



**NYU**

**ROBERT F. WAGNER GRADUATE  
SCHOOL OF PUBLIC SERVICE**

# **URPL-GP 2641**

## **Urban Transportation Planning**

### **Spring 2022**

#### **Instructor Information**

- Nicole Bucich and Beth Zall
- Email: [nb124@nyu.edu](mailto:nb124@nyu.edu) & [bz17@nyu.edu](mailto:bz17@nyu.edu)
- Office Hours: Via Zoom by appointment, weekdays after 5pm

#### **Course Information**

- Class Meeting Times: 6:45-8:25pm
- Class Location: 25W4, Room C-14

#### **Course Prerequisites**

- None

#### **Course Description**

This course will offer an introduction to urban transportation planning, including both theoretical and practical approaches. This course will provide an understanding of the evolution and role of urban public transportation modes, systems and services. Subjects in general will include characteristics of different modes (rail, bus, ferry, air), project development, data collection/mapping, transit oriented development, and public involvement. While primarily focused upon transportation issues in New York City, national and international transit systems may be used as comparative study cases. The course will include a combination of lectures, research/readings, in-class activities and guest lecturers (if permitted).

#### **Course and Learning Objectives**

The objective of this course is to expose students to the multi-disciplinary field of urban transportation planning. Students will gain an understanding of the steps of the Transportation Planning and Alternative Development process and will have the opportunity to use information described in course lectures in a real-world application. Another objective is to provide students with relevant background to pursue transportation planning-related careers.

## Required Readings

See Detailed Course Overview.

## Assessment Assignments and Evaluation

- Writing Assignments, 60%
- Class Attendance/Engagement/Preparation, 20%
- Final Project Presentation/Written Submittal, 20%

## Late Submission Policy for Assignments

1. Extensions on assignments will be granted only in case of emergency or special circumstances. This policy is adopted out of respect to those who abide by deadlines despite equally demanding schedules. Assignments handed in late without authorized extensions will be penalized one-third of a grade per day.
2. Assignments are due prior to 6:45 pm on the dates indicated on NYU Brightspace.
3. We accept late work (that is, having a time stamp later than the time and date on which assignments are due) after the due date only by prior arrangement.

## Overview of the Semester

The course will start with an overview of the Transportation Planning/Alternatives Analysis (AA) process. Throughout the following weeks, sessions will focus on relevant topics related to the AA process, focusing on NYC project examples – BQX; East Side Access, Second Ave Subway; Penn Station Access; Hudson Tunnel; 7 Line Extension to Secaucus, Route 110, etc. The final group project/presentation will be an application of the AA process.

### Week 1 – January 26 (Bucich & Zall)

- Topic: Orientation, Transportation Planning Process/Alternative Analysis & Evaluation
- Writing Assignment #1 (due Feb 9)

### Week 2 – February 2 (Bucich)

- Topic: Introduction to Major NYC Transportation Projects & Transportation and the Environment

### Week 3 – February 9 (Zall)

- Topic: Bus/Bus Rapid Transit and Ferry Planning
- Writing Assignment #1 due
- Writing Assignment #2 (due March 2)

### Week 4 – February 16 (Bucich)

- Topic: Role of Federal Government, MPOs & Funding/Financing

### Week 5 – February 23 (Zall)

- Topic: Technology Applications for Planning (GIS and Visualization) & Data Collection/Big Data

**Week 6 – March 2 (Bucich)**

- Topic: Rail Planning
- Writing Assignment #2 due
- Writing Assignment #3 (due March 30)

**Week 7 – March 9 (Zall)**

- Topic: Future of transportation (CAV/AV, Uber Elevate) – New Mobility

**Week 8 – March 16 – Spring break (no class)**

**Week 9 – March 23 (Bucich)**

- Topic: Cost Estimation & Airport and Terminal Planning

**Week 10 – March 30 (Bucich)**

- Topic: Resiliency Planning, Public Outreach & Final Presentation Discussion
- Writing Assignment #3 due

**Week 11 – April 6 (Bucich)**

- Topic: Transportation and Land Use/Transit Oriented Development, Bike/Ped Planning
- Final Presentation outline due

