Course Syllabus: Sustaining Access and Mobility in Cities

I. Course Information

Course Title:	Sustaining Access and Mobility in Cities (PLAN A6104)
Instructor:	Jitendra N. Bajpai
School:	Graduate School of Architecture, Planning and Preservation
Department:	Urban Planning
Days:	Tuesdays
Time:	11:00 AM to 1:00 PM
Location:	409 Avery Hall

II. Course Description

A. Bulleting Description:

This course covers planning practices to achieve access and mobility in global cities. The lectures and project-based case studies will prepare students to address the key issues under three interconnected themes: i) accessibility management at regional and local (e.g., Transit-Oriented-Development) levels to nurture growth, inclusiveness and a healthy environment; ii) mobility planning covering emerging transport technologies, modal integration, pricing, incentives, regulations and zoning measures to promote efficient, affordable and low-carbon travel; and iii) governance and funding to strengthen synergies between land-use planning and transport

B. Detailed Description:

The course combines two methods of learning, lectures and related case based learning. The required pre-class reading(s) introduce the topic of a lecture which is further elaborated in the class through discussions. The discussions are followed by its topic related case study review. The case stories present the information and issues if any, of real-life projects for which students apply their learnt knowledge to devise probable answers to the questions raised while the instructor moderates and participates in discussion. By selecting cases from both global North and South cities students are exposed to varied context of urban development, political economy, governance and travel mobility issues. Prior to the class students work in small groups to analyze each case specific issues, seek answers to the case questions and report back their answers in a short memo.(not exceeding 3 pages). Later the classroom serves as the forum for collective brainstorming over the case questions in order to promote peer learning and understanding of planning principles and practices to be used in project design and policy making.

C. Course Goal(s):

The main objective of the course is to teach students the planning process and practices that help to address access and mobility problems of cities.

D. Student Learning Objectives:

By taking this course, students will gain understanding of how to:

a. Assess existing and emerging access and mobility conditions of a city;
b. Define mobility goals considering the multi-facet factors affecting the emerging or projected mobility conditions; and
c. Identify, evaluate and prioritize investment and policy alternatives to meet the defined goals including the choices of appropriate transport technologies, regulations, land use development strategies and supporting institutional set-up.

E. Course Calendar/Schedule:

Class 1: Course Overview and Introduction to Urban Access and Mobility (3/12)

- Course Overview
- Why adopt sustainability principles in urban transport planning?

Required Readings:

Schiller, Preston L. and Kenworthy Jeffrey. An introduction to sustainable transport: Policy, Planning and Implementation, Edition 2, Taylor and Francis, 2017, Chapter 1: A highly mobile planet and its challenges: automobile dependence, equity and inequity

Class 2: Urban Form and Transport (3/26)

- How urban form and transport influence access to opportunities and amenities of a city?
- How land use and transport interactions nurture spatial economy, inclusiveness and environment of cities?

Required Readings:

Merlin, Louis A. (2017). A portrait of accessibility changes for four metropolitan areas, Journal of Transport and Land Use, Vol. 10, No.1, pp. 309-336. http://www.jstor.org/stable/pdf/26211733.pdf?refreqid=excelsior%3Acde83271259c2a6cd6e3134120f6735b

Cervero Robert, (2013). Linking urban transport and land use in developing countries, The Journal of Transport and Land Use, Vol. 6, No.1 (pp. 7-24). http://www.jstor.org/stable/pdf/26202644.pdf?refreqid=excelsior%3Aecb1c9587e3fd47b34a4b62fe38a630e

Additional Recommended Readings:

Genevieve Giuliano, and Susan Hanson, The Geography of Urban Transportation, Guilford Publications, Fourth Edition 2017, Chapter 3: Transportation and Urban Form: Stages in the Spatial Evolution of the American Metropolis.

Chatman, Daniel G. & Noland Robert B. (Aug., 2013), Transit Service, Physical Agglomeration and Productivity in US Metropolitan Areas, Urban Studies.

Shyr O., Andersson D. E., Wang J., Huang T. and Liu O. (Sept. 2013). Where Do Home Buyers Pay Most for Relative Transit Accessibility? Hong Kong, Taipei and Kaohsiung Compared, Urban Studies 50(12) 2553-2568.

Case Study - Urban Expansion and Mobility Trends in Mexico Metro Area

Assignment Questions:

- What major factors are influencing urban footprint expansion of the city?
- How transport supply is affecting travel pattern and mode choices?
- How city is performing in meeting current mobility needs of its residents compared to other cities?
- What measures would you consider to improve quality of environment and access to opportunities for city residents?

