

PLAN 637-PUBLIC TRANSPORT

Department of City and Regional Planning • University of North Carolina at Chapel Hill • Spring 2019



This is an elective upper level undergraduate/graduate course that aims to introduce students to public transit in the United States and abroad, taking into consideration history, governance, finance, and operations.

The course is divided into three parts. Module 1 focuses on the history and governance of public transit. Module 2 focuses on accessibility, looking at the transportation-land use connection, (TOD), social justice, and paratransit. Module 3 will focus on route design, ridership forecasting, finance, and analysis of a route. This course uses some materials, such as PowerPoints and suggested readings and assignments, from the American Public Transit Association's (APTA) National Transit Curriculum.

OBJECTIVES

The overarching objective of this course is to provide students with an overview of public transit's evolving role in US urban and rural transportation systems. This course will also provide case studies of public transit in the UK, Europe, Asia, South America and Asia. Students will also learn how to measure and analyze transit performance, transit costs and ridership impacts, the transportation and land use connection and its role in supporting public transit.

By the end of the course, students should be able to:

- Describe the different types of public transit and where to use them
- Identify current challenges to providing public transit –at the national, regional, and local level.
- Discuss how public transit impacts different socio-economic and ethnic/racial groups.
- Evaluate public transit system service elements.
- Create a basic transit accessibility analytical tool.

EXPECTATIONS

As a student, you are expected to:

- Complete all readings prior to class and come prepared to discuss
- Complete five out of the eight reading responses.
- Complete assignments on time. All work should be uploaded to Sakai unless otherwise directed.
- Ask questions in class, via email or at office hours, if you're unclear about a concept.

COURSE REQUIREMENTS AND GRADING (I=INDIVIDUAL; G=GROUP)

Assignment	Due Dates	% of grade
Reading responses (I) – 5 responses total	Mondays at 12 pm. Upload to Sakai.	5%
Discussion Questions (I) –5 weeks of <u>your choice</u>	Mondays at 12 pm. Submit to Sakai.	5%
Assignment #1: Walkability Analysis Tool; Walkability Analysis of a bus stop/transit center	Handout: 1/14 Analysis due: 2/18 by noon. Extra credit: +2% --partner with someone and collaborate on the tool.	25%
Assignment #2: Best practice Case Study(I); Recommendations (G)/Presentation + Poster Session (G)	Handout: 1/28 Case Study Group: 2/4 end of class. Annotated Bibliography: 2/25 Case Study Draft: 3/18 Draft (ungraded –no late papers accepted; optional for graduate students); Returned 3/25 –draft your recs w/group! Case Study Final (Individual): 4/8 (20%) Case study Group recommendations and Poster: 4/15 or 4/22. (10%)	30%
Assignment #3: Problem Set (G)	Handout March 25 Due: April 15	10%
Final Exam (I)	Study guide Handout 4/22 May 7 th 4pm location: TBD	20%
Participation		5%

Mondays 4:00-6:30pm

Alumni Hall 207

Dr. Allie Thomas

alainna@ad.unc.edu

Grader: Atticus Jaramillo

Office Hours

TUESDAYS 1:30-4:00 PM

@ New East 206

(I'm happy to schedule an appointment if these times don't work for you; just ask!)

Sign up@

allie.thomas.youcanbook.me

Grading Scale for Undergraduate

A 93%+
 A- 92.99%-89.5%
 B+ 89.49%-85%
 B 84.99%-83%
 B- 82.99%-79.5%
 C+ 79.49%-75%

C 74.99%-73%
 C- 72.99%-69.5%
 D+ 69.49%-65%
 D 64.99%-63%
 D- 62.99%-59.5%
 F 59.49% or less

ASSIGNMENTS AT-A-GLANCE

Reading Responses (5%)

Reading responses are due at noon on Mondays starting January 28, 2019. You will submit five reading responses over the semester. There will be a total of eight reading responses for the semester; you are only required to do five of them. **The first reading response is required of all students.** After January 28, you can choose which four of out the remaining seven reading responses you want to do. You will be given a grade of 0, 1, or 2. Look for what you find interesting, provocative, or contradictory in the readings, rather than simply critiquing them. Readings should be no longer than one page long or 500 words and should comment on *all of that week's readings*. Reading prompts are provided for four of the readings and are *optional*. You are not to respond to all of the questions in the prompts, just ones that make sense for you.

