

URP 6821
Transportation and Land Use Modeling
Department of Urban and Regional Planning
University of Florida

Instructor:

Dr. Zhong-Ren Peng, Professor (Room 431-A, 352-392-0997 Ext. 429, zpeng@dcp.ufl.edu)

Course Overview

This course focuses on planning process, modeling and applications for passenger transportation of metropolitan areas. The class will help develop an understanding of the federally-mandated transportation planning process, models of travel demand, transportation and land use interaction modeling, GIS applications in transportation, and transportation project and policy analysis. We will consider the role of planning in both advising politicians and policy-makers and also in advocating on behalf of communities that are affected by transportation projects.

This is a hands-on course. Students will have the opportunity to use transportation demand models in a transportation modeling software package (e.g., Cube Voyager). We will also have occasional guest speakers who are involved in transportation planning, modeling and project management.

Prerequisites: Either of the following courses is required prior to take this course: URP 6716 Transportation Policy/Planning, or TTE 5006 Advanced Urban Transportation Planning.

Assignments: There will be weekly or bi-weekly assignments. Many of them will require the use of transportation planning software Cube Voyager or GIS software ArcGIS. There will be a mid-term exam and a final project. Grading will be based on the following components: 30% assignments, 30% mid-term exam and 40% final project.

Textbook and Readings:

- Meyer, Michael D. and Eric J. Miller. *Urban Transportation Planning: A Decision-Oriented Approach*. New York: McGraw Hill. Second edition.
- Other readings as assigned

Students with Disabilities

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

Class Attendance

Students are expected to attend all classes and labs and to stay until the class/lab period ends. Role will be taken randomly; more than 3 unexcused absences will result in the loss of a letter grade. In the case of illness or a family emergency, a schedule for the completion of make-up work must be determined with the instructor as soon as possible upon a student's return to class. Failure to comply with the agreed upon schedule will result in a failing grade for that project.

Academic Honesty

Students in the Department of Urban and Regional Planning are expected to adhere to all University of Florida academic honesty policies. Failure to do so will result in lowered grades and/or referral to the University Honor Court. The following are some examples that are considered to be academic dishonesty:

- copying graphics or texts from any sources for your report without crediting the original source;
- representing someone else's work as your own;
- allowing someone else to represent your work as his/her own;
- Multiple submissions of the same or similar work without prior approval;
- Cheating in exams (e.g., looking at books or notes in a closed-book examination).
- Falsifying information such as changing or leaving out data, such as manipulating or misreporting statistics for a research project; altering work after it has been submitted; hiding reference materials, etc.

Schedule of Classes

Spring 2010

1. Jan. 5 **Course Overview, and Analytical Perspectives, Transportation Trends**
Pisarski, Alan, 2006, Commuting in America III, part I (available at http://onlinepubs.trb.org/onlinepubs/nchrp/CIAIII_Part1.pdf)
2. Jan. 12 Instructor at the Transportation Research Board meeting, no class.
3. Jan. 19 **Urban Transportation Planning and Decision Making**
Meyer and Miller, Chapters 1, 2 and 3
4. Jan. 26 **Transportation Data and System Characteristics, Urban Transportation Demand Modeling: Trip Generation**

Meyer and Miller, Chapters 4 and 5
5. Feb. 2 Cube Program
6. Feb. 9 **Urban Transportation Demand Modeling: Trip Distribution**

Meyer and Miller, Chapters 5
7. Feb. 16 **Urban Transportation Demand Modeling: Modal Split**

Meyer and Miller, Chapters 5
8. Feb. 23 **Urban Transportation Demand Modeling: Trip Assignment**

Meyer and Miller, Chapters 5
9. March 2 **Urban Transportation Demand Modeling: Time-of-Day Modeling, Activity-Based Models and Non-Motorize Travel Demand**

Meyer and Miller, Chapters 5
10. March 9 **UF Spring Break, no class**
11. March 16 **Land-Use Models, part 1**

Meyer and Miller, Chapters 6
12. March 23 **Land-Use Models, part 2**

Meyer and Miller, Chapters 6

13. March 30 **Mid-Term Exam**

14. Apr. 6 **GIS Applications in Transportation: Linear data model**

Timothy Nyerges, 1995. Geographic Information System Support for Urban/Regional Transportation Analysis. In Susan Hanson, ed. *The Geography of Urban Transportation*. Second Edition. The Guilford Press. pp. 240-268.

Dueker, K. J. and Vrana, R. (1992). Dynamic Segmentation Revisited: A Milepoint Linear Data Model. *Journal of the Urban and Regional Information Systems Association*, 4(2): 94-105

15. April 13, Cube Voyage Lab, working on your project

16. Apr. 20 working on your project

17 April 27, **Final project presentation and final project report Due**