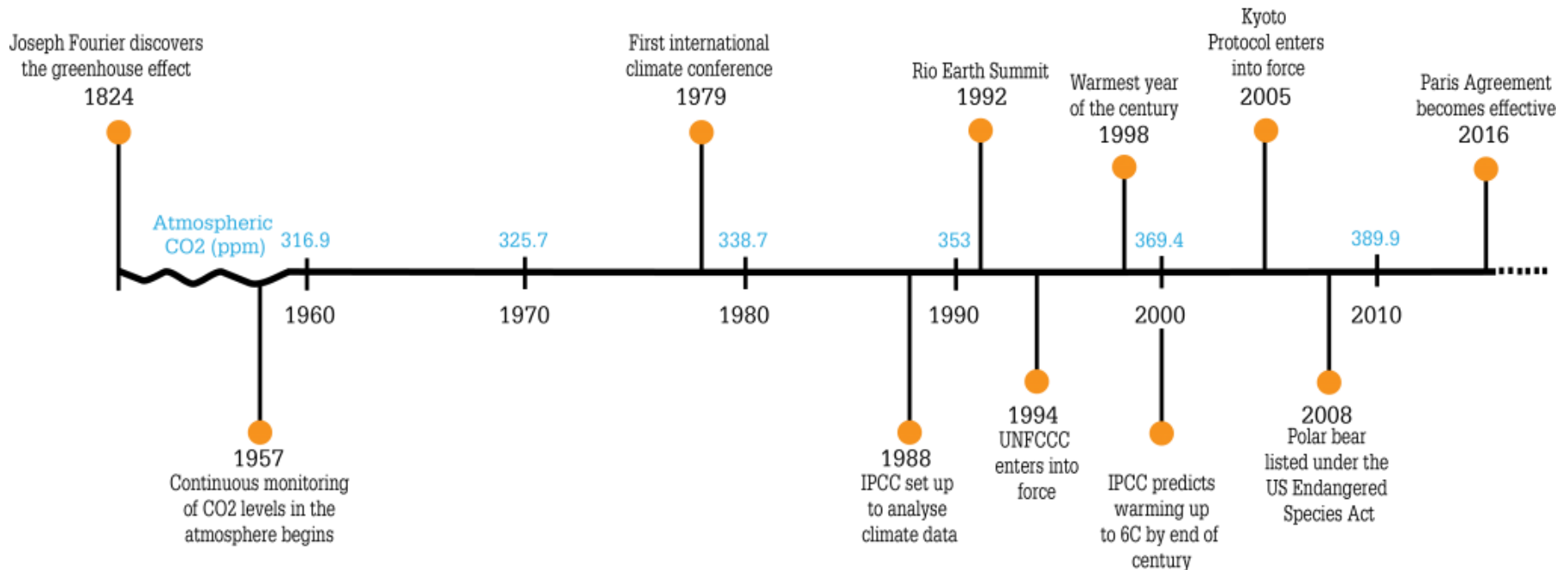


# Developing the Next Generation of Female Environmentalists

## Introduction to

# Climate Change Curriculum



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May 9, 2023

# Course Description & Training outcomes

- **Course description**

- This course will discuss the practices in the US and other countries about establishing curriculum related to climate change at college level, such as related courses in STEM or social sci. majors
  - Climate change across the university curricula/different disciplines
  - The current status and practices in the world regarding how to teach climate change to students with different majors
  - Ways of thinking, methods, strategies, rationales, and theoretical justifications for teaching climate issues at the university level

- **Training outcomes**

- Know the current status of the climate change curriculum
- Understand different course contents (modules/units) across the curriculum at college level
  - Short-, mid-, and full-length courses
  - Their combinations for students with different majors
- Know how to develop the curriculum for different majors
- Understand the related issues and ways to address them

# Part I: Climate Change Across the Curriculum: Current Status & Practices



**EDUCATION  
PROGRAMS**

# Example 1 from Internet (1)

## Climate Change and Personal Responsibility

**Become a climate change ambassador with this free online course that explains how citizens can help protect the planet.**

This free online course equips you with the knowledge required to become a climate change ambassador. We examine industry greenhouse gas emissions to help you find ways to minimize them but global climate change isn't only driven by factories: individuals can also play a role. Understanding the scale of the problem can enable you to spread awareness of the crisis to help others recognize their contribution and possible role in solving it.

### What You Will Learn In This Free Course

- ✓ Outline the difference between biodiversity loss and climate change
- ✓ List the physical and mental effects of climatic change
- ✓ Describe the elements of 'deep adaptation'
- ✓ Differentiate between the rational and emotional mind
- ✓ Identify the sources of greenhouse gas emissions
- ✓ Discuss the stages of the eco-anxiety cycle
- ✓ Analyse the victim mentality and how to tackle it
- ✓ Recall the spheres of personal responsibility

# Example 1 from Internet (2)

## Course Modules

## Course Description

## Alison Certificates

### MODULE 1

#### Introduction

This module introduces the planetary crises facing humanity. You will learn the difference between biodiversity loss and climate change, as well as the

[Start Course Now](#)

### MODULE 2

#### Climate Action

In this module, you will learn how to respond to climatic changes. You will understand the concept of victim mentality and how to tackle it. Further, you will learn the different ways of creating meaning in your

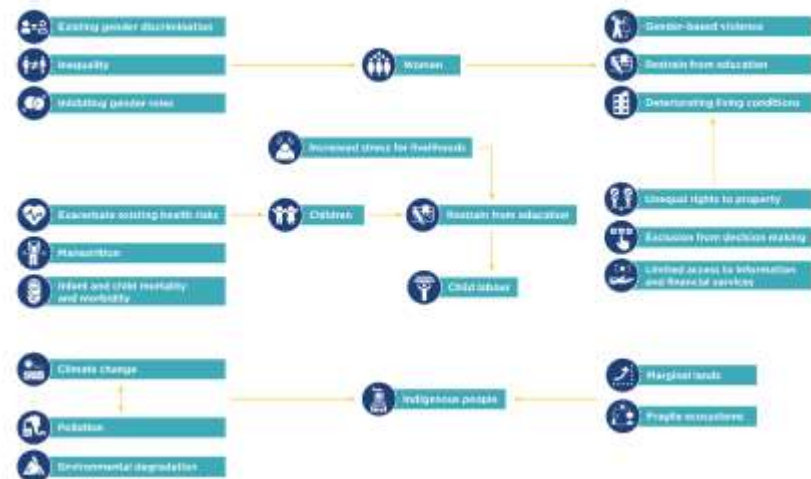
### MODULE 3

#### Course assessment

# Example 2 from Internet (1)

- **Common Earth *Insights*: Developing a Systemic Understanding of Climate Change**
  - 2 Modules with 8 wk/module; 2 sessions (each 2 h) per week
  - Format: Online - Live & Interactive sessions
  - Commitment: 8 h/wk (live sessions plus 1 to 2 h of prework for each session)
  - Investment: This program is fully sponsored by Common Earth.
  - **Module 1: Shifting perspectives and making connections**
    - The principles of human experience
    - The origin story
    - Systems thinking
    - The climate crisis
  - **Module 2: Identifying leverage points and harnessing community**
    - The economy
    - Biomimicry
    - Thermodynamics
    - Regenerative agriculture
    - Community

## Segments of the population mostly affected



# Example 3 from Internet: UN courses (1)

## INTRODUCTORY E-COURSE ON CLIMATE CHANGE



**Free e-Learning Course on  
Climate Change**

Do you want to know more about climate change?  
Do you want to test your knowledge?  
Try the UN CC:Learn e-learning course!

It is free, self-paced and takes only 8 X 2 hours to complete.

[www.uncclearn.org](http://www.uncclearn.org)

# Example 3 from Internet: UN courses (2)

- **Introduction to Climate-Smart Agriculture**

This course addresses the subject matter from a technical perspective, but is written for the general public. Individuals who would especially benefit from taking the course include:

- Policy makers
- Development practitioners and programme managers
- Sectoral specialists and academics
- Trainers and extension agents

#### **You will learn about**

- Climate change and its causes
- Climate change impacts on agriculture, food security and food systems
- The concept of climate change adaptation and mitigation and the related strategies that could be put in place in agriculture
- The CSA approach and the 5-step process to implement it

#### **Course structure**

The course consists of 4 lessons, ranging from approximately 15 to 25 minutes duration each:

- Lesson 1 – Climate change and global warming
- Lesson 2 – Impacts of climate change on agriculture and food security
- Lesson 3 – Basics of adaptation and mitigation in the agricultural sectors
- Lesson 4 – Climate-smart agriculture



# Example 4 from Internet (1)

MA in Climate and Society, Columbia Climate School, CU in NY City

- **Course of Study [total Credits = 34 (minimum)]**

Fall Semester	Spring Semester	Summer Semester
Dynamics of Climate Variability and Change 3 credits	Quantitative Methods for Climate Applications 4 credits	Summer Internship: Climate and Society* 6 credits
Climate Change Mitigation 3 credits	Applications in Climate and Society 3 credits	Capstone Workshop: Climate and Society* 6 credits
Climate Change Adaptation 3 credits	Elective #3 3 credits	
Elective #1 3 credits	Elective #4 <sup>†</sup> 3 credits	
Elective #2 3 credits		
15 credits	13 credits	6 credits

# Example 4 from Internet (2)

## MA in Climate and Society, Columbia Climate School, CU in NY City

### Why Climate and Society?

The climate crisis is the single biggest problem facing humanity today. It affects every aspect of society from health to food to energy, among others. How we respond in the coming decades will shape the world for future generations. Knowing this is one thing. Knowing what to do about it is another. The MA in Climate and Society is designed to help young professionals and academics understand the science of climate change and variability and how to use it to help humanity thrive in the 21st century. The program will prepare you to translate complex scientific information and understand the risks a shifting climate poses as well as how to take advantage of the predictable aspects of natural climate variability. Students come from a [variety of backgrounds](#). Our diversity is our strength. Addressing the climate crisis will require a wide range of skills and interests. Our students learn not just from faculty but from each other. They work together as [alumni](#), approaching the climate crisis from many different avenues. They're city planners, policy advisors, journalists, conservationists and more. If you want to be part of the solution, [join us](#).

# Example 4 from Internet (3)

## Climate change and Business Program Courses at CU in NY City

Columbia Business School is home to many leading experts in the climate change field, and has offered courses in this field for over a decade. In addition, Columbia students have the option of taking climate change electives across the university in disciplines including law, earth sciences, policy, public health, and engineering to name a few. Columbia Business School courses include:

- B8363 Climate Finance
- B8201 Climate Change and the Energy Transition
- B8448 The Business of Climate Change: Investing and Managing in a Changing Environment
- B8224 Energy and Resource Economics
- B8352 Financing Energy Markets
- B8209 Climate Justice, Real Estate and Vulnerability
- B8027 Challenges in Measurement & Disclosure of Environmental, Social, and Governance Data
- B8468 ESG Equity Investing

# Example 5 from Internet (1)

## Climate Commitment at Duke University

### Climate & Sustainability Course List

<https://climate.duke.edu/wp-content/uploads/sites/91/2023/04/Fall-2023-CS-Course-List-4.4.23.xlsx>

#### UNDERGRADUATE

- ✓ AAAS 202, THEATRST 221, GSF 223: Manifesto Workshop: Climate Change, Afro/Solar-Punk, and Performance
- ✓ BIOLOGY 263: Biological Responses to Climate Change
- ✓ ECON 182FS, PUBPOL 171FS, ETHICS 182FS, HISTORY 170FS: Beyond Denial - A Thriving Future
- ✓ ME 461: Energy Engineering and the Environment
- ✓ ENVIRON 89S: Climate Change

#### GRADUATE AND PROFESSIONAL

- ✓ ENERGY 578, ECON 578: Environmental, Social, Governance (ESG) Investing
- ✓ ENVIRON 774, GLHTLH 573D, GLHLTH 771: One Health: From Philosophy to Practice
- ✓ EOS 511, ECS 511: The Climate System
- ✓ STRATEGY 627: Climate, Sustainability, and Corporate Governance
- ✓ PREACHNG 775: Preaching Place: The Challenge and Promise of a Global Gospel



SEE THE FULL LISTING OF CLIMATE AND SUSTAINABILITY COURSES FOR FALL 2023

# Example 5 from Internet (2)

University of Massachusetts Amherst

## Climate Change

Welcome
Articles
Books
Campus Resources
Local Resources
Climate Change Courses at UMass
Internet Links
Climate Change at the Movies

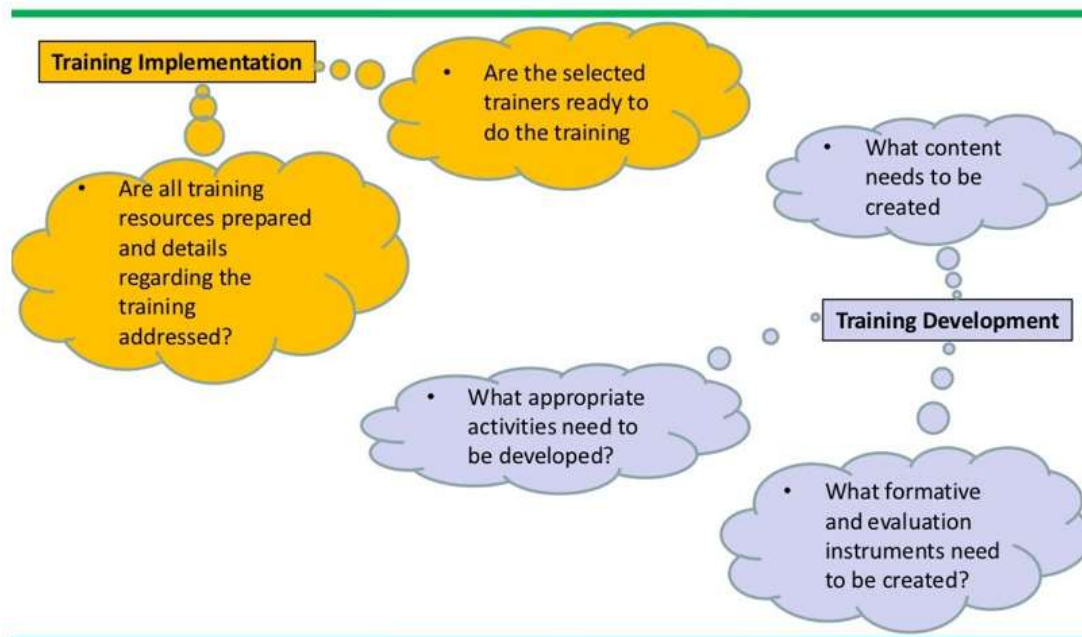
### Sample Courses

#### Sample courses

- Air Pollution & Climate Change Biology (EnvirSci 504)
- Climatology (Geo-Sci 354)
- Climate Change & the Urban Environment (CEE 697CC)
- Climate Impacts in New England (Geo-Sci 697CC)
- Geophysical Fluid Dynamics (Math 797I)
- Planning for Climate Adaptation (LARP)
- Planning for Climate Change Mitigation (LARP)
- Society & Environment (NRC 100)
- Special Issues in Land Use Planning: Planning for Climate Change (RP691)
- Weather and Our Atmosphere (Astronomy 105)

