Seminar: Sustainable Transportation
Department of Planning, Public Policy and Management

PPM 407/507: Seminar: Sustainable Transportation
Fall 2015 (CRN17380/17381)

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Office Hours: Mondays and Wednesdays 10:00-11:30am

Course Number: PPPM 407/507
Class Time: Mondays and Wednesdays 8:30-9:50
Room: 360 Condon Hall

Course Objectives

The objective of this course is to give students the academic skills to plan transportation in a metropolitan environment. These skills will be based on a critical knowledge of transportation planning and related approaches in transportation research disciplines. The application of these skills will be positioned within the context of the governance issues characterizing decision making processes in a metropolitan environment. Each of the major paradigms in transport planning will be introduced.

At the end of the course students:
- will have theoretical and applied knowledge of sustainable transportation planning and policy-making methods: problem analysis (system analysis, demand analysis and supply analysis), and design and assessment of innovative solutions (covering both content and process aspects)
- will be able to distinguish and fulfill in simulated form the different roles of planners in sustainable transportation planning

Course Content

The development of cities and transportation systems are deeply intertwined. A major contemporary challenge, and one which will be central in the course, is how to ensure that this development becomes sustainable. In practice, metropolitan transport planning is performed by various disciplines. All of them have their own approach or paradigm. Working in interdisciplinary teams is typical for metropolitan transport planners. The following 5 guiding paradigms are designated as a basis for transport planning and as building blocks of the course:

- the system analysis approach of (technical) system equilibrium and evolution, as a framework for logical and model-based work;
- the individual behavioral demand analysis approach based on maximization of utility, as applied in modeling and forecasting traffic and transport;
- the multi-disciplinary, pragmatic supply analysis approach focusing on assessing system performance;
- the (welfare) economic approach aiming at social-economic efficiency, specified in social cost-benefit analysis for large infrastructure investments;
- finally, the planning approach integrating different paradigms (including paradigms taught in other courses) and a normative point of view to tackle a complex planning problem, resulting in a substantive strategy (the "what") and an associated process architecture (the "how").

Furthermore, the students will be encouraged to integrate insights from a sixth paradigm, which will not be addressed explicitly in the course as it is extensively treated in other planning courses:
- the (public) management science approach aimed at satisfying different interests in decision-making processes

Teaching Methods/Learning Formats
A variety of teaching methods will be applied including lectures, seminars, and group work. The emphasis is on self-study through alternately working in groups and individually on actual theories and cases. There are two main streams that form the course. The first stream, with a theory focus, will alternate sessions where a new theme/discipline/paradigm will be introduced by the instructor (indicated as 'Lecture' / LE in the program below), and sessions where theories and/or methods will be applied and links will be drawn to the more critical/innovative literature on the subject ('Application and Reflection', A&R in the program). The A&R sessions will clarify the assignments and discuss the work of the students (see program below). In the second stream, with a practice focus, the students will work independently in groups (4 students per group) on a complex sustainable transportation planning issue in the US, and the instructor will supervise the process by means of feedback to student presentations (in the A&R sessions and in the 'Presentations and Feedback' sessions, P&F in the program).

Course Evaluations & Adjustments of the Course
This course is structured to allow both theory and practice applications in transportation planning, and has been developed from a previous course taught at another university. Student evaluations were instrumental in restructuring the course:
- allowing for more words in the assignment and giving it more weight in the final mark
- making the reflection step/chapter in the group assignment individual, to discourage free-riding
- integrating the theory and practice stream, in particular by strengthening the relationship between the A&R sessions and the steps/chapters in the assignment (see Appendix 1 for details)

Manner & Form of Assessment and Assessment Requirements & Criteria
The first stream will be assessed by means of a written examination (determining 50% of the final grade); the second stream by means of a group paper (determining 50% of the final grade). The deadline for the paper is Wednesday December 2, 5:00pm. The paper must be delivered digitally by e-mail to rthomas5@uoregon.ca and on paper in her PPPM mailbox. The examination will take place on Wednesday December 9, 8:00am. Students <u>must</u> take the final exam to receive a grade in the course. The date and time for the final exam will not be changed to accommodate scheduling conflicts. Final exams will not be given early under any circumstances.

