GUÍA DOCENTE

MÁSTER UNIVERSITARIO EN POLÍTICAS PÚBLICAS Y SOCIALES

CURSO 2024-2025

Del 31 de marzo al 7 de abril

de 2025

ASIGNATURA

Nombre: The Impacts of Climate Change (Environmental Policies)

Tipo de asignatura: Obligatoria

Trimestre: segundo

Créditos: 3 ECTS

Idioma de docencia: inglés

Coordinador de la asignatura: Mary Sheehan

Profesor de la asignatura: Mary Sheehan

Learning Objectives:

Upon successfully completing this course, students will be able to:

- Describe the basic science behind climate change and the evidence for its adverse impacts on human populations in a sustainability and Planetary Health framework;
- Develop familiarity with the core elements of a climate assessment, including both risks and opportunities, in a multi-hazard context; and
- Critically evaluate mitigation, adaptation and communications policy and practice tools, including targeting toward the most vulnerable, with focus on the urban space.

Course description

Background. Climate change has been called a defining issue of our time and is increasingly understood as a slow-moving global crisis, often termed emergency, requiring urgent action. The Earth's surface has warmed an average of about 1.2° C since the industrial era, with the last 30 years the warmest in 1400 years. The years 2016 and 2020 tied for the warmest on record,

while the extreme storm, flooding and wildfire events of the last year have similarly broken records for intensity and severity. There is strong scientific consensus that observed global warming is due to carbon dioxide (CO2) and other greenhouse gases (GHGs) released through human activity, according to the Intergovernmental Panel on Climate Change (IPCC), the UN body responsible for monitoring climate change. This warming is causing major changes in Earth's systems and cycles, with more frequent extreme heat and droughts, more intense precipitation events, and coastal sea-level rise among the major impacts already observed.

These changes will continue to bring significant impacts on human populations, although impacts and effects differ markedly by geographic region. During 2020 these impacts have been compounded by the Covid-19 pandemic. Mitigation of climate change through policy actions to reduce greenhouse gas emissions is urgent. However, the fact that past and current emissions

commit Earth to further warming underlines the importance of a strong focus on policies that help with adaptation of human endeavors to a warmer and more extreme and variable climate context. Vulnerability to impacts from a changing climate often determines how severe impacts will be, and differs substantially by region and by other characteristics. The world's large cities are on the frontlines due to their large and concentrated populations, and particularly the urban "heat-island effect," with particular relevance for the Mediterranean and other regions. Guest lecturer Dr. Gerardo Sanchez Martinez of the European Environment Agency will illustrate approaches to adapting to urban heat with a talk on heat health action plans.

This course highlights the risks to urban populations due to a changing climate in various regional and geographical contexts. In order to identify populations at greatest risk, students will learn to employ methodological frameworks for assessing climate vulnerability, including the European Union's Climate Adapt framework, the Building Resilience Against Climate Effects (BRACE) framework of the US Centers for Disease Control and Prevention (CDC), and the World Health Organization's (WHO) Vulnerability Assessment framework. Students will gain experience using one of these frameworks in the course final assignment. The course will also cover the evolving communications tools that help encourage needed behavior change to reduce climate-related hazards. Through case studies of various cities, and interactive work in small groups, students will critically evaluate actual climate mitigation and adaptation policies in real-life contexts. The main goal of this course is to provide students with knowledge and tools to build their capacities as public policy leaders who can guide efforts to build urban climate resilience in real world settings across a variety of disciplines.

Course approach and grading policy

The three main readings for the course are "Global Warming of 1.5 Degrees: Summary for Policy Makers" (IPCC, 2018); "The State of Global Climate" (WMO, 2020); and "The Lancet Countdown on Health and Climate Change" (Lancet, 2020). Several other recommended readings and resources and provided for reference, and a longer list will be available during the course.

For students participating in the course for academic credit, student evaluation would be based on: (a) participation in class exercises (30%); (b) a preliminary goal statement for the final paper (10%); and (c) a final 3-page paper (60%). The final paper (~2,500 words, or ~10 pages) is due June 23, 202***3***, by 9:00 am. The goal of the in-class exercises and final paper are to apply concepts learned in the course, using elements of the assessment frameworks discussed in class, and outlining a proposed adaptive policy approach to reduce the impact of climate change in a city or region of students' choosing.