# Part II: Development of Climate Change Curriculum: Examples of Stanford Univ.

## Designing a Training Module



# Sandford Dorr School of Sustainability (1)

Added security | <https://climatechange.stanford.edu/curriculum>

Stanford University

**Stanford** | Doerr  
School of Sustainability

## Climate Change Education

[Home](#) [Curriculum](#) [Research](#) [Resources](#) [People](#) [About](#)

# Curriculum

Overview

Middle School Curriculum



High School Curriculum



Global climate change ...

- \* is unequivocal,
- \* almost certainly is caused mostly by us,
- \* already is causing significant harm, and
- \* is growing rapidly.

# Sandford Dorr School of Sustainability (2)

- **Seven Units (see Sample 10-0 to 10-7 in reference list)**

## Introduction to Climate Change

Students will be able to identify the relevance of studying climate change and differentiate between elements of weather and climate.



High School Curriculum 

Earth's Energy Balance

[Greenhouse Gases and Energy Balance](#)

Impacts on Physical Systems

Consequences of Climate Change & Adaptation

Science Consensus and the Climate Change Debate

Mitigation Strategies

- [Lesson Guide](#)
- 1.1.1 - [Student Hook Article \(pdf\)](#) or [\(.doc\)](#)
- 1.1.2 - [Article Vocabulary Slide](#) (powerpoint)
- 1.1.3 - [Small Group Discussion Questions](#)
- 1.1.4 - [Weather and Climate System Slides](#) (powerpoint)
- 1.1.5 - [Keywords to identify definitions](#) (powerpoint)
- 1.1.6 - [Concept Map Instructions](#)

## Videos and Websites

- [Google Map Sea Level Rise](#)
- [Stephen Colbert Video](#)

For Claims And Evidence



# Part III: Development of Climate Change Curriculum: Our Efforts & Examples



# Course (Draft) Syllabus of Our Group (1)

- **Jurisprudential Approach of Environmental Laws and Policies**
  - **Objective/Outcomes:** Upon completion of this course, the students will understand the role of the state and its responsibilities in the governance of the environment in order to learn responsibilities of state and rights of its citizens for environmentally sustainable development. Students are expected to understand
    - International Laws on environment
    - Major State statutes and state controls
    - Basic doctrines on protection and promotion environmental laws.
  - **Course Scheme:**
    - Introduction of Environmental Law
    - Sources of Environmental Law
    - Regulatory Choices in Environmental Law
    - International Human Rights
    - Principles of policies under Constitutional approach
    - Implementing and Enforcing Environmental Law
    - International Environmental Laws
    - National Environmental Laws

See “Sample-8-1-Draft Syllabus-Jurisprudential Approach of Environmental Laws and Policies-Johar-04192023.docx” for details

# Course (Draft) Syllabus of Our Group (2)

- **Climate Change: The Integral Factor Behind Natural Disasters**
  - **Objective: To understand:**
    - Climate change resulting into disasters
    - The phases of disasters
    - The impacts and effects of disasters on society
  - **Learning Outcomes: Enable to:**
    - Identify the importance & consequences of climate change on society
    - Understand the aims of phases of disasters
    - Learn and adapt preventive measures
  - **Course Contents:**
    - Introduction to climate change
    - Disaster and its types
    - Aims for disaster management
    - Impacts of natural disasters on society
    - Mitigation/preventive measures

# Course (Draft) Syllabus of Our Group (3)

- **Role of Climate Justice in Climate Resilience**
  - **Objective:**
    - To recognize the importance of human rights happen on the planet
    - To abreast them with inequalities due to climate change with solutions
    - Expected role of stakeholders in ensuring climate justice
  - **Learning Outcomes:**
    - Advocates rights properly, focusing on women rights in particular advancing climate justice
    - Participation in climate resilient process and policy making
    - Protection of human rights and to recognize the dignity of planet
  - **Course Contents:**
    - Role of justice
      - Climate justice bridges the **human rights** and **development** to achieve:
        - » A human-friendly approach
        - » Safeguarding the rights of the most vulnerable people and sharing the burdens and benefits of climate change and its impacts equitably and justly.
    - Core Principles of climate justice:
      - Respect and protect human rights
      - Support the right to development
      - Share benefits and burdens equitably
      - Ensure that decisions on climate change are participatory/transparent/accountable
      - Highlight gender equality and equity
      - Harness the transformative power of education for climate resilience
      - Use effective partnerships with stakeholders to secure climate justice
    - **Xxxxxxx?????? (to be developed)**

# Course (Draft) Syllabus of Our Group (4)

- A short course proposed by Ms. Mahrukh Zahir



## *CLIMATE CHANGE*

- What is Climate Change ?
- Causes and Effects of Climate Change
  - Adaptation
- Policies Related To Climate Change

# Course (Draft) Syllabus of Our Group (5)

- A short course proposed by Ms. Mahrukh Zahir



## *ENVIRONMENTAL DEGRADATION IN PAKISTAN*

- Meaning & Definition
- Causes of Environmental Degradation In Pakistan
- Impacts of Environmental Degradation In Pakistan
- Impacts of Environmental Degradation In Pakistan on Females
- Impacts Environmental Degradation In Pakistan on Economy



