

SOCIAL SCIENCE

Climate Change in the Past and Present

- I. CONCEPTUALIZING CLIMATE CHANGE IN THE PAST AND THE PRESENT 25%
 - A. Essential Concepts from Earth System Science (ESS)
 - 1. The Earth's Subsystems
 - a. Geosphere
 - b. Hydrosphere
 - c. Atmosphere
 - d. Biosphere
 - 2. Forcings
 - a. Solar Energy
 - b. Volcanoes
 - c. Greenhouse Gases
 - 3. Positive and Negative Feedbacks
 - a. Examples of Positive Feedbacks
 - b. Examples of Negative Feedbacks
 - B. Sources for Reconstructing the History of Climate
 - 1. The Archives of Nature
 - a. Ice Cores
 - b. Trees
 - c. Sedimentation and Other Sources
 - 2. The Archives of Society
 - a. Instrumental Records
 - b. Narrative Records
 - c. Other Types of Records
 - C. Fields for Studying the History of Climate
 - 1. Historical Climatology and Paleoclimatology
 - 2. Climate History
 - 3. The History of Climate and Society (HCS)
 - D. Conceptualizing Climate Change Today
 - 1. Concerns about Using the Term "Anthropocene"
 - 2. Arguments for Using the Term "Anthropocene"
 - E. Climate Change and Narratives of Global History
 - 1. Mapping Climate onto Existing Narratives
 - 2. Climate Determinism and the Question of Causal Relationships
 - a. Multiple Scales
 - b. Incongruent Chronological Scales
 - c. The Novelty of the Anthropocene
- II. HUMANS IN THE HOLOCENE 25%
 - A. An Overview of the Holocene
 - 1. The End of the Last Ice Age and the Early Holocene
 - 2. The Middle Holocene

3. The Late Holocene
- B. Climate and the Development of Human Civilizations
 1. Early Agrarian Societies
 - a. Mesopotamia
 - b. Egypt
 - c. India
 - d. The Americas
 2. The Mediterranean World During Antiquity
 3. 536 CE: The Worst Year to Be Alive?
 4. The Climate in China and the Mandate of Heaven
- C. The Little Ice Age (LIA) and the Colonial World
 1. Phases of the LIA
 2. The LIA around the Globe
 - a. European Empires
 - b. Africa
 - c. Asia
 - d. North America
- D. From the “Seventeenth-Century Crisis” to the Nineteenth Century

III. THE ANTHROPOCENE 25%

- A. The Origins of the Anthropocene
 1. The Industrial Revolution and the Burning of Fossil Fuels
 2. The “Great Acceleration” and the Beginning of the Anthropocene
- B. The Causes of the Anthropocene
 1. Global Production of Greenhouse Gases
 2. The History of Oil Extraction
 3. Current Sources of Fossil Fuels
 4. Historic Greenhouse Gas Emissions in the West
 5. Global Greenhouse Gas Emissions
- C. The Consequences of the Anthropocene
 1. Climate Change as Part of Compounding Ecological Crises
 2. Stress on Human Habitats
 - a. Fires
 - b. Floods
 - c. Droughts
 3. Stress on Human Life
 - a. Health
 - b. Financial Impacts
 - c. Migration
 4. Impending Risks

IV. RESPONDING TO THE CLIMATE CRISIS 25%

- A. Recognizing the Climate Crisis
 1. Research Programs
 - a. The World Climate Research Program (WCRP)
 - b. The International Geosphere-Biosphere Programme (IGBP)

2. Raising Awareness of Climate Change
 - a. Early Public Warnings
 - b. The Intergovernmental Panel on Climate Change (IPCC)
- B. Opposition to Climate Action
 1. Nierenberg and the Marshall Institute
 2. U.S. Opposition to the Kyoto Protocol
 3. Business and Industry
 4. Political Parties
 5. News Media
- C. Mitigating the Climate Crisis
 1. Political Efforts
 - a. The United Nations Framework Convention on Climate Change (UNFCCC)
 - b. The Kyoto Protocol
 - c. The Paris Agreement
 - d. The Green New Deal and Inflation Reduction Act (IRA)
 2. New Technology and Industry
 3. Geoengineering
 4. New Sources of Energy
- D. Climate Activism
 1. Speaking Out for “Climate Justice”
 2. Standing Rock and Indigenous Voices
 3. Fridays for Future and Youth Voices