Students participating in the course for continuing education or non-academic credit will be expected to fully participate in the course.

Monday, March 20, 2023

16:30 Introductions, course organization

17:00 Session I. The science of climate change: IPCC findings and projections

18:00 Break

18:30 Session II. How climate change affects people: Direct and indirect impacts

20:15 Wrap up

Resources:

- IPCC, 2018. Global Warming of 1.5 degrees: Summary for Policymakers. https://www.ipcc.ch/sr15/
- WMO, 2020. State of the Global Climate 2020 (interactive presentation). https://public.wmo.int/en/our-mandate/climate/wmo-statement-state-of-global-climate
- Watts N, et al. (2020). The Lancet Countdown on health and climate change: 2020 Report. https://www.lancetcountdown.org/2020-report/

Tuesday, March 21, 2023

16:30 Session III. Policy responses: Overview of mitigation and adaptation

18:00 Break

18:30 Session IV. Adaptation for extreme heat: Heat Health Action Plans
Guest Lecturer, Dr. Gerardo Sanchez Martinez, European Environmental Agency

20:15 Wrap up

Resources:

- Watts N, et al. (2020). The Lancet Countdown on health and climate change: 2020 Report. https://www.lancetcountdown.org/2020-report/
- WHO, UNEP-DTU (2021). Heat and Health in the WHO European Region: Updated Evidence for Effective Prevention. World Health Organization (Regional Office for Europe), UNEP-DTU Partnership. https://www.euro.who.int/en/health-topics/environment-and-health/Climate-change/publications/2021/heat-and-health-in-the-who-european-region-updated-evidence-for-effective-prevention-2021

Wednesday **March 22, 2023**

16:30 Session V. Using climate risk assessment frameworks

18:00 Break

18:30 Session VI. Applying promising practice – temperature extremes

20:15 Wrap up

Resources:

- WHO (2013). Protecting Human Health from Climate Change: Vulnerability and Adaptation Assessment. World Health Organization. https://www.who.int/globalchange/publications/vulnerability-adaptation/en/
- European Commission, European Union Climate Platform Climate ADAPT (online resource) https://climate-adapt.eea.europa.eu
- US GCRP, NOAA (2019). US Climate Resilience Toolkit. (online resource) https://toolkit.climate.gov/tool/assessing-health-vulnerability-climate-change-guide-health-departments

Thursday **March 23, 2023**

16:30 Session VII. City case studies: Barcelona and others*

18:00 Break

18:30 Session VIII. Applying promising practice – extreme precipitation

20:15 Wrap up

Resources:

- Àrea Metropolitana de Barcelona, Adaptació. http://www.amb.cat/en/web/mediambient/sostenibilitat/canvi-climatic/adaptacio
- Villalbi JR, Ventayol I (2016). Climate Change and Health in the Urban Context: The Experience of Barcelona. Int J Health Serv. 46(3):389-405.
- WEF (2019). China's "Sponge Cities:" (youtube video). World Economic Forum. https://www.youtube.com/watch?v=U37gst79pGc
- WWF (2020). Working with Nature to reduce climate risk in Europe. (online resource) World Wildlife Fund. https://wwf.panda.org/wwf_news/?356471/Working-with-Nature-to-reduce-climate-risk-in-Europe

*This session will feature one or more other world cities depending on time available

Friday **March 24, 2023**

16:30	Session VIII. The big picture: Planetary Health and communicating about climate change
18:00	Break
18:30	Session IX. Applying promising practice – food, water, ecosystem services and sustainability
20:15	Wrap up: Looking ahead

Resources:

- Steffen et al. (2015). Planetary Boundaries: Guiding Human Development on a Changing Planet. Science 347(6223):1259855.
- Planetary Health Alliance (online resource). https://www.planetaryhealthalliance.org
- Swinburn et al. (2019). The Global Syndemic of Obesity, Undernutrition and Climate Change: The Lancet Commission Report. Lancet 393(10173):791-846. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)32822-8/fulltext
- Crane et al. (2021). Transforming cities for sustainability: A health perspective. Environment International, 147; 106366. https://www.sciencedirect.com/science/article/pii/S0160412020323205
- Climate Communication: Science & Outreach. (online resource) https://www.climatecommunication.org/resources/