# Course (Draft) Syllabus of Our Group (6)

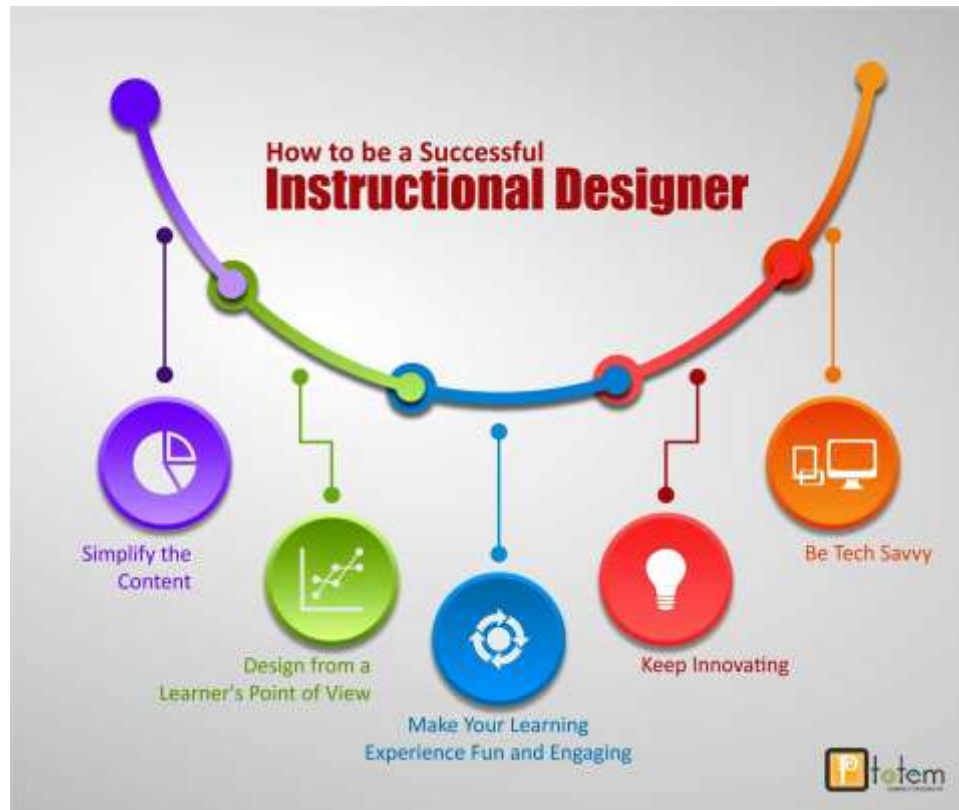
- A short course proposed by Ms. Mahrukh Zahir

## Why Women Are More Vulnerable to Climate Change



PRESENTED BY ,  
MARUKH ZAHIR  
LECTURER &  
ENVIRONMENTALIST ECONOMIST

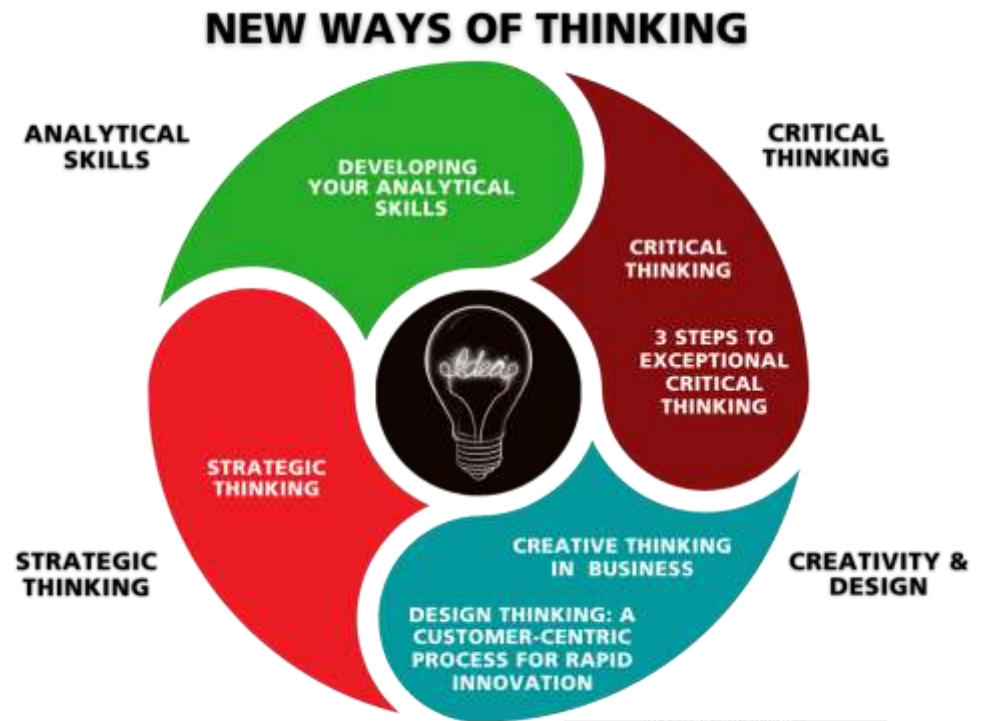
# Part IV: Different Courses about Climate Changes and Related Impacts/Issues





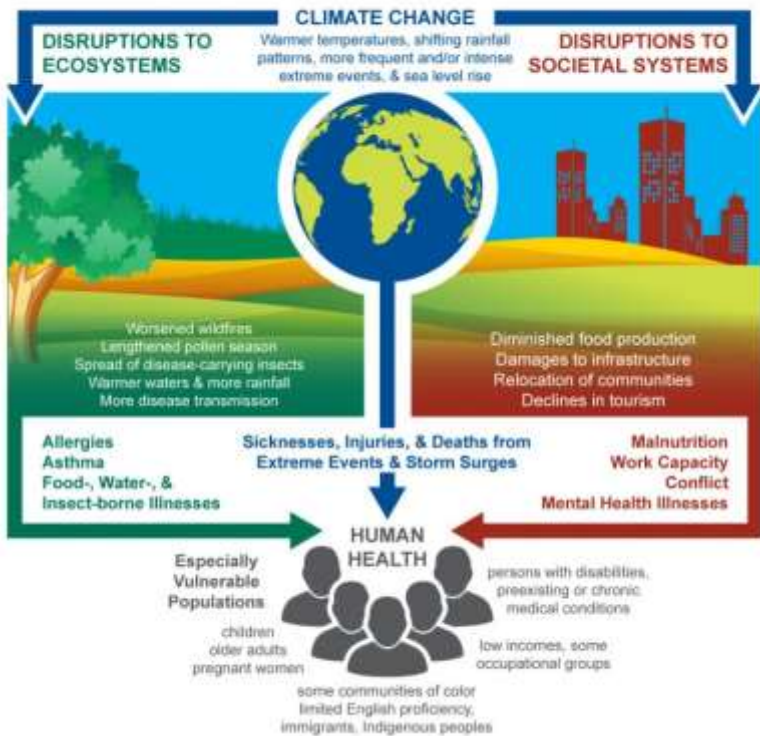
# Ways of Thinking in Course Design

- Your audience? A wide range of disciplines
  - STEM students
    - General Sci./Eng. (e.g., IT, Agri/Natural Sci.)
    - Civil Eng., Environ. Sci./Eng., Chem. Eng.
  - Social/human Sci./Edu./Fine Arts/Public Affairs
    - Journalism & Mass Communications
  - Law School
  - Business Adm./Medical School....
- Broader institutional focus/thinking
  - Difference between
    - Law school
    - Medical school
    - Business school
    - College of engineering
- Engagement of resources/knowledge
- Other factors
  - Environ/eco-factors
  - Global/cultural/social



# Focus to What?

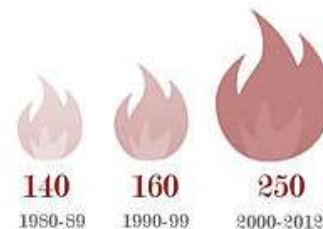
## The Impacts of Climate Change on Human Health



## % of People Who Notice Changes in Climate



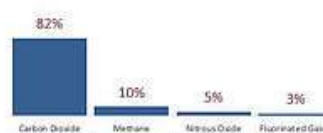
## Fires in the US by Decade



## How the Different Sectors Add to Emissions



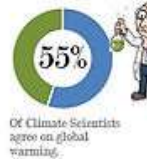
## Carbon Pollution by Gas



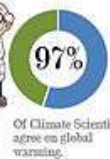
## In Danger...



## The Public Think...



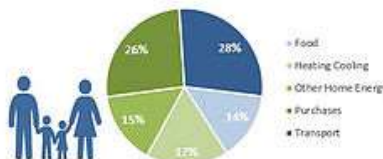
## But Really...



## Renewable Energy



## Household Causes of Energy Use



"We must reject the perennial prophets of doom and their predictions of the apocalypse"

I don't think it's a hoax. I think there's probably a difference. But I don't know that it's manmade.

It's freezing in New York — where the hell is global warming?

"The United States will join one trillion trees initiative"

The weather has been so cold for so long that the global warming HOAXSTERS were forced to change the name to climate change to keep \$ flow!

"I don't believe it."

The concept of global warming was created by and for the Chinese in order to make U.S. manufacturing non-competitive.



Donald J. Trump

"The environment is very important to me. Someone wrote a book that I'm an environmentalist"

The badly flawed Paris Climate Agreement protects the polluters, hurts Americans, and cost a fortune. NOT ON MY WATCH!

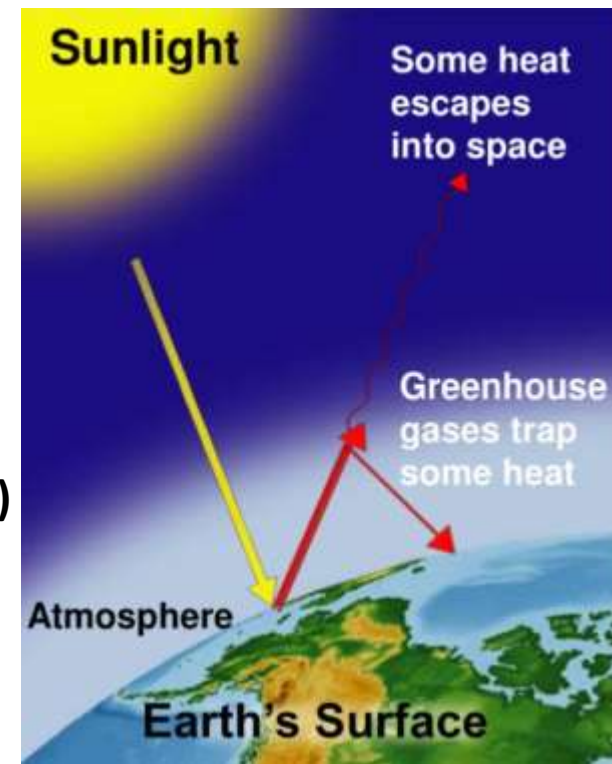
"I want the cleanest water on the planet. I want the cleanest air anywhere — crystal-clean water"

# Complexity of Climate Change



# Short Courses (for Sic. & Eng. Students) (1)

- **Example 1: Intro to Global Atmospheric Change (1 to 3 h)**
  - The atmosphere of earth and global temperature
  - Greenhouse effects and GHGs emissions
  - Global energy balance global warming
- **Example 2: Radiative Forcings of Climate Change (2 to 3 h)**
  - Direct and indirect forcings by GHGs, O<sub>3</sub>, aerosols, etc.
    - CO<sub>2</sub>/CH<sub>4</sub>/N<sub>2</sub>O/Halocarbons (e.g., CFCs, HCFCs, HFCs)
    - The earth's albedo = 0.31 & solar const = 1370 W/m<sup>2</sup>
- **Example 3: Global Warming Potential & GHGs Emissions (2 h)**
  - GWP index (for comparison between GHGs)
  - Carbon & other GHGs emissions and their rates
- **Example 4: Climate Change and its Direct Impacts (1 to 2 h)**
  - Projections of global mean/regional temperature change
  - Impacts on ocean (rising sea level, circulation, biological pump)
  - O<sub>3</sub> (in stratospheric/the Antarctic ozone hole → more UV exposure)



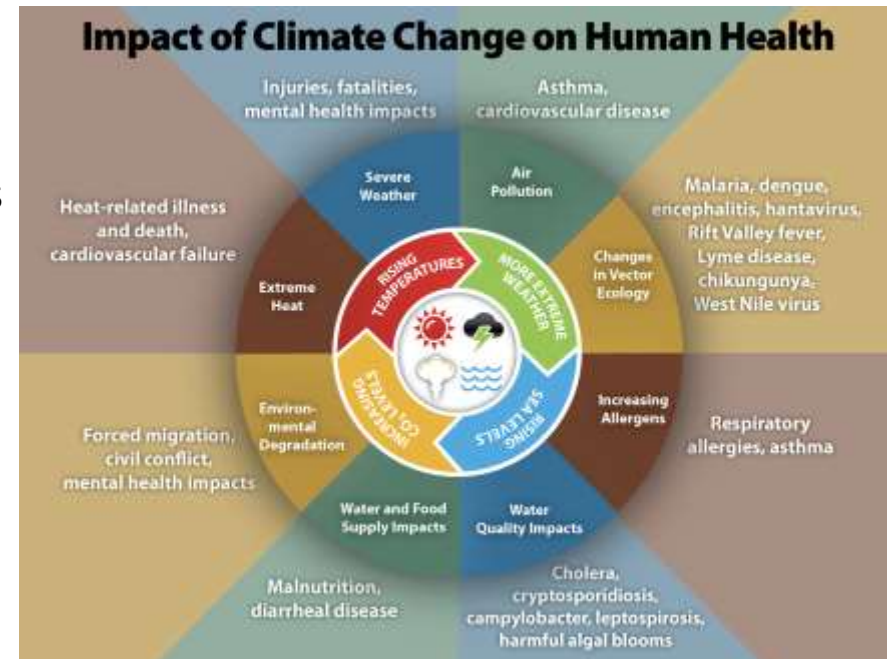
**Note:** at the undergraduate level in the US

- 1) Examples 1 to 4 may be taught as part of "Intro to Environ. Sci. & Eng." (8 to 10 h)
- 2) Examples 1 and 4 may be taught together to save time (maybe 2 to 3 h)

# Short Courses (for General Students) (2)

**Example 5: Climate Change Indicators.** USEPA has developed more than 50 climate change indicators that show changes over time and include more than 100 figures as graphs and maps. View the indicators by [search using the table below](#). Indicators by topics:

- Greenhouse gases (GHGs) (1 h)
  - GHGs emissions/conc./climate forcing
- Weather and climate (1 h)
  - Temp. (seasonal, high/low)/heat waves
  - Precipitation/tropical cyclone activity
  - Flooding/drought
- Oceans (1 h)
- Snow/ices (1 h)
- Health/society (1 h)
  - Lyme disease; west Nile virus
  - Heat (cold)-related deaths/illnesses
  - HVAC/residential energy use
  - Length of growing seasons/growing degree days/Ragweed pollen season
- Ecosystems (1 h)
  - Wildfires/stream flow/lake level & T/leaf & bloom days
  - Bird wintering days/marine species distribution