Discussion Questions (5%)

Submit 1-2 discussion questions by Mondays at noon on Sakai, starting January 28, 2019. You can submit one question that applies to all the readings or a question(s) for a specific reading. They can be a question you may have about the reading. This is part of your participation grade. You only need to submit a 1-2 questions a total of 5 different times. Easiest 5% you'll earn. I'll use them to guide group discussions for that day's class. You will not be called on to answer the question(s). This is a way to participate and also reflect on the reading.

Walkability Access of a transit stop (25%) (+2% optional extra credit)

For this assignment, you will grade the streets/built environment adjacent to a public transportation station (or hub) according to pedestrian friendly design criteria. First, you will develop your own tool to measure walkability/transit accessibility. Criteria can include: human scale (signs, height to width ratio), buffering (trees, parking distance to street), street furniture, space (wide, long views, complex scenes), etc. Once the tool is developed you should score the street(s) closest to the transit stop on all of your indicators on a scale from 1 to 5 (5 is best). You can evaluate the street in person or via street view features of Google, or others. You will need to justify your score. You will also have a score sheet (excel). Make recommendations for improvements (realistic). Evaluate the tool and discuss weakness/strengths. This hub/stop can be anywhere in the world.

Case study report and Poster Session (30% = 20% individual case study +10% poster presentation and group recommendations)

You and one or two other student(s) will conduct a comparative case study on any transit system in the world attempting to implement a best practice. For example, you could all look at bus rapid transit (BRT), projects in 2-3 cities. Or, transit-oriented developments. Or, public transit technology –fare payment technology, ADA compliance, multimodal apps, funding policies, community engagement in transit planning, affordable housing + transit, workforce development + transit, etc. Each student in the group will be responsible for a case study city on the same subject. You will present as a group, create a poster as a group (using a template), and write up a short paper together that synthesizes your findings and makes recommendations.

Problem Set (10%)

This will be a set of questions that assesses transit capacity, quality, and ridership. We will do practice examples in class. I will provide you with the excel sheets to do the calculations. The objective of this is to give you some exposure to how these things are calculated, how they are helpful and also what information they are lacking. You will do a brief write up of your findings. You will work with one other student, but on separate cities/transit agencies. This is a straightforward set of calculations and response. No template will be provided. No specific formatting required.

SEMESTER AT-A-GLANCE AND IMPORTANT DATES

Module 1. Public Transit and its Evolution		
14-Jan*	Intro to Course.	Handouts: Assignments #1: Transit Stop Walkability Assessment Tool
21-Jan	MLK DAY/NO CLASS	
28-Jan	Overview of Public Transportation in United States	DUE @noon. FOR ALL STUDENTS: RR#1 Handouts: Assignment #2 Case Study Analysis
4- Feb	Improving Access to Transit—Land Use Connection	Reading Response #2 @12pm/Sakai
11-Feb	Improving Accessibility for those with Disabilities	Reading Response#3 due @12pm/Sakai

18-Feb	Improving Access to Economic Opportunity/ Social Justice, Transportation Equity, and Public Transit Guest Speaker: Jack Yuan, Postdoctoral Scholar at UNC-Chapel Hill	Reading Response#4 due at @12pm/Sakai Assignmt#1 Walkability Assessment Due at noon.
Module 2: Financing, Governance & Best Practices		
25-Feb	Transit Agencies and Financing	Reading Response #5 due at noon on Sakai. Annotated Bibliography due.
4-Mar	Sustainable Transit	Reading Response #6 due at noon on Sakai
11-Mar	SPRING BREAK	
18-Mar	Public Transit, Social Media, and TNCs	Reading Response # 7 due at noon on Sakai. Assignment #2 Case Study Draft due at noon
Module 3. Transit Planning Analysis		
25-Mar	Transit Planning and Design: Quality of Service/Measuring Service Quality	Handout for Assignment #3 Problem Set. Assignment #2 Case Study returned by 4pm. Reading Response #8 due
1-April	International Case Study/In-class exercise— Guest Speaker: Gwen Kash, Postdoctoral Scholar, Georgia Tech	
8-April	Fundamentals of Transit Service and Networks	Case Study Final (Individual): 4/8
Presentations, End of Semester Wrap-up		
15-April	Final Presentation Part 1 (5-6 groups poster session)	Problem set due 4/15 at 12pm. Groups 1-6 Present and Recommendations due.
22-April	Class wrap up/ Final Presentations and Poster Session (5-6 Poster Sessions)	Groups 7-12 Present and Recommendations due. There may be more or less presentations depends on group size. Study Guide Handout.
29- April	<i>Reading Week</i>	
7-May	Final, 4pm. LOCATION: TBD. Registrar will update me a month in April.	

