)</p>

Week 7	10/3/16	<p>Land use and transportation The land use – transport relationship, impacts of transportation investments; land use policy to reduce auto dependence</p> <p>Lecture: Land use and transport theory</p> <p>Class discussion of readings</p>
Readings		<p>Giuliano, 2016, chapter 9 in Giuliano and Hanson Boarnet, 2016, chapter 7 in Giuliano and Hanson</p> <p>Optional Giuliano, Chakrabarti and Rhoads, 2015 (rail impacts) Chatman, 2013 (TODs and travel) Giuliano and Dargay, 2006 (int’l comparison) Schuetz, Giuliano and Shin, 2016 (TOD case studies)</p>
Week 8	10/10/16	<p>Freight in the urban environment Freight trends, last mile problems, trade nodes, spatial aspects of freight</p> <p>Lecture: globalization, supply chains and cities</p> <p>Class discussion of readings</p>
Readings		<p>Dicken, 2011 Dablanc and Rodrigue, 2016, chapter 2 in Giuliano and Hanson Giuliano and Dablanc, 2013</p> <p>Optional Cui, Dodson and Hall, 2015 (planning for urban freight) RPA and VREF, 2016 (solving freight problems)</p>
<u>Assignment 3 due</u>		
<u>Assignment 4</u>		Capital project case study
Prep for Week 10 class		Group assignments and instructions for Week 10 in class assignment

Week 9	10/17/16 Guest lecture	Environment Transport sector contributions to emissions; impacts on natural and human environments Guest Instructor: TBA Lecture: Regulation, theories and outcomes
Readings		Le Vine and Gosling, 2016, chapter 11 in Giuliano and Hanson Millard-Ball, 2013 Becker et al, 2013 Optional Van der Ree, Smith and Grilo, 2015 (road impacts) Lawrence, 2015 (road impacts) Leone, 1999 (technology forcing regulation)
Prep for Week 11 class		Instructions for Week 11 in-class assignment

Week 10	10/24/16	<p>Energy Trends in energy consumption, US oil dependence, fuel policy, GHGs, alternative fuel vehicles</p> <p>Lecture: GHGs, climate change, and the transport sector</p> <p>Class discussion: energy futures</p> <p>Data sources: US Energy Information Administration, http://www.eia.gov/ Transportation Energy Data Book, http://cta.ornl.gov/data/index.shtml</p>
Readings		<p>Greene, 2016, chapter 12 in Giuliano and Hanson Black, 2010, chapter 3 McNutt and Rodgers, 2004 Chu and Majumdar, 2012</p> <p>Optional Small, 2012 (energy strategies) Holland, Hughes, Knittel and Parker, 2015 (policy)</p>
<u>Term Paper Bibliography due</u>		

Week 11	10/31/16	<p>Public transit History of public transit industry, who uses transit, decline of transit, why subsidize transit</p> <p>Lecture: history of the public transit industry</p> <p>Class discussion: Improving LA public transit</p> <p>Data Sources: American Public Transportation Association Transit Fact Book, http://www.apta.com/resources/statistics/Pages/transitstats.aspx National Transit Database, https://www.transit.dot.gov/ntd</p>
Readings		<p>Schweitzer, 2016, chapter 8 in Giuliano and Hanson Giuliano, 2011 Manville and Cummins, 2015</p> <p>Optional Smerk, 1991, chapters 4, 5 (federal transit policy) Chakrabarti and Giuliano, 2015 (service reliability) Thompson, Brown and Bhattacharya, 2012 (service and ridership)</p>

Week 12	11/7/16	<p>Equity and Justice Social equity, accessibility, transportation and environmental justice</p> <p>Class discussion of readings</p>
Readings		<p>Blumenberg, 2016, Chapter 13 in Giuliano and Hanson Schweitzer and Valenzuela, 2004 Martins, Golub, and Robinson , 2012</p> <p>Optional Pendall, Blumenberg and Dawkins, 2016 (cars and transit for mobility)</p>
<u>Assignment 4 due</u>		

Week 13	11/14/16	ICT and transportation 1: Demand side Impacts on spatial form, activities, travel; substitute or complement Class discussion of readings
Readings		Circella and Mokhtarian, 2016, Chapter 4 in Giuliano and Hanson Lens and Nobis, 2007 Optional Marshall, 2015 (sharing economy)
Prep for Week 14 class		Group assignments and instructions for week 14 in-class assignment

Week 14	11/21/16	ICT and transportation 2: Supply side ICT facilitated services -- zipcars and car sharing, casual carpools, web-based bus and taxi; ITS and automated vehicles Class discussion: Next-gen options
Readings		Litman, 2015 TRB 2016, chapter 2 Mote and Whitestone, 2011 Optional Shaheen, 2014 (bikesharing and transit) Fagnant and Kockleman, 2014 (environmental impacts of automated vehicles) TRB, 2016, all (TNCs)

Week 15	11/28/16	Managing the auto; course review Strategies for solving urban transportation problems
Readings		Giuliano and Hanson, 2016, Chapter 15 in Giuliano and Hanson
<u>Assignment 1 due</u>		
TERM PAPER DUE		2 PM Friday, 12/9/16

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