

ENVST-UA 9226L01

Climate Change

NYU London

Instructor Information

- Dr. Lisa Weber
- Office hours: Thursday 4-5.30pm

Course Information

- Thursday 1-4pm
 - Room 105
- No Co-requisite or prerequisite

Course Overview and Goals

Climate change is among the most complex and challenging problems that we have confronted as a civilization, but the responses and impacts will vary largely across space and the global population. This course is designed to give you a fundamental understanding of the scientific basis of climatic change, and will expose you to multiple facets of a very interdisciplinary and encompassing field. You will be introduced to the physical science of our climate system, the contributing system components, and the basic mechanisms that govern how the climate system responds to drivers of change. We'll then explore climate change from multiple perspectives: paleoclimatic change, recent historical variability and change, future climate projections as well as social and economic issues.

Upon Completion of this Course, students will be able to:

- Explain how the climate system works.
- Understand the physical basis of climate change.
- Describe how human activities are influencing greenhouse gas emissions
- Investigate projections about past and possible future climate change on Earth
- Evaluate global climate change policy and its implementation options for mitigation and adaptation

Course Requirements

Grading of Assignments

The grade for this course will be determined according to these assessment components:

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Assignments/ Activities	Description of Assignment	% of Final Grade	Due
Assignments	Lab & Reading Assignments	25%	
Midterm	90 minute exam	20%	
Semester Project	Essay	25%	
Final Exam	90 minute exam	30%	

Failure to submit or fulfill any required course component results in failure of the class

Grades

Letter grades for the entire course will be assigned as follows:

Letter Grade	Percent	Description
A	Example: 93.5% and higher	Excellent understanding of the course content, applying theoretical and conceptual issues.
B	Example: 82.5% - 87.49%	Good understanding of the course content, reasonable application of theoretical and conceptual issues.
C	Example: 72.5% - 77.49%	Some general understanding. Nevertheless mostly superficial understanding which misses some essential elements.
D	Example: 62.5% - 67.49	Lacking in understanding of the course content. Poor attention to essential details. Nevertheless a vague and general idea of the basic concepts.
F	Example: 59.99% and lower	Lacking in understanding and misunderstanding of the course content. Lack of attention to essential details.

Course Materials

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Required Textbooks & Materials

- N/A. Required readings will be made available during the semester on the course webpage

Optional Textbooks & Materials

- David Archer & Stefan Rahmstorf (2010): The Climate Crisis, An Introductory Guide to Climate Change, Cambridge University Press

Resources

- **Access your course materials:** [NYU Classes](http://nyu.edu/its/classes) (nyu.edu/its/classes)
- **Databases, journal articles, and more:** [Bobst Library](http://library.nyu.edu) (library.nyu.edu)
- **NYUL Library Collection:** [Senate House Library](http://catalogue.libraries.london.ac.uk) (catalogue.libraries.london.ac.uk)
- **Assistance with strengthening your writing:** [NYU Writing Center](http://nyu.mywconline.com) (nyu.mywconline.com)
- **Obtain 24/7 technology assistance:** [IT Help Desk](http://nyu.edu/it/servicedesk) (nyu.edu/it/servicedesk)

Course Schedule

Session/Date	Topic	Reading	Assignment Due
Session 1:	Introduction	Required readings will be made available during the semester on the course webpage.	Due dates for assignments will be announced in class and on the course webpage.
Session 2:	Atmosphere I: Earth Energy Budget		
Session 3:	Atmosphere II: Atmospheric Dynamics		
Session 4:	Ocean I: Physical Processes		
Session 5:	Ocean II: Biogeochemical Processes		
Session 6:	Water Cycle and Extreme Weather		
Session 7:	Midterm Exam (90 minutes)		
Session 8:	Terrestrial Carbon Cycle I: Lecture		
Session 9:	Terrestrial Carbon Cycle II: Fieldtrip		

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Session/Date	Topic	Reading	Assignment Due
Session 10:	Polar Regions and Sea Level Rise		
Session 11:	Paleoclimate		
Session 12:	Climate Models and Predictions		
Session 13:	COP 25 Simulation		
Session 14:	Mitigation and Adaptation		
Final Assessment:	Final Exam (90 minutes)		

Co-Curricular Activities

- **Field trip to Highgate Wood (TBC)**
- Session 9, during normal class time (Group 1) and Friday morning (Group 2).

Classroom Etiquette

- The usage of mobile phones during class and eating lunch is not allowed.

NYUL Academic Policies

Attendance and Tardiness

- Key information on NYU London's absence policy, how to report absences, and what kinds of absences can be excused can be found on our [website](http://www.nyu.edu/london/academics/attendance-policy.html) (<http://www.nyu.edu/london/academics/attendance-policy.html>)

Assignments, Plagiarism, and Late Work

- You can find details on these topics and more on this section of our NYUL [website](https://www.nyu.edu/london/academics/academic-policies.html) (<https://www.nyu.edu/london/academics/academic-policies.html>) and on [the Policies and Procedures section of the NYU website](https://www.nyu.edu/academics/studying-abroad/upperclassmen-semester-academic-year-study-away/academic-resources/policies-and-procedures.html) for students studying away at global sites (<https://www.nyu.edu/academics/studying-abroad/upperclassmen-semester-academic-year-study-away/academic-resources/policies-and-procedures.html>).

Classroom Conduct

Academic communities exist to facilitate the process of acquiring and exchanging knowledge and understanding, to enhance the personal and intellectual development of its members, and to advance the interests of society. Essential to this mission is that all members of the University Community are safe and free to engage in a civil process of teaching and learning through their experiences both inside and outside the classroom. Accordingly, no student should engage in any form of behaviour that interferes with the academic or educational

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process, compromises the personal safety or well-being of another, or disrupts the administration of University programs or services. Please refer to the [NYU Disruptive Student Behavior Policy](#) for examples of disruptive behavior and guidelines for response and enforcement.

Disability Disclosure Statement

Academic accommodations are available for students with disabilities. Please contact the Moses Center for Students with Disabilities (212-998-4980 or mosescsd@nyu.edu) for further information. Students who are requesting academic accommodations are advised to reach out to the Moses Center as early as possible in the semester for assistance.

Instructor Bio

Dr Lisa Weber has a PhD in Marine Sciences, in addition to a first class degree and an MSc equivalent in Physical Geography. Her most recent job is Associate Lecture for Oceanography at the Open University. Prior to that she worked as postdoctoral researcher at the National Oceanography Centre in Southampton for almost 10 years. Her entire education at University and subsequent jobs have revolved around environmental and marine issues related to climate change. Her previous main research was focused on the biogeochemical cycles of nutrients in marine ecosystem models, which is an important aspect of the global carbon cycle and climate change research. Currently she is investigating the truly interdisciplinary nature of climate change and the need to change our norms and the way we think in order to overcome climate change.