CARE Global Course
Global Climate Action: Policies & Practices

This global course, designed by the CARE consortium, provides graduate students with the knowledge, tools, and frameworks to navigate global climate action in an increasingly fragmented world. Focusing on both international policy frameworks and bottom-up initiatives from cities, Indigenous communities, and the private sector, the course offers practical insights into policy design, financing mechanisms, and local adaptation strategies. Students will explore how multi-level governance, innovation, and cross-sector collaboration are reshaping the climate landscape, preparing them to drive impactful change across diverse contexts.

Short Description

The CARE Global Course is a collaborative course designed and delivered jointly by universities across the CARE consortium. It equips students with the knowledge, tools, and frameworks needed to understand, analyze, and engage with climate action in a rapidly evolving global landscape. While international agreements like the Paris Agreement remain critical reference points, the course also recognizes that today's climate action increasingly depends on the leadership of cities, regions, Indigenous communities, private actors, and citizen movements. Students will explore both top-down global policy frameworks and the growing ecosystem of bottom-up initiatives driving change on the ground — even as multilateral systems face profound challenges. The course emphasizes practical insights into policy design, implementation, financing mechanisms, and innovative practices, preparing students to navigate complex, multi-actor environments. It is aimed at graduate students from CARE partner universities interested in environmental and sustainability issues.

Learning Objectives

1. Understand global climate policy frameworks, including major international agreements and evolving governance dynamics.
2. Analyze real-world case studies of climate action led by states, cities, Indigenous communities, private actors, and civil society groups.
3. Apply key concepts and tools for strategic planning, policy implementation, and stakeholder engagement across different scales.
4. Examine how Indigenous knowledge and local practices contribute to effective, context-sensitive climate action.
5. Evaluate financial mechanisms, innovation pathways, and new models of climate governance emerging in response to systemic challenges.

Course Outline

Session 1: Climate Science and Policy (Simon Donner, University of British Columbia)

Abstract: This class describes the foundation of modern climate change science and the role of science in international climate policy. It traces the science and the history behind the global temperature limits in the Paris Climate Agreement, the remaining carbon budget to avoid those limits, pathways to net-zero emissions, and the likelihood of achieving those pathways.

Simon Donner is a professor at the University of British Columbia (UBC) whose research lies at the intersection of climate science, marine science and public policy. He was a lead author on the Intergovernmental Panel on Climate Change's recent Sixth Assessment Report and is currently co-chair of the Canada's Net-Zero Advisory Body and the Director of UBC's Climate Solutions Research Collective.

Readings:

1. Fransen, T. (18 June 2025). 'The 1.5 Degrees C Target Explained'. *World Resources Institute*. https://www.wri.org/insights/1-5-degrees-c-target-explained
2. Hausfather, Z. (29 April 2021). 'Explainer: Will global warming stop as soon as net-zero emissions are reached?' *Carbon Brief*. https://www.carbonbrief.org/explainer-will-global-warming-stop-as-soon-as-net-zero-emissions-are-reached/

Session 2: Climate Change and Global Institutions (Milind Kandlikar, University of British Columbia)

Abstract: The architecture of international climate institutions reflects a decades-long effort to secure collective action on a global crisis. Two global institutions -- the IPCC and the UNFCCC -- have been critical to this effort. IPCC has played a vital scientific role in informing policy with rigorous assessments, yet translating scientific consensus into action has been challenging. The UNFCCC provides a foundational framework for negotiations, as it aims to reconcile diverse national interests. Yet, almost 35 years after the Rio accord was signed, the nations of the world are no closer to achieving coordinated and meaningful emissions reductions than they were more than three decades ago. Meanwhile, the impacts of a changing climate are being felt in rich and poor countries alike. In this session, we will ask: What explains this inaction? Why have nations of the world been unable to come together to find solutions to this existential crisis? What is it about climate change that makes action difficult, and what is the way forward?