Class 3: Local Access, Land-use Planning and Housing for Low Income (4/2)

- What role transport access plays in planning and design of local areas (e.g., TODs)?
- How to address displacement impacts of transport investments and urban redevelopment projects on low income population?

Required Readings:

Schiller, Preston L. and Kenworthy, Jeffrey. An introduction to sustainable transport: Policy, Planning and Implementation, Edition 2, Taylor and Francis, 2017, Chapter 6: Urban design for sustainable and active transportation and healthy communities.

ITDP. (2017). TOD Standards, Pages 8-16. https://www.itdp.org/tod-standard/

Additional recommended readings:

Prutz, Tobias, Rodriguez-Castelan, C. & Valderrama-Gonzalez, D. Urban Transport Infrastructure and Household Welfare, Evidence from Columbia, Policy Research Working Paper 8341, World Bank Group.

Case Study – Mumbai (India) Urban Transport Project I

Assignment Questions:

- How project had planned to resettle project affected persons and businesses?
- What were the risks and how did the project team manage them during the implementation of resettlement plan?
- Did the plan meet its intent to restore livelihood of resettled businesses and families?

Class 4: Factors Affecting Travel Behavior and Pattern (4/9)

- What major factors influence travel behavior, demand and patterns in a city?
- What process is popularly used to prepare an urban transport project and related policies?

Required Readings:

Stead, Dominic & Marshall, Stephen. (2001). The Relationship between Urban Form and Travel Patterns. An International Review and Evaluation, EJTIR, 1, no2, pp. 113-141. (Google). http://www.ejtir.tudelft.nl/issues/2001_02/pdf/2001_02_01.pdf

Giuliano, Genevieve & Narayan, Dhiraj. Another look at travel patterns and urban forms: The US and Great Britain. (Google) https://lusk.usc.edu/sites/default/files/working_papers/wp_2002-1009.pdf

Additional Recommended Readings:

The Guardian. (2015). How connected is your city? Urban transport trend around the world? (Google). https://www.theguardian.com/cities/2015/nov/26/connected-city-urban-transport-trends-world

Genevieve Giuliano, and Susan Hanson, The Geography of Urban Transportation, Guilford Publications, Fourth Edition 2017, Chapter 5: Theories and Models in Transportation Planning

Case Study – Mobility Plan for Kampala (Uganda)

Assigned Questions:

- What major factors are shaping prevailing travel choices and patterns of Kampala residents?
- How travel demand and patterns are likely to change and affect travel conditions by 2040?
- What are potential risks and barriers in implementing the proposed 2040 Mobility Plan?
- What would be the high priority near-term actions worth considering?

Class 5: Modal Characteristics and Alternatives Analysis (4/16)

- What are operational characteristics and costs of various public transport, para-transit and non-motorized modes (e.g., NMT, bike, walkways)?
- How to identify public transport corridors and evaluate modal options for them?

Required Readings:

GTZ. (March 2003) Sustainable Transport: A Sourcebook for Policy-Makers in Developing Cities, Module 3a: Mass Transit Options. https://3gozaa3xxbpb499ejp30lxc8-wpengine.netdna-ssl.com/wp-content/uploads/2014/07/Sustainable-Transport-Mass-Transit-Options.pdf

ITDP, (March 2014). Footpath Design: A guide to creating footpaths. https://www.itdp.org/publication/footpath-design-a-guide-to-creating-footpaths/

Additional Recommended Readings:

Tumlin, Jeffrey: Sustainable transport planning: Tools for creating vibrant, healthy and resilient communities, Wiley Series in Sustainable Design Services, Vol. 16, ed. 1, John Wiley & Sons, Inc., Chapter 8: Transit

Case Study – Cebu (Philippines) BRT Project

Assignment Questions:

- What are major transport problems in Cebu that officials wish to address?
- How a high priority travel corridor has been identified for improvement?
- What alternatives should be considered along the identified corridor?
- What criteria should be used to evaluate alternatives?

Class 6: Pricing and Regulations (4/23)

- How transport pricing and regulations affect use and ownership of motorized personal modes and congestion in cities?
- How parking demand is managed through appropriate pricing and zoning codes?

