



GGS 505: Transportation Geography
Geography and Geoinformation Science
College of Science
George Mason University

Semester: Spring 2023

Hours: Monday 7:20 PM - 10:00 PM

Location: Planetary Hall 224

Credits: 3 Credit Hours

Website: <https://mymason.gmu.edu>

Instructor: Alireza Ermagun

Office Hours: Monday 4:30 PM - 6:30 PM (By Appointment)

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Course Description

Every day and increasing throughout the years, Americans take 1.1 billion trips, accounting for 11 billion miles, through the transportation system in the United States. This demonstrates how essential travel is to our communities. With the emergence of technologies, changes are expected in the why, when, where, and how of people movement. Our Transportation Geography course highlights the characteristics of mobility of people and the operation of transportation systems through the lens of spatial geography at international, national, regional, and urban levels. It gives an overview of transportation engineering, planning, theory, and practice, emphasizing current issues being discussed in the planning and transportation industries. This is an interactive and engaging course with real-world applications and activities, where the hypothetical nature of the lessons is used as a jumping-off point to discuss the transportation planning process and how planning occurs on actual transportation projects.

Catalog Description

(Prerequisite: none). Three-hours lecture. An introductory class that gives an overview of transportation geography, with primary attention given to the role of transportation in moving people, goods, and ideas at international, national, regional, and urban levels.

Learning Objectives

The goals and expectations of this course are ambitious, but the overarching goal is to give the class a taste of how to think and act as engineers, planners, and geographers. Over the course of the semester, students will gain a deeper knowledge of the complexities of what transportation engineers, planners, and geographers do, as well as begin to examine the possibilities and the limitations that they face. Specific learning goals of this course are to enable students to:

- Gain knowledge of problems, ideas, and concepts that have formed and developed transportation systems over time.
- Understand the theories behind the spatial structure and performance of transportation systems.
- Comprehend the nexus of socioeconomic and transportation systems.

- Describe travel forecasting models, including the 4-step process of generation, distribution, mode choice, and trip assignment.
- Understand travel behavior patterns and the planning process.
- Illustrate the link between transportation planning and land use planning.
- Develop the ability to use statistical analysis, including data exploration and hypothesis testing, to develop disaggregate models of individuals' travel choices.
- Apply critical analysis to define and measure the accessibility of different transportation modes in tandem and individually.
- Comprehend the national, state, and local policies in planning for the transportation system developments.
- Demonstrate written and oral analysis and communication skills.
- Prepare, present, and lead a case study discussion of a contemporary transportation system.

Class Participation

Classes are a combination of lectures and discussions. The students have to have something to say regarding the materials we cover in every session. Class participation will be balanced with both participating in class discussions, small group discussions, and in-class writing assignments about the topic of the day. As students of a major university in the U.S., you have to think of your own concepts based on what you read and hear in class discussions. Therefore, you should be ready to participate in group discussions, jigsaw, and think-pair-share to make the class a lot more interesting and facilitate your learning through engagement. To help determine your course grade, I will reflect on the quality and quantity of your participation in class discussions. The class starts at 7:20 PM sharp.

Course Materials

Transportation science is inherently propelled forward by the next cutting-edge technology. Using traditional textbooks, students typically read out-of-date materials as new editions are only released once every five or six years. Utilizing digital resources propels the learning of our "tech-savvy" students forward by offering contemporary information. These bolsters both the curriculum and coursework. My class activities, discussions, and homework are informed by digital resources to create a more dynamic, state-of-the-art, and collaborative learning environment.

- **Wikibooks:** The Wikimedia Foundation, a non-profit organization registered in the U.S., hosts several websites such as Wikipedia, Wikibooks, Wikinews, and Wikiversity. Wikibooks is an open-content textbooks collection including 3,038 books with 81,490 pages. The "**Fundamentals of Transportation**" book is known as a featured book by Wikibooks as it contains substantial content and is well-formatted. The content covers the syllabus of the Transportation Engineering course and can be used as a valuable open digital resource.

