CLIMATE: PAST, PRESENT, and FUTURE

Semester No 1	**Code HU-131**	**Credit Hours-3-0**

COURSE OBJECTIVES:

1. To highlight how humanities disciplines can mobilize the creative and critical power of students, teachers, and communities to confront climate change.
2. To rethink many of our traditional means of historical understanding.
3. To properly understand what climate means today across an array of discursive domains, from politics, literature and law to neighborly conversation.

COURSE LEARNING OUTCOMES:

Upon successful completion, students will have the knowledge and skills to:

1. Understand the interactions between the atmosphere, ocean, cryosphere and land in the
   Earth's climate system.
2. Analyze climate data to interpret past, present and future climate variability and change.
3. Interpret the relationships between large-scale ocean-atmosphere processes and regional and global climates, using simple statistical techniques.
4. Synthesize understanding of processes that influence climate variability and change, and their application to research and policy contexts.
5. Develop a broad scientific basis for evaluating the likely causes and potential impacts of climate variability and change, and communicate this in a range of formats suitable for diverse audiences.

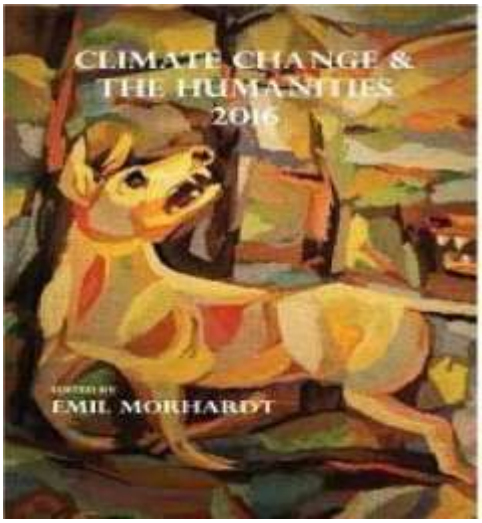
PREREQUISITES:

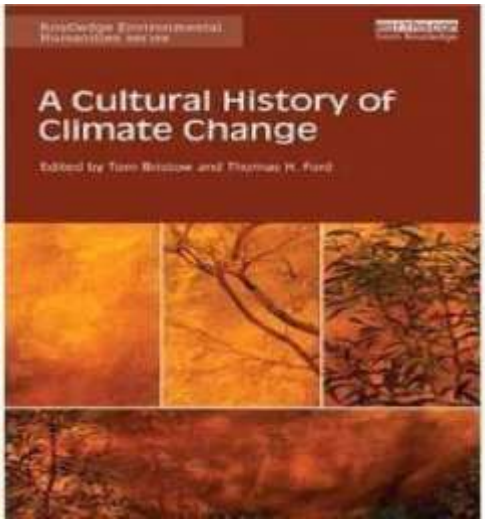
NIL

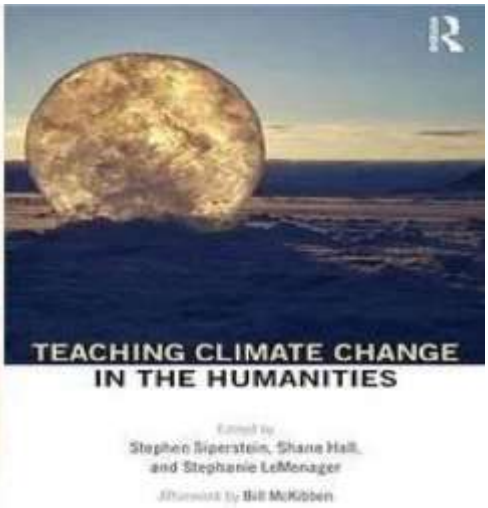
COURSE DESCRIPTION:

Which human activities are changing our climate, and does climate change constitute a major problem? We investigate these questions through an introduction to climate processes and an exploration of climate from the distant past to today. We also

consider the impact of past and ongoing climate changes on the global environment and on humanity. Finally, we draw on climate science to identify and evaluate possible courses of action. Intended to be accessible to students not concentrating in science or engineering, while providing a comprehensive overview appropriate for all students.







PRESCRIBED TEXTS:

1. Climate Change and the Humanities, edited by Emil Morhardt (Cloud Ripper Press)
2. A Cultural History of Climate Change, edited by Tom Bristow and Thomas H. Ford.
3. Teaching Climate Change in the Humanities, edited by Stephen Siperstein, Shane Hall,

REFERENCE MATERIAL:

1. Gergis, J. (2018). Sunburnt Country: The future and history of climate change in Australia, Melbourne University Press, 310pp.