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Late Assignments

Assignments are marked down 20% per day.

IF YOU HAVE A MEDICAL OR PERSONAL EMERGENCY, LET ME KNOW ASAP.

My purpose is to help you to excel in this learning environment. Should you need further assistance beyond my help, please consult the following on-campus resources:

The Writing Center: <http://www.unc.edu/depts/wcweb/>

Academic Success Program (for students with learning disabilities (LD) and/or attention-deficit/hyperactivity disorder (ADHD): <http://www.unc.edu/depts/lds/>

Learning Center: <http://www.unc.edu/depts/acadserv/learn.html>

Counseling and Wellness Services: <http://campushealth.unc.edu>

Honor code

The UNC honor Code states: "It shall be the responsibility of every student at The University of North Carolina at Chapel Hill to obey and to support the enforcement of the honor code, which prohibits lying, cheating, or stealing when these actions involve academic processes or University, student or academic personnel acting in an official capacity." We are committed to treating Honor Code violations seriously and urge all students to become familiar with its terms set out at <http://honor.unc.edu/honor/code.html> If you have questions it is your responsibility to ask the professor about the Code's application. All written work, and other projects must be submitted with a signature that you have complied with the requirements of the Honor Code in all aspects of the submitted work.

Absences

Students are permitted to miss class for EXCUSABLE absences only (for details about what an excused absence is, see UNC-Chapel Hill's attendance policy below). If a student has unexcused absences, their attendance and participation grade will be affected. [Basically, attendance is required.]

http://www.unc.edu/ugradbulletin/procedures1.html#class_attendance

Laptops and cell phones

Please turn off your cellphones before entering class. If you must have your phone on during class because of an extraordinary circumstance, please let me know beforehand. Laptops are permissible only for classroom purposes. You must turn off all other programs including web browsers, emails, instant messaging, etc. If laptops are used for anything other than taking notes, I will ask you stop using your laptop during class time.

Disability

If you have a documented disability that may require assistance, you may need to contact the Academic Services office that houses the Academic Success Program for coordination in your academic accommodations. Please contact me to discuss any accommodations that may be required to satisfy your needs.

READINGS

The lectures will not cover all of the material in the reading, so it is essential that you keep up with the required reading. If you have any questions on the readings or if certain concepts are unclear, please let me know either in class or via email.

REQUIRED TEXTBOOKS: THESE ARE ALL AVAILABLE ONLINE.

1. Walker, Jarrett. 2011. Human Transit: How clearer thinking about public transit can enrich our communities and our lives. Washington, DC: Island Press. (e-book).
2. Better Public Transit Systems Bruun, E. 2014. Better Public Transit Systems, 2d Ed., New York: Routledge. (e-book)
3. Beyond Mobility: Planning Cities for People and Places, Cervero et al 2017 (e-book)
4. Accessible Public Transit: Designing Service for Riders With Disabilities 2018. Steinfeld, et al. (e-book)

COURSE OUTLINE AND READINGS

All readings should be completed before class (except January 14th).

Module 1: Introduction to Public Transit

1. January 14: Overview of Class. Short introduction
Brief overview of Public Transit types. **Handout of Assignment #1.**

The Geography of Urban Transportation, John Pucher, Ch. 8—Public Transportation, pp.199-236 (scanned) This reading provides a nice overview of public transit and its role in the US and abroad.

