

IB532 Global Change and Sustainability

Course Overview

This fully online, 8-week course examines how on-going global change affects the world around us, and how sustainability might lessen the effects. As fuel sources diminish and the human population grows exponentially, the need for conserving Earth's resources have never been greater. Climate change, which will be the focus of early modules, adds an additional challenge because climate determines the biological structure of an ecosystem and the rate at which bio-geo-chemical processes take place. Climate change ultimately leads to global change because a region's climate controls all anthropogenic activity. This course explores how to make better use of the Earth's natural resources with little to no damage to the ecosystem (sustainability).

Course Goals and Objectives

Upon completing this course, students will:

- Understand how climate and biology are interrelated.
- Understand how ecological principles relate to understanding environmental problems.
- Recognize the nature and importance of ecosystem services.
- Define the causes of global climate change.
- Have a solid understanding of how humans affect global change.
- How climate change might affect human societies directly or indirectly by altering the ecosystems around us.
- Be able to explain the importance of sustainability as a key concept.
- Be able to explain how sustainability might help human societies through sustainable development, sustainable harvesting, etc.
- Be able to make predictions about the future of American resources.
- Be better able to teach middle- and high-school students about global change and sustainability.

Academic Calendar

A course week is defined as the period between Monday, 12:00 AM Central Time and Sunday, 11:55 PM Central Time.

For more information, see the [University's Academic Calendar](#).

Course Structure

This is a **4-credit hour** course. The course is **8 weeks** long and consists of 8 content modules. Please be aware that this course is accelerated in nature; 16 weeks' worth of content will be covered in a 8-week time span. You should dedicate approximately **12-16 hours** per week to working on the course itself, but actual time commitments will vary depending on your input, needs,

and personal study habits. You should be logging into the course **every day** to keep up with the workload and meet deadlines.

This course is designed with the principles of collaborative learning, constructivism, and active participation in mind. You are encouraged to share your thoughts and engage in problem-solving. The course has a consistent and predictable structure, organized around the weekly modules, with a course website that is straightforward and easy to navigate. Instructions and due dates for activities and assignments are clearly articulated so that you know what is expected of you and will be able to easily stay on track.

We realize that you have a life beyond the scope of this course. However, if you are unable to complete an assignment because of professional obligations, you should notify the instructor or, better yet, prepare the assignment ahead of time and post it early. This will give your classmates a head start in reading and responding to your work. Most assignments are due by 11:55 PM on their respective due dates as listed on the course calendar, giving you and your classmates time to read and comment on each other's work before the next module begins.

Readings and responses to discussion questions should be read and submitted during the module for which they are assigned in order to get the most benefit from the discussions. At the end of each content module, participants will have an opportunity to make sure that they have completed all the required activities and assignments.

Textbooks

There are no formal textbooks for this course. Rather, please refer to the optional books of interest, websites, and e-Reserve information listed in the overview of each weekly module.

Course Components

This course will consist of the following components:

Weekly Overviews

Each week will begin with a weekly overview, which will explain what the module is about, what learning goals you are expected to achieve, how long the module will take, and in what activities you will participate. Each week is designed with the same structure and activities unless otherwise specified. Weekly instructional activities are explained in greater detail below. Due dates of specific assignments appear on each week's overