UP 430/CEE 417: Urban Transportation Planning

University of Illinois at Urbana-Champaign
Department of Urban and Regional Planning

Spring 2015

CLASS MEETINGS: Mondays, 5:00-7:50 pm
ROOM: 225 Temple Buell Hall (Lab: 227 TBH)
INSTRUCTORS: Rita Morocoima-Black, rmorocoi@ccrpc.org
M. Sharif Ullah, mullah@ccrpc.org
TEACHING ASSISTANTS: Sebastián Arias

COURSE OVERVIEW

Our transportation systems influence virtually every aspect of community life. They are the means for moving people, goods and services throughout our communities, the region, and, increasingly, to destinations around the world. Of equal importance, these systems have played a significant role in shaping patterns of growth, facilitating economic prosperity, and influencing the character and livability of our communities.

As a result, transportation planning is a particularly important component in the overall planning for what we want our communities to be. Past decisions about transportation system development were not always based on a comprehensive review of the diverse needs and interrelationships that influence whether we achieve both effective transportation systems and livable communities. Decisions were not necessarily based on a clear vision about a community's future. Instead, much of our current inventory of transportation facilities was built on a project-by-project basis, often in reaction to traffic congestion or other problems. Planning, development and operational responsibility for various pieces of the transportation network has been divided among federal, state, and local government agencies, regional transit agencies, port districts, and the private sector. The efforts of these various agencies have not always been coordinated to create an efficient, seamless transportation system.

This course will examine a number of the more important issues, descriptive and analytical, dealing with urban transportation. We begin by taking a close look at the historical development of urban transportation and the fundamental question of the role of transportation in urban development. We will continue by examining the characteristics of urban transportation systems and their planning processes while emphasizing the use of analytical tools.

TEXTBOOKS

There are two required textbooks:

\textit{Modelling Transport}, 4\textsuperscript{th} edition, Juan de Dios Ortuzar and Luis G. Willumsen (2011, Wiley). They will be available for purchase at the Illini Bookstore, and on Amazon.

Readings not included in the two required textbooks will be available on the course website.

\section*{HOMEWORK ASSIGNMENTS AND GROUP FINAL PROJECT}

A number of assignments will be required for the course. The purpose of the homework assignments is to provide opportunities to integrate the principles of the course by analyzing selected problems in urban transportation. Three written assignments will be required: two analytical memoranda and a small group project including data collection and analysis. These assignments have staggered due dates timed to correspond with the subject areas covered in class.

The written assignments are going to be distributed during class. All written assignments (hardcopy only) should be placed in my desk at the beginning of the class by the due date when the homework is due. Late assignments will not be accepted except under unusual circumstances.

Homework 1 (Due Date - February 9): 10%
Homework 2 (Due Date - February 23): 15%
Homework 3: (Due Date - March 30): 15%

A group final project will also be assigned. Detailed instructions about the final group project will follow.

\section*{GRADING}

The final grade for the course will be made up of the following components:
\begin{itemize}
  \item Homework: 40%
  \item Final Project and Presentation: 40%
  \item Class Participation/Attendance: 20%
\end{itemize}

Laptops should be used only for note taking. No web surfing! No texting!
Phones are expected to be turned off during class time."

\section*{DURP CODE OF CONDUCT: INCLUSIVENESS & PROFESSIONALISM}

\textbf{CLASS CLIMATE} The Department of Urban and Regional Planning (DURP) is committed to creating an environment of inclusion and opportunity that is rooted in the very goals and responsibilities of practicing planners. This responsibility requires planners to adhere to the
highest standards of professionalism and integrity in the workplace, with coworkers, and with the public. As a result, the development of responsible, ethical, professional behavior is a critical component of professional planning education. DURP expects all students to meet and exceed the standards outlined in the University of Illinois Student Code. See Student Code Article 1—Student Rights and Responsibilities, Part 1. Student Rights: §1-102 In the Classroom.

ACADEMIC INTEGRITY

This course follows the guidelines set forth by the University student code. See http://www.admin.uiuc.edu/policy/code/article_1/a1_1-401.html for specific guidelines, examples, and punishment associated with academic dishonesty.

COURSE SCHEDULE

- Week 1 (January 26) - Course overview. Introduction and key concepts. History of the urban transportation systems and its relationship with the urban environment
- Week 2 (February 2) - History of the Transportation Planning Process: Changes. Impacts of Transportation Policies in Land Use
- Week 3 (February 9) - Transportation planning at the federal level, regional and local level
- Week 4 (February 16) - Planning for automobiles and transit
- Week 5 (February 23) - Planning for walking and biking: Changes in mode choices
- Week 6 (March 2) - Transportation and the built environment. Health Implications
- Week 7 (March 9) - The role of models in transportation planning
- Week 8 (March 16) - Introduction to Travel Demand Forecasting
- Week 9 (March 23) - Spring Break
- Week 10 (March 30) - Methods and issues with modeling and forecasting
- Week 11 (April 6) - Trip Generation Modeling
- Week 12 (April 13) - Trip Distribution Modeling
- Week 13 (April 20) - Mode Choice Modeling
- Week 14 (April 20) - Model Aggregation and Transferability
- Week 15(April 27) - Traffic Assignment Modeling
- Week 16 (May 4) - Freight Demand Model and Activity Based Modeling
- Week 17 (May 11) – Final Project Presentation

INTRODUCTION TO TRANSPORTATION PLANNING AND COURSE OVERVIEW

* indicates optional readings.

Week 1: January 26

Course overview. Introduction and key concepts. History of the urban transportation systems and its relationship with the urban environment.


Week 2: February 2

History of the Transportation Planning Process: Changes. Impacts of Transportation Policies in Land Use


Week 3: February 9

Transportation planning at the federal level, regional and local level
Week 4: February 16

Planning for automobiles and transit


Damien Newton and Melanie Curry. 2014. “California Has Officially Ditched Car-Centric ‘Level of Service’.”


Week 5: February 23

*Planning for walking and biking: Changes in mode choices*


Active Living Research. 2013. “How to Increase Bicycling for Daily Travel.”


Week 6: March 2
Transportation and the built environment. Health Implications.


Week 7: March 9
The role of models in transportation planning (Guest lecture on CUUATS Modeling Suite)


Week 8: March 16
*Introduction to Travel Demand Forecasting*


Week 9: March 23
*Spring Break*

Week 10: March 30
*Methods and issues with modeling and forecasting, Trip Generation Modeling*


Week 11: April 13
*Trip Distribution Modeling*


Week 12: April 20
*External Travel Estimation and Mode Choice Modeling*


Week 13: April 20
*Model Aggregation and Transferability*


Week 14: April 27
*Traffic Assignment Modeling*


Week 15: May 4
*Freight Demand Model and Activity Based Modeling*


NCHRP Report 716: *Travel Demand Forecasting: Parameters and Techniques*, Chapter 6

Week 16: May 11
*Final Project Submission and Group Presentation*