Graduate students must achieve a minimum grade of B- (undergraduate students must achieve a minimum grade of C-) on each of these assessments to pass the course. The grade of the examination will be

communicated within four days of the last Friday of exam week, and the grade of the group paper by Wednesday, December 9.

A+	A	A-	B+	B	B-	C+	C	C-	D	F
95-100	90-94	85-89	80-84	75-79	70-74	65-69	60-64	55-59	50-54	<50

Requirements and criteria concerning Lectures, Application and Reflection sessions, and examination

I assume participation of the students in both 'Lectures' and 'Application and Reflection' sessions. Participation includes studying the relevant literature beforehand and engaging in on-the-spot applications. Participation in Lectures will be not controlled formally. However, knowledge of presentations and discussions during the sessions, not only of the literature, will be tested in the written examination. Furthermore, the Lectures are essential in understanding how to study the literature. Participation in the interactive Application and Reflection sessions is obligatory and will be controlled. Students missing more than one of these sessions will be required to do an extra assignment. Students missing more than two will be not allowed to take part in the exam.

Requirements and criteria concerning presentation and feedback sessions and group paper

I assume equal contribution of group members to the paper. In particular, all the students in the group must be present when the group presents their work. In principle, the same grade will be given to all students in the group. However, if some group members feel not everybody is contributing equally, the instructor should be contacted so that a different arrangement can be made. Please contact the course coordinator as soon as problems emerge.

The group paper must be delivered on time. If it is not, and up to two days of delay, ten percent (out of 100) will be subtracted from the mark. In the case of more than two days of delay the paper will not be graded. "Days" include holiday and weekend days.

The group paper should be written in an academic style. Citations and reference list should be in APA format: http://library.uoregon.edu/guides/citing/apa.html. For writing guidance please visit the University of Oregon College of Education: https://education.uoregon.edu/student-academic-services/writing-resources or the Teaching and Learning Center: http://tlc.uoregon.edu/subjects/writing/ Students are also encouraged to visit the Writing Lab, which begins week two of the term and closes at 5:00 pm the Wednesday of finals week. Free tutors are available on a drop-in basis or by appointment, Monday-Friday 9:00am-5:00pm, 72 PLC (Prince Lucien Campbell).

Detailed instructions for the group paper, including assessment criteria, are in Appendix 1, 'Group Assignment Instructions' below.

Inspection of Exams/Assignments, Feedback

After communication of the grades for the original examination, students can inspect their exam and the model answers by making an appointment with the instructor (see contact information above). The instructor will give directions for the study of the literature during the 'Lecture' sessions, and feedback during the 'Application and Reflection' sessions.

Written comments will accompany the grade of the group paper. If more explanation is needed, the group can make an appointment with the instructor. The instructor will give directions for the group paper during the introductory session, and will provide feedback during the 'Application and Reflection' and 'Presentation and Feedback' sessions.

Specification Workload
The total course load is 4 credits or 170 hours. It will be approximately be distributed as follow:
  • contact = 26 hours
  • paper = 50 hours
  • literature study = 94 hours

I have designed the course to provide an even spread of work throughout the period. I expect, however, some self-discipline on the part of the students.

Rules regarding Plagiarism and Academic Misconduct
The provisions of the policies governing plagiarism and academic misconduct for University of Oregon students apply in full. For this purpose a check with SafeAssign or Turn It In may be performed. Access the regulations at http://library.uoregon.edu/guides/plagiarism/students/index.html and http://uodos.uoregon.edu/StudentConductandCommunityStandards/AcademicMisconduct/tabid/248/Default.aspx.

Disability Accommodations
The University of Oregon is working to create inclusive learning environments. Please notify me if there are aspects of the instruction or design of this course that result in disability related barriers to your participation. You are also encouraged to contact the Accessible Education Center (formerly Disability Services) in 164 Oregon Hall at 346-1155 or uoaec@uoregon.edu.

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 (www.bias.uoregon.edu) or by phoning 541.346.2037.