**Week 12 – April 13 (Bucich)**

- Topic: Ridership, Transit Operations, and Pedestrian Modeling

**Week 13 & 14 – April 20 & April 27 (Bucich & Zall)**

- Topic: Student Presentations

**Week 15 – May 4**

- No class
- Final project written submittal due

## Letter Grades

Letter grades for the entire course will be assigned as follows:

Letter Grade	Points
A	4.0 points
A-	3.7 points
B+	3.3 points
B	3.0 points
B-	2.7 points
C+	2.3 points
C	2.0 points
C-	1.7 points
F	0.0 points

### Student grades will be assigned according to the following criteria:

- (A) Excellent: Exceptional work for a graduate student. Work at this level is unusually thorough, well-reasoned, creative, methodologically sophisticated, and well written. Work is of exceptional, professional quality.
- (A-) Very good: Very strong work for a graduate student. Work at this level shows signs of creativity, is thorough and well-reasoned, indicates strong understanding of appropriate methodological or analytical approaches, and meets professional standards.
- (B+) Good: Sound work for a graduate student; well-reasoned and thorough, methodologically sound. This is the graduate student grade that indicates the student has fully accomplished the basic objectives of the course.
- (B) Adequate: Competent work for a graduate student even though some weaknesses are evident. Demonstrates competency in the key course objectives but shows some

indication that understanding of some important issues is less than complete. Methodological or analytical approaches used are adequate, but student has not been thorough or has shown other weaknesses or limitations.

- (B-) Borderline: Weak work for a graduate student; meets the minimal expectations for a graduate student in the course. Understanding of salient issues is somewhat incomplete. Methodological or analytical work performed in the course is minimally adequate. Overall performance, if consistent in graduate courses, would not suffice to sustain graduate status in “good standing.”
- (C/-/+) Deficient: Inadequate work for a graduate student; does not meet the minimal expectations for a graduate student in the course. Work is inadequately developed or flawed by numerous errors and misunderstanding of important issues. Methodological or analytical work performed is weak and fails to demonstrate knowledge or technical competence expected of graduate students.
- (F) Fail: Work fails to meet even minimal expectations for course credit for a graduate student. Performance has been consistently weak in methodology and understanding, with serious limits in many areas. Weaknesses or limits are pervasive.

## Detailed Course Overview

### Recommended Resources/Readings for Week 1

- Route 110 Alternatives Analysis Final Report- <https://www.townofbabylon.com/DocumentCenter/View/1699/Route-110-AA---Final-Report?bidId=>
- CONNECT NEC 2035 - <https://nec-commission.com/connect-nec-2035/>

## WEEK 1: ORIENTATION, TRANSPORTATION PLANNING PROCESS/ ALTERNATIVE ANALYSIS & EVALUATION (Jan 26)

### Assignment

Writing Assignment #1 due Feb 9: Submit a 3-4 page paper comparing your transportation experience growing up vs. your experience today (pre-COVID). Graphics, photos and maps are encouraged.

### Recommended Resources/Readings for Week 2

- Brooklyn-Queens Connector (BQX) - [https://edc.nyc/sites/default/files/filemanager/BQX/BQX\\_Report\\_August\\_2018.pdf](https://edc.nyc/sites/default/files/filemanager/BQX/BQX_Report_August_2018.pdf)
- East Side Access Program - [http://web.mta.info/capital/esa\\_alt.html](http://web.mta.info/capital/esa_alt.html)
- Second Avenue Subway - [http://web.mta.info/capital/phase2\\_about\\_sas.html](http://web.mta.info/capital/phase2_about_sas.html)
- Penn Station Access - [http://web.mta.info/capital/penn\\_station\\_access\\_alt.html](http://web.mta.info/capital/penn_station_access_alt.html)
- 7 Line to Secaucus - [https://www1.nyc.gov/html/mancb4/downloads/pdf/Transportation/Extending%20the%20No.%207%20to%20Secaucus\[1\].pdf](https://www1.nyc.gov/html/mancb4/downloads/pdf/Transportation/Extending%20the%20No.%207%20to%20Secaucus[1].pdf)
- Gateway Program - <http://www.gatewayprogram.org/about.html#current-projects>
- FTA NEPA - <https://www.transit.dot.gov/regulations-and-guidance/environmental-programs/transit-environmental-sustainability/environmental>
- NEPA - <https://www.epa.gov/nepa/national-environmental-policy-act-review-process>
- CEQR Technical Manual - <https://www1.nyc.gov/site/oec/environmental-quality-review/technical-manual.page>