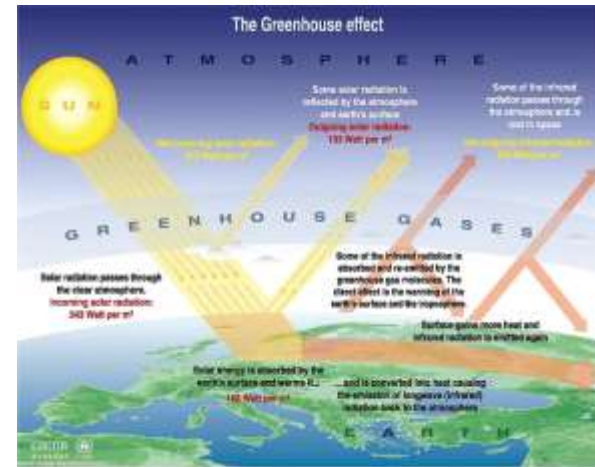
**Note:** Examples 1 to 5 can be combined in different ways for students in different majors

# Mid-length Courses (for General Students) (1)

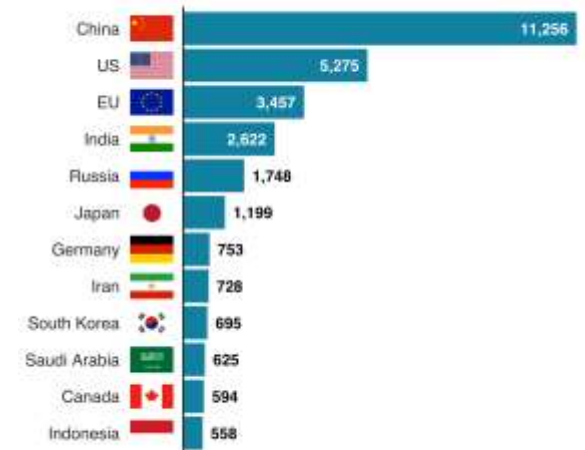
- **Example 6: Climate Change & its Major Impacts**

- Greenhouse effects and climate change (1 h)
- Direct impacts of climate change (2 to 5 h)
  - Global mean/regional temperature change
  - Rising sea level/ocean circulation/biological pump
  - O<sub>3</sub> (in stratospheric/the Antarctic ozone hole)
  - UV exposure ↑
- Impacts by sector (varied, maybe 10 to 20 h)
  - Agriculture and food supply/air quality/transportation
  - Built/natural environments (coasts, forests, landscapes, ecosystems)
  - Severe weather and hydrologic extremes
    - Extended drought/precipitation/cold/hot periods
    - Increased flooding with higher frequency
    - Water crisis & fresh/sea water resources
  - More threats of human health
  - Biodiversity and wildlife at risk
- Other impacts (2 to 4 h)
  - Social/economic impacts

**Note:** For undergraduates, it = 1.5 credits in the US if the course uses 24 h



**The world's top emitters of carbon dioxide**  
Megatonnes of CO<sub>2</sub> per year



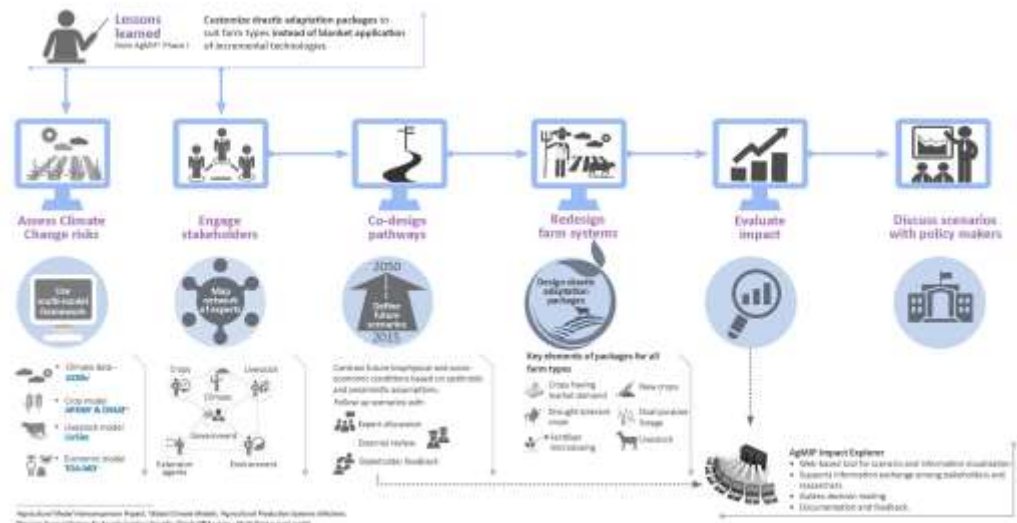
Note: One megatonne = 1,000,000 tonnes  
Source: EC, Emissions Database for Global Atmospheric Research, 2018 data

# Mid-length Courses (for General Students) (2)

- **Example 7: Coping with Climate Change**
  - Intro to climate change (2 h)
  - Techniques for mitigating climate (16 h)
    - GHG emissions↓(fossil fuel/coal usage↓)
    - Carbon capture and storage (CCS)
    - Adaptation (e.g., green energy)
  - Perceptions for mitigating climate (2 h)
    - Lifestyle and citizens' perceptions
    - Science and public perceptions
  - Change in education/training/outreach (3 h)
    - Understanding the current situation
    - A paradigmatic change in education
  - Challenges & controversies (1 h)



**Note:** For undergraduates, it = 1.5 credits if the course uses 24 h



# Mid-length Courses (for General Students) (3)

- **Example 8: Climate Change & Development of Sustainable Society**
  - Introduction to greenhouse effects and climate change (2 h)
  - GHG equivalencies and climate pollutants/their control (5 h)
    - GHG equivalence factors/GHG emissions/EPA's GHG calculator
    - Short- & long-lived climate pollutants and their control
    - Carbon (footprint) reduction
  - Meditation of climate change by Carbon storage/sequestration (CSS) (5 h)
    - Physical/chemical/biological methods
  - Introduction to sustainability and sustainable development (2 h)
    - Background/definition (e.g., United Nation's sustainable development goals)
    - Challenges/solutions & adaption and resilience
  - Dimensions and different aspects of sustainability (6 h)
    - Economic, ecological, social, technological and systems perspectives
    - Ethical aspects/education/human resource development for sustainability
  - Coping with climate change (4 h)
    - Resource recovery/reuse
    - Renewable energy
    - Green technologies

