

GEOG 5301 Sustainable Transportation	
Instructor	Harvey J. Miller
Class meetings	Tuesday, Thursday 3:55 PM - 5:15PM Derby Hall 1080
Office hours	Tuesday 12:00 PM – 3:30 PM Derby 1176
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Course Description
<p>The explosion in mobility over the past two centuries is one of the most profound changes in the history of human civilization. While mobility has benefits, it comes with environmental, social and economic costs. A prime challenge facing humanity over the next few decades is address the environmental cost of transportation while maintaining – and even increasing – mobility and access to opportunities. This course examines the problem of developing sustainable transportation systems. We will examine the environmental and human problems associated with transportation, including climate change, air quality, consumption of non-renewable resources, safety, congestion and social equity. We will also examine possible solutions to these problems, including pricing, alternative fuels, autonomous vehicles, public transit, walkability, bikeability and urban form.</p>

Learning Objectives
<p>After successful completion of this course, students will:</p> <ol style="list-style-type: none"> 1. Understand concepts surrounding sustainability and their application to the problem of mobility 2. Understand the technological and social processes that have created the mobility revolution 3. Understand the scientific basis for non-sustainable transportation and the implications for the environment, society and personal well-being. 4. Engage in informed discussions about policy, planning, technological and educational prescriptions that improve transportation sustainability.

Readings and Learning Technologies

There is no textbook for this course: I will post all readings at the Canvas class website. There are required and optional readings. I will also make announcements and provide other course information via this site. Please check this site regularly for updates; it is also a good idea to turn on notifications.

It is your responsibility to ensure access to the learning technology website and its tools. This includes seeking technical support from OSU staff (ocio.osu.edu) when encountering any problems. Students must themselves confirm that discussion postings are successfully posted or files are uploaded to Carmen in order to receive credit.

Evaluation

Attendance (10%): I will grade this based on the percentage of your attendance in class, e.g., 90% attendance will earn 90% credit. I count an excused absence as attendance in class. Valid reasons for excused absences include university business, illness, family emergencies and unavoidable incidents. *You must inform me and provide documentation no later than one week from the missed class.*

Examinations (40%): There will be three short examinations during the semester, including a (non-comprehensive) final examination.

Term project (50%): The term project should be a critical discussion of a transportation sustainability problem and possible solutions. Some suggestions:

1. A critical review and discussion of the scientific literature on a sustainable transportation issue – e.g., mobility, air quality and health; access to jobs and health care; Complete Streets; Vision Zero policies
2. Investigate local problems and potential solutions in Columbus or some other location of your choosing. For example, what is the history of bike infrastructure in Columbus? What do you think is needed to improve it? What are the prospects and barriers to progress?
3. Identify a proposed or recent transportation project or policy in a particular study area (e.g., a new highway interchange, a new airport, a new light rail line, a redesign of a bus network, autonomous vehicles, scooters) discuss the sustainability issues involved.

Students can also propose other topics, subject to the instructor's approval.

The project will consist of four major milestones:

1. Project idea: 200-300 word description of your idea **(5% of project total)**
2. Project proposal: 3-4 page detailed proposal **(15% of project total)**
3. Presentation: To the class on your research – a “lightening talk” of 5 slides / 5 minutes max **(30% of project total)**
4. The paper itself **(50% of project total)**

I will provide details at the Canvas learning technology website.

I will evaluate the presentations and papers using professional standards: they should reflect original thought, be well-written and organized, and must be referenced following

scientific standards. Students must submit papers must be submitted using the Turnitin plagiarism detection software.

Grading scale. I use the OSU standard scale to assign the final course grade. I use the rules of scientific rounding for borderline cases – e.g., 92.5% and above is rounded up to 93%.

A 93-100%; A- 90-92%; B+ 87-89%; B 83-86%; B- 80-82%; C+ 77-79%; C 73-76%; C- 70-72%; D+ 67-69%; D 60-66%; E 0-59%

Policies

Disability services. Any student who feels they may need an accommodation based on the impact of a disability should contact me privately to discuss their specific needs. Please contact the Student Life Disability Services at 614-292-3307 in room 098 Baker Hall to coordinate reasonable accommodations for documented disabilities.

Academic misconduct. Academic misconduct in any form will not be tolerated; this includes but is not limited to, cases of plagiarism and dishonest practices in connection with examinations such as cheating. Plagiarism is the representation of another's works or ideas as one's own: it includes the unacknowledged word for word use and/or paraphrasing of another person's work, and/or the inappropriate unacknowledged use of another person's ideas. *All cases of suspected misconduct, in accordance with university rules, will be reported to the Committee on Academic Misconduct.* For additional information, see the Code of Student Conduct: <https://studentconduct.osu.edu/>

Class conduct. Our primary joint responsibility in this class is to create a productive learning community. You are expected to conduct yourself with professionalism courtesy in the classroom, in your interactions with other students and the instructor and in your online behavior at the Canvas site. **Threatening or intimidating speech in any form will not be tolerated.** Other disruptive behavior includes, but is not limited to, holding conversations with classmates, passing notes, making unnecessary comments, leaving and coming back into the classroom (except in emergencies), coming in late or leaving early on frequent occasions, surfing the web and failing to turn off cell phones.

GEOG 5301 course schedule

Required and optional readings are available at Carmen. I will update the readings during the semester; please check back frequently.

Date	Topic	Class project milestones
Part 1. Sustainability and mobility		
1/8	1.1. Sustainability concepts	
1/10	1.2. Unsustainable and sustainable mobility	
1/15	No class – Transportation Research Board meeting	
1/17	1.3. The history of transportation	
1/22	1.4. The evolution of personal mobility	
1/24	1.5. The mobility revolution	
1/29	Exam 1	
Part 2. Sustainable transportation: Problems		
1/31	2.1. Greenhouse gases and climate change	1. Project idea due
2/5	2.2. Air quality and health	
2/7	2.3. Energy and non-renewable resources	
2/12	2.4. Safety	
2/14	2.5. Congestion	
2/19	2.6. Physical inactivity and health	
2/21	2.7. Social equity	
2/26	Exam 2	
Part 3. Sustainable transportation: Solutions		
2/28	3.1. Cost, pricing and travel demand management	
3/12	No class – Spring Break	
3/14		
3/19	3.2. Alternative fuels and electric vehicles	2. Detailed proposal due
3/21	3.3. Connected and autonomous vehicles	
3/26	3.4. Public transit	
3/28	3.5. Street design and walkability	
4/2	No class – American Association of Geographers annual meeting	
4/4		
4/9	3.6. Bikeability	
4/11	3.7. Urban form	3. Presentations (uploaded to Canvas)
4/16	Student project presentations	
4/18	Student project presentations	
4/22		
		4. Project due
4/29	Exam 3 - 6:00pm-7:45pm	