- **MIT OpenCourseWare:** MIT OpenCourseWare is a web-based publication of virtual course content, including 2,400 courses. This digital resource has rich materials regarding transportation engineering. The materials of two courses, namely “**Introduction to Transportation Systems**” and “**Urban Transportation Planning**,” are selected to enhance the basic knowledge gained from “Fundamentals of Transportation” Wikibooks.
- **The Geography of Transport Systems:** This is a web-based open-access book offering a comprehensive and accessible introduction to the field with a broad overview of its concepts, methods, and application areas. **The Geography of Transport Systems** by Jean-Paul Rodrigue is provided to practitioners, policymakers, educators, researchers, students, and individual learners and includes a wide variety of media elements such as maps, figures, and PowerPoint presentations. The full reference to the textbook is Rodrigue, J. P. (2020). *The geography of transport systems*. Routledge, 5th Edition.

Additional readings will be drawn further from different sources. The readings, along with other course materials such as the syllabus, assignments, and lecture presentations, can be found on the course website.

Class Policies and Expectations

- Your attendance is expected at all scheduled class meetings.
- Cell phones and other communication devices should be turned off or set to silent during class time. I will appoint a few students to keep smartphones out to receive Mason Alert. You are expected to adhere to Mason’s student code of conduct; disruptive behavior will result in classroom removal. Audio or video recording requires the consent of the instructor.
- You should be respectful of fellow classmates, guest speakers, and the instructor at all times.
- All the students are required to do the homework, assignments, case study, and term paper. This will, of course, help you obtain a more profound understanding of the subject.
- Late assignments are not accepted. If you miss a deadline, your grade is automatically 0. Students, however, are given three “**green cards**” that can be used to turn in assignments up to 24 hours late for any assignment throughout the semester.
- A student found to have engaged in plagiarism, or other scholastic dishonesty as defined by the George Mason University Honor System and Code may be assigned a penalty up to and including failure in the course. Please ask the course instructor directly if you have any questions regarding the expectations for a specific assignment.
- If you require special accommodations, please contact the course instructor as soon as possible to discuss your needs. Your request and any accommodations will remain strictly confidential.

Attendance Policy

Students are expected to attend every class meeting and are responsible for all material covered during class and any in-class announcements. The official code of class attendance for George Mason University is documented in the Academic Policies: **AP.1 Registration and Attendance**.

Class Assignments

This course will have six graded components consisting of participation, homework assignments, transportation news of the day, case study assignment, in-class exams, and a term paper. There is a strong link between these six graded components and the objectives of the course, and student learning will be measured toward the

objectives of the course through these graded components. For *undergraduate students*, the term paper assignment will be a group effort on an agreed-upon topic. For *graduate students*, the term paper assignment will be an individual effort on an agreed-upon topic. Two of the homework assignments are a group effort, and eight are an individual effort. For individual homework assignments, students are given two options: (i) submit seven individual homework assignments rather than eight individual homework assignments, or (ii) submit eight individual homework assignments and eliminate the one with the lowest grade from the final grade.

Activity	Grade (%)	Individual	Group	Due
Participation	60	×		-
Homework Assignment 1	50	×		Jan 31
Homework Assignment 2	50	×		Feb 14
Homework Assignment 3	50		×	Feb 28
Homework Assignment 4	50	×		Mar 7
Homework Assignment 5	50	×		Mar 21
Homework Assignment 6	50	×		Mar 28
Homework Assignment 7	50		×	Apr 18
Homework Assignment 8	50	×		Apr 25
Homework Assignment 9	50	×		May 2
Homework Assignment 10	50	×		May 9
Transportation News of the Day	30	×		Jan 30-May 1
Case Study Assignment	100		×	Apr 3
In Class Exam 1	55	×		Mar 27
In Class Exam 2	55	×		May 1
Term Paper	250	×		TBA
Total Grade	1050			

Instructor Availability

If you have problems or concerns with an aspect of the course, please make an appointment to come and see me. I strive to make this class manageable for all my students, so if you are having difficulties, please let me know. Office hours are not just a time to address problems but also to talk with me about your areas of interest, brainstorm topics for your research, and seek career advice. If you have questions about course topics or assignments, I will answer all weekday emails within 24 hours and weekend emails within 48 hours. Should you not receive a response within that time frame, please send a gentle reminder via email. Try to avoid last-minute emails, as I may not have email accessible immediately before deadlines. It is generally a good practice to avoid sending an email at the first sign of trouble with an assignment; many times, you will find the proper solution by giving yourself an hour or two to problem-solve! Please also make use of the office hours listed at the top of this document. Generally, issues can be clarified quickly in person.

