Transportation and Technology and the Future of Mobility (PPD 422)

Professors
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Class Location
VPD LL101

Office Hours
Mondays (after class) or by email appointment

COURSE OVERVIEW

Introduction of the role that technology will play in facilitating shared mobility, disrupting transportation markets, and reshaping multi-modal urban transportation systems, analyses of governance issues, the interaction between private markets and regulators, changes in the nature of infrastructure and urban planning that will be required to accommodate the wired future of transportation

COURSE SUMMARY

- Technology is transforming mobility and cities. This course will introduce students to a distinctly urban view of the role that technology will play in facilitating shared mobility, disrupting transportation markets, and reshaping multimodal transportation systems. The class will include analyses of governance issues, the interaction between private providers and regulators, and changes in the planning, design, and operations of infrastructure and land use planning that will be required to facilitate a safe, equitable, and sustainable transportation system in the future. At the end of this course, you should expect to have learned about transportation technology and the future of urban mobility from the multiple perspectives of the people responsible for implementing and shaping them: A policymaker anticipating and collaborating on transportation technology deployment
- A business designing and deploying a new urban mobility product or solution
- The public, who influence the transportation networks of today and tomorrow
- Other stakeholders, such as city planners and urban designers, real estate developers, non- profit organizations, or universities, who either have to respond to new mobility (and bear the consequences) or anticipate them (and try to influence their outcomes)

You should also expect to gain a limited technical understanding of the predominant products/solutions in transportation technology today, as well as demonstrate a critical understanding of the urban design, equity, accessibility, and sustainability implications of transportation technology in city environments.

GENERAL RESPONSIBILITIES

University-level study is a gateway to professional life and everyone should conduct themselves accordingly. This means that the classroom is a workplace where we get things done—hopefully with some enjoyment as we learn. You're expected to arrive on time and stay for the duration; to complete assignments on time; to actively participate in discussions; and to treat your colleagues, guest speakers, and instructors with courtesy and respect. This expectation of

professional conduct extends outside the classroom to any and all correspondence and meetings.

CLASSROOM CONDUCT
Attendance of class meetings, on time and for the full duration, is required. Please notify us via email as soon as possible regarding tardiness and/or absences.

Phones, tablets, or other electronic devices should be silenced during class. Computer use during class is limited to note-taking and research. If your computer use is distracting you or anyone else (regardless of what's on the screen) you'll be asked to close it for the rest of the class session.

ACADEMIC ACCOMMODATIONS
Any student requesting academic accommodations based on a disability is required to register with USC Disability Services and Programs (DSP) each semester (www.usc.edu/disability). A letter of verification for approved accommodations can be obtained from DSP. Please deliver accommodations letter as soon as possible. Note: it is the student's responsibility to notify the instructor with a DSP-verified request.

ACADEMIC INTEGRITY
The University takes academic integrity very seriously. From SCampus, the USC Student Guidebook: "General principles of academic integrity include and incorporate the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another's work as one's own. All students are expected to understand and abide by these principles. Faculty members may include additional classroom and assignment policies, as articulated on their syllabus." For examples of violations of these and other university standards, go to http://webapp.usc.edu/scampus/1100-behavior-violating-university-standards-and-appropriate-sanctions/. Penalties for violating ethical standards are suitably harsh; a list of potential sanctions for cases of academic dishonesty is at http://scampus.usc.edu/files/2009/08/appendix_a.pdf Students will be referred to the Office of Judicial Affairs and Community Standards for further review, should there be any suspicion of academic dishonesty.

LEARNING OBJECTIVES
At the end of the course, you should expect to have the following skills:
1. Understand the impacts that past transportation planning decisions have had on current infrastructure.
2. Identify technology innovations that are part of the ACES revolution
3. Evaluate likely impacts of proposed transportation technology policy on urban living including- sustainability, equity, and accessibility
3. Present policies in a concise and compelling way to a range of audiences
4. Develop proofs-of-concept and pilots for implementing ACES in an urban context

In- Class Assignments
Classroom Debates: (20% of grade)
We will have in-class debates on the following for/against topics.

