

Sol Price School of Public Policy University of Southern California

PPD 361: Sustainable Communities, Policy and Planning

Spring 2023
Friday, 9-12:20PM
Location: RGL 215

Instructor: Zissis Marmarelis
Office Hours: by appointment
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Overview

This course provides an introductory survey of the public policy and planning strategies that are underway at the local and global levels with the goal of placing communities on a more sustainable path. The course is interdisciplinary in nature and relies on ideas and techniques from economics and public policy, planning, political science, environmental studies, industrial ecology, and statistics. The context is largely global as we examine case studies from Europe, Asia, the US, Africa, and Latin America.

The course has three parts: In the first part, we will present and discuss the theoretical foundations needed to define a sustainable community; We will then use this framework throughout the course. Part II, which comprises the majority of the course, surveys recent literature that examines public policy, planning, and business strategies to address the challenges of: i) tackling air pollution in cities (stationary and mobile sources); ii) alleviating traffic congestion in cities; iii) emerging new technologies, such as autonomous vehicles; iv) the advent of renewable energy; v) increasing residential energy use and conservation; vi) energy poverty and energy security vii) growing mega cities in the developing world and urban poverty. Part III surveys recent literature on various topics of climate change in cities and emerging decarbonization technologies, highlighting strategies for climate mitigation and adaptation.

There are no prerequisites for this course and no required textbook. All required readings (mostly online articles) will be posted and online links to resources will be provided. It is recommended that students keep up to date with global affairs and relevant news and/or analyses (e.g., The Economist, Foreign Affairs, The Atlantic, New York Times, etc.). We will occasionally have guest speakers that discuss pertinent topics for approximately half an hour.

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of

verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me as early in the semester as possible. DSP is located in GFS 120 and is open 8:30 a.m. – 4:30 p.m., Monday through Friday. The phone number for DSP is (213)740-0776.

Laptops with an internet connection are required for this course. To ensure digital equity, students are able to obtain loaner laptops from the library or other University computer centers service desks. For further questions, one could contact the program's IT department.

Learning Objectives

- Analyze the theoretical foundations needed to define a sustainable community
- Discuss recent literature that examines public policy, planning, and business strategies to address various environmental challenges
- Apply the theoretical foundations, literature, and statistical knowledge to real-life examples of sustainable community policies
- Evaluate or propose an environmental policy recently proposed in any city using the theoretical foundations established in the class

Grades

Students are expected to complete all assignments on time. Instructions on how to submit assignments will be posted on blackboard. The score on these assignments will drop 10% per day late.

Your grade will be determined based on (subject to change):

- Discussion board posts (x10) and responses (in small groups) (20%)
- 3 Problem Sets (in small groups) (25%)
- Midterm Exam (25%)
- Group project and debate (25%)
- Participation (5%)

Every week, you will watch a Ted-Talk (or two) on a topic related to the material covered in class. In small (assigned) groups you will then produce one reflection paragraph that addresses: i) What was the most interesting idea of the video, and why? ii) Ask a *discussion question* about the topic that you think would motivate critical thinking and somehow extends the ideas in the video. Your paragraphs will be posted in a discussion board, and you will have a chance to read the posts of the other groups and respond to at least one. Brief discussions on these will take place at the beginning of

each corresponding class. These materials will also become study materials for the midterm exam, which will be closed book, as well as inspiration for project ideas.

The group project is meant to be worked on throughout the semester, culminating in a group debate on the final day of class (there will be no final exam!). I will provide various topics that students can select (students are encouraged to recommend topics of interest by Week 5) and will assign a for/against role to the group. If students feel like they have similar interests, they can submit a proposal to be grouped together by Week 3. Students should prepare their case throughout the semester, and a progress check will occur on Week 10. Groups will produce a written report of their case, which will comprise half of the project grade. The other half will derive from the debate between the two groups, making their case effectively and respectfully, and providing meaningful answers to questions from both the moderator (myself) and the audience.

Possible debate topics *could* include: i) Should fracking be banned? ii) Should the Keystone Pipeline be abandoned? iii) Should we phase-out nuclear energy? iv) Should electric vehicles receive subsidies? v) Should we allocate more land for preservation and conservation? vi) Is tourism beneficial or detrimental to a sustainable city?