Student Honor Code

George Mason University has an approved Honor Code that applies to all students. The code is as follows: “To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the

student members of the university community, have set forth this honor code: Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.” Upon accepting admission to George Mason University, a student immediately assumes a commitment to uphold the Honor Code, accept responsibility for learning, and follow the philosophy and rules of the Honor Code. Students will be required to state their commitment to examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the George Mason University community from the requirements or the processes of the Honor Code. For additional information, please visit [George Mason University Honor Code Catalog](#).

Title IX

George Mason University is committed to complying with Title IX, a federal law that prohibits discrimination, including violence and harassment, based on sex. This means that George Mason University’s educational programs and activities must be free from sex discrimination, sexual harassment, and other forms of sexual misconduct. If you or someone you know has experienced sex discrimination, sexual violence, or harassment by any member of the University community, you are encouraged to report the conduct to Mason’s [Title IX Coordinator](#) at titleix@gmu.edu per [University Policy Number 1412](#).

Support Services

Students who need academic accommodations based on a disability should visit the Disability Services located at Student Union Building I, Suite 2500, call (703) 993-2474, or visit the website at <https://ds.gmu.edu/>. Students who suspect that they have a disability, temporary or permanent, but do not have documentation are encouraged to contact Disability Services for advice on how to obtain an appropriate evaluation. A memo from Disability Services authorizing your accommodation is needed before any accommodation can be made. The memo should be furnished to the instructor, preferably within the first two weeks of class or as soon as an accommodation is made.

A Grading Scale

96-100	A+	
93-95.9	A	Achievement that is outstanding relative to the level necessary to meet course requirements.
90-92.9	A-	
86-89.9	B+	
83-85.9	B	Achievement that is significantly above the level necessary to meet course requirements.
80-82.9	B-	
76-79.9	C+	
73-75.9	C	Represents achievement that meets the course requirements in every respect.
70-72.9	C-	
60-69.9	D	Represents achievement that is worthy of credit even though it fails to meet full requirements.
< 60	F	Student fails to meet the course requirements.

Tentative Course Schedule

Session ¹	Date	Topic	Readings ²
1	Jan 23	Transportation Problems	Chapter 6 (Concept 4)
2	Jan 30	What is Transportation Geography?	Chapter 1
3	Feb 6	Transportation and the Spatial Structure	Chapter 2 + Chapter 3
4	Feb 13	The Economy of Transportation	Chapter 7
5	Feb 20	Transportation Board Games	
6	Feb 27	Urban Transportation: Trip Generation	Chapter 6
7	Mar 6	Urban Transportation: Trip Distribution	Chapter 6
8	Mar 13	Spring Recess (no classes)	
9	Mar 20	Urban Transportation: Travel Mode and Route Choices	Chapter 6
10	Mar 27	Instructor Traveling + In Class Exam 1 (Closed-Book)	
11	Apr 3	Case Study Assignment Presentations	
12	Apr 10	Methods in Transportation Geography: Accessibility	Chapter 10 (Concept 5)
13	Apr 17	Public Transportation	Articles
14	Apr 24	Parking	Articles
15	May 1	Transportation Planning and Policy + In Class Exam 2 (Closed-Book)	Chapter 9

¹ Dates and topics are subject to change at the discretion of the instructor.

² Readings are drawn from The Geography of Transport Systems by Jean-Paul Rodrigue. When resources are not sufficient, additional readings will be drawn further from different sources and will be provided to students.