

**URBAN TRANSPORTATION II: TRANSPORTATION
POLICY ANALYSIS**

COURSE: UPP 561

CALL NO.: 17225

**Prerequisite: UPP 560. Can be waived with instructor's
consent.**

Time: 6:00 - 9:00 PM Mondays

Location: 316 2DH

**Textbooks: None. Reading materials will be handed out
or available online via the blackboard site.**

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Course Web Site: Login to *blackboard.uic.edu*

Objectives of the Course

The purpose of this course is to examine key issues affecting transportation policy. The course will cover material on strategic policies and emerging trends in various transportation modes and sectors. Equitable and efficient access to jobs and social opportunities have strong implications for quality of life in communities. The relationship of transportation to the environment and energy usage, to the decentralization of urban areas and to regional economic development and industry growth are only some of the many factors of concern to policy makers. Further, the activity patterns of individuals are changing and there is a need to supply transportation systems that reflect these changing needs. As the focus of transportation policies increasingly move away from provision of mobility (simple movement of people, goods and commodities) to the harder questions of equitable accessibility to "spatial opportunities", a re-thinking is occurring in transportation communities regarding future transportation policies. Students are also exposed to the principles of transportation policy analysis.

I like to bring an international perspective. The problems of congestion, lack of accessibility, lack of funding for infrastructure projects are global. Further, the course exposes students to illustrative examples in all policy areas we cover.

The course will cover the following topics:

Part I: Major policies concerning the transportation-related aspects of the environment, energy, economic development, community mobility/accessibility, freight transportation, advanced transportation systems, transportation safety and "social justice" (including Job Access and Reverse Commute, Environmental Justice and Americans with Disabilities Act).

Part II: Basic concepts in transportation policy formulation, research design and evaluation and (i) legislation analysis and tracking (ii) decision-making methods (iii) public participatory techniques and (iv) transportation policy evaluation principles and methods.

Course Requirements:

The student, at the end of this course, will be expected to exhibit a thorough understanding of transportation policy and its implications on planning. Course requirements are class participation, three take-home assignments and a final term project, including a class presentation and a final paper.

The grading system will be as follows:

1. Attendance and participation: 10% of grade.
2. Assignment I: Due on Feb. 28. 15% of grade.
3. Presentation of Final Term Project Proposal: On March 14. (About 10 minutes including questions). 10% of grade.
4. Assignment II: Due on April 4. 15% of grade.
5. Assignment III: Due on April 25. 15% of grade.
6. Final Term Project Paper: Due on May 5. 35% of grade.

Please consult the documents for more information on the assignments and course requirements/assignments:

1. *course-schedule-overview.pdf*: This document gives weekly overview of lectures, dates of assignments and other calendar details
2. *Student-responsibilities.pdf*: This document outlines student responsibilities, in addition to those given in the other documents.
3. *assignments.pdf*: This document gives guidelines for preparing your home work assignments and your final paper.

All these documents may be found in the Blackboard site. For an overview of how items are structured in the site, please consult *guidetosite.pdf*.

Readings

There is no required text. Photocopied materials (journal articles, book chapters and government documents) will be distributed in class and the student will write a check to the University of Illinois for these materials. Other required readings will be available as online documents through the course Blackboard site. Students are also required to look at internet information sources and documentation, all of which will be linked through the course web site.

Weekly Syllabus
January 10 to April 25, 2005
Examination Week: May 2-May 6, 2005

**STARRED READINGS (indicated as **) ARE REQUIRED.
OTHER READINGS ARE OPTIONAL BUT WILL BE USED
DURING CLASS DISCUSSION**

Part I: Weeks 1, 2, 3, 4, 5, 6, 7

1. **Week 1:** No class due to Transportation Research Board Annual Meetings.
2. **Week 2:** Holiday due to Martin Luther King Day.
3. **Weeks 3 and 4:** Course requirements, planning and policy connections, strategic US Transportation Policy, current trends. History and implications of transit, highway, freight and non-motorized (bicycle and pedestrian) transportation policies. Comparison of US transportation policy with that of the European Union, South American and South-East Asian region's strategic policies,

(a) Readings and Assigned Tasks:

- i. ****Verify access to Blackboard site and read Blackboard Student Manual.**
- ii. ****Transportation Research Board (2001). Critical Issues in Transportation 2002. November-December 2001. Reprinted from TR News 217. [Source: Available from blackboard web site under Course Documents in .pdf format.]**
- iii. ****Weiner, E. (1992). *Urban Transportation Planning in the United States: A Historical Overview*. DOT-T-93-02. [Source: Available from Courseinfo web site under Course Documents in .pdf format. You can also try <http://www.utc.uic.edu/~vonu/history-upp561.html>]**
- iv. **** (continued) Weiner, E. (1992). *Urban Transportation Planning in the United States: A Historical Overview*. DOT-T-93-02. [Source: Available from blackboard web site under Course Documents in .pdf format.]**