Required Readings:

Tumlin, Jeffrey: Sustainable transport planning: Tools for creating vibrant, healthy and resilient communities, Wiley Series in Sustainable Design Services, Vol. 16, ed. 1, John Wiley & Sons, Inc., Chapter 13: Transportation Demand management

Shoup, Donald & Pierce, Gregory. (2013). Getting the Prices Right: An Evaluation of Pricing Parking by Demand, Journal of the American Planning Association, 79(1): 67-81.

Additional recommended readings:

Wilson, Richard, (2016). Parking Management for Smart Growth, Access 49. UC connect. https://www.accessmagazine.org/wp-content/uploads/sites/7/2016/11/access49-web-parking-management.pdf

Case Study – Congestion Pricing Plan for New York City

Assignment questions:

- What are key features of the plan and how the plan differs from London, Stockholm and Milan congestion pricing plans?
- Who will be likely winners and losers if the plan is implemented?
- What could inhibit approval of the plan?

Class 7: Low Carbon Mobility & Emerging Technologies (4/30)

- How cities are promoting low carbon travel behavior?
- What are emerging mobility options including new transport technologies, operational practices and policies?

Required Readings:

UNEP DTU Partnership. (Sept. 2016). A toolkit for preparation of Low Carbon Mobility Plan, pages 1-39, Nairobi. (Google)

Bajpai, Jitendra N., Emerging Vehicle Technologies and the Search for Urban Mobility Solutions, Journal of Urban, Planning & Transport Research, Vol. 4, 2016, Issue 1 http://www.tandfonline.com/eprint/rmWFcyHMerxiadEquKhA/full

Additional recommended readings:

Shaheen, S., Chan, N. & Rayle, L.(2017) Ride sourcing's Impact and Role in Urban Transportation, Access 51, UC Connect https://www.accessmagazine.org/spring-2017/ridesourcings-impact-and-role-in-urban-transportation/

Case Study Paper – Low Carbon Strategy for Portland Metro Transport Sector

Assignment questions:

- What are strategic measures proposed under the Climate Action Plan that would nurture low carbon transport sector development?
- Are the planned low carbon measures supporting growth, inclusiveness and environmental goals of the land, transport and economic development strategies?
- Considering the progress made so far what is the likelihood of success in meeting the planned 2035-40 targets in transport sector performance?
- Are there major risks or barriers which need to be managed by the Metro, state and its counties in coming years? If so, what measures could be considered to mitigate those risks?

III. Assignments:

Students are expected to complete the following two assignments during this course:

- Weekly Readings: Students are expected to complete all assigned readings and submit a short note (not more than a page) expressing what they found as the main take away points from the required reading(s), and raise one or two question(s) of interest related to the topic. Please do not recap the readings. The note should be submitted 24 hours before the class. Students are expected to come to the class well prepared for discussion and active participation.

- Case Study Reports: The course covers five case studies for group work and one for individual final paper writing. For group case study review and answering of the case questions students will be randomly assigned into groups of not exceeding three to four students. Individual groups will review the case story, discuss the problems among group members, collectively develop answers and submit a short memo. (two-three pages) 24 hours before the class. All groups will come to the class well prepared for an interactive analysis of the case story and peer learning. For the final paper submission students will get eight days.

  Grading: Grades will be determined by the quality of weekly class discussion and submission of seven pre-class read notes (10%), five case study group memos (50%), one final paper (20%), peer review (10%) and class participation (10%). Each late assignment will lose 20% of the grade each day past the due date. After five days past the due date an assignment will not be accepted. There will be no final examination for this course.

IV. Conferences and Office Hours:

For class matters please feel free to contact me and schedule an appointment.

V. Students with disabilities:

In compliance with Columbia University policy and equal access laws, please request for academic accommodations need by registering with the Office of Disability Services (see: http://www.health.columbia.edu/docs/services/ods/index.html or call 212 854 2388) for disability verification and for determination of reasonable academic accommodation.

VI. Academic Integrity:

Academic integrity is expected of every Columbia University student in all academic undertakings. Integrity entails a firm adherence to a set of values (outlined in the 20132014 Columbia University Student Handbook), and the values most essential to an academic community are grounded in the concept of honesty with respect to the intellectual pursuits of oneself and others. A Columbia student's submission of work for academic credit indicates that the work is the student's own. All outside assistance (including assistance from a classmate, roommate, friend or family member) should be acknowledged, and the student's academic position truthfully reported at all times. In addition, Columbia students have a right to expect academic integrity from their peers. (For more information:
http://www.arch.columbia.edu/bulletin/plagiarism.html)

VII. Safety:

All students are expected to adhere to the specific health and safety guidelines of Columbia University.