



## PPPM607: Sustainable Transportation Fall 2013 (CRN 18326)

Instructor: Marc Schlossberg

Course Day and Time: 8:30-9:50 am T/TH

Location: 166 Lawrence

Office Hours: Mondays 10-12 (starting 10/14; sign up sheet on office door)

Office Location: 147B Hendricks Hall

### Purpose of the course and Course Description

Until recently, automobile-based travel has been central to the planning of cities in the United States. While there have been many benefits of a transportation system that allows those legally and physically able to drive to get from anywhere to anywhere in relative comfort, the development of the system and associated use of land over the last 60 years, has also led to many negative consequences, including urban sprawl, traffic congestion, enhanced social division, environmental damage, health degradation, economic hardship, and deprivation of individual freedom. The concept of sustainable transportation has emerged in city planning and design to address these problems and improve the long-term sustainability of cities and regions and offer greater transportation and lifestyle choices to more people. A key strategy has been to develop a highly accessible city that reduces the need to travel by car without limiting individual mobility.

With the aim of understanding how transportation fits into the overall design and planning of sustainable cities, this course introduces a broad range of sustainable transportation and land use planning and design concepts to enable students to:

- Understand how land use and transportation planning work together for different modes of transportation, including discussions about traffic congestion, Smart Growth, Complete Streets, Context-Sensitive Design, Scenario Planning, and Transit-Oriented Development (TOD).
- Become familiar with initiatives that are transforming urban transportation, such as active transportation planning and advocacy, car sharing, bike sharing, electric vehicles, bus rapid transit, and intelligent transportation systems.
- Become familiar with sustainable transportation cases in the U.S. and abroad and the factors that influence success.
- Apply what is learned to an actual sustainable transportation project.

## Course Requirements

The course is a combination of instructor lectures, guest lectures, discussions, written assignments, and a final project, which will be presented in Eugene.

Readings are to be completed prior to the class period in which they are listed. Students are expected to have obtained, read, and retained the readings for each week and to come to class prepared to discuss their content and implications.

The course website is located on the university's Blackboard system (blackboard.uoregon.edu). The class syllabus, announcements, readings (except for the Tumlin text, which students are required to purchase), and other materials will be posted on the blackboard site. Please check the course website frequently for updates. In addition, make sure that the University Registrar has your correct email address. We will use this email address to communicate with you.

## Applied Project - Eugene

Designing Streets for Alternative Transportation. This project will focus on how city streets should be designed to promote more walking and biking in our community. Working with staff in the City of Eugene Transportation Planning Program, students will help develop a mechanism for rating the walking and biking quality of multi-modal streetscapes and apply it to some examples in Eugene. The project will address key questions like: What design features (e.g. sidewalk width, set-back, bike lanes, etc.) create an appealing and well-functioning street for pedestrians and bicyclists? When is a street "adequate" for walking, biking? What are the appropriate data and/or metrics to measure these street qualities? Students will use the Highway Capacity Guide and NACTO guidelines and other relevant resources to create a scoring tool, apply it to a set of sample streets in Eugene and supplement the analysis with in-person interviews, focus groups or other inputs. In addition to reports and presentations, opportunities to supplement this analysis with making movies or other creative approaches for communicating your findings will be encouraged. Students may work in small groups or individually. Students will also present their results to city staff and other local stakeholders (e.g. Bicycle and Pedestrian Advisory Committee).

## Assignments and Grading Policy

### Participation

Students are required to attend each class. The course will include lectures by the instructor and some guest lecturers where thoughtful participation is encouraged. Participation will also be assessed throughout all aspects of the course as described below.

### Written Assignments (2)

There will be three short papers based on community observations, data gathering, and summarization of your data and insights.

Written Assignment #1: Vehicular vacancies. Critics of public transportation often complain about empty busses and the waste of taxpayer money that such vacancies represent as public transit is not a self-supporting mode of transportation). In this assignment, you are to pick a two-hour block of time to observe and count traffic and vehicular occupancy/vacancy during that period. Such counting will also measure volume of vehicular use, which you can compare to the number of lanes on the street to see if there is a good match between lanes and users. More specifically, you are to:

1. Pick a location on West 11<sup>th</sup> west of Chambers. You can choose the side of the street. In general, it is better to choose the hours of the am or pm commute during weekdays, and observe in the heavier direction.
2. Develop a data collection instrument that will allow you to separately note the type of vehicle (car, truck, bus, motorcycle) and observed occupancy. You may have to develop a generalization method so you can count quickly. For cars, it should be easy to count the number of occupants, but you may want to generalize the total number of seats (sedan = 4, minivan = 7, coupe = 2). For busses, you may want to count in quartiles (25% full, 50% full, etc.) and just know what the maximum seating or seating and standing capacity is on a typical bus.
3. Record this data in 15-minute time segments so you can compare traffic volume over time and also to divide up your data collection instrument in a way that makes it easier to keep data counts organized.
4. Calculate the # of empty seats or vacancy (or occupancy) percentage, the overall volume, the v/c (volume to capacity level), and reflect and comment on all of this.
5. Your final paper should be two pages, single-spaced, visually appealing, and directed to the City Manager as a short report as though you were city staff asked to do this assignment.
6. Offer any recommendations that come to mind based on this observation and in keeping with the theme of sustainable transportation.
7. Attach your tabulation sheets as extra pages.
8. **Due: October 24.**

Written Assignment #3: Transportation User. By 10/17, from campus bike to the Valley River Center or Gateway mall and by 10/31, take the bus to Valley River Center AND separately to Gateway mall. Write a 2-4 page paper (single spaced) about the entirety of your experience, from comfort to convenience to infrastructure, to how you felt, to anything else that you notice or have thoughts about good or bad. **Due: November 5.**

Written Assignment #2: Parking Utilization. In this assignment you will do another data collection and analysis exercise, but focus on on-street parking utilization. Streets are public space, but most of them offer the ability for the storage of private vehicles in the form of on-street parking. In some ways, this can be thought of as a public subsidy to private landowners who ought to store their own vehicles on their own land or in private parking lots. In this assignment, you will:

1. Choose either a 4x4 block residential area or 16 blocks along an arterial with on-street parking (either one 16-block stretch or two 8-block stretches of different roads)
2. Pick a time of day that interests you about potential uses (during the workday, in the evening, on the weekend, etc.)
3. Walk the area, count the number of on-street parking spaces (you may have to make educated guesses if spaces are not explicitly marked; be sure to describe how you did this), count the number of actual cars parked on the street, and in some way count the number of off-street parking availability on the block (2 car garage, 3-car driveway, etc.)
4. Calculate the vacancy/occupancy percentage, describe your research methods, and offer any recommendations that come to mind based on this observation and in keeping with the theme of sustainable transportation.

5. Your final paper should be two pages, single-spaced, visually appealing, and directed to the City Manager as a short report as though you were city staff asked to do this assignment.
6. Offer any recommendations that come to mind based on this observation and in keeping with the theme of sustainable transportation.
7. Attach your tabulation sheets as extra pages.
8. **Due: November 21.**

#### Team or Individual Projects

Students will also engage in a real-world project with the City of Eugene focusing on assessing streets as Complete Streets. This assignment has many goals: 1) help you translate big ideas about sustainable transportation into the smallest, politically volatile unit of the street; 2) work on a project that is of real interest to the city – this is not a hypothetical exercise; 3) learn to work in groups with all the plusses and minuses that go along with group work – this is a skill that employers constantly tell us they want their employees to be skilled in; 4) learn how to professionally present your work in both written and oral form; and 5) hopefully your ideas will make a real and lasting impact in Eugene.

#### Photoshop and InDesign Workshops (optional and HIGHLY recommended) – (dates TBD)

Two workshops will be given outside of class to teach you basic Photoshop and InDesign skills for creating good public posters and manipulated images to help visualize your design ideas.

<b>Assignment</b>	<b>% Grade</b>
Participation	20%
Written Assignments	30%
Project Report	30%
Project Presentation	20%

Please note that assignments must be completed on time. Since you have ample warning of due dates, no extensions will be granted unless the circumstances are exceptional.

#### **Required Textbook**

Tumlin, Jeffrey (2012). *Sustainable Transportation Planning: Tools for Creating Vibrant, Healthy and Resilient Communities*. Wiley, Hoboken, NJ.

**Other required readings** are mostly listed in the course outline below and are accessible on Blackboard. Please note that some readings are yet to be determined. Please check Blackboard to access required readings.

#### **Professional Practice**

In order to create a classroom in which students are comfortable expressing their opinions and perspectives, we ask that students please approach the readings and others' contributions with both an open mind and a willingness to question one's own assumptions and biases.

This course is also a core course in the OLIS graduate certificate program. As such, students are expected to behave in a professional manner at all times:

- Students should treat each other and the instructor with the professional courtesy and respect expected in a workplace.