- *Debate 1:* Should the public have a greater role in approval of transportation technologies in communities?
- *Debate 2:* Should the government subsidize autonomous vehicles usage?
- *Debate 3:* Should there be tax rebates for electric vehicle/e-bike ownership?
- *Debate 4:* Should the United States institute Universal Basic Mobility?
- *Debate 5:* Should the government collect user data from transportation and mobility companies?

Guest Speaker Presentations:
Prior to each guest speaker's visit, you will be responsible for researching the speaker and the topics, as well as preparing and submitting three questions you would like to ask.

In-Class Participation: (20% of grade)
Students must come prepared for each lecture and ready to engage in dialogue on topics of discussion.

Group Presentations: (30% of grade)
We will have group presentations on the following topics.

1. Autonomous, Connected, Electric, and Shared (ACES) Vehicle Policy
    - Subtopic A: Federal vs. State Regulatory Status
    - Subtopic B: Infrastructure and Technology
2. Zero-emissions vehicles and Sustainable Urban Transport
    - Subtopic A: Moving people—access and connectivity
    - Subtopic B: Moving goods—freight and logistics
3. Grid reliability and clean tech mobility
    - Subtopic A: The role of utilities, innovators, and government

Presentations will be prepared by groups of students. Following Week 2 the topics and groups will be assigned. The entire presentation should last 10-15 minutes, followed by 2-3 minutes of questions/ discussion from the class. Audio/Visual aids are encouraged but reading from notes or note cards during the presentation will be prohibited.

Quizzes + Exams (30% of grade)

- Quizzes- 10%
- Mid-term- 10%
- Final exam- 10%

GRADING

To receive an "A" grade, students must complete all work on time and submit work of superior quality throughout the course. Work must address all aspects of the required assignments, exceed the minimum requirements, and demonstrate critical and creative thinking.

Students must consistently contribute to class discussion. In-class assignments will be evaluated based on the thoughtful completion of the assigned activity. Activities in class may include guest speaker discussions, debates, and presentations.

Grade Description:

A – Work of excellent quality exceeding requirements and exceeding expectations
B – Work of good quality meeting requirements and meeting expectations
C – Work of fair quality
D – Work of minimum passing quality
F – Failure to adequately complete coursework.

Grading Scale

Course final grades will be determined using the following scale:
A 95-100
A- 90-94
B+ 87-89
B 83-86
B- 80-82
C+ 77-79
C 73-76
C- 70-72
D+ 67-69
D 63-66
D- 60-62
F 59 and below

ABSENCES

If You Are Unable to Attend Class Advise Via Email

Course Schedule

Week	Discussion Topics	Reading Assignments (Subject to change)
Week 1 – January 9	Contextualizing transportation planning in the US Introduction to the smart city and the smart world	**https://www.forbes.com/sites/selikajosiahtalbott/2020/07/13/autonomous-vehicles-potential-to-remove-discrimination-in-transportation/?sh=5db53ddd7069** https://rationalwalk.com/the-evolution-of-robert-moses/
Week 2 – January 16	MLK Day: No Class	
Week 3 – January 23	Introduction to ACES and Transportation Intersection of Climate Change and Policy Role of the Regulator	**https://transweb.sjsu.edu/sites/default/files/2055-Riggs-Policy-Framework-Future-Automated-Mobility.pdf** Litman, Todd, 2021 New Mobilities: Smart Planning for Emerging Transportation Technologies, Island Press pages: tbd
Week 4 –	Transportation	**https://www.forbes.com/sites/selikajosiahtalbott/2020/07/20/economically-political-solutions-for-transportation-equality-involving-autonomous-**