**Note:** For undergraduates,  
it = 1.5 credits if the course uses 24 h



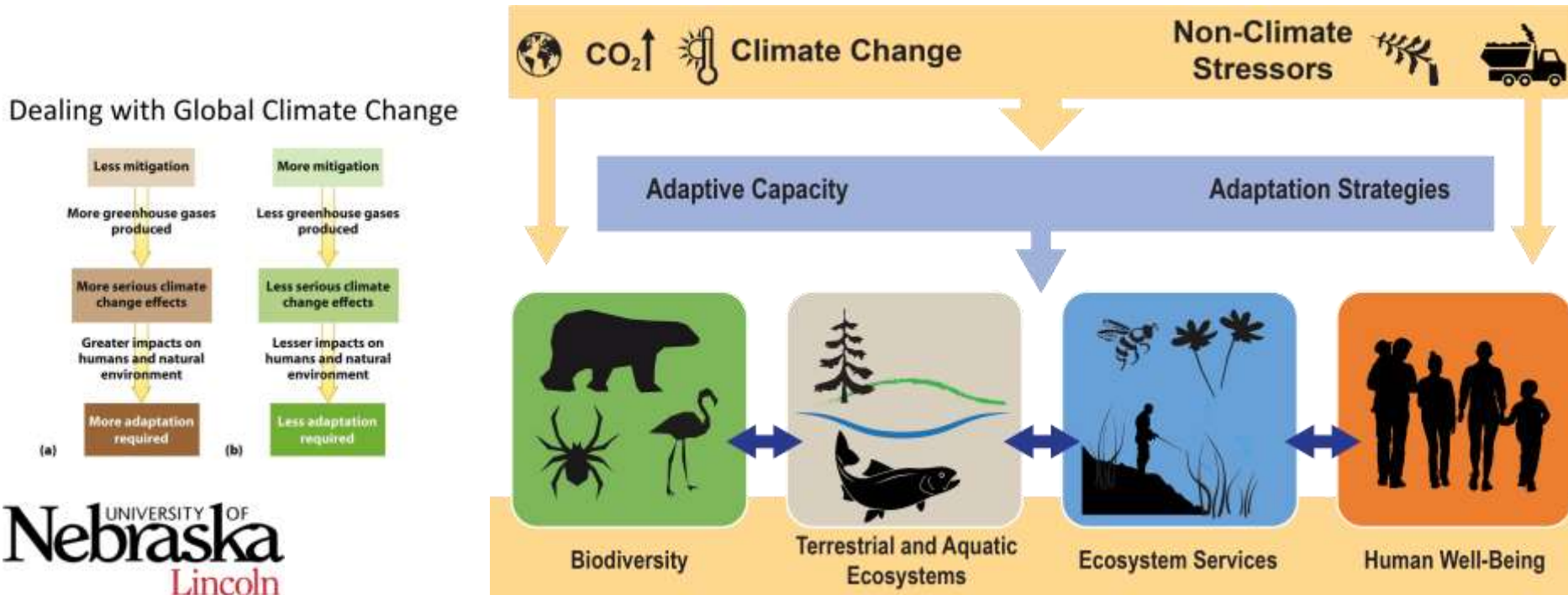


# Full-length Courses (1)

- **Example 9: Adapting to Climate Change**

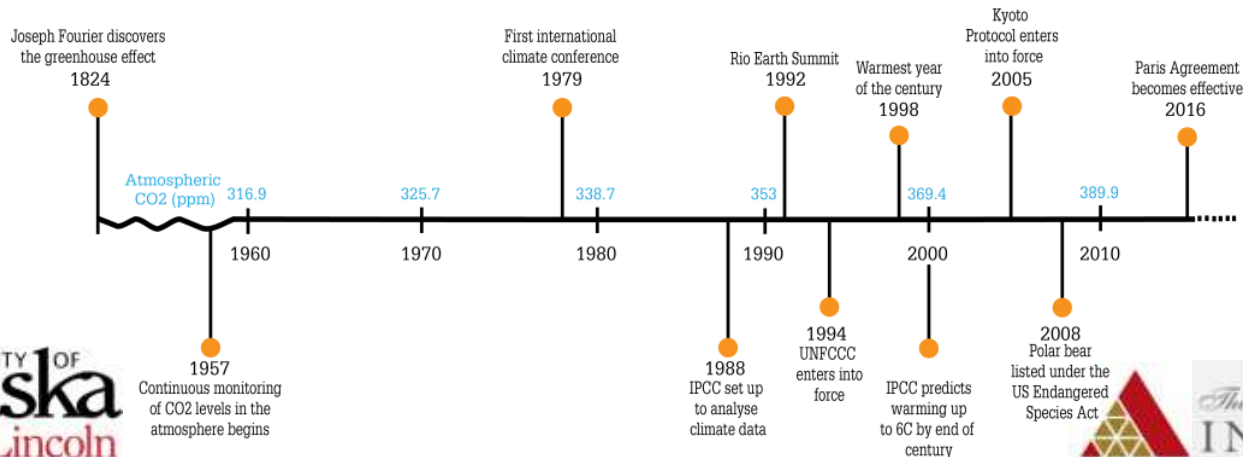
- Example 1: Introduction to Global Atmospheric Change (3 h)
- Example 2: Radiative Forcing of Climate Change (3 h)
- Example 3: Global Warming Potential & GHGs Emissions (3 h)
- Example 5: Climate Change: Indicators and impacts (15 h)
- Example 7: Coping with Climate Change (20 h)
- Example 8 (part): Development of sustainable society (4 h)

**Note:** For undergraduates, it = 3 credits in the US if the course uses 48 h in total 16 weeks



# Full-length Courses (2)

- **Example 10: Climate Change Law (3 credits in the US):** Orient students towards the state of US law with respect to global climate change
  - Understand the science behind climate change and the current state of the field
  - Introduce to international frameworks for climate change mitigation/adaptation
    - The United Nations framework convention on climate change
    - Recent efforts to achieve mitigation through international climate litigation
  - Examine the US (and, to some degree, international) law
    - The federal statutes (e.g., the Clean Air Act, the Federal Power Act, the Natural Gas Act, and the National Environmental Policy Act)
    - Regional initiatives (e.g., the Regional Greenhouse Gas Initiative and carbon adders in regional electricity markets)
    - State and local statutory and common laws (e.g., state climate laws, renewable portfolio standards and other electricity grid initiatives, and public nuisance law) being brought to bear to address climate change.
  - Institutions' roles—including legislative bodies, agencies, courts, private and non-governmental organizations—play in efforts to address climate change.



