Problem sets are meant to foster critical thinking on issues discussed in class and a review of key concepts. They may take the form of problems or short-essays. These can be worked on in groups and only one copy can be submitted, though each person must declare in written that every group member contributed to the assignment. Peer evaluations at the end of the semester will factor into the grades.

One of the foundations of a sustainable community is inclusive participation. To stay faithful to these tenets, any suggestions or recommendations for the class received by students will be thoroughly considered, and potentially even put to a vote in class. Most importantly, the topics covered should remain interesting to the majority of students. Learning is a two-way street that never ceases—I look forward to learning just as much this semester from all of you.

The grading scale will be in line with university standards, rounding up to the nearest integer.

Course Schedule and Topics

(Tentative readings as of November 2022)

Weeks 1-2 (January 13-January 20) – Sustainable Cities: Definition and Theoretical Foundations

- Class overview and syllabus
- The economic foundations of cities
- The classical monocentric city model
- Costs and benefits of agglomeration in cities
- Unsustainable cities and urban sprawl: causes and remedies, including planning and market-based strategies
- **Week 2 Guest speaker: Lizhong Liu, expert in housing policy**

Deliverables

Week 2: Discussion Board

Readings:

[OECD. 2018. Rethinking Urban Sprawl](#)

[Brueckner, Jan. 2000. “Urban Sprawl: Diagnosis and Remedies”](#)

[A Ranking of the Most Sprawling U.S. Metro Areas, and Why You Should Care](#)

[The Doughnut Effect](#)

[Healthy cities: Walkability](#)

Ted Talk for Discussion Board:

Technical Point: If you are unable to view the video on the Ted Talk website, search for the same video title on Youtube.

[Can we rebuild our broken suburbs?](#)

[How to make cities more walkable](#)

Week 3 (January 27) – Los Angeles Green Deal & European Green Deal

- Why a green deal?
- The key elements of the green deal
- Financing and passing the green deal
- Role of cities in a (de)centralized system
- Global cities
- **Guest Speaker: David Miller, Managing Director of C40**

Deliverables:

Week 3: Discussion Board 2

Readings:

[Los Angeles' Green new deal](#)

[European Green Deal](#)

[A perspective on the politics of the European Green Deal](#)

[Measuring America's most and least sustainable cities](#)

[The New Economics of Global Cities](#)

Ted Talks for discussion board:

[How city mayors are taking action on climate change](#)

[Europe's plan to become the first carbon-neutral continent](#)

Week 4 (February 3) – Air Pollution in Cities

- Basic Trends in Air Pollution in the United States
- The Clean Air Act: Structure, Enforcement, and Delegation
- Association of air pollution and mortality
- Air Pollution in Mega Cities of the Developing World
- **Guest Speaker: Virat Agrawal, expert on Health Policy**

Deliverables

Problem Set 1

Discussion Board 3

Readings:

[Samet, Jonathan et al. 2000. "Fine Particulate Air Pollution and Mortality in 20 US cities, 1987-1994". The New England Journal of Medicine.](#)

[US Ozone pollution](#)

[Mapping global air pollution](#)

[Global air pollution](#)

[People of color are disproportionately impacted by air pollution](#)

[Seoul takes on air pollution with free public transit](#)

[Where EVs cause more pollution](#)

[Brussels pollution emergency plan](#)

[Barcelona bans older cars](#)

Ted Talks for discussion board:

[How China is \(and isn't\) fighting pollution and climate change?](#)

[What is in the air you breathe?](#)

Week 5 (February 10) – Addressing Congestion in Cities

- Basic Facts and Policies
- Congestion Pricing
- High Occupancy Vehicle Lanes and Express Lanes
- Benefits of Public Transit
- Road Infrastructure

Deliverables:

Discussion Board 4

Readings:

[New York Congestion](#)

[London congestion charge needs updating](#)

[Could congestion charges work for Latin America?](#)

[The hidden cost of congestion](#)

Ted Talk for discussion board:

[How to Solve Traffic Jams](#)

Week 6 (February 17)—Electrification and Renewable Energy

- Basics of Electricity Markets
- Incorporation of Renewable Energy
- Local Electrification Efforts

Deliverables:

Discussion Board 5

Readings:

[Sweden will meet its 2030 target early](#)

