

**CPLN 655 MULTIMODAL TRANSPORTATION:  
COMPARATIVE INTERNATIONAL TOPICS AND CASE STUDIES  
(ZOOM | WED 2 – 5 PM)**

Office hours: Zoom, TBD

Office hours sign up: <https://www.wejoinin.com/ibambe@gmail.com>

## **COURSE OVERVIEW**

This course explores contemporary multimodal transportation systems, policy, planning, and practice through a series of comparative international case studies, lectures, and class exercises. Case topics include innovative parking management in San Francisco, congestion charging in London, managing motorcycles in Indonesia, and Bus Rapid Transit in Bogota. By analyzing contemporary planning challenges and best practices, students will develop a better understanding of how the transportation system works and how to employ specific multimodal interventions and policies effectively.

The course emphasizes learning about contemporary transportation planning and policy issues through the case study method. This pedagogical tool requires students to prepare the case before class and engage actively in the classroom discussion. In most classroom cases, a manager or policy maker faces a difficult decision related to a contemporary transportation policy. In general, there is no right answer. Well-informed, intelligent people may come to different conclusions about the most effective way to proceed. Students will learn to process information quickly and hone effective arguments to support their position.

Throughout the course, I will put a special emphasis on the verbal and written communication of policy recommendations. This will include a memo-writing workshop and class exercises that ask students to quickly digest a transportation-related theme (such as a parking inventory analysis) and prepare a brief presentation that highlights recommendations and evidence to support that recommendation.

The first section of the course will focus on surface-based transportation planning and policy. The second section will explore specific topics related to public and non-motorized transportation.

## **COURSE REQUIREMENTS**

This course has three primary assignments:

- 1) Two action memos responding to class case studies (25%);
- 2) Peer evaluations and group participation (25%); and
- 3) Final exam or final project (50%).

You are required to come prepared and participate in all classes. This is particularly important for teaching cases. Effectively preparing a teaching case requires you to read the case at least twice, study the exhibits, and develop your arguments. One of the first day's reading assignments details how to prepare a case effectively.

You will also give and receive regular written and verbal feedback on your classmates' work. Given the participatory nature of this course's work, it is important to prepare and submit your assignments on time. If for any reason you are having trouble keeping up with the course materials or assignments, please arrange a meeting with me.

### **Plagiarism**

Do not plagiarize. If you have any questions about what constitutes plagiarism, please consult the [University's official policy for academic integrity](#). If you continue to have any questions, please come talk to me or send me an email.

### **Memos (25%)**

You will write two *action* memos (roughly 500 to 1500 words) on any case that we discuss in the class, except for the Second Avenue Subway case. Memos will be due on Canvas by the end of day on the Friday after a case is discussed in class. You may submit your memos individually or with all or some of the team-members with whom you work on the day that we review a case in class. No one is required to work with their group on submitting a memo.

One case must be from the first six weeks (up to the Bogota Case), the other from the remaining cases (week 7 through 13). Late submissions will not be accepted, nor will memos for a class that you do not attend. The memo should make clear and specific recommendations that respond to the question posed on the day of class and consider the opportunities and challenges presented in the cases. Be sure to organize your memo clearly with headings or other devices to effectively separate and highlight key ideas, use evidence from the case to support your argument, and use crisp jargon-free English. For guidance, refer to the course materials on writing an action memo in the Files section of Canvas.

### **Participation and peer-evaluations (25%)**

You are required to submit a self- and peer-evaluation form by the end of class on each day that we review a case. On Wednesday, March 3, I will meet with each student individually to discuss peer-evaluations, self-evaluations, and class participation. Each student will fill out a self-evaluation form that highlights strengths, areas for improvement, and goals for the remainder of the semester.

### **Final Exam or Final Project (50%)**

Students may choose between a final exam and final project. The final exam will take place on the last scheduled course day and will require students to prepare a case like the ones we have prepared in class and respond to specific written questions about the case.

Alternatively, students may work in groups of 1 to 3 to prepare their own teaching case. I will provide additional details on preparing and writing a case study in class. In general, the

content and style should follow the format of the cases that we review in class. This will require some primary research (likely interviews), data collection, and analysis

Use an author-date format when referring to readings and include a bibliography. Here are links to the [Chicago](#) and [APA](#) manuals of styles.

## **Grading**

For the final grade:

- an A indicates excellent work across all dimensions of all aspects of the course.
- a B indicates acceptable work.
- a C or below indicates insufficient or unacceptable work.

