

Course Syllabus NYU P11.2641(001)

Urban Transportation Planning - Fall 2007

Thursday 8:10-9:50 pm Room LC2, Tisch Hall

Georges Jacquemart, PE, AICP

Office Address: Buckhurst Fish & Jacquemart Inc. (BFJ) Tel: (212) 353-7477
115 Fifth Avenue, 2nd Floor
between 18th and 19th Streets Fax: (212) 353-7494
New York, NY 10003
Email address: g.jacquemart@bfjplanning.com

1. (9-6) Course Introduction

Organization, requirements, oral presentations, grading, reading list

Social, economic and financial aspects of transportation.
Urban structure, land-use and transportation implications.
Concept of accessibility, mobility.
Travel behavior, modal choice, criteria determining modal choice.

Reading: ITE Planning Handbook Chapters 2 and 4.

2. (9-13) Transportation Systems and Studies

Functional classification and hierarchy, functions of transportation system (through travel, access, collection, feeder system...)
Describe different types of transportation studies (Computerized simulation studies, alternatives elevation studies, traffic and parking studies, speed and delay studies, origin-destination surveys, etc.)

Reading: ITE Planning Handbook Chapters 5 and 6

3. (9-20) Highway Capacity and Levels of Service

Traffic flow theories, concept of level of service, capacities and level of service calculations for freeways, 2-lane rural roads, signalized intersections, unsignalized intersections.

Readings: HCM 2000 Chapters 2, 3, 4, 5 (Glossary), 8, 13

4. (9-27) Site Planning and Design, Parking Management

Parking layout and design, long-term parking, short-term parking, compact cars.
Paring operations and access controls.
Internal circulation, access, egress considerations, shared parking. Park & Walk.
Reading: ITE Planning Handbook Chapter 14

5. (10-4) Traffic Impact Studies (Outline of Class Presentation Due)

Traffic generation, distribution, assignment, impact calculation and presentation, mitigation measures.

6. (10-11) Traffic Calming

Traffic intrusion on local streets, causes, environmental, economic and social impacts.
Control strategies, examples such as Berkeley barriers, European cities, auto-restricted zones, etc. Traffic Calming Techniques.

Reading: Livable Streets, Donald Appleyard, Chapters 1 & 11
ITE Planning Handbook Chapter 17

7. (10-18) Goods Transportation

General freight policies and issues, loading requirements, design issues, truck radii, loading docks, truck terminals.

Reading: ITE Planning Handbook Chapter 2 and 18

8. (10-25) Pedestrian and Bicycle Circulation

Pedestrian capacities and level of service calculations for different circulation conditions.
Design issues (effective widths of sidewalks, corner accumulation...)

Reading: HCM 2000 Chapter 11
ITE Planning Handbook Chapter 16

9. (11-1) Transportation System Management. Energy Consumption

TSM policies and strategies, carpools, vanpools, preferential treatment for transit, employer associations, inducements for ridesharing. Congestion Pricing.

10. (11-8) Environmental Aspects Related to Transportation

Air Quality: Role of transportation in air pollution. Factors affecting pollutant emissions and concentrations. Mitigation measures.

Noise: Traffic noise levels, factors to consider in noise impact calculations, mitigation measures.

Environmental Impact Studies, structures, etc.
Guest Speaker

Reading: ITE Planning Handbook Chapter 8

11. (11-15) Transit Technologies, Planning and Design

Types of transit systems, infrastructure, rolling stock, planning criteria, system productivity, financing. Transit Friendly Planning.

Transportation terminals

Reading: ITE Planning Handbook Chapter 13

(11-22) Thanksgiving

12. (11-29) Bus Operations

Types of bus operations (fixed route, fixed schedule, demand responsive, flexible...), types of routes, timed transfer center, pulsating system, radial routes, loops, bus stops, bus productivity, bus terminals.

13. (12-6) Student Presentations

Each student will make a 12-minute oral presentation about a transportation project including problem statement or purpose of work, data collection, analysis, conclusions and recommendations. Topics and methods of presentation should be reviewed with the instructor at least twice before the due date, upon initiative of the student and during session #6.

14. Tuesday (12-11) Student Presentations (Continued)

Thursday (12-13) Reading Day – No classes

15. (12-20) Final Exam

The final exam will be a closed-book written exam in class with about 30 to 40 short questions based on material presented in class.

Grading

Grading will be on the basis of A, B, C, D, or F and will be weighted as follows:

1/3 class participation

1/3 class presentation

1/3 final exam

Reading List

Transportation Planning Handbook (Prentice-Hall/ITE, 2nd Edition 1999) on reserve at Bobst Library

Transportation Research Board, Special Report 209, Highway Capacity Manual (HCM 2000) National Research Council, Washington, DC 2000. (On reserve at Bobst Library)

Don Appleyard, Livable Streets, University of California Press, 1981. (On reserve at Bobst Library)

Traffic Calming, State of the Practice. Reid Ewing, US Dot Federal Highway Administration, Institute of Transportation Engineers, 1999 (On reserve at Bobst Library)

Still Stuck in Traffic, Anthony Downs, Brookings Institution Press, Washington, D.C, 2004 (on reserve at Bobst Library)

Traffic Engineering Handbook (Prentice-Hall/ITE, 5th Edition 1999)

American Association of State Highway and Transportation Officials, A Policy on Geometric Design of Highways and Streets, Fourth Edition, 2001.

Boris Pushkarev, Jeffrey Zupan, Urban Space for Pedestrians, A Report of the Regional Plan Association, the MIT Press, 1978.

Barton-Aschman Associates, Inc. Shared Parking, A study conducted under the Direction of the Urban Land Institute, 1983.

Thomas P. Smith, Flexible Parking Requirements American Planning Association, Planning Advisory Service, #377, 1983.

John J. Fruin, Ph.D., Pedestrian Planning and Design Metropolitan Association of Urban Designers and Environmental Planners, Inc., New York, 1971.

August 21, 2007