[Smart Cities & Net Zero](#)

[C40: Making the Case for Building Electrification](#)

[Market Integration and Renewable Energy](#)

[What will Electrification Cost?](#)

[Economic cost of NIMBYism](#)

[Will India Become a Green Superpower?](#)

[Green Energy and the Fossil Fuel Lobby](#)

[California cities electrification efforts](#)

Ted Talks:

[How much clean energy do we actually need?](#)

[How green hydrogen could end the fossil fuel era?](#)

[A vision for a sustainable Africa](#)

Week 7 (February 24) - Residential Energy Use and Conservation in Cities

- Physical and Technical Determinants of energy consumption
- Economic behavior of resident households
- Green Building
- Behavioral responses & Nudges
- Real Time Pricing

Deliverables:

Discussion Board 6

Readings:

[United States' increasingly gigantic homes are making us less energy efficient](#)

[Reducing water energy use through peer pressure](#)

[Why renters waste more energy than homeowners](#)

[District Heating in Helsinki](#)

[Evidence of Homeowner-renter gap for electric appliances](#)

[Real-time pricing in California?](#)

[Richard Thaler: Nudge](#)

Ted Talks:

[Tradeoffs of building green](#)

[The thrilling potential for off grid solar energy](#)

Week 8 (March 3) – Autonomous Vehicles and smart technologies

- Impact of autonomous vehicles on congestion, public transit
- Big data in cities
- Midterm review

Deliverables:

Problem Set 2

Readings:

[Autonomous vehicles could spell traffic disaster](#)

[The future of autonomous vehicles is shared](#)

[What will happen to public transit with autonomous cars](#)

[How electrified cities will sound and function](#)

[Article summaries at MIT Urban Mobility Lab](#)

[Saudia Arabia's Line urbanist dream](#)

[The state of self-driving](#)

[Flying cars?](#)

[How Amsterdam revolutionizes energy](#)

Ted Talks:

[What a driverless world could look like](#)

[If cars could talk, accidents might be avoidable](#)

Week 9 (March 10) – Midterm

Week 10: March 17- SPRING BREAK

Week 11 (March 24) – Megacities and the Developing World Urban Poverty: Informal Settlements and Slums.

- Causes and consequences of Slum formation
- Policies to improve the welfare of Slum dwellers
- Urban poverty and energy inequality
- **Guest Speaker: Jose Scott, expert on urban poverty**

Deliverables:

Discussion Board 7

Readings:

[Why so many mega cities remain poor](#)

[Bigger isn't necessarily better for city size](#)

[Why India likes its cities so short](#)

[The Endurance of Slums](#)

[Should we retire the word “slum?”](#)

[Letting slum residents control their own destiny](#)

[Slums and the pandemic in Sicily](#)

[The lives of people who live on \\$2 or less](#)

[Climate gentrification](#)

Ted Talks:

[What if the poor were part of the city planning?](#)

[Greening the Ghetto](#)

Week 12 (March 31) – Energy Security & Energy Poverty

- Global access to energy
- Vulnerable sources of energy
- Energy crises
- Critical Earth Minerals
- Global energy system
- Intersection of economics, politics, and sustainability

Deliverables:

Discussion Board 8

Group Project Progress Check

Readings:

[Geopolitics of the European Green Deal](#)

[What the European Green Deal Means for Africa](#)

[New Geopolitics of Energy](#)

[The Value of Energy Security](#)

[Electricity does not change poor lives as much as we thought](#)

[Energy Poverty Alleviation: Review](#)

[Colombia Quits Oil?](#)

[The Mining Gap](#)

Ted Talks:

[The Energy Africa needs to develop and fight climate change](#)

[The Blind Spots of the Green Transition](#)

Week 13 (April 7) - Cities and Climate Change: Resilience

- Cities, Disasters, and Climate risk
- Urban Climate: processes, trends, and projections
- Adaptation

Deliverables:

Discussion Board 9

Readings:

[When Climate Adaptation hurts the urban poor](#)

[Cities might not exist without air conditioning](#)

[What mayors want](#)

[Discrepancy in air conditioning access](#)

[Sea level rise is affecting Miami low income communities](#)

[Resilience and Adaptation](#)

[Nature-based cooling solutions](#)

Ted Talks (Choose 2):