## **Readings**

Throughout the course, we will rely on a number of cases, provided by Harvard Business Publishing. Pay special attention to preparing cases on days when we learn from a teaching case. To purchase the electronic or paper versions of the cases, please follow this link: <https://hbsp.harvard.edu/import/795118>

Other readings are available online through Canvas. Where possible, I also provide hyperlinks to articles in the reading list. You will only be able to access them through a Penn-connected computer or through [a library proxy](#).

If for some reason a link is broken, you are still required to access the reading. I recommend using the Penn library or Google Scholar. I will also provide a list of additional readings that will help you learn more about a subject but are not required prior to class. You can find these through the Penn library or Google Scholar search and can use them to improve your understanding of a specific topic. I recommend reading at least one per case to familiarize yourself with the topic.

## **READING LIST AND CLASS SCHEDULE**

### ***Week 1 (January 20): Introduction and overview***

Part A) Course overview

Part B) Learning from the case study

Part C) Traffic flow and passenger-car equivalents

#### ***Required Readings***

Cervero, Robert. 1998. *The Transit Metropolis: A Global Inquiry*. 1st ed. Washington, D.C.: Island Press. Chapter 1: Transit and the Metropolis: Finding Harmony.

Gomez-Ibanez, Jose. 1984. Learning by the Case Method. Cambridge, MA: Kennedy School of Government Case Program.

Yin, Robert. 2009. *Case Study Research: Design and Methods*. 4<sup>th</sup> ed. Thousand Oaks, CA: SAGE Publications, Inc. Chapter 1, Introduction.

## **Part I: Surface transportation**

### ***Week 2 (January 27)***

#### **A) Case: Jakarta's Transportation Problems**

*Prep questions:* What are the causes of congestion and how important are they? What are the pros and cons of reducing travel demand? Increasing road supply? Managing the existing supply?

B) Memo-writing breakout session

#### **Additional Readings**

Cervero, Robert. 1998. *The Transit Metropolis: A Global Inquiry*. 1st ed. Washington, D.C.: Island Press. Chapter 15, Hierarchical Transit: Mexico City, Mexico.

Dimitriou, Harry T, and Ralph Albert Gakenheimer, ed. 2011. *Urban Transport in the Developing World: A Handbook of Policy and Practice*. Cheltenham: Edward Elgar.

Gakenheimer, Ralph. 1999. "Urban Mobility in the Developing World." *Transportation Research Part A: Policy and Practice* 33 (7–8) (September): 671–689.

Vasconcellos, Eduardo. 2001. *Urban Transport, Environment, and Equity: The Case for Developing Countries*. London: Earthscan.

### ***Week 3 (February 3)***

A) Memo writing workshop

B) Memo-evaluation breakout session (bring copy of Jakarta memo)

### ***Week 4 (February 10)***

#### **A) Case: Congestion Charging in London: the Western Expansion**

*Prep questions:* Is the original scheme a success? What are its strengths and weaknesses? What are the advantages and disadvantages of the western expansion? Would the London scheme work in Philadelphia?

B) Zonal congestion charge for Philadelphia exercise

#### **Additional Readings**

Schweitzer, Lisa, and Brian D. Taylor. 2008. "Just Pricing: The Distributional Effects of Congestion Pricing and Sales Taxes." *Transportation* 35 (6) (November 1): 797–812.  
Taylor, Brian D. 2002. "Rethinking Traffic Congestion." *Access* (21) (October 1): 8–16.  
Vickrey, William S. 1963. "Pricing in Urban and Suburban Transport." *The American Economic Review* 53 (2): 452–465.

### ***Week 5 (February 17)***

#### **A) Case. Parking in San Francisco.**

*Prep questions:* How should San Francisco address its parking problems? What is the relationship between on-street parking and minimum parking regulations? What should Philadelphia do about its parking problems?

B) Parking inventory exercise

#### **Additional Readings**

Millard-Ball, Adam, Rachel R. Weinberger, and Robert C. Hampshire. 2014. "Is the Curb 80% Full or 20% Empty? Assessing the Impacts of San Francisco's Parking Pricing Experiment." *Transportation Research Part A: Policy and Practice* 63 (May): 76–92.  
Pierce, Gregory, and Donald Shoup. 2013. "Getting the Prices Right." *Journal of the American Planning Association* 79 (1): 67–81.  
Shoup, Donald. 1999. "The Trouble with Minimum Parking Requirements." *Transportation Research Part A: Policy and Practice* 33 (7-8): 549–574.  
———. 2005. *The High Cost of Free Parking*. Chicago, IL: Planners Press.  
Wilson, R. W. 1995. "Suburban Parking Requirements: A Tacit Policy for Automobile Use and Sprawl." *Journal of the American Planning Association* 61 (1).

