Orf 467
Transportation Systems Planning and Analysis v1.2

Fall 2007/2008

Course Description


Week 1
Mon Sep 17
Introduction and Survey of Course
Elements of the transportation sector of the economy, the player, the technologies, the information sources

Reading: http://www.bts.gov/publications/pocket_guide_to_transportation/2007/pdf/entire.pdf (Basic background on Transportation in the US)
The Changing Face of Transportation USDOT National Transport Statistics (Continuously updated)

Wed Sep 19
Historical evolution of National Transportation Policy
Readings: Coyle Ch. 1-4, pp. 2-129 (passed out); Brief History of US DOT
http://dotlibrary.dot.gov/Historian/history.htm
Homework 1: The Last Drop
Class Notes: Week 1

Week 2
Mon Sep 24
Current National Transportation Policy and the FY07 Budget Proposal for Transportation; Highway taxes; Central Jersey Rapid Transit Project

Reading: FY2008 Federal Budget; FY2008 Federal Transportation Budget; The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), governs fiscal years 2004 through 2009. The legislation For 2005 to 2009, highway spending limits total $189.48 billion, and public transportation funding totals $45.31 billion. Public transportation spending equals 18.5 percent of the bill’s overall funding. Summary of Highway provisions

Wed Sep 26
Big Picture view of Transportation in the next 20-25 years (be prepared to discuss!)
The Private Sector side of Transportation. Carriers, shippers 3rd party logistics, and other service provides
Part 2. Planning and Analysis Tools of Transportation Demand and Investment

Week 3

Mon Oct 1

Ref.: Class Notes also: CNJ US1 BRT Planning Charts
Background reference: M&M, Ch 2 Planning & Decision Making

Wed Oct 3
Urban Travel & Transportation System Characteristics: Planning Studies and Methods: Travel Demand Surveys, Data Sources, Intro to Sequential Demand Forecasting Modeling Approaches
Background reference: M&M, Ch 3 Urban Travel Characteristics, Ch 4 Data Management & Use in Decision Making
Homework #3 My City. Examples: MyCityEx1, MyCityEx2 Due: Wed. Oct 10 & Wed Oct 24.

Week 4

Mon Oct 8
Relating the demand for transportation with Land Use: Trip generation
Background reference: M&M, Ch 5.0 – 5.3

News:

Wed Oct 10
Relating the demand for transportation with Land Use: Trip distribution
Ref.: Puget Sound Study, Broad, New York Met Area Study, North Carolina Study, Travel modeling Urban Goods Movement Model UGMM; Class Notes Background reference: M&M, Ch 5.0 – 5.3
Handout of ITE Trip Generation chapter, Ch. 5.4.1 Ref.: Trip Distribution Notes

Week 5

Mon Oct 15:
Modeling Trip Distribution and Mode Split for State-wide transit system
Assignment:
Ref.: Class Notes, Background reference: M&M, Ch 5.4.2Ref.:

Wed Oct 17
Traffic Assignment and paths through networks; Network Analysis: Shortest Paths: Label Setting and Label Correcting, Shortest paths in Real Networks and Essentially Shortest Paths
Readings: Ch. 5.4.3-6, Magnanti, Ch4, Ch5

Week 6

Mon Oct 22
More on: Paths through networks; Network Analysis: Shortest Paths: Label Setting and Label Correcting, Shortest paths in Real Networks and Essentially Shortest Paths
Readings: Ch. 5.4
Ref.: Class Notes
Wed Oct 24
More on Networks: Label Setting Dijkstra’s Algorithm
Readings: DykstraApplet
Ref.: Magnanti Ch 4 Class Notes c

Term Break Oct 28- Nov 3

Part 3 The Role of High Technology in Transportation

Week 7
Mon Nov 5
More on Networks: Dial and Radix Heap Implementations of Dijkstra’s; Label Correcting; real-world networks and stochastic issues
Assignment: Magnanti: 2.1, 2.2, 2.3, 2.4, 2.5, 2.30, 2.31, 4.1, 4.14, 4.15 (These are straightforward. Do them with your partners; turn in one solution set per two person pair.), Due in class Monday Nov 12.

Wed Nov 9
Readings: 511 Traffic Bay Area, South Florida Virginia TampaBay Minnesota Georgia Traffic.com Real-time ATIS
Assignment: Next Steps in “Advanced Traveler Information Systems”

Week 8
Mon Nov 12 Wed Nov 14
Readings: NJ PRT Legislative Study; NJ PRT Legislative Exec Presentation, NJ PRT Academic Look, Jerry Schneider’s Source Page, Skyweb Express (aka Taxi2000), History of PRT

More Links on PRT: Uppsala Conference; Daventry Conference, Vectus PRT
Assignment: New Jersey State-wide PRT Network Design: Assignment v1, Teams

Wed Nov 14
Toward Real-Time Dynamic Minimum Estimated Time of Arrival turn-by-turn route guidance

Part 4 Current High Profile Transportation Policy & Planning Issues
Week 9
Mon Nov 21 and Wed Nov 23
More on ITS and Real-time traffic information systems

Week 10
Mon Nov 26 and Wed Nov 28
“Value Pricing”, other pricing policies in transportation.
Readings: Fehlig, M, Kornhauser, A. “ Marketable Permits for Peak Hour Congestion on Rt 1”
Ref.: Class Notes

Exam: Thursday Evening Nov 29   Exam covering weeks 1-9 Instructions

Week 11
Mon Dec 5
Sin tax on oil; learning from the taxation of alcohol and tobacco”
Readings: to be distributed,
Assignment:

Wed Dec 7
The London Congestion Zone and “Paying for Access” (the Manhattan Congestion Zone)
Readings: London Congestion Zone

Week 12
Mon Dec 14 and Wed Dec 16
“Privatizing the Cash Cow (aka New Jersey Turnpike)”
Readings: To be distributed
Assignment:

Reading Period 10:00 am - 1:00pm Tuesday Jan 10, Final Workshop on Term Project; Lunch will be served.  Schedule