## WEEK 2: INTRODUCTION TO MAJOR NYC TRANSPORTATION PROJECTS & TRANSPORTATION AND THE ENVIRONMENT (Feb 2)

### Recommended Resources/Readings for Week 3

- Bus Network Redesign - <https://www.nap.edu/read/25487/chapter/1;>
- MTA Bus Network Redesign - [https://new.mta.info/system\\_modernization/bus\\_network](https://new.mta.info/system_modernization/bus_network)
- BRT Design Guidelines - [https://nacto.org/wp-content/uploads/2015/04/service\\_design\\_guidelines\\_vta.pdf](https://nacto.org/wp-content/uploads/2015/04/service_design_guidelines_vta.pdf);

- ITDP BRT Planning Guide - <https://brtguide.itdp.org/branch/master/guide/pdf/the-brt-planning-guide.pdf>
- Bus Transit Capacity (Transit Capacity and Quality of Service Manual, Third Edition (2013) Chapter 6 - <https://www.nap.edu/read/24766/>
- NYC Ferry Expansion Study - [https://edc.nyc/sites/default/files/filemanager/Resources/Studies/Ferry\\_Feasibility\\_Study\\_2018\\_2019.pdf](https://edc.nyc/sites/default/files/filemanager/Resources/Studies/Ferry_Feasibility_Study_2018_2019.pdf)
- Ferry Transit Capacity (Transit Capacity and Quality of Service Manual, Third Edition (2013)) Chapter 9 - <https://www.nap.edu/read/24766/>

## **WEEK 3: BUS/BUS RAPID TRANSIT AND FERRY PLANNING (Feb 9)**

### **Assignment**

Assignment #1 due.

Writing Assignment #2 due March 2: The transit industry has been devastated by COVID-19. Write a 3-4 page paper focusing on either a specific city (i.e. New York City) or mode (i.e. aviation) describing the impacts (past and future) and your thoughts about how transportation planning efforts should change to address these challenges.

### **Recommended Resources/Readings for Week 4**

- [https://www.fhwa.dot.gov/planning/publications/briefing\\_book/fhwahep18015.pdf](https://www.fhwa.dot.gov/planning/publications/briefing_book/fhwahep18015.pdf) (Part 1)
- <https://www.cantwell.senate.gov/imo/media/doc/Infrastructure%20Investment%20and%20Jobs%20Act%20-%20Section%20by%20Section%20Summary.pdf>
- <https://www.apta.com/wp-content/uploads/Resources/resources/reportsandpublications/Documents/APTA-Benefits-Reliable-Funding.pdf>
- <http://libraryarchives.metro.net/DPGTL/MeasureM/20180524-how-pass-mega-transportation-measure-lacounty-measure-m-lessons-learned.pdf>

## **WEEK 4: ROLE OF FEDERAL GOVERNMENT, MPOS & FUNDING/ FINANCING (Feb 16)**

### **Recommended Resources/Readings for Week 5**

- <https://www.apta.com/wp-content/uploads/Big-Data-Policy-Brief.pdf>
- National Transit Database - <https://www.transit.dot.gov/ntd/transit-agency-profiles>
- Replica Website (especially “What We Do” and “How it Works” tabs) <https://replicahq.com/>
- Cell Phone Data in Traffic Analysis and Transportation Planning - <https://www.sehinc.com/news/cell-phone-data-makes-traffic-analysis-and-transportation-planning-easier>