# Where to Find Info?

- [350.org](http://350.org) International campaign that is building a movement to unite the world around solutions to the climate crisis. Their mission is to inspire the world to rise to the challenge of the climate crisis—to create a new sense of urgency and of possibility for our planet. The focus is on the number 350--as in parts per million CO2. Scientists say that if we can't get below that number, the damage we're already seeing from global warming will continue and accelerate.
- [Architecture 2030](#) Non-profit, non-partisan and independent organization whose mission is to rapidly transform the US and global Building Sector from the major contributor of greenhouse gas emissions to a central part of the solution to the global-warming, energy consumption, and economic crises.
- [Association for the Advancement of Sustainability in Higher Education \(AASHE\)](#)
- [Biochar](#) Charcoal used for agricultural purposes. Created using a pyrolysis process, heating biomass in a low oxygen environment. Once the pyrolysis reaction has begun, it is self-sustaining, requiring no outside energy input.
- [Biodiversity for a Livable Climate](#) Promotes the great potential of inexpensive, low-tech and powerful Nature solutions to the biodiversity and climate crises, and works to inspire urgent action and widespread implementation of many regenerative practices.
- [Biodiversity for a Living Climate](#) Collaborates with organizations around the globe to advocate for the restoration of soil, and of grassland, forest, wetland, coastal and ocean ecosystems—along with the associated carbon, water and nutrient cycles – to draw down excess atmospheric greenhouse gases, cool the biosphere, and reverse global warming, for the benefit of all people and all life on earth.
- [Climate + Energy Project](#) Supports lively, informed conversations about our energy future. Helps halt the Midwest's contributions to global warming and climate change. Supports the reduction of greenhouse gas emissions by increasing energy efficiency and developing renewable energies in a sustainable manner.
- [Climate Counts](#) A collaborative effort to bring consumers and companies together in the fight against global climate change.
- [Climate Science Centers](#) Provides scientific information, tools and techniques that land, water, wildlife and cultural resource managers and other interested parties can apply to anticipate, monitor and adapt to climate and ecologically-driven responses at regional-to-local scales.
- [Committee on Global Warming & Climate Change - House](#)
- [Committee on Global Warming & Climate Change - Senate](#)
- [Intergovernmental Panel on Climate Change](#) United Nations body for assessing the science related to climate change.
- [Kyoto Protocol](#) International agreement linked to the United Nations Framework Convention on Climate Change. Its major feature is a binding targets for 37 industrialized countries and the European community for reducing greenhouse gas (GHG) emissions by an average of 5% against 1990 levels over the five-year period 2008-2012.
- [Mothers Out Front](#)
- [Regeneration International](#) Project of the Organic Consumers Association and a 501(c)(3) nonprofit dedicated to building a global network of farmers, scientists, businesses, activists, educators, journalists, governments and consumers who will promote and put into practice regenerative agriculture and land-use practices that: provide abundant, nutritious food; revive local economies; rebuild soil fertility and biodiversity; and restore climate stability by returning carbon to the soil, through the natural process of photosynthesis.
- [Savory Institute](#) Livestock management brain trust that connects the dots between climate change, water scarcity, energy shortages, global health, food security and women's empowerment. Develops innovative tools and enhanced curricula, inform policy, establish market incentives, increase public awareness, and coordinate relevant research, cultivating relationships with aligned partners.
- [Soil4Climate: Restoring Soil to Reverse Global Warming](#) Nonprofit organization that advocates for soil restoration as a climate solution. We promote regenerative land management practices to capture atmospheric carbon and encourage collaboration with the larger body of climate activism.
- [U.S. Environmental Protection Agency](#) Provides information on climate change for communities, individuals, businesses, states, localities and governments.
- [United Nations Framework Convention on Climate Change](#) An international treaty signed by most countries in order to reduce global warming and cope with whatever temperature increases are inevitable.

# Summary

- **Understanding the gravity/complexity of climate change**
  - Unequivocal/mostly caused by human
  - Causing significant harm/getting worse quickly
  - Overwhelming info existed
- **Developing climate change across the curriculum**
  - Being practiced everywhere at different levels
  - Course contents depending on many factors
    - Culture and locations
    - Audiences (e.g., students, policy makers)
    - Topics & their broadness/depth vary (as per majors, time)
  - Developing modules/units is essential
    - Short-, mid-, and full-length courses
    - Their combinations for students with different majors
  - Keep yourself in current is important
  - Communicating with your peers and audiences

# Sample Files

Name	Date modified	Type	Size
 0-PPT-Intro to Climate Change Curriculum-TCZ-UNL-05062023.pptx	5/8/2023 4:27 PM	Microsoft PowerPoint...	28,498 KB
 Sample 1-1-1-Introductory e-course on Climate Change-05042023.pptx.pdf	5/4/2023 5:09 PM	Adobe Acrobat Docu...	1,266 KB
 Sample 1-1-2-Introduction to Climate-Smart Agriculture-05042023.pptx.pdf	5/4/2023 5:31 PM	Adobe Acrobat Docu...	5,323 KB
 Sample 1-2-1-Columbia Climate School MA in Climate & Society-Curriculum-Core Courses-05042023.pptx.pdf	5/4/2023 4:37 PM	Adobe Acrobat Docu...	1,155 KB
 Sample 1-2-2-Columbia Climate School MA in Climate & Society-Curriculum-Elective Courses-05042023.pptx.pdf	5/4/2023 4:40 PM	Adobe Acrobat Docu...	324 KB
 Sample 1-2-3-Climate Change and Business Program Courses-Columbia Business School.mhtml	5/4/2023 5:21 PM	Microsoft Edge MHT ...	414 KB
 Sample 1-3-1-Climate Change Related Courses-Duke Univ--05042023.xlsx	5/4/2023 7:47 PM	Microsoft Excel Work...	38 KB
 Sample 1-3-2-Internet Links - Climate Change - LibGuides at University of Massachusetts Amherst.mhtml	5/4/2023 8:32 PM	Microsoft Edge MHT ...	935 KB
 Sample 1-4-1-Univ of Miami-Climate Variability & Change Program-Climate Change Courses-05042023.pptx.pdf	5/4/2023 8:05 PM	Adobe Acrobat Docu...	525 KB
 Sample 1-4-2-Syllabus-Intro to Atmospheric Sci-05042023.pptx.pdf	5/4/2023 8:08 PM	Adobe Acrobat Docu...	57 KB
 Sample 1-4-3-Syllabus-Topics in Climate Dynamics-05042023.pptx.pdf	5/4/2023 8:09 PM	Adobe Acrobat Docu...	138 KB
 Sample 1-4-4-Syllabus-Climate and Society-05042023.pptx.pdf	5/4/2023 8:10 PM	Adobe Acrobat Docu...	164 KB
 Sample 1-4-5-Syllabus-Intro to Sci Policy-05042023.pptx.pdf	5/4/2023 8:12 PM	Adobe Acrobat Docu...	55 KB
 Sample 1-4-6-Syllabus-Climate Change and Sustainability-05042023.pptx.pdf	5/4/2023 8:22 PM	Adobe Acrobat Docu...	234 KB
 Sample 2-1-0-Stanford-Introduction to the Curriculum-MS-05062023.pdf	5/6/2023 1:04 PM	Adobe Acrobat Docu...	118 KB
 Sample 2-1-1-Stadford-Unit-1-LP1-HS-wholeunit.pdf	5/6/2023 1:17 PM	Adobe Acrobat Docu...	2,489 KB
 Sample 2-1-2-Stadford-Unit-2-LP2-HS-wholeunit.pdf	5/6/2023 1:17 PM	Adobe Acrobat Docu...	7,343 KB
 Sample 2-1-3-Stadford-Unit-3-LP3-HS-wholeunit.pdf	5/6/2023 1:19 PM	Adobe Acrobat Docu...	8,415 KB
 Sample 2-1-4-Stadford-Unit-4-LP4-HS-wholeunit.pdf	5/6/2023 1:20 PM	Adobe Acrobat Docu...	8,138 KB
 Sample 2-1-5-Stadford-Unit-5-LP5-HS-wholeunit.pdf	5/6/2023 1:20 PM	Adobe Acrobat Docu...	4,148 KB
 Sample 2-1-6-Stadford-Unit-6-LP6-HS-wholeunit.pdf	5/6/2023 1:19 PM	Adobe Acrobat Docu...	4,677 KB
 Sample 2-1-7-Stadford-Unit-7-LP7-HS-wholeunit.pdf	5/6/2023 1:19 PM	Adobe Acrobat Docu...	16,786 KB
 Sample 3-1-1-Draft Syllabus-Jurisprudential Approach of Environmental Laws and Policies-Johar-04192023.docx	5/4/2023 10:37 PM	Microsoft Word Doc...	22 KB
 Sample 3-2-2-Why women are more vulnerable to climate change-Mahrukh-Zahir.pdf	5/6/2023 2:13 PM	Adobe Acrobat Docu...	493 KB

# Questions?

# Thank You!