- All communications relating to this course and all work turned in for this course should reflect professional standards in tone, presentation, formatting, and spelling.
- The classroom is a place of focused learning. This requires that students arrive on time, stay until the end of the class period, do not disrupt the class by leaving the room temporarily, and refrain from non-learning activities. Students who fail to adhere to these guidelines will be asked to leave for the remainder of the class session.
- We expect all course assignments to be completed using a word processor. Some assignments will require use of a spreadsheet program for data analysis and graphing. Some familiarity with a spreadsheet program (e.g. Excel), as well as basic concepts in mathematics and algebra at the high school level will be used when we cover the analytic components of the material. You will also be required to use PowerPoint for a presentation at the end of the term on your final project.
- You will be expected to be active learners and participants. I assume that the reason you are here is to learn and it is my belief that the best way for you to learn is for you to push yourself into thinking in new ways. I see my role, then, as a facilitator in your learning process, guiding you through ideas and concepts that may be new to you, but with the expectation that you will grab the concepts and run with them. That is, I'm not expecting you to regurgitate facts and definitions back to me. I want you to think and actively interact with me and other students.

## COURSE OUTLINE

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### **Week 1: A Highly Mobile Planet and Its Challenges: Automobile Dependence, Equity and Inequity**

**Tuesday, 10/1:** What is transportation? Introductions. Course Overview. Eugene Project.

**Thursday, 10/3:** Automobile dependence. Congestion. Urban sprawl. Zoning. Arguments: car culture, property rights, anti-sustainability.

Readings:

- Tumlin, Ch. 1: Introduction
- Tumlin, Ch. 2: Sustainable Transportation
- Jacobs, Jane (1962). *The Death and Life of Great American Cities*, Chapter 18: Erosion of Cities or Attrition of Automobiles. Vintage Books, New York, NY.
- *Team Selection*

### **Week 2: Sustainable Transportation & City Planning**

**Tuesday, 10/8:** Land Use and Transportation Planning

Readings:

- Tumlin, Ch. 4: The City of the Future
- Transportation Research Board (2003). *TCRP Report 93: Travel Matters: Mitigating Climate Change with Sustainable Surface Transportation*. TRB, National Research Council, Washington, DC.  
[http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp\\_rpt\\_93.pdf](http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_93.pdf)
- Kenworthy, J.R. (2006). *The Eco-City: Ten Key Transport and Planning Dimensions for Sustainable City Development*. *Environment & Urbanization*, 18, pp. 67-85.  
<http://eau.sagepub.com/content/18/1/67.full.pdf+html>
- R. Ewing and R. Cervero (2010). *Travel and the Built Environment—A Meta-Analysis*, *Journal of the American Planning Association*, 76 (3), pp. 265-294.
- Guide to COPENHAGEN 2025

**Thursday, 10/10:** Smart Growth and the Compact City

Readings:

- E. Barbour and B. Deakin (2012). Smart Growth Planning for Climate Protection: An Evaluation of California's Senate Bill 375. *Journal of the American Planning Association*, 78 (1), 70-86.
- Urban Land Institute Report (2010). Land Use and Driving: The Role Compact Development Can Play in Reducing Greenhouse Gas Emissions. Washington, DC. <http://www.uli.org/wp-content/uploads/ULI-Documents/Land-Use-and-Driving-Low-Res.pdf>
- U.S. Environmental Protection Agency. Smart Growth Principles. [http://www.epa.gov/dced/about\\_sg.htm](http://www.epa.gov/dced/about_sg.htm).

**Week 3: Neighborhood scale design and issues**

**Tuesday, 10/15: Guest Speaker: Matt McCrae, City of Eugene (confirmed)**

Readings:

**Thursday, 10/17: Assessing Streets** - class project

Readings:

**Week 4: Walking**

**Tuesday, 10/22:**

Readings:

- Tumlin, Ch. 5: Streets
- Tumlin, Ch. 6: Pedestrians
- Smart Growth America and National Complete Streets Coalition (2012). Complete Streets Local Policy Workbook.
- Institute of Transportation Engineers (ITE) (2010). Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities: An ITE Proposed Recommended Practice.
- Reid Ewing, Susan Handy, Ross C. Brownson, Otto Clemente, and Emily Winston. (2006) *Identifying and Measuring Urban Design Qualities Related to Walkability*. *Journal of Physical Activity and Health* 2006, 3, Suppl 1, S223-S240.