***** **January 21 MLK Holiday-NO CLASS*******

2. January 28: Overview of Public Transit and its place in Society
Assignment # Handout

Walker, Jarrett. 2011. Human Transit: How clearer thinking about public transit can enrich our communities and our lives. Washington, DC: Island Press. (e-book). Chapters 1-3. (You can skim Ch.2)

APTA Public Transportation Fact Book 2018. Review “Key Facts” first 3 pages. You can skim the rest of the report that goes into more detail.

Rubin, Thomas A., James E. Moore II, and Shin Lee. 1999. “Ten Myths About U.S. Urban Rail Systems,” *Transport Policy*, 6: 57-73

Stanger, R. (2000) “Ten Myths About U.S. Urban Rail Systems by Thomas Rubin, James Moore, and Shin Lee—a rejoinder. *Transport Policy*, 303-305.

Reading Response #1 Prompts (due January 28th) at noon. What role has public transit played in the US transit system? How has it evolved? What role should public transit play in the future? What types of government policies have shaped the role of public transit? What are some preconceived

notions about public transit? Why is public transit important? What are some of the challenges to expanding public transit? [This is for today's reading and 1/14 reading].

3. February 4: Improving Access to Transit—Land Use Connection
Groups formed for Assignment #2 Case Study

Walker, Chapter 9: Density Distractions

Ewing, R., Cervero, R., 2010. "Travel and the Built Environment: A Meta-Analysis". *Journal of the American Planning Association*, 76(3), 265 - 294.

The Geography of Urban Transportation, Peter O. Muller: Ch. 3 "Transportation and Urban Form: Stages in the Spatial Evolution of the American Metropolis", pp.56-85.

Brookings Institute (2011), "Missed Opportunity: Transit and Jobs in Metropolitan America". Pp. 1-28.

Cervero, R. (2013) "Linking urban transport and land use in developing countries" *Journal of Transportation and Land Use* Vol 6(1), 7-24.

Reading Response #2 Prompts: How does the relationship between land use and transportation impact public transit? How can the research help to shape policies? How should we consider density in our understanding of public transit supportive land uses? What are density distractions and how do they emerge in the readings (other than Walker)?

4. February 11: Improving Accessibility for People with Disabilities; Paratransit

Accessible Public Transit: Designing Service for Riders with Disabilities 2018. Steinfeld, et al. (e-book) Chapters 12, then Chapters 1 and 3. Chapter 12 provides an overview of all the problems they identified.

National Academies of Sciences, Engineering, and Medicine 2018. ADA Paratransit Service Models. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25092>. : Summary, Conclusions sections.

Coughlin, J. and Lacombe, A. "10 Myths About Transportation for the Elderly" *Transportation Quarterly* (1997) 51(1), 91-100.

Reading response #3 Prompts: What are the main challenges to making public transit more accessible for riders with disabilities in the US and abroad? Urban vs rural areas in the US? How do they differ? Why is it important to provide access? What are the challenges for the riders in gaining access to public transit (not just physical, but think bureaucratic)?

5. February 18: Improving Accessibility with Transit/Social Justice and Public Transit

Assignment #1 due by noon on Sakai.

Guest Speaker: Jack Yuan, Postdoctoral Scholar at UNC-Chapel Hill

Karner, A., Golub, A., Martens, K., & Robinson, G. (2018). Transportation and Environmental Justice: History and Emerging Practice. In R. Holifield, J. Chakraborty, and G. Walker (Eds.), *The Routledge Handbook of Environmental Justice* (pp. 400-411).

Grengs, J. 2002. Community-Based Planning as a Source of Political Change: The Transit Equity Movement of Los Angeles' Bus Riders Union, *Journal of the American Planning Association*, 68:2, 165-178.

Environmental Justice Website: https://www.fhwa.dot.gov/environment/environmental_justice/index.cfm
Read the description; Read also: DOT EJ Strategy.

USDOT –Office of Civil Rights (<https://www.transportation.gov/civil-rights>)

Reading response #4 prompts: What role can transit agencies and government organizations play in improving transportation justice? How can they diminish it? How can the community make changes? Why is accessibility important for disadvantaged groups? What are the limitations to how we measure accessibility and how can that impact access to jobs?