- v. **United Nations. Economic and Social Commission for Asia and the Pacific. (1996-2001). Review of Developments in Transport and Communications in the ESCAP Region. Asia and the Pacific. Executive Summary and Part II. [Source: Available from blackboard web site under Course Documents in .pdf format.]
 - vi. **European Commission. (2001). European Transport Policy for 2010. Time to Decide. Part 1. [Source: Available from blackboard web site under Course Documents in .pdf format.]
 - vii. **TCRP Special Report 257. Making Transit Work. Insights from Western Europe, Canada and the United States. *Transportation Research Board, National Research Council*. Chapters 3 and 4. [Source: Visit blackboard; go to External Links].
 - viii. **Linked readings on ISTEA and TEA-21 [Source: Visit blackboard; go to External Links].
4. **Week 4 and 5: Energy, environment and sustainable development policies; urban sprawl, “clean” transportation policies, globalization of transportation trends.**
- (a) **Readings and Assigned Tasks:**
- i. **Transportation Research Board. (1997). *Toward a Sustainable Future: Addressing the Long-Term Effects of Motor Vehicle Transportation on Climate and Ecology*. Chapters 3 and 4. TRB Special Series Report 251. [Source: Available from blackboard web site under Course Documents in .pdf format.]
 - ii. **Marshall, S. and D. Banister. (2000). Travel Reduction Strategies: Intentions and Outcomes. In *Transportation Research Part A*, Vol. 34, pp. 321-338. [Source: Available from blackboard web site under Course Documents in .pdf format.]
 - iii. **Greene, D. (1996). Energy-Use Patterns and Trends. Chapter 6 [titled *Alternative Fuels and Vehicles*] of *Transportation and Energy*. Eno Transportation Foundation. [Source: Available from blackboard web site under Course Documents in .pdf format.]
 - iv. **Schafer, A. (1998). The Global Demand for Motorized Mobility. In *Transportation Research Part A*, Vol. 32, No. 6, pp. 455-477. [Source: Available from blackboard web site under Course Documents in .pdf format.]
 - v. **Federal Highway Administration. (1996). *Summary of Environmental Legislation Affecting Transportation*. [Source: Visit blackboard; go to External Links].

- vi. **Shrouds, J. M. (1995). Challenges and Opportunities for Transportation: Implementation of the Clean Air Act Amendments of 1990 and the Intermodal Surface Transportation Efficiency Act of 1991. In *Transportation*, Vol. 22, pp. 193-215. [Source: Available from blackboard web site under Course Documents in .pdf format.]
- vii. **Transportation Conformity Reference Guide. (2000) Revised July 31, 2001. Read Parts I, II and Section A, B, C and D of Part III. [Source: Visit blackboard; go to External Links].

Other links that may be of interest:

- i. Federal Register (1993). *Air Quality: Transportation Plans, Programs and Projects; Federal or State Implementation Plan Conformity; Rule*. EPA, 40 CFR Parts 51 and 93. Part II. November. [Source: Photocopied hand-outs.]
- ii. Federal Register (1987). *Section 4F Evaluations*, Vol. 52, No. 160, Wednesday, August 19. [Source: Photocopied hand-outs.]
- iii. Council on Environmental Quality. Executive Office of the President. (1986 reprint). *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act*. Reprint 40 CFR Parts 1500-1508. [Source: Photocopied hand-outs.]
- iv. Kyoto Protocol. Summary. [Source: Visit blackboard; go to External Links].
- v. Urban sprawl links. [Source: Visit blackboard; go to External Links].
- vi. 2001 National Energy Policy. [Source: Visit blackboard; go to External Links].
- vii. Bicycle and Pedestrian Programs. [Source: Visit blackboard; go to External Links].
- viii. Transit Focused Development. [Source: Visit blackboard; go to External Links].
- ix. Livable Communities Initiative. [Source: Visit blackboard; go to External Links].

5. Week 7: Transportation and economic development.

(a) Readings and Assigned Tasks:

- i. **Boarnet, M. G. (1997). Highways and Economic Productivity: Interpreting Recent Evidence. In *Journal of Planning Literature*. 11, No. 4, pp. 476-86. [Source: Photocopied hand-outs.]

- ii. **NCHRP (1997). Factors Affecting Freight Demand. In *A Guidebook for Forecasting Freight Transportation Demand*. (1997). Cambridge Systematics, Transportation Research Board, National Academy Press. [Source: Photocopied hand-outs.]

6. Week 8 and 9: Transportation and social justice regulations, community-accessibility and mobility policies.

(a) Readings and Assigned Tasks:

- i. **Thakuria, P. and P. Metaxatos. (2001). Effect of Residential Location and Access to Transportation on Employment Opportunities. In *Transportation Research Record* No. 1726. [Source: Photocopied hand-outs.]
- ii. **Shen, Q. (1998). Location characteristics of inner-city neighborhoods and employment accessibility of low-wage workers. In *Environment and Planning B*, Vol. 25. [Source: Photocopied hand-outs.]
- iii. **Inlandfeldt, K. R. and D. L. Sjoquist. (1998). The Spatial Mismatch Hypothesis: A Review of Recent Studies and Their Implications for Welfare Reform. In *Housing Policy Debate*, Vol. 9, Issue 4. [Source: Photocopied hand-outs.]
- iv. **Metaxatos, P. S. Sööt, P. Thakuria, A. Sen, J. Dijohn. (1999). Transportation Planning Process for Linking Welfare Recipients to Jobs. In *Transportation Research Record*, 1626. [Source: Photocopied hand-outs.]
- v. Overview of Transportation and Environmental Justice. [Source: Visit blackboard; go to External Links].

Student Work: Assignment IA, IB and II.

Part II: Weeks 10, 11, 12, 13, 14 and 15.

1. **Week 10, 11, 12 and 13: Introduction to traffic flow theory; fundamentals of welfare economics, criteria for evaluation; efficiency and equity criteria for transportation investments, cases of market failure, user equilibrium and system optimum and need for optimal tolling, full costs and benefits. Equity analysis and redistributive policies. Examination of Intelligent Transportation Systems, Congestion Pricing and Transit Investments with these concepts.**

(a) Readings and Assigned Tasks:

- i. **Thakuriah, P. (1999). *Basic Concepts in Transportation Analysis. Introduction to research design and applications/modifications for transportation impact assessment.* Handout created for UPP 561. [Source: Photocopied hand-outs.] [Source: Available from blackboard web site under Course Documents in .pdf format.]
- ii. **Arnott, R. and K. Small. (1994). The Economics of Traffic Congestion. In *American Scientist*, Vol. 82, pp. 447-455. [Source: Photocopied hand-outs.]
- iii. **Gómez-Ibánñez, J. A. (1997). Estimating whether Transportation Users Pay their Way: The State of the Art. In *The Full Costs and Benefits of Transportation: Contributions to Theory, Method and Measurement.* Edited by D. L. Greene, D. W. Jones and M. A. Delucchi. Springer-Verlag, Berlin-Heidelberg. [Source: Photocopied hand-outs.]
- iv. **Miller, T. (1997). Societal Costs of Transportation Crashes. In *The Full Costs and Benefits of Transportation: Contributions to Theory, Method and Measurement.* Edited by D. L. Greene, D. W. Jones and M. A. Delucchi. Springer-Verlag, Berlin-Heidelberg. [Source: Photocopied hand-outs.]
- v. **Krupnick, A. J., R. D. Rowe and C. M. Lang. (1997). *Transportation and Air Pollution: The Environmental Damages.* In *The Full Costs and Benefits of Transportation: Contributions to Theory, Method and Measurement.* Edited by D. L. Greene, D. W. Jones and M. A. Delucchi. Springer-Verlag, Berlin-Heidelberg. [Source: Photocopied hand-outs.]
- vi. **FHWA (1992). *Secondary and cumulative Impact Assessment in the Highway Project Development Process.* Position Paper. [Source: Photocopied hand-outs.]
- vii. National Highway Traffic Safety Administration. (1996). *What Do Traffic Crashes Cost?* Report No. DOT-HS-808-478. [Source: Photocopied hand-outs.]
- viii. Transit Cooperative Research Program (1996). *Measuring and Valuing Transit Benefits and Disbenefits.* Report # 20. [Source: Visit blackboard; go to External Links].
- ix. Analysis of HOT Lanes. [Source: Visit blackboard; go to External Links].
- x. **Euler, G. (1999). Intelligent Transportation Systems. In *Traffic Engineering Handbook*, Institute of Transportation Engineers. [Source: Photocopied hand-outs.]

2. Weeks 14 and 15: Specific Evaluation Approaches; multicriteria decision-making, cost-benefit analysis, the emerging power of GIS and spatial MCDM systems in transportation, other economic and policy evaluation methods.

(a) Readings and Assigned Tasks:

- i. **Meyer, M. D. and E. J. Miller. (2001). Transportation System and Project Evaluation. Chapter 8 of *Urban Transportation Planning: A Decision-Oriented Approach*. McGraw-Hill Series in Transportation. [Source: Photocopied hand-outs.]
- ii. **Boardman, A.E., D. H. Greenberg, A. R. Vining, D. L. Weimer. (2000). Chapters 11 and 14. *Prentice Hall*. [Source: Photocopied hand-outs.]
- iii. **Jankowski, Piotr. (1995) Integrating geographical information systems and multicriteria decision making methods. *Int. J. Geographical Information Systems*. 9; 251-273. [Source: Available from blackboard web site under Course Documents in .pdf format.]
- iv. **Malczewski, J. (1999). GIS and Multicriteria Decision Analysis. John Wiley & Sons; (March 19, 1999). Selected chapters. [Source: Photocopied hand-outs.]
- v. Additional readings to be added to list.

Student Work: Assignment II and III. Final paper due Finals week.