Diversity

The University of Oregon values our diversity and seeks to foster equity and inclusion in a welcoming, safe, and respectful community. This course is committed to upholding this principle by encouraging the exploration, engagement, and expression of different perspectives and diverse identities. We will value each class member's experiences and contributions, and communicate disagreements respectfully. Please notify me if you feel aspects of the course undermine these principles. For additional resources, you are also encouraged to contact the following campus services:

  • Division of Equity and Inclusion, 1 Johnson Hall, 541.346.3175; http://inclusion.uoregon.edu/

- Center on Diversity and Community, 54 Susan Campbell Hall, 541.346.3212; http://codac.uoregon.edu/
- Bias Response Team, 164 Oregon Hall or brt@uoregon.edu; http://uodos.uoregon.edu/Programs/BiasResponseTeam.aspx?q=bias (bias.uoregon.edu)

Title IX and a Safe Learning Environment

I support Title IX and have a responsibility to report relevant information. The UO is committed to providing an environment free of all forms of prohibited discrimination and sexual harassment, including sexual assault, domestic and dating violence and gender-based stalking. Any UO employee who becomes aware that such behavior is occurring has a duty to report that information to their supervisor or the Office of Affirmative Action and Equal Opportunity. The University Health Center and University Counseling and Testing Center can provide assistance and have a greater ability to work confidentially with students.

Literature/Materials

1) A selection of chapters from: Meyer, M.D. and E.J. Miller *Urban Transportation Planning*. I will clarify in the lectures which sections require the most attention (Note: this is an e-book, and instructions for buying it (entirely or as individual chapters) have been provided on Canvas)

2) The articles in the literature list below. These articles can be downloaded through the university library search website. (Note: you have to be in a University of Oregon digital environment to be able to access the articles)

At the examination I expect that the student will have studied:

- selection of chapters 1, 2, 3, 5, 7 and 8 of Meyer and Miller (for more details see the literature list below)
- the articles in the literature list below
- the PowerPoint presentations of the instructor and guests, and what has been said and discussed during these sessions

Final Grade

I will communicate the final grade by e-mail/Canvas after grading the examinations, or four days after the last Friday of exam week.

Schedule

Week	Date & Time	Activity	Contents
1	Monday September 28, 8:30-9:50	LE	Introduction & instructions, current issues in the US
	Wednesday September 30, 8:30-9:50	A&R	Introduction of paper topics, groups finalized
2	Monday October 5, 8:30-9:50	LE	System analysis/ Models in planning
	Wednesday October 7, 8:30-9:50	A&R	System analysis/ Models in planning
3	Monday October 12, 8:30-9:50	P&F	Presentation: *What is the problem?*
	Wednesday October 14, 8:30-9:50	P&F	Presentation: *What is the problem?*
4	Monday October 19, 8:30-9:50	LE	Demand analysis
	Wednesday October 21, 8:30-9:50		No class
5	Monday October 26, 8:30-9:50	LE	Demand analysis
	Wednesday October 28, 8:30-9:50	A&R	Demand analysis
6	Monday November 2, 8:30-9:50	LE	Supply analysis
	Wednesday November 4, 8:30-9:50	A&R	Supply analysis
7	Monday November 9, 8:30-9:50	LE	Emerging strategies in the US and internationally
	Wednesday November 11, 8:30-9:50	A&R	Emerging strategies in the US and internationally
8	Monday November 16, 8:30-9:50	P&F	Presentation: W*hat is the solution?*
	Wednesday November 18, 8:30-9:50	P&F	Presentation: *What is the solution?*
9	Monday November 23, 8:30-9:50	LE	Evaluation
	Wednesday November 25, 8:30-9:50	A&R	Evaluation
10	Monday November 30, 8:30-9:50	LE	Course summary and evaluation
	Wednesday December 2, 8:30-9:50	A&R	Final working group
	Wednesday December 2, 5:00pm: Paper Deadline!!!		
	Wednesday December 9, 8:00am, 360 Condon Hall: Final Exam!!!		

LE = Lecture; A&R = Application and reflection; P&F = Presentations and feedback.

Literature, per session

Monday September 28: Introduction

a) Meyer & Miller, chapter 1 (pp. 8-45), selection of chapter 2 (pp. 75-80, <u>Note: pages from chapter 2 will be sent as pdf with permission of the author</u>)

b) Bertolini, L (2012) Integrating Mobility and Urban Development Agendas: a Manifesto. *disP - The Planning Review*, 188 (1) 16-26. (<u>Note: this article is not available through the library, please check Canvas</u>)

c) Willson, R. (2001) Assessing communicative rationality as a transportation planning paradigm. *Transportation*, 28 (1), 1–31.