ASSESSMENT SYSTEM:

Quizzes	10-15%
Assignments	5-10%
Mid Term	20- 25
ESE	40-50%

Weekly breakdown of course contents as follows:

WEEK	TOPICS	QUIZZES	ASSIGNMENTS
1	**Introduction to Climate Change Science** Module 1 introduces the basics of climate change science. Section 1 provides an overview of key concepts such as climate, weather and the greenhouse gas effect. Section 2 looks at the human contribution to climate change and provides an overview of important greenhouse gases and their main sources. Section 3 describes some of the main observed changes in the climate since the industrial revolution. Section 4 presents projected future trends and impacts of climate change on surface temperature, precipitation, ocean pH, sea-level and Arctic sea-ice extent. The module concludes with an overview of main sources of scientific climate information, relevant programmes and institutions. https://ocw.un-ihe.org/mod/url/view.php?id=5847 Climate change basics [Video, 3 minutes]		01
2	**Deepening the understanding of climate concepts [Text]**		
3	**Understanding Climate Change The WWF Way** [External Content, 30 mns] https://ocw.un-ihe.org/mod/url/view.php?id=5848 What's in a Name? The “Greenhouse Effect” https://youtu.be/VYMjSule0Bw	01	

4	**Introduction to the International Legal and Policy Framework to Address Climate Change** Provides an overview of how the international legal and policy framework to address climate change developed over time and points out some of the key issues under negotiation. Section 1 provides a brief history of international climate change negotiations and introduces the United Nations Framework Convention on Climate Change (UNFCCC). Section 2 presents the key provisions of the UNFCCC, its organizational structure, and different Party groups under the Convention. Section 3 presents the Kyoto Protocol and its associated bodies, as well as key commitments by Parties. Section 4 provides an overview of main negotiation issues. Section 5 discusses how the negotiations have evolved over the past years (from a two-track to a one-track approach) and highlights some of the key issues relevant for a future climate change regime.		01
5	**Earth's climate in the past [Text]** https://ocw.unihe.org/mod/page/view.php?id=5852 The Physical Science basis [Video, 9 minutes] https://ocw.un-ihe.org/mod/url/view.php?id=5853	01	
6	**What are RCP's? [Text]** https://ocw.un-ihe.org/mod/page/view.php?id=5854 How ESA deploys their satellites to understand climate change[video, 5 minutes] https://ocw.un-ihe.org/mod/url/view.php?id=5855		01

7	**Introduction to Climate Change Adaptation** Introduces the concept of climate change adaptation, highlights ways to measure vulnerability, introduces examples of adaptation solutions and summarizes how to prepare a planned response. Section 1 provides key definitions and introduces some of the expected consequences of climate change on key sectors. Section 2 provides a framework for assessing climate vulnerability. Section 3 lists different adaptation measures that can be implemented for various vulnerable sectors. Section 4 provides a short introduction to linkages between climate change adaptation and development. Section 5 presents a number of important international adaptation initiatives and programmes.	01	
8	**Introduction to Climate Change Mitigation**		
9	**MID TERM**		
10	**Introduction to Climate Change Mitigation (contd.)**		
11	**Introduction to Climate Change Finance** Provides the learner with an understanding of existing financing flows and future needs, as well as a basic typology of financing sources. Section 1 discusses the different meanings of the term climate finance. Section 2 presents national financing and the centrality of the national budget in leveraging other sources of finance, including private sector		01
12	**Introduction to Planning for Climate Change** Provides an overview of planning processes for climate change. Section 1 provides an overview of different dimensions and entry points for climate change planning. Sections 2 and 3 examine the roles of national and sectoral, as well as subnational institutions in climate change planning. Section 4 explains a five-step methodology for preparing a lowemission climate-resilient development strategy. Section 5 presents some of the main international initiatives to support climate change planning.		
13	**The Detailed Physical Sciences Report of IPCC**		

14	Climate justice, climate governance and enabling mechanisms https://ocw.un-ihe.org/course/view.php?id=79&section=6	01	
15	**Individual and collective actions for change** https://ocw.un-p?id=79&section=7		
16	**Impacts of climate change** https://ocw.un-ihe.org/course/view.php?id=79		
17	**Revision**		
18	**END SEMESTER EXAMINATION**		