## **WEEK 5: TECHNOLOGY APPLICATIONS FOR PLANNING (GIS AND VISUALIZATION) & DATA COLLECTION/BIG DATA (Feb 23)**

### **Recommended Resources/Readings for Week 6**

- Urban Transit Systems and Technology, Vukan R. Vuchic, Chapter 6: Rail Transit: Streetcars/Tramways, Light Rail, Rapid Transit and Regional Rail (See NYU Brightspace Resources tab)
- <https://www.apta.com/wp-content/uploads/Resources/resources/reportsandpublications/Documents/APTA%20Light%20Rail-Streetcars-How%20They%20Differ-How%20They%20Overlap%20Oct%202014.pdf>
- <https://www.apta.com/research-technical-resources/high-speed-passenger-rail/resources/>
- <http://www.railway-technical.com/archive/track-basics-v2.pdf>
- <https://trn.trains.com/railroads/abcs-of-railroading/2006/05/glossary-of-railroad-signal-terms>
- [http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp\\_webdoc\\_6-c.pdf](http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_webdoc_6-c.pdf)
- Rail Transit Capacity (Transit Capacity and Quality of Service Manual, Third Edition (2013)) Chapter 8- <https://www.nap.edu/read/24766/>

## **WEEK 6: RAIL PLANNING (March 2)**

### **Assignment**

Writing Assignment #2 due.

Writing Assignment #3 due March 30: Submit a 2-3 page paper with your reactions to a selected story from The Future of Transportation (downloadable)

<http://www.citylab.com/commute/2015/01/the-best-of-the-future-of-transportation-a-free-e-book/384529/>.

### **Recommended Resources/Readings for Week 7**

- <https://www.transportation.gov/sites/dot.gov/files/docs/policy-initiatives/automated-vehicles/320711/preparing-future-transportation-automated-vehicle-30.pdf>
- <https://www.apta.com/wp-content/uploads/Resources/resources/reportsandpublications/Documents/APTA-Shared-Mobility.pdf>
- [https://www.apta.com/wp-content/uploads/Policy-Brief\\_AVFinal.pdf](https://www.apta.com/wp-content/uploads/Policy-Brief_AVFinal.pdf)
- <http://www.schallerconsult.com/rideservices/automobility.pdf>
- <https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/shared-mobility-where-it-stands-where-its-headed>



## **WEEK 7: FUTURE OF TRANSPORTATION (CAV/AV, UBER ELEVATE) – NEW MOBILITY (March 9)**

## **WEEK 8: SPRING BREAK (March 16)**

### **Recommended Resources/Readings for Week 9**

- [ACRP Airport Passenger Terminal Planning and Design \(Chapters 1-3\)](https://www.nap.edu/read/22964/chapter/1)  
<https://www.nap.edu/read/22964/chapter/1>
- USDOT Airport Terminal Planning (Chapters 1-4)  
[https://www.faa.gov/documentLibrary/media/Advisory\\_Circular/AC-150-5360-13A-Airport-Terminal-Planning.pdf](https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC-150-5360-13A-Airport-Terminal-Planning.pdf)
- Capital Cost - <https://www.transit.dot.gov/funding/grant-programs/capital-investments/standard-cost-categories-capital-projects>
- Operating and Maintenance (O&M) cost - <https://rosap.ntl.bts.gov/view/dot/458>

## **WEEK 9: COST ESTIMATION & AIRPORT AND TERMINAL PLANNING (March 23)**

### **Recommended Resources/Readings for Week 10**

- “Transportation During and After Hurricane Sandy.” Sarah Kaufman, Carson Qing, Nolan Levenson, and Melinda Hanson. November 2012.
  - <http://wagner.nyu.edu/files/rudincenter/sandytransportation.pdf>
- NYS 2100 Commission, Recommendations to Improve the Strength and Resilience of the Empire State’s Infrastructure. (Transportation Chapter, pages 43-78).  
<https://www.cakex.org/sites/default/files/documents/NYS2100.pdf>
- USDOT Public Outreach Guidance [https://www.planning.dot.gov/planning/topic\\_PI.aspx](https://www.planning.dot.gov/planning/topic_PI.aspx)
- Public Outreach Techniques  
[https://www.fhwa.dot.gov/planning/public\\_involvement/publications/pi\\_techniques/fhwahep15044.pdf](https://www.fhwa.dot.gov/planning/public_involvement/publications/pi_techniques/fhwahep15044.pdf)
- Virtual Community Engagement toolkit - <https://www.karpstrategies.com/virtual-toolkit>

