

GEOG 5301 Sustainable Transportation – Spring 2021	
Instructor	Dr. Harvey J. Miller My role is to design and deliver the course and answer questions about its content. I will also supervise the weekly quizzes, and grade your assignments. I am also responsible for the final grades assigned.
Lectures	<u>Asynchronous</u> : 11 January 2021 – 21 April 2021
Virtual office hours	<u>Real-time</u> : Mondays, Wednesdays 1PM – 2:30 PM or by appointment. Chat and Zoom via Carmen Canvas
Phone	(614) 292-5207
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Homepage	u.osu.edu/miller.81 This webpage describes my research and teaching activities.

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 in the 21st century is reducing or eliminating the massive harms caused by our transportation system while maintaining – and even increasing – accessibility to opportunity. This course examines the problem of creating 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, urban form and intercity rail.</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.

Course Mode
<p><u>This is an asynchronous distance learning course:</u> lectures, films, readings and other media can be viewed based on your own schedule. <u>However, there are weekly deadlines that must be met.</u> 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</p>

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 when encountering any problems. Students must themselves confirm that assignments are successfully posted or files are uploaded to Carmen in order to receive credit.

Course Organization

This course consists of 14 modules (one per week) organized in three major sections:

- A. **Sustainability and mobility** – the conceptual, historical, and theoretical backgrounds for understanding sustainability and mobility (three modules)
- B. **Sustainable transportation: Problems** – the scientific evidence surrounding sustainable and unsustainable transportation (four modules)
- C. **Sustainable transportation: Solutions** – regulatory, technological, policy and planning solutions to sustainable transportation problems (seven modules)

Each module consists of the following components:

- **Required lectures and films** – prerecorded lectures by the instructor and occasionally documentary films. These are required viewing. I will also post handouts of the slides in the lectures with supplemental notes
- **Required readings and media** – papers, articles, websites that are required reading and viewing.
- **Discussion form** – a link to a Canvas Discussion forum dedicated to the module. You can ask (public) questions, comment on the lectures, films and readings, and post new items or articles for sharing with the class
- **Quiz** – a short quiz (10 multiple choice, matching and true/false questions) that must be completed by midnight on Saturday of the corresponding week, starting with the first week of the course. Each quiz is timed (30 minutes), and you have only one attempt. Although the quiz is “open book”, you will not be able to complete it within the time limit unless you have carefully viewed the lecture/film and completed the required readings prior to taking the exam.
- **Background and deeper dives** - papers, articles, websites that are optional reading and viewing.

Assignments

There is a “Get Acquainted” survey that should be completed before the class begins. This is survey to help me understand your background and expectations. You receive credit for simply completing the survey

The remaining assignments are based on the following scenario:

You have been hired as the first-ever Chief Sustainable Mobility Officer for your community (loosely defined: a city, metropolitan area, state, region, indigenous nation, country). The first three months are a probationary period for you to do some preliminary investigation to familiarize yourself with sustainable mobility concepts, challenges and solutions. At the end of that period, you are required to give a public presentation that describes sustainability, the sustainable mobility challenges facing the community, and a realistic plan for making progress on these challenges within 10 years.

More specifically, your presentation must answer the following questions

- 1) What are the sustainability principles that our community should adopt? How do these principles fit into our community's history and current situation?
- 2) What are the most urgent sustainable transportation challenges we should be addressing?
- 3) What policies or technologies should we adopt to make substantial progress on those challenges within a decade? How should we measure success?

You are encouraged to choose a "community" (city, region, state, indigenous nation, country) that is familiar to you, such as your hometown or a place you live.

This will involve three assignments:

1. **Community sustainability goals:** Identify and describe your community of choice, and formulate a set of sustainability goals
2. **Community mobility challenges:** Describe the mobility challenges facing the community
3. **Sustainable mobility plan presentation:** A presentation that describe a ten-year sustainable mobility plan for the community. The presentation will be a self-contained (recorded) slideshow that is 10 minutes and 10 slides maximum.

Discussion and Interactions

Although this is an asynchronous, distance leaning course, there are several channels for interacting with the instructor and your fellow students, both asynchronously and in real-time:

- **Announcements** – I will be posting regular announcements on topics such as issues with the course, relevant university and community events and activities, and transportation in the news. You can reply to these announcements with questions and comments.
- **Discussions** - There is a Canvas Discussion forum associated with each module. I will monitor and respond to posts on a regular basis. I also encourage you to ask questions and post comments on the lectures, films and other materials, and share relevant articles and news items.
- **Chat and Zoom** – I will be available in real-time during the designated office hours above. I will monitor Canvas Chat and there will be a Zoom meeting room

available. If you cannot make office hours please contact me for an appointment. Also contact me for an appointment if you need to discuss individual matters or issues.

Evaluation

- Quizzes (total) – 40% of the final grade
- Assignments (total) – 60% of the final grade

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 and Expectations

Disability services. The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's **request process**, managed by Student Life Disability Services. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

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/>

Professionalism and respect. Our primary joint responsibility in this class is to create a productive learning community. You are expected to conduct yourself with professionalism and respect in your interactions with other students and the instructor in your online behavior at the Canvas site.

Wellness. As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing.

If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614- 292-5766. CCS is located on the 4th Floor of the Younklin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273- TALK or at suicidepreventionlifeline.org

GEOG 5301 course schedule (readings, media and assignments posted at Carmen)

Week	Dates	Module	Activities A = Assignment (due); L = Lecture (pre-recorded); F = Film;
Course orientation			
		Welcome to GEOG 5301	(A) Get acquainted survey
Part A. Sustainability and mobility			
1	1/10 - 1/16	Sustainable mobility concepts	(L) Sustainability concepts (L) Sustainable and unsustainable mobility
2	1/17 - 1/23	History of transportation	(L) Global history of transportation (L) Evolution of urban mobility
3	1/24 - 1/30	Mobility battles and revolutions	(F) <i>Taken for a Ride</i> (1996) (L) Mobility technologies and space-time convergence
Part B. Sustainable transportation: Problems			
4	1/31 - 2/6	Nonrenewable energy and greenhouse gases	(A) Community sustainability goals (L) Non-renewable energy and mobility (L) Greenhouse gases and climate change
5	2/7 - 2/13	Public health: air quality and physical activity	(L) Air quality and health (L) Physical inactivity and health
6	2/14 - 2/20	Safety and traffic congestion	(L) Road trauma and safety (L) Traffic congestion
7	2/21 - 2/27	Social equity	(L) Mobility and social equity (F) <i>Free to Ride</i> (2016)
<i>2/23 – 2/24 is Spring 2021 instructional break #1. Take some time to relax and refresh. I have scaled Week 7 workload accordingly.</i>			
Part C. Sustainable transportation: Solutions			
8	2/28 – 3/6	Cost, pricing and travel demand management	(A) Community mobility challenges (L) Transportation cost and pricing (L) Travel demand management
9	3/7 – 3/13	Alternative fuel and electric vehicles	(L) Alternative fuel vehicles (F) <i>Who Killed the Electric Car?</i> (2006)
10	3/14 – 3/20	Connected and autonomous vehicles	(L) Connected and autonomous vehicles (F) <i>Look Who's Driving</i> (2019)
11	3/21 – 3/27	Public transit and walkability	(L) Public transit (L) Walking and walkability
12	3/28 – 4/3	Bicycling and Bikeability	(L) Bicycling and bikeability (F) <i>Physically Separated Bike Lanes</i> (2017); <i>From Netherlands to America</i> (2012)
<i>3/31 – 4/1 is Spring 2021 instructional break #2. Take some time to relax and refresh. I have scaled Week 12 workload accordingly.</i>			
13	4/4 – 4/10	Urban form and neighborhood design	(L) Urban land use and mobility (L) Neighborhood design and mobility
14	4/11 – 4/17	Intercity mobility: aviation and high speed rail	(L) Commercial aviation and high speed rail
	4/18 – 4/24	(Work on final presentation.)	(A) Sustainable mobility plan presentation (DUE: 4/28)