**Thursday, 10/24:**

*Paper #1 Due.*

**Week 5: Biking**

**Tuesday, 10/29**

Readings:

- Tumlin, Ch. 7: Bicycles
- Sciara, G.C. (2003). Making Communities Safe for Bicycles. *Access*, pp. 28-33.
- Forsyth, A. and K. Krizek (2011). Urban Design: Is there a Distinctive View from the Bicycle? *Journal of Urban Design*, 16 (4), pp. 531-549. <http://kevinjkrizek.org/wp-content/uploads/2012/04/CyclingUrbanDesign.pdf>
- *Making Cycling Irresistible* by John Pucher and Ralph Buehler. (one of my favorites)
- *Collection of Cycling Concepts (from Denmark)*

**Thursday, 10/31 – HALLOWEEN**

## **Week 6: Transit**

### **Tuesday, 11/5: Transit and Bus Rapid Transit**

Readings:

#### **Project Check-in**

### **Thursday, 11/7: Transit + Transit-Oriented Development (TOD)**

Readings:

- Tumlin, Ch. 8: Transit; Tumlin, Ch. 12: Stations and Station Areas
- Reconnecting America (2012). Mid-size Cities on the Move: A Look at the Next Generation of Rapid Bus, Bus Rapid Transit, and Streetcar Projects in the United States. <http://reconnectingamerica.org/assets/Uploads/20121206midsizefinal.pdf> (includes results from the Emerald Express BRT, Eugene, OR, p. 42)
- Reconnecting America (2007). Why Transit-Oriented Development and Why Now? <http://reconnectingamerica.org/assets/Uploads/tod101full.pdf>
- J. Jacobson and A. Forsyth (2008). Seven American TODs: Good Practices for Urban Design in Transit-Oriented Development Projects. *Journal of Transport and Land Use* 1(2), pp. 51–88. Available at <http://jtlu.org>

*Written Assignment #2 due*

## **Week 7: Complete Streets**

### **Tuesday, 11/12:**

Readings:

B. Sadler (2010). Complete Streets Make Healthier People: Reforming Street Design Policies to Combat Obesity. Center for New Urbanism.

### **Thursday, 11/14: Paper discussion, project work, team check-in**

Guest Speaker: Alex Page (LiveMove) and Briana Orr (UO Bike Program)

Readings:

- McKenzie-Mohr, D. Overview of Community-Based Social Marketing (CBSM).
- CBSM Transportation Case Studies:
  - “Go Boulder” at <http://www.toolsofchange.com/English/CaseStudies/default.asp?ID=10>.
  - “Way to Go” Vancouver BC Schools at <http://www.toolsofchange.com/English/CaseStudies/default.asp?ID=135>.
- Student Power: Students drive the University of Oregon to go platinum (By Briana Orr and Rithy Khut)

## **Week 8: Making Change**

### **Tuesday, 11/19: Transportation Policy**

Guest Speaker: Karmen Fore, Governor Kitzhaber’s Office (confirmed), former Chief of Staff, Congressman Peter DeFazio.

Readings:

- Transportation Policy 101, by Transportation for America (Executive Summary and Full Report)

- Old Solutions From A Passing Generation: USDOT's Proposed Strategic Plan Falls Short
- Transplan
- How To Talk About Cities Without Ticking Off Folks Who Don't Live There
- M. Wachs (2011). Transportation, Jobs, and Economic Growth. *Access*, 38, 8-14.
- Blueprint For Jobs And Economic Growth Through Transportation Investments
- Parking Karma: <http://daily.sightline.org/2013/08/28/parking-karma/#comment-37556>

#### **Thursday, 11/21: Environment & Human Health**

- Tumlin, Ch. 9: Motor Vehicles
- Nixon, H. and Saphoras, J.D. (2007). Impacts of Motor Vehicle Operation on Water Quality in the United States – Clean up Costs and Policies. University of California Irvine. <http://escholarship.org/uc/item/8tn1w17s>.
- Yang and McCarthy (2009). Electricity Grid: Impacts of Plug-In Electric Vehicle Charging. *Environmental Management*, pp. 16-20.
- Rocky Mountain Institute (2012). Cities Working to Entice Electric Vehicles. Boulder, CO. [http://blog.rmi.org/blog\\_cities\\_working\\_to\\_entice\\_evs](http://blog.rmi.org/blog_cities_working_to_entice_evs)
- U.S. Environmental Protection Agency (2007). The Plain English Guide to the Clean Air Act. <http://www.epa.gov/air/caa/peg/pdfs/peg.pdf>
- Tumlin, Ch. 3: Transportation and Public Health
- [http://www.cnu.org/sites/www.cnu.org/files/sadlerb\\_cnu18.pdf](http://www.cnu.org/sites/www.cnu.org/files/sadlerb_cnu18.pdf)
- L.D. Frank, J.F. Sallis, T.L. Conway, J.E. Chapman, B.E. Saelens and W. Bachman (2006). Many Pathways from Land Use to Health: Associations between Neighborhood Walkability and Active Transportation, Body Mass Index and Air Quality. *Journal of the American Planning Association*, 72 (1), pp. 75-87. <http://www.tandfonline.com/doi/abs/10.1080/01944360608976725>