## **Part II: Public and Non-Motorized Transportation**

### ***Week 6 (February 23)***

#### **A) Case: Transmilenio: The Battle over Avenida Séptima**

*Prep questions:* What were the successes and challenges of phases 1 & 2 of the Transmilenio? What additional challenges and opportunities does phase 3 present? What are the limitations of BRT as a transport policy?

B) Capacity calculations BRT and memo writing exercise

*Additional Readings*

- Cervero, Robert, and Danielle Dai. 2014. "BRT TOD: Leveraging Transit Oriented Development with Bus Rapid Transit Investments." *Transport Policy* 36: 127–38.
- Federal Transit Administration. 2009. "Characteristics of Bus Rapid Transit for Decision-Making". FTA-FL-26-77109. United States Department of Transportation. [http://www.fta.dot.gov/documents/CBRT\\_2009\\_Update.pdf](http://www.fta.dot.gov/documents/CBRT_2009_Update.pdf).
- Gilbert, Alan. 2008. "Bus Rapid Transit: Is Transmilenio a Miracle Cure?" *Transport Reviews* 28 (4): 439–467.
- Guerra, Erick. 2014. "Mexico City's Suburban Land Use and Transit Connection: The Effects of the Line B Metro Expansion." *Transport Policy* 32 (March): 105–14.
- Hensher, David A., and Thomas F. Golob. 2008. "Bus Rapid Transit Systems: A Comparative Assessment." *Transportation* 35 (4): 501–518.
- Rodríguez, Daniel A., and Felipe Targa. 2004. "Value of Accessibility to Bogotá's Bus Rapid Transit System." *Transport Reviews: A Transnational Transdisciplinary Journal* 24 (5): 587–610.

***Week 7 (March 3)***

Midterm participation assessments, peer-review, and self-review

***Week 8 Spring Break (March 10) Spring Break***

***Week 9 (March 17)***

A) Case: SEPTA Capital Budget Crisis

*Prep questions:* How serious is SEPTA's budget problem? What are the most important criteria for evaluating different funding options (equity, efficiency, political acceptability, etc.)? What are the relative merits of taxes and user fees?

B) SEPTA's contemporary budget crisis exercise

*Additional Readings*

- Pucher, John. 1981. "Equity in Transit Finance: Distribution of Transit Subsidy Benefits and Costs Among Income Classes." *Journal of the American Planning Association* 47 (4): 387–407.
- Zhao, Zhirong Jerry, Kirti Vardhan Das, and Kerstin Larson. 2012. "Joint Development as a Value Capture Strategy in Transportation Finance." *Journal of Transport and Land Use* 5 (1): 5–17.

***Week 10 (March 24)***

A) Transit service planning exercise Part I

### ***Week 11 (March 31)***

A) Transit service planning exercise Part II

B) Case: Parsons Brinckerhoff: The Second Avenue Subway

*Prep questions:* What do you think it is like to work at Parsons Brinckerhoff? How important is the 2<sup>nd</sup> avenue subway to PB? What are the strengths and weaknesses of PB's bid?

#### *Additional Readings*

- Banister, David, and Joseph Berechman. 2000. *Transport Investment and Economic Development*. London: University College London Press. (Book, not on Canvas)
- Crôte, Amado, Robert Noland, and Daniel Graham. 2009. "Is the Mexico City Metro an Inferior Good?" *Transport Policy* 16 (1): 40–45.
- Small, Kenneth. 1999. "Project Evaluation." In *Essays in Transportation Economics and Policy: A Handbook in Honor of John R*, edited by Jose Gomez-Ibanez, William B. Tye, and Clifford Winston, 137–177. Washington, D.C.: Brookings Institution Press. (Book, not on Canvas)
- Meyer, Michael D., and Eric J. Miller. 2001. *Urban Transportation Planning: A Decision-Oriented Approach*. 2nd ed. New York: McGraw-Hill. Chapter 8, Transport System and Project Evaluation.

### ***Week 12 (April 7)***

A) Case: California High-Speed Rail

*Prep questions:* What are the different markers for HSR? Are the demand forecasts reasonable? What assumptions are most problematic? What are the biggest barriers to implementation?

B) Northeast HSR forecast and memo-writing exercise

#### *Additional Readings*

- Campos, Javier, and Ginés de Rus. 2009. "Some Stylized Facts about High-Speed Rail: A Review of HSR Experiences around the World." *Transport Policy* 16 (1) (January): 19–28.
- Chester, Mikhail, and Arpad Horvath. 2010. "Life-Cycle Assessment of High-Speed Rail: The Case of California." *Environmental Research Letters* 5 (1).
- Vickerman, R. 1997. "High-Speed Rail in Europe: Experience and Issues for Future Development." *The Annals of Regional Science* 31 (1): 21–38.