## **WEEK 10: RESILIENCY PLANNING & PUBLIC OUTREACH & FINAL PRESENTATION DISCUSSION (March 30)**

### **Assignment**

Writing Assignment #3 due

Final Presentation Outline assignment (teams of 3 or 4)

## **Recommended Resources/Readings for Week 11**

- NYC Green Wave Bike Plan: <https://www1.nyc.gov/html/dot/downloads/pdf/bike-safety-plan.pdf>
- Pennsylvania Active Transportation Plan: [https://www.penndot.gov/TravelInPA/RideaBike/Documents/PUB%20787\\_10-19.pdf](https://www.penndot.gov/TravelInPA/RideaBike/Documents/PUB%20787_10-19.pdf)
- Atlanta Regional Commission Bike-Ped Plan <https://atlantaregional.org/plans-reports/bike-pedestrian-plan-walk-bike-thrive/>
- FTA TOD <https://www.transit.dot.gov/TOD>

## **WEEK 11: TRANSPORTATION AND LAND USE/TRANSIT ORIENTED DEVELOPMENT & BIKE/PED PLANNING (April 6)**

### **Assignment**

Final Presentation Outline due (1 per group)

## **Recommended Resources/Readings for Week 12**

- Read the following information on the Metro Washington Transportation Planning Board Ridership Modeling Process (Tabs on the right of the page, hyperlinks below):  
<http://www.mwcog.org/transportation/activities/models/>  
Process - <https://www.mwcog.org/transportation/data-and-tools/modeling/process/>  
Inputs and Outputs - <https://www.mwcog.org/transportation/data-and-tools/modeling/inputs-outputs/>  
Four-Step Model - <https://www.mwcog.org/transportation/data-and-tools/modeling/four-step-model/> (Note, please read the pages on each of the Four Steps. This is the heart of the subject matter)
- Pedestrian/Station Capacity Planning - Rail Transit Capacity (Transit Capacity and Quality of Service Manual, Third Edition (2013)) Chapter 10- <https://www.nap.edu/read/24766/>

## **WEEK 12: RIDERSHIP, TRANSIT OPERATIONS, AND PEDESTRIAN MODELING (April 13)**

## **WEEKS 13 and 14: STUDENT PRESENTATIONS (April 20 and April 27)**

## **WEEK 15: NO CLASS (May 4)**

### **Assignment**

Final project written submittal due

## NYU Brightspace

All announcements, resources, and assignments will be delivered through the NYU Brightspace site. I may modify assignments, due dates, and other aspects of the course as we go through the term with advance notice provided as soon as possible through the course website.

## Academic Integrity

Academic integrity is a vital component of Wagner and NYU. All students enrolled in this class are required to read and abide by [Wagner's Academic Code](#). All Wagner students have already read and signed the [Wagner Academic Oath](#). Plagiarism of any form will not be tolerated and students in this class are expected to report violations to co-professors. If any student in this class is unsure about what is expected of you and how to abide by the academic code, you should consult either professors.

## Henry and Lucy Moses Center for Students with Disabilities at NYU

Academic accommodations are available for students with disabilities. Please visit the [Moses Center for Students with Disabilities \(CSD\) website](#) and click the “Get Started” button. You can also call or email CSD (212-998-4980 or [mosescsd@nyu.edu](mailto:mosescsd@nyu.edu)) for information. Students who are requesting academic accommodations are strongly advised to reach out to the Moses Center as early as possible in the semester for assistance.

## NYU's Calendar Policy on Religious Holidays

[NYU's Calendar Policy on Religious Holidays](#) states that members of any religious group may, without penalty, absent themselves from classes when required in compliance with their religious obligations. Please notify co-professors in advance of religious holidays that might coincide with due dates to schedule mutually acceptable alternatives.

## NYU's Wellness Exchange

[NYU's Wellness Exchange](#) has extensive student health and mental health resources. A private hotline (212-443-9999) is available 24/7 that connects students with a professional who can help them address day-to-day challenges as well as other health-related concerns.