*Written Assignment #3 due.*

#### **Week 9: New Ideas (car sharing, peer to peer car sharing, bike sharing, PRT)**

##### **Tuesday, 11/26**

Readings:

- Tumlin, Ch. 11: Car Sharing
- S. Shaheen and S. Guzman (2011). Worldwide Bikesharing. *Access*, 39, 22-27. [http://www.uctc.net/access/39/access39\\_bikesharing.pdf](http://www.uctc.net/access/39/access39_bikesharing.pdf).
- Shaheen, Susan A. and Adam P. Cohen (2007) Growth in Worldwide Carsharing: An International Comparison. *Transportation Research Record* 1992, 81 – 89
- Dude, share my car? A look at peer-to-peer car sharing: <http://gridchicago.com/2012/dude-share-my-car-a-look-a-peer-to-peer-car-sharing/>

##### **Thursday, 11/28: THANKSGIVING**

#### **Week 10: Project work, course wrap up, fantastical transportation technologies, and other topics as appropriate**

##### **Tuesday, 12/3:**

Readings: check Blackboard.

##### **Thursday, 12/5:**



Readings: check Blackboard.

## **FINALS WEEK**

**Monday 12/9 - Friday, 12/13 (official day, 8-11am)**

*Presentations to Eugene officials – exact date and time to be determined*

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### **Policies**

Late Assignment: If you are unable to make it to class on the day an assignment is due, you may mail, email, or fax your assignment to me prior to the class time and date that assignment is due. Late assignments receive only partial credit. If an answer key is posted to the website, however, no late homework assignments are accepted (no credit).

Missed Class: If you miss a class, please arrange to get class notes from a classmate. Instructor lecture notes are not available.

Incomplete: Students are expected to behave in a professional manner and to turn in all materials at the designated time. In accordance with university regulations, an incomplete will only be given when “the quality of work is satisfactory but a minor yet essential requirement of the course has not been completed for reasons acceptable to the instructor.”

Academic Misconduct: You are expected at all times to do your own work. Copying content from other students and submitting it as your own work is grounds for failing the class. The University Student Conduct Code (available at [conduct.uoregon.edu](http://conduct.uoregon.edu)) defines academic misconduct. Students are prohibited from committing or attempting to commit any act that constitutes academic misconduct. By way of example, students should not give or receive (or attempt to give or receive) unauthorized help on assignments or examinations without express permission from the instructor.

Plagiarism: Students should properly acknowledge and document all sources of information (e.g. quotations, paraphrases, ideas) and use only the sources and resources authorized by the instructor. If there is any question about whether an act constitutes academic misconduct, it is the students’ obligation to clarify the question with the instructor before committing or attempting to commit the act. Additional information about a common form of academic misconduct, plagiarism, is available at: [www.libweb.uoregon.edu/guides/plagiarism/students](http://www.libweb.uoregon.edu/guides/plagiarism/students).

### **Writing Lab**

If you struggle with writing or just want to get better, I encourage you to use the services of the Writing Lab. The Writing Lab begins week two of the term and closes at 5:00pm the Wednesday of finals week. Free tutors are available. Upper-division and graduate student tutors are available on a drop-in basis or by appointment. (You must go to the Writing Lab to schedule your appointment.) 9:00am–5:00pm, Monday–Friday, 72 PLC (Prince Lucien Campbell).

**Documented Disabilities**

Students who have a documented disability and anticipate needing accommodations in this course should make arrangements to see the instructor as soon as possible. They should also request that the Counselor for Students with Disabilities send a letter verifying the disability.

**Inclusion Statement**

The School of Architecture and Allied Arts is a community that values inclusion. We are committed to equal opportunities for all faculty, staff and students to develop individually, professionally, and academically regardless of ethnicity, heritage, gender, sexual orientation, ability, socio-economic standing, cultural beliefs and traditions. We are dedicated to an environment that is inclusive and fosters awareness, understanding, and respect for diversity. If you feel excluded or threatened, please contact your instructor and/or department head. The University Bias Response Team is also a resource that can assist you. Find more information at their website ([bias.uoregon.edu](http://bias.uoregon.edu)) or by phoning 541-346-2037.