Milind Kandlikar is a Professor at the University of British Columbia (UBC) whose work is at the intersection of science, technology, and development. He has published widely on the science, impacts, and mitigation of climate change. As a member of the IPCC multiple times, he has both participated in and been a long-time observer of global efforts to reduce carbon emissions,

while also studying how these institutions have, to date, failed developing countries. He currently works on the drivers of and barriers to low-carbon energy transitions.

Readings:

1. Azevedo, Inês, et al. "The Paths to Net Zero: How Technology Can Save the Planet." *Foreign Affairs*, vol. 99, no. 3, 2020, pp. 18–27. *JSTOR*, https://www.jstor.org/stable/26985604. Accessed 25 June 2025.
2. Saha, S., & Lee, L. (2024, November 27). 'The Case for a New International Climate Policy: Where the U.S. Should Go Next on Climate.' *Carnegie Endowment for International Peace*. https://carnegieendowment.org/research/2024/11/the-case-for-a-new-international-climate-policy-where-the-us-should-go-next-on-climate?lang=en
3. Keohane, Robert O., and David G. Victor. "Cooperation and discord in global climate policy." *Nature Climate Change* 6.6 (2016): 570-575.

Session 3: Indigenous Knowledge Systems and Local Climate Solutions (Diana Lewis, University of Guelph)

- Theme: How Indigenous perspectives and traditional ecological knowledge strengthen climate policies and practices.

Abstract: We will explore the terminology of Indigenous knowledge systems and traditional ecological knowledge. Students will examine the barriers to integrate these knowledge systems more meaningfully into climate policies and practices, to end with a discussion on the challenges and opportunities in integrating Indigenous communities in respectful and reciprocal partnerships from the local, national, and global perspective.

Prof Diana Lewis is a member of the Sipekne'katik Mi'kmaq First Nation in Nova Scotia. Her research interests are to foster a wider understanding of Indigenous worldviews and how Indigenous worldviews must inform environmental decisions, specifically as Indigenous peoples are impacted by resource or industrial development. Prof Lewis is a strong advocate for Indigenous data sovereignty and Indigenous-led decision making, and she is currently working with Indigenous communities across Canada to develop an Indigenous-led environmental health risk assessment approach.

Readings:

1. McGregor, D. (2021). Indigenous knowledge systems in environmental governance in Canada. *Kula*, *5*(1), 1-10.
2. Orlove, B., Sherpa, P., Dawson, N., Adelekan, I., Alangui, W., Carmona, R., ... & Wilson, A. (2023). Placing diverse knowledge systems at the core of transformative climate research. *Ambio*, *52*(9), 1431-1447.

3. Reed, G., Fox, S., Littlechild, D., McGregor, D., Lewis, D., Popp, J., Wray, K., Kassi, N., Ruben, R., Morales, S. and Lonsdale, S. (2024). For Our Future: Indigenous Resilience Report. Ottawa, Ontario.
4. Wildcat, D. (2023). Traditional ecological knowledges: An antidote to destruction. In M. Montgomery, (Ed.), *Re-indigenizing ecological consciousness and the interconnectedness to indigenous identities* (pp. 10-19). Lexington Books

Session 4: Communicating Climate Action Across Cultures and Sectors (Prof Madhur Anand, University of Guelph)

- Theme: Strategies for effective communication and advocacy across diverse audiences.

Abstract: We will examine different ways in which language can be used to communicate climate action from a diverse array of texts including: primary scientific articles, news articles, governmental reports (e.g., IPCC) and literature (poetry, creative nonfiction and/or fiction). Students will discuss the similarities and differences in excerpts from these texts and examine the role of facts, imagination and emotions on communication climate action.