Monday October 5: System Analysis/Models

a) Meyer & Miller, chapter 3 (pp. 1-88)

b) Te Brömmelstroet, M. and L. Bertolini (2011) The Role of Transport-Related Models in Urban Planning Practice (Introduction to the theme issue). *Transport Reviews*, 31(2), 139-143. (<u>Note: this article is not available through the library, please check Canvas</u>)

c) Te Brömmelstroet, M. and L. Bertolini (2008) Developing Land use and Transport PSS. Meaningful information through a dialogue between modelers and planners. *Transport Policy*, 15(4), 251-259. (<u>Note: this article is not available through the library, please check Canvas</u>)

d) Jones, P. (2011) Developing and Applying Interactive Visual Tools to Enhance Stakeholder Engagement in Accessibility Planning for Mobility Disadvantaged Groups. *Research in Transportation Business and Management,* 2, 29–41.

Monday October 19: Demand Analysis

a) Meyer & Miller, chapter 5 (pp. 1-81)

b) Thomas, R. (2013) Resilience and housing choices among Filipino immigrants in Toronto. *International Journal of Housing Policy* 13(4): 408-432. (<u>Note: this article is not available through the library, please check Canvas</u>)

c) Næss, P., and A. Strand, A. (2012) What kinds of traffic forecasts are possible? *Journal of Critical Realism*, 11(3), 277-295. (<u>Note: this article is not available through the library, and will be sent as pdf with permission of the author</u>)

Monday November 2: Supply Analysis

a) Meyer & Miller, selection of chapter 7 (sections 7.0 introduction; 7.1 role of supply analysis; 7.2 system performance (up to time-distance diagrams); 7.5 impact models; 7.6 cost models)

b) Banister, D., K. Anderton, D. Bonilla, M. Givoni, and T. Schwanen (2011) Transportation and the environment. *Annual Review of Environment and Resources*, 36, 247-270.

c) Jones, P., and K. Lucas (2012) The social consequences of transport decision-making: clarifying concepts, synthesising knowledge and assessing implications. *Journal of Transport Geography*, 21(1), 4-16. (Note: this article is not available through the library, please check Canvas)

Monday November 23: Evaluation

a) Meyer & Miller, selection of chapter 8 (pp. 1-73; 75-82)

b) Mackie, P., and J. Preston (1998) Twenty-one sources of error and bias in transport appraisal. *Transport Policy*, 5(1), 1-7. (Note: this article is not available through the library, please check Canvas)

c) Beukers, E., L. Bertolini, and M. Te Brömmelstroet (2012) Why Cost Benefit Analysis is perceived as a problematic tool for assessment of transport plans: A process perspective. *Transportation Research Part A: Policy and Practice*, 46, 68-78.

d) Mouter, N., Annema, J.A. and Van Wee, B. (2013) Ranking the substantive problems in the Dutch Cost-Benefit Analysis practice. *Transportation Research Part A* 49: 241-255. (Note: this article is not available through the library, please check Canvas)

Appendix 1: Group Assignment Instructions

Setting
Students will work in groups. Each group is made up of 4 students, minimum 2 graduate students per group. Each group acts as a metropolitan transportation planning consultancy, hired by the metropolitan authority to help tackle a complex planning issue. Each group must choose an issue to tackle among those presented in the lecture on September 30, 2015. A maximum of three groups can choose the same issue. Groups must finalize their case city/region by the second week of the course.

Steps
The assignment should be developed along the following steps:

1) **Problem definition**: What is the problem? Why is it a problem? For whom is it a problem?
   For this step, insights from the lecture on current issues and notions and tools from in other planning courses can be useful

2) **Problem analysis**: What are the causes of the problem? What role can transportation and land use policy interventions play in solving it?
   For this step, notions and tools from paradigms 1(system analysis), 2 (demand analysis) and 3 (supply analysis) can be useful

3) **Solution generation**: What is the solution? How does it solve the problem? What is required for its implementation? Who should do what when? What are threats along the way? How can these be dealt with?
   For this step, insights from the lecture on emerging strategies and issues, ideas, and tools from other planning courses can be useful

4) **Solution assessment**: In which measure does the solution solve the problem? How certain of its effectiveness are we? Do the benefits/advantages outweigh the benefits/disadvantages? How can the solution be improved following the assessment?
   For this step, notions and tools from paradigm 4 (evaluation) can be useful

5) **Reflection**: How does the proposal relate to the knowledge from the theoretical stream? Which knowledge has been used and which not? Why? Has knowledge not considered in the course proven to be important? What are the implications for education and research in sustainable transportation planning?

