Fall 2014

Columbia University Graduate School of Architecture, Urban Planning and Historic Preservation

INSIDE TRANSIT, PLA6622, Thursdays 6:30-8:30PM Andrew Bata, Instructor

Preferred email: Andrew.bata@nyct.com

Office hours: Off campus, by appointment

The intent of this course is to familiarize students with the inner workings of actual operating transit systems based on actual hand on experience by the instructor. The material presented would go directly into the essentials of the specific elements of urban rail and bus systems. It is not designed to be a theoretical or overly academic course but rather an introduction to how transit really works. The course will be structured so that each week a different specific subject (planning, operations, technology, infrastructure, etc.) will be presented and a substantial time devoted to discussion/questions and answers. Students will be required to perform transit related field observations and be prepared to report on findings. As warranted, specific disciple area experts will be invited to class to share their direct knowledge and actual experience with the students.

Topics

- Summary/recap of historic development and evolvement to transit to current times
- The key elements and components of urban public transit
- The mechanics of "service planning" from demand to actual service delivery
- The complexities, importance of, tools and "art of" "alternatives analysis"
- Transit service scheduling techniques
- Transit track and signaling design and maintetance
- Infrastructure elements and current design challenges for climate change considerations
- Fare collection technology and alternatives
- Transit rolling stock configurations design
- Transit architecture, design, art and aesthetics
- Real time information systems and social media for transit
- Transit services and design for special needs passengers – serving changing societal needs
- Mitigation of noise and vibration
- Lessons from worldwide best practices for urban transit

Weekly readings: To be assigned during the semester

Course requirements:

- Observation report on transit operations or facilities 30%
- Research project report and presentation on an approved transit topic 30%
- One presentation/discussion lead on an assigned reading 25%
- Participation 15%

Required Textbooks:

Urban Transit Systems and Technology, Vukan R. Vuchic, John Viley and Sons

Better Public Transit Systems, 2nd Edition, Eric C. Bruun, Taylor and Francis Grp

Recommended reading:

Urban Transportation Systems, Sigurd Grava, McGraw Hill

Tunneling to the Future, Peter Derrick, NYU Press

The Transit Metropolis, Robert Cervero, Island Press

Human Transit, Jarrett Walker, Island Press

Straphanger, Taras Grescoe, Henry Holt (Macmillan)

From a Nickel to a Token, Andrew Sparberg, Fordham University Press