Prof Dr Madhur Anand is a full professor of ecology and sustainability in the School of Environmental Sciences at the University of Guelph, where she has been leading a research program on monitoring and modelling global ecological changes for twenty-five years. Dr. Anand is also an award-winning writer. Her debut book of creative nonfiction *This Red Line Goes Straight to Your Heart* (2020) won the Governor General's Literary Award for Nonfiction. Her debut collection of poems *A New Index for Predicting Catastrophes* (2015) was a finalist for the Trillium Book Award for Poetry and named one of 10 all-time "trailblazing" poetry collections by the Canadian Broadcasting Corporation (CBC). Her second collection of poems Parasitic Oscillations (2022) was also a finalist for the Trillium Award for Poetry and named a Globe and Mail Top 100 Book. Her first novel, *To Place a Rabbit* has been published in May 2025 by Knopf Canada.

Readings:

1. Thomas M. Bury, Chris T. Bauch and Madhur Anand (2019) 'Charting pathways to climate change mitigation in a coupled socio-climate model', *Computational Biology,* https://doi.org/10.1371/journal.pcbi.1007000

Related Media Articles:

- Bhattacharya, S. (2019, June 7). 'Talking about climate change could reduce global warming, says new study'. *News-Medical.Net*. https://www.news-medical.net/news/20190607/Talking-about-climate-change-could-reduce-global-warming-says-new-study.aspx
- *India Today Education Desk*. (2019, June 11). 'Climate change can be curbed if people talk about it, reveals study'. *India Today*.

https://www.indiatoday.in/education-today/latest-studies/story/climate-change-social-interactions-global-warming-1546484-2019-06-11

2. Kopp, R.E., Gilmore, E.A., Shwom, R.L. *et al.* 'Tipping points' confuse and can distract from urgent climate action. *Nat. Clim. Chang.* 15, 29–36 (2025). https://doi.org/10.1038/s41558-024-02196-8
   Students will be invited to write either a journalistic/media-style article or a creative response to this paper.
3. Anand, Madhur (6 June 2019). 'Language matters when the Earth is in the midst of a climate crisis' *The Conversation*. https://theconversation.com/language-matters-when-the-earth-is-in-the-midst-of-a-climate-crisis-117796

Session 5: Case Studies in Multi-Level Climate Action (Peter Wallace, University of Toronto)

Abstract: In 2014 Ontario closed its last remaining coal-fired electricity plant. This is widely acknowledged as the single largest reduction to greenhouse gas emission policy initiative in North America.
This case study will explore the key policy and implementation mechanics behind this successful measure:

- Ontario's energy mix and institutional framework
- Policy direction to end coal-fired generation
- Key barriers to coal closure, including reliability, price, labour and fiscal
- Central elements of risk mitigation to secure stable ramp down of coal-fired generation and eventual closure
- Subsequent energy policy evolution in Ontario.

Peter Wallace has held senior leadership positions in all levels of government, including Ontario's Secretary of Cabinet, Toronto's City Manager, and Secretary to the Treasury Board for the Government of Canada. His earlier roles in Ontario's public service include Deputy Minister of Finance and Energy, among others. Wallace currently serves as Executive in Residence at the Ivey Academy and Senior Fellow at the Munk School. He has chaired several public agencies and was awarded the 2024 Vanier Medal for outstanding leadership in public service. He holds degrees in Political Economy and Public Administration from the University of Toronto.

Readings:

1. Ontario Power Generation. 'OPG marks 10 years since the closure of its last coal-fired station.' https://www.opg.com/news-resources/newsroom/our-stories/story/opg-marks-10-years-since-the-closure-of-its-last-coal-fired-station/
2. Fatima Syed, Sick of smog, this Canadian province killed coal. A decade later, it weighs its next big energy move, https://thenarwhal.ca/ontario-coal-10-years-later/

3. International Institute for Sustainable Development (IISD). (2024).' The End of Coal: Ontario's Coal Phase-Out'. https://www.iisd.org/system/files/publications/end-of-coal-ontario-coal-phase-out.pdf

Session 6: Financing Climate Action in a Fragmented World (Jun Yuan, University of Toronto)