In doing the assignment the students will be, in principle, free to choose among the themes/disciplines/paradigms introduced in the theory stream. However, they should at least explicitly consider all themes/disciplines/paradigms. In other words: students might end up not using everything they learned in the theory stream only if they are able to show that they can still solve the problem. This will be a main area of concern for the instructor when giving feedback.

Output
The final product is **a paper of between 10,000 and 15,000 words**, making appropriate use of text, figures, maps and tables and including a reference list. Each of the five steps above will result in a chapter of the paper. Furthermore:

- Step 2 will include material developed in the Application & Reflection sessions of October 7, October 28, and November 4 (on system analysis/models, demand analysis, and supply analysis)
- Step 4 will include material developed in the Application & Reflection session of November 25 (on evaluation)
- <u>Step 5 (reflection) will be carried out individually by each member of the group</u>. All reflections will be added as an Appendix to the paper <u>but will not be included in the word count</u>. They should each be between 1,000 and 2,000 words long.

Assessment criteria

Specific criteria:

- Is the **problem definition** clear and supported by evidence? Is the problem relevant and challenging?
- Is the **problem analysis** sound? Does it give insight in critical factors and relationships? Do system, demand, and supply analysis play a clear role?
- Is the **solution** clearly related to the problem? Is it innovative? Is it realistic?
- Does the **assessment** convincingly address all the important dimensions of the problem? Does it lead to improvement of the solution? Do concepts and tools from the evaluation paradigm play a clear role?
- Have the different sustainable transportation paradigms been used appropriately? If they have not been used, or other paradigms have been used, does the **reflection** clarify why?

General criteria:

- Is the **argumentation** clear and consistent?
- Is there evidence of **original insights** and of a critical and creative attitude?
- Is the paper **easy to read** and grammatically correct? In particular, do text, figures and tables complement each other?
- Is the paper written according to the **guidelines for scientific publications**? In particular, are literature references appropriate and correctly reported?

Important dates

- Wednesday September 30, 8:30-9:50am: Lecture introducing the paper topics

- Monday October 12 and Wednesday October 14, 8:30-9:50am, presentation: *What is the problem?* Schedules and instructions for presentations will be circulated when the groups are known

- Monday November 9, 8:30-9:50am: Lecture on emerging strategies

- Monday November 16 and Wednesday November 18, 10:00-11:20am, presentation: *What is the solution?* Schedules and instructions for presentations will be circulated

- **Wednesday December 2, 5:00pm, deadline** (Note: The paper must be delivered digitally by e-mail to rthomas5@uoregon.edu, and on paper in her PPPM mailbox)

Appendix 2: Useful Websites

- Government, State of Oregon

    – http://www.oregon.gov/ODOT/PT/

- Government, National

    – US DOT http://www.transportation.gov/

    – Pedestrian and Bicycle Information Centre http://www.pedbikeinfo.org/

- Research, State of Oregon:

    – Portland State University TREC http://trec.pdx.edu/about

    – American Public Transit Association
      http://www.apta.com/resources/links/unitedstates/Pages/OregonTransitLinks.aspx

- Research, National

    – Center for Neighbourhood Technology http://www.cnt.org/

    – Center for Urban Transportation Research http://www.cutr.usf.edu/

    – Transportation Research Board http://www.trb.org/

- Data:

    – Census http://www.census.gov/

    – State and County Quick Facts http://quickfacts.census.gov/

    – DOT GIS gis.odot.state.or.us/transgis/

- Advice, international:

    – http://www.vtpi.org/tdm/

    – http://www.konsult.leeds.ac.uk/

- Innovative practices, international:

    – http://www.civitas-initiative.org/

    – http://www.mobilityplans.eu/

    – http://www.epomm.eu/

    – http://www.eltis.org/