GD916-20 Dimensions of the Climate Crisis

24/25

Department
Global Sustainable Development
Level
Taught Postgraduate Level
Module leader
Katie Reeves
Credit value
20
Module duration
10 weeks
Assessment
100% coursework
Study location
University of Warwick main campus, Coventry

Description

Introductory description

The climate crisis is arguably one of the most important challenges of the 21st century, with the need for efficient governance and immediate action to protect the Earth for future generations. This crisis is inherently tied to many of the United Nations Sustainable Development Goals, and thus requires engagement on an interdisciplinary level. Therefore, this module offers a research-led teaching approach to climate change, with contributions from teaching staff across the School for Cross-Faculty Studies, to present an evolving and interdisciplinary view of the dimensions of the climate crisis. This module is designed to provide students with the training to engage with such a complex issue with a contemporary, critical, and interdisciplinary understanding of some of the key issues with climate change. This will cover four key principle themes linked to teaching staff's research and expertise: (1) science, (2) vulnerability, (3) resilience, and (4) responses, and will allow students to apply their understanding to examine and propose innovative solutions to a global issue.

Module aims

The module allows students to engage with and explore the complexities of SDG 13, develop system-thinking to examine links with other SGDs (e.g. 2, 7, 14, 15), and address a global issue

with an interdisciplinary perspective. Students will develop and apply understanding across a range of themes that will allow for a diverse assessment of policy, governance, vulnerabilities, limitations, technologies, and scientific processes that shape the climate crisis. This module addresses the climate crisis within the MASc curriculum, to allow for a comprehensive training in Global Sustainable Development.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

Core teaching themes are as follows:
(1) Science of climate change and impacts on the Earth System
(2) Vulnerability of climate change
(3) Climate resilience and risk communication
(4) Response to the climate crisis

Topics will follow the above themes. Below is an indicative module outline only to give an indication of the breadth and type of topics that may be covered. Actual sessions held may differ:
Week 1: Context of anthropogenic climate change and the scientific basis;
Week 2: Application of scientific concepts to Earth System Processes Part 1;
Week 3: Application of scientific concepts to Earth System Processes Part 2;
Week 4: Disaster risk management and climate adaptation, disaster vulnerability, relationship between people and the environment;
Week 5: Infrastructure and risk, and risk communication;
Week 6: Resilience and spaces for learning, community-led initiatives to establish climate resilience;
Week 7: Global and place-based climate policy making, scale of knowledge;
Week 8: Climate finance, politics of financing for climate loss and damage;
Week 9: Innovative methodologies to reduce climate-related risk, net zero;
Week 10: Data science and visualisation;

Learning outcomes

By the end of the module, students should be able to:

- Explain advanced concepts in climate science to critically explore the complex effects of climate change on the Earth system, people, and their relationship with the environment, with engagement of gaps in knowledge
- Examine the risks and vulnerability across diverse societal groups, while critically evaluating the nuanced complexities with effective communication strategies
- Critically assess the potential for climate change adaption and resilience, and examine responses to the climate crisis, including climate mitigation technologies
- Engage with a complex issue with an applied thematic approach, using research and collaboration to integrate and apply knowledge from interdisciplinary fields to understand the interconnectedness of climate change with other global challenges
- Communicate complex issues of the climate crisis effectively, whilst accommodating diverse audiences and communication methodologies

Indicative reading list

IPCC (2023), AR6 Synthesis Report: Climate Change 2023, https://www.ipcc.ch/report/ar6/syr/

Raupach et al. (2014) Sharing a quota on cumulative carbon emissions, Nature Clim Change, 4, 873–879

Bellard et al. (2012), Impacts of climate change on the future of biodiversity, Ecology Letters, 15 (4), 365-377

Moncada et al. (2021), Small Island Developing States: Vulnerability and Resilience Under Climate Change, ISBN : 978-3-030-82773-1

Brooke (2014), Climate Change and the Course of Global History, Cambridge University Press, ISBN: 9781139050814

This module is team-taught and research-led, and so readings will also be allocated by teaching staff and will likely evolve throughout the module and emerging research.

Interdisciplinary

This module is team taught throughout the School for Cross-Faculty Studies with expertise across the three pillars of Global Sustainable Development. Students will work effectively with peers and staff from interdisciplinary backgrounds to address solutions to the climate crisis.

International

This module addresses the global climate crisis and will assess a range of scales and case studies to develop understanding of climate change, and how perspectives may differ nationally and internationally, and within communities. Themes are designed with the aim to decolonise climate change, with discussion on vulnerability and different communities and needs.

Subject specific skills

This module will provide students with climate science knowledge and the ability to communicate complex processes. Students will also develop analysis skills of climate data, and will assess sustainability measures, governance, and climate ethics through synthesising information from personal research and delivered content.

Transferable skills

Systems thinking: students will develop skills to understand the link between different sectors impacted by climate change and the interconnectedness of the system.
Communication: students will develop skills to effectively communicate complex climate-related information to a diverse range of audiences from completing a variety of assessment formats.
Interdisciplinary thinking: working effectively with peers and staff from interdisciplinary backgrounds to address solutions to the climate crisis.

Critical thinking: students will engage with climate change from a critical viewpoint by critiquing and discussing climate mitigation technologies and existing governance, also considering the barriers to successful solutions to the climate problem.
Problem solving and original thinking.
Data visualisation.

Study

Study time

Type	Required
Lectures	10 sessions of 1 hour (5%)
Seminars	10 sessions of 2 hours (10%)
Private study	60 hours (30%)
Assessment	110 hours (55%)
Total	200 hours

Private study description

Approximately 6 hours per week.

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group A

	Weighting	Study time	Eligible for self-certification
Portfolio	80%	88 hours	Yes (extension)

Students will build an assessment portfolio with one assessment entry allocated to each of the four themes within the module (science, vulnerability, resilience, and response). Students will submit four assessments to the assessment portfolio, with a word count of 750-words each (or equivalent), and assessment type will vary depending on the teaching theme: (1) laboratory/scientific report (science), (2) critical response to a case study or learning activity (vulnerability), (3) pre-recorded 5 minute presentation (resilience), and (4) critical review of climate policy (response). Students will have a choice between 2-3 topics for each assessment,

	Weighting	Study time	Eligible for self-certification
set by relevant teaching contributors.			
Policy Brief	20%	22 hours	Yes (extension)
Students will choose a topic from the module and create a policy brief. This final assessment is consistent for all students to synthesise information from the entire module and develop their interdisciplinary learning approach.			

Feedback on assessment

Students will receive written feedback following submission.

Availability

Courses

This module is Optional for:

- Year 1 of TIPA-LA9Y Postgraduate Taught Community, Engagement and Belonging (PGDip)

This module is Option list A for:

- Year 1 of TIPA-LA9Z Postgraduate Taught Community, Engagement and Belonging (MASc)

This module is Option list B for:

- Year 1 of TGDA-L801 Postgraduate Taught Global Sustainable Development