### ***Week 13 (April 14)***

A) Introduction to Bicycle and Pedestrian Planning

B) Case: Bixi goes to New York

*Prep questions:* What are the strengths and weaknesses of Bixi as a bike-share provider? How important is the NYC contract to Bixi? Is Bixi ready to expand its area of operation to NYC?

### Additional Readings

- Gössling, Stefan. 2013. "Urban Transport Transitions: Copenhagen, City of Cyclists." *Journal of Transport Geography* 33 (December): 196–206.
- Peters, D. (2013). Gender and sustainable urban mobility. Thematic study prepared for Global Report on Human Settlements 2013. Retrieved from: <http://unhabitat.org/wp-content/uploads/2013/06/GRHS.2013.Thematic.Gender.pdf>
- Pucher, John, Jennifer Dill, and Susan Handy. 2010. "Infrastructure, Programs, and Policies to Increase Bicycling: An International Review." *Preventive Medicine* 50, Supplement (January): S106–S125. doi:10.1016/j.ypmed.2009.07.028.
- Dill, J. 2009. "Bicycling for Transportation and Health: The Role of Infrastructure." *Journal of Public Health Policy*: S95–S110.
- Garrard, Jan, Geoffrey Rose, and Sing Kai Lo. 2008. "Promoting Transportation Cycling for Women: The Role of Bicycle Infrastructure." *Preventive Medicine* 46 (1) (January): 55–59. doi:10.1016/j.ypmed.2007.07.010.
- NCHRP project 15-37. 2010. *AASHTO Guide for the Development of Bicycle Facilities*, read Chapters 1 and 2 (pp 1-36), skim Chapters 4 and 5 (pp 55-195)
- Gössling, Stefan. 2013. "Urban Transport Transitions: Copenhagen, City of Cyclists." *Journal of Transport Geography* 33 (December): 196–206.
- PennDesign Studio. 2016. CYCLE, QRO Promoting equitable bicycle planning in the Municipality of Queretaro, Mexico
- Buehler, Ralph, John Pucher, and Alan Altshuler. 2017. "Vienna's Path to Sustainable Transport." *International Journal of Sustainable Transportation* 11 (4):257–71.
- Buehler, Ralph, John Pucher, Regine Gerike, and Thomas Götschi. 2017. "Reducing Car Dependence in the Heart of Europe: Lessons from Germany, Austria, and Switzerland." *Transport Reviews* 37 (1):4–28.
- National Association of City Transportation Officials (NACTO). 2012 *Urban Street Design Guide*. New York City.
- Federal Highway Administration. 2002. *Pedestrian Facilities Users Guide*, Chapters 1 (pp 3-10) and 4-A (pp 41-50)
- Manaugh, Kevin, and Ahmed El-Geneidy. 2011. "Validating Walkability Indices: How Do Different Households Respond to the Walkability of Their Neighborhood?" *Transportation Research Part D: Transport and Environment* 16 (4):309–15.

### ***Week 14 (April 21)***

Design Charrette: Intersection and Street Section Redesign  
Aditya Inamdar, AICP, LEED AP  
Urban Planner at Kittelson & Associates, Inc.

### ***Week 15 (April 28)***

Final Exam



Case: Ho Chi Minh City

*Prep questions to consider:* What are the trade-offs between motorcycles and public transit from a user and public perspective? What would you have to do to achieve the 2025 transit mode share goals? Is your strategy likely to succeed?

Additional Readings

Shirgaokar, Manish. 2015. "Expanding Cities and Vehicle Use in India: Differing Impacts of Built Environment Factors on Scooter and Car Use in Mumbai." *Urban Studies*. doi:10.1177/0042098015608050.

Srinivasan, Karthik, P. Bhargav, Gitakrishnan Ramadurai, Vidhya Muthuram, and Sumeeta Srinivasan. 2007. "Determinants of Changes in Mobility and Travel Patterns in Developing Countries: Case Study of Chennai, India." *Transportation Research Record: Journal of the Transportation Research Board* 2038 (1): 42–52.

Pucher, John, Zhong-ren Peng, Neha Mittal, Yi Zhu, and Nisha Korattyswaroopam. 2007. "Urban Transport Trends and Policies in China and India: Impacts of Rapid Economic Growth." *Transport Reviews* 27 (4): 379–410.