Abstract: In Session 6 of the CARE Global Course, we will explore how climate action is financed through three interconnected lenses. First, we will examine the role of public financing and investment, highlighting how governments use budgetary tools, subsidies, and strategic investment vehicles to catalyze climate solutions. Next, we will delve into sustainable finance, focusing on instruments such as green bonds and sustainability-linked bonds—comparing their structures, incentives, and practical applications. We will also discuss how financial institutions use climate scenario analysis to support clients and manage climate-related risks. Finally, we will analyze public-private partnerships (PPPs) as a model for scaling climate investments, using a case study of federal and provincial collaboration with the private sector to reduce industrial emissions. By the end of the session, students will gain practical insight into how financial tools, risk-sharing structures, and cross-sector collaboration are reshaping climate finance in a fragmented world.

Dr. Jun Yuan is a leading expert in financial risk management, climate analytics, and AI innovation. He is Managing Director at RBC, Adjunct Professor at the Rotman School, and Senior Fellow at the Munk School, University of Toronto. With over 15 years at RBC, he has influenced major international banking reforms, including the Basel IV framework. He has advanced RBC's climate risk analytics and co-led climate scenario analyses recognized by national regulators. In AI, he spearheads efforts to integrate machine learning into risk management and co-authored *Machine Learning in Business*. He is also a published researcher and global speaker on finance and AI.

Readings:

1. OECD -- Climate Adaptation Investment Framework, Section 3: Public finance and investment, sustainable finance, and support & incentives for private investment, Climate Adaptation Investment Framework (EN)
2. RBC -- The $2 Trillion Transition: Canada's Road to Net Zero, The $2 Trillion Transition: Canada's Road to Net Zero - RBC

Session 7: Energy Transitions and Technological Innovations (Marc Ringel, Sciences Po)

- Theme: Technologies and systemic challenges in moving toward low-carbon economies.

Prof Marc Ringel is the Director of the European Chair for Sustainable Development and Climate Transition at Sciences Po. An economist by training, he specializes in analyzing European energy and climate policies. His research focuses on the European Green Deal and the "Fit for 55" legislative package from a comparative perspective. Marc serves as an advisor and external expert for organizations including the European Commission and the German Ministry of Economics. He has provided expert testimony before the German Bundestag and the Dutch Parliament, drawing on his experience as a former official at the European Commission and the German Ministry of Economics.

Session 8: Building Urban Resilience from the Ground Up (Charlotte Halpern, Sciences Po)

Abstract: Cities play a major role in the development of climate action. Yet there has been a tendency to consider them as the mere recipient or testbeds of strategies elaborated elsewhere, rather than actors in their own rights. This session will examine how cities have developed more capacities to support their climate initiatives, what resources they draw upon, and how this has impacted their policy choices at both formulation and delivery stages. The course will draw on specific examples.

Dr. Charlotte Halpern holds a PhD in political science and is an FNSP senior research fellow with tenure at Sciences Po, Centre for European studies and comparative politics (CEE), CNRS, France. She has done extensive teaching and research on state restructuring, comparative climate governance and the selection of policy instruments. Her current research focuses on the politics and policies of ecological transitions, with a focus on sustainable mobility and carbon measurement. She is the co-director of the LIEPP (Laboratory for interdisciplinary evaluation of public policies) environmental policy research group. She also heads the Sciences Po executive master programme "Regional governance and urban development".

Readings

1. Acuto, Michele et Benjamin Leffel. « Understanding the global ecosystem of city networks », *Urban studies (Edinburgh, Scotland)*. 2021, vol.58 n° 9. p. 1758-1774. DOI
2. Ansell, Christopher, Eva Sørensen, et Jacob Torfing. *Co-Creation for Sustainability: The UN SDGs and the Power of Local Partnership*. [s.l.] : Emerald Publishing Limited. 2022. open access
3. Gordon, David J et Craig A Johnson. « City-networks, global climate governance, and the road to 1.5°C », *Current opinion in environmental sustainability*. 2018, vol.30. p. 35-41. DOI