

Carleton University

Department of Civil and Environmental Engineering

URBAN TRANSPORTATION PLANNING AND MANAGEMENT

CIVE5307

Fall Term: 2015-2016

Lectures: 3 hours/week

COURSE OBJECTIVES

The objectives of this course are:

- (a) to discuss current issues in transportation, and
- (b) to treat the planning and management concepts and techniques for urban transportation systems.

In this course, principles and methods are emphasized which are applicable to an integrated system of modes as well as integrated transportation and land use systems. The discussions and methodology are applicable to urban regions in a mature economy and developing countries.

September 2015

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Department of Civil and Environmental Engineering
COURSE OUTLINE

WEEK	TOPIC	SUGGESTED READING
1	Current issues in urban transportation. The transportation system and its components. Characteristics of urban transportation system. Transportation technology: introduction. Intelligent transportation systems (ITS): introduction. Transportation software: introduction	Course notes, papers Ref.1: Ch.1 Ref.2 & Ref. 3 Ref.4: Preface, Ch.1-6 Ref.7: Ch.1,2,10,11 Ref.8: Ch.1,2
2	The framework for urban transportation planning and management; transportation planning and decision-making	Course notes, papers Ref.1: Ch.2,3 Ref.4: Ch.7 Ref.5: Ch.1 Ref.7: Ch.1,2 Ref.8: Ch.14
3	Data acquisition, data management for transportation planning. Geographic information systems (GIS)	Course notes, papers Ref.1: Ch.4 Ref.6: Ch.3 Ref.15 (general reading)
4-6	Land use-transportation interaction. Urban activity system analysis. Demand analysis and forecasting	Course notes, papers Ref.1: Ch.5,6 Ref.4: Ch.7,8 Ref.5: Ch.13 Ref.6: Ch.4-12 Ref.7: Ch.3
7	Public transit Supply analysis; network analysis	Course notes, papers Ref.12 &13: General readings Ref.1: Ch.7

WEEK	TOPIC	SUGGESTED READING
8	Transportation system management Demand management Traffic management	Course notes, papers Ref.4: Ch.7,9 Ref.7: Ch.14
9	Traffic impact studies Environmental impacts: energy consumption, noise, air quality	Course notes, papers Ref.1: Ch.7 Ref.4: Ch.9,10
10,11	Transportation system and project evaluation	Course notes, papers Ref.1: Ch.8 Ref.4: Ch.11 Ref.7: Ch.15 Ref.14: Ch.18,20 Ref.16 (General reading)
12	Program development and project implementation	Course notes, papers Ref.1: Ch.9 Ref.8: Ch.15 Ref.14: Ch. 18,20

REFERENCE TEXTS:

See list of references.

MARKING SCHEME:

Assignments	20%
Term paper/project	40%
Final Examination	40%
Total	100%

COURSE INSTRUCTOR:

Professor A.M. Khan
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September 2015

REFERENCES+

1. Meyer, M.D. and E.J.Miller. Urban Transportation Planning: A Decision-Oriented Approach. 2nd Edition. McGraw-Hill, 2001.
2. Urban Transportation Task Force. Urban transit in Canada: taking stock of recent progress. 2009 [electronic text, available from library; Pages 1 to 38]
3. Turcotte, M. Commuting to work: results of the 2010 general social survey. Article. Component of Statistics Canada Catalogue no. 11-008-X, Canadian Social Trends.
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5. Manheim, M.L. Fundamentals of Transportation Systems Analysis. V.I. The M.I.T. Press, 1979.
6. Ortuzar, S., Juan deDios and L.G. Willumsen. Modelling Transport. John Wiley & Sons, 2011.
7. Khisty, C.J. and B. Kent Lall. Transportation Engineering, An Introduction. Third Edition, Prentice Hall, 2003.
8. Bank, James H. Introduction to Transportation Engineering. Second Edition. McGraw Hill, 2002.
9. Morlok, E.K. Introduction to Transportation Engineering and Planning. McGraw-Hill, 1978.
10. Black, A. Urban Mass Transportation Planning. McGraw-Hill, 1995.
11. Hanley, R. (Editor). Moving People, Goods, and Information in the 21st Century, The Cutting-Edge Infrastructure of Networked Cities. Routledge. 2004.
12. Vuchic, V.R. Urban Transit: Operations, Planning, and Economics. John Wiley & Sons, Inc. 2005.
13. Vuchic, V.R. Urban Transit: Systems and Technology. Wiley & Sons, Inc. 2007.
14. Sinha, K. and Labi, S. Transportation Decision Making: Principles of Project Evaluation and Programming. Wiley & Sons, Inc. 2007.
15. Washington, S.P., Karlaftis, M.G. and Mannering, F.L. Statistical and Econometric Methods for Transportation Data Analysis. Second Edition. CRC Press, Taylor and Francis Group, Boca Raton (USA), 2011.
16. Sage, A.P. and Rouse, W.B. Economic Systems Analysis and Assessment. John Wiley & Sons, Inc. Hoboken, New Jersey (USA), 2011.
17. Kliucininkas, L. Towards sustainable urban transportation: environmental dimension. Frankfurt am Main, Germany: New York: Peter Lang, 2012.

18. Weiner, E. Urban Transportation Planning in the United States, History, Policy, and Practice. Third Edition. Springer.
19. Altoon, R.A. Urban transformation: transit oriented development and the sustainable city. Mulgrave, Vic.: Images Publishing Group, 2011.
20. Tumlin, Jeffery. Sustainable Transportation Planning, Tools for Creating Vibrant, Healthy, and Resilient Communities. John Wiley, 2012.
21. Goulias, G. Konstadinos (Editor). Transportation systems planning: methods and applications. Boca Raton, Fla.: CRC Press, c2003.
22. Ceder, Avishai (Editor). Public Transit Planning and Operation: Modelling, Practice and Behaviour. CRC Press (July 17, 2015).

+ Information on additional references will be provided during the term.

ANNOUNCEMENTS

1. Academic Accommodation

You may need special arrangements to meet your academic obligations during the term. For an accommodation request the processes are as follows:

Academic Accommodations for Students with Disabilities: The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the [PMC website](#) for the deadline to request accommodations for the formally-scheduled exam (if applicable).

Pregnancy obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details see the [Student Guide](#)

Religious obligation: write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible

after the need for accommodation is known to exist. For more details see the [Student Guide](#)

2. Marked Final Examination Papers

Marked final examinations will not be returned.

3. Students Who Wish to Audit the Course

Please refer to Carleton University regulations.

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