Module 2: Public Transit—Governance, Finance, and Policy

6. February 25: Transit Agencies and Financing

Bruun, E. Better Public Transit Systems, Ch. 9, 240-247; Chap 10, 258-274.

Walker, Ch. 11 “Can Fares be Fair?” Walker, Ch 10: “Ridership or Coverage: The Challenge of Service Allocation”

Transportation Planning Process

7. March 4: Sustainability and Livability/Transit-oriented Development

Ian Carlton (2007). Histories of Transit-Oriented Development: Perspectives on the Development of the TOD Concept Real Estate and Transit, Urban and Social Movements, Concept Protagonist. (IURD Working Paper).

Cervero, et al: Chapters 1, 3, 7.

March 11 –SPRING BREAK

8. March 18: Public Transit and Social Media

Assignment #2 Case Study Draft due. Optional for graduate students.

Collins, Craig, et al. 2013. A Novel Transit Rider Satisfaction Metric: Rider Sentiments Measured from Online Social Media Data. *Journal of Public Transportation*, 16 (2): 21-45.

DOI: <http://doi.org/10.5038/2375-0901.16.2.2>

Available at: <https://scholarcommons.usf.edu/jpt/vol16/iss2/2>

Jennifer Evans-Cowley and Greg Griffin. Microparticipation with Social Media for Community Engagement in Transportation Planning. *Transportation Research Record: Journal of the Transportation Research Board* (2012) 2307: 90-98

Lisa Schweitzer (2014) “Planning and Social Media: A Case Study of Public Transit and Stigma on Twitter”, *Journal of the American Planning Association*, 80:3, 218-238

MODULE 3: PUBLIC TRANSIT ANALYSIS

9. March 25: Public Transit Planning

Assignment #2 Case Study Feedback. Start meeting with your group to compare case studies and draft recommendations! No reading responses after today.

Walker, Chapters 5-8

Ewing, Reid. 1993. “Transportation Service Standards—As If People Matter,” *Transportation Research Record: Planning and Administration*, 1400: 10-17.

Ewing, Reid. 1995. “Measuring Transportation Performance,” *Transportation Quarterly*, Winter, 49(1): 91-104.

TCQSM manuals and handouts. [Fixed route; Bus Capacity; Demand Responsive Transit; Rail Transit; Ferry Transit; Station capacity]

10. April 1: International Case Studies—in class exercise—Gwen Kash

Assignment #2 Case Study Drafts due; no readings assigned. Class time also for groups to meet and discuss their recommendations and get feedback from me.

11. April 8: Fundamentals of Transit Service and Networks

Assignment #2 Case Study Final due.

Walker, Ch. 12 Connections or Complexity?; Ch. 13: From Connections to Networks to Places.

TCQSM manuals and handouts. [Fixed route; Bus Capacity; Demand Responsive Transit; Rail Transit; Ferry Transit; Station capacity]

12. April 15: Class Wrap-up/Final Presentations and Poster Sessions, Part 1

Problem Set due at noon on Sakai.

Groups will present their case study recommendations through a timed poster session. Groups not presenting will provide feedback on the posters and presentations. You'll end up presenting for 5-7 minutes about five times.

13. April 22—Poster Sessions, Part 2

Groups will present their case study recommendations through a timed poster session. Groups not presenting will provide feedback on the posters and presentations. You'll end up presenting for 5-7 minutes about five times. Refreshments will be served. Handout: Study Guide for exam.

MAY 7—FINAL 4PM. LOCATION: TBD. REGISTRAR WILL UPDATE ME A MONTH IN APRIL. STAY TUNED.

Government and Non-government Public Transit websites

American Public Transportation Association (APTA) www.apta.com

Link to transit agencies in the US by state: <https://www.apta.com/resources/links/unitedstates/Pages/default.aspx>

US DOT Public Transit <https://www.transportation.gov/public-transit>

Federal Transit Administration: www.fta.dot.gov

National Transit Database: <https://www.fta.dot.gov/ntd>

National Association of City Transportation Officials (NACTO)