[The Economic Benefits of Climate Action](#)

[How is your city tackling the climate crisis?](#)

Week 14 (April 14) – Cities and Climate Change: heat waves, fires, and droughts

- Climate Change and urban energy systems
- Heat waves
- Possible Guest Speaker: Eleni Myrivili, Athens Chief Heat Officer and UN-Habitat Global Heat Officer

Deliverables:

Discussion Board 10

Readings:

[The European Heat Wave is Brutal](#)

[How some cities endure extreme heat](#)

[Tree Inequality](#)

[How many US Households don't have AC?](#)

[Impacts of Heatwaves](#)

[How should cities adapt to heatwaves](#)

[California experiments to fight droughts](#)

Ted Talks:

[Why wildfires have gotten worse – and what we can do about it](#)

[A 3-part plan to take on extreme heat waves](#)

Week 15 (April 21)- To be determined based on student input Potentially: International Approach to Climate Change

Deliverables:

Debate position paper

Week 16 (April 28) – Final Project Debate

Statement on Academic Conduct and Support Systems

Academic Integrity:

The University of Southern California is a learning community committed to developing successful scholars and researchers dedicated to the pursuit of knowledge and the dissemination of ideas. Academic misconduct, which includes any act of dishonesty in the production or submission of academic work, comprises the integrity of the person who commits the act and can impugn the perceived integrity of the entire university community. It stands in opposition to the university's mission to research, educate, and contribute productively to our community and the world.

All students are expected to submit assignments that represent their own original work, and that have been prepared specifically for the course or section for which they have been submitted. You may not submit work written by others or "recycle" work prepared for other courses without obtaining written permission from the instructor(s).

Other violations of academic integrity include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), collusion, knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university. All incidences of academic misconduct will be reported to the Office of Academic Integrity and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see [the student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

Please ask your instructor if you are unsure what constitutes unauthorized assistance on an exam or assignment, or what information requires citation and/or attribution.

Students and Disability Accommodations:

USC welcomes students with disabilities into all of the University's educational programs. The Office of Student Accessibility Services (OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at osas.usc.edu. You may contact OSAS at (213) 740-0776 or via email at osasfrontdesk@usc.edu.

Support Systems:

[Counseling and Mental Health](#) - (213) 740-9355 – 24/7 on call

Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

[988 Suicide and Crisis Lifeline](#) - 988 for both calls and text messages – 24/7 on call

The 988 Suicide and Crisis Lifeline (formerly known as the National Suicide Prevention Lifeline) provides free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week, across the United States. The Lifeline is comprised of a national network of over 200 local crisis centers, combining custom local care and resources with national standards and best practices. The new, shorter phone number makes it easier for people to remember and access mental health crisis services (though the previous 1 (800) 273-8255 number will continue to function indefinitely) and represents a continued commitment to those in crisis.

[Relationship and Sexual Violence Prevention Services \(RSVP\)](#) - (213) 740-9355(WELL) – 24/7 on call

Free and confidential therapy services, workshops, and training for situations related to gender- and power-based harm (including sexual assault, intimate partner violence, and stalking).

[Office for Equity, Equal Opportunity, and Title IX \(EEO-TIX\)](#) - (213) 740-5086

Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

[Reporting Incidents of Bias or Harassment](#) - (213) 740-5086 or (213) 821-8298

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office for Equity, Equal Opportunity, and Title for appropriate investigation, supportive measures, and response.

[The Office of Student Accessibility Services \(OSAS\)](#) - (213) 740-0776

OSAS ensures equal access for students with disabilities through providing academic accommodations and auxiliary aids in accordance with federal laws and university policy.

[USC Campus Support and Intervention](#) - (213) 740-0411

Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

[Diversity, Equity and Inclusion](#) - (213) 740-2101

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

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) 442-1200 – 24/7 on call

Non-emergency assistance or information.

[Office of the Ombuds](#) - (213) 821-9556 (UPC) / (323-442-0382 (HSC)

A safe and confidential place to share your USC-related issues with a University Ombuds who will work with you to explore options or paths to manage your concern.

[Occupational Therapy Faculty Practice](#) - (323) 442-2850 or otfp@med.usc.edu

Confidential Lifestyle Redesign services for USC students to support health promoting habits and routines that enhance quality of life and academic performance.