January 30	Technology Who is leading in this space? Who is funding it? Who is it serving? Who is it not?	**vehicles/?sh=1395efda37c4** https://itsa.org/wp-content/uploads/2021/03/508_ABF_-Distribution-Copy.pdf **Debate 1**
Week 5 – Feb 6	New Mobility Stakeholders	Fireside Chat/Guest Speaker
Week 6 - Feb 13	Autonomous Vehicle Regs and Policy	**https://edgecaseresearch.medium.com/a-users-guide-to-vehicle-automation-modes-4bdd49b30dc0** AV 4.0," USDOT, published December 23, 2019, https://www.transportation.gov/policyinitiatives/automated-vehicles/av-40 . **ttps://www.forbes.com/sites/selikajosiahtalbott/2020/12/17/what-the-ev-and-av-community-wants-from-a-biden-administration/** https://www.theverge.com/2021/9/24/22691410/california-autonomous-vehicles-zero-emission-2030-newsom **Debate 2**
Week 7 – Feb 20	President's Day: No Class	
Week 8 – Feb 27	Electric Vehicle: Regulatory landscape Role of utilities	**https://www.epa.gov/greenvehicles/explaining-electric-plug-hybrid-electric-vehicles** https://energycenter.org/thought-leadership/blog/state-electric-vehicle-adoption-us-and-role-incentives-market https://www.iea.org/reports/global-ev-outlook-2021/policies-to-promote-electric-vehicle-deployment **Debate 3**

	Role of automakers	
Week 9 – Mar 6	Shared Mobility **Mid-Term**	**https://www.forbes.com/sites/selikajosiahtalbott/2021/05/21/communities-leading-the-way-to-new-mobility/?sh=3252a1847e1a** **Debate 4**
Week 10 – Mar 13	Spring Break: No Class	
Week 11 – March 20	Infrastructure and Curb Technology	https://media.erepublic.com/document/CDG22_BRIEF_Lenovo_2_IIJA_Transportation_V.pdf **https://www.forbes.com/sites/selikajosiahtalbott/2021/12/12/is-your-smart-city-smart/?sh=5dc07b9444e0**
Week 12 – Mar 27	Connected Transportation FCC regulatory framework V2X, V2V	**https://www.wsp.com/en-GL/hubs/new-mobility** Litman, Todd, 2021 New Mobilities: Smart Planning for Emerging Transportation Technologies, Island Press pages: TBD
Week 13 – Apr 3	Advanced Air Mobility	https://docsend.com/view/a7hhr38jpiv8bssw
Week 14 – Apr 10	Mobility Tech Stars	Fireside chat/Guest Speakers **Debate 5**
Week 15 –	Group Presentation	In-class student presentations

April 17	s	
Week 16 – April 24	LAST Class Final Exam	**Final Exam**

Statement on Academic Conduct and Support

Support Systems:
Student Health Counseling Services - (213) 740-7711 – 24/7 on call engemannshc.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-4900 – 24/7 on call engemannshc.usc.edu/rsvp Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) | Title IX - (213) 740-5086 equity.usc.edu, titleix.usc.edu
Information about how to get help or help a survivor of harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants. The university prohibits discrimination or harassment based on the following protected characteristics: race, color, national origin, ancestry, religion, sex, gender, gender identity, gender expression, sexual orientation, age, physical disability, medical condition, mental disability, marital status, pregnancy, veteran status, genetic information, and any other characteristic which may be specified in applicable laws and governmental regulations.

Bias Assessment Response and Support - (213) 740-2421 studentaffairs.usc.edu/bias-assessment-response-support

Avenue to report incidents of bias, hate crimes, and microaggressions for appropriate investigation and response.

The Office of Disability Services and Programs - (213) 740-0776 dsp.usc.edu

Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Support and Advocacy - (213) 821-4710
studentaffairs.usc.edu/ssa
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101
diversity.usc.edu
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call dps.usc.edu, emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 –
24/7 on call dps.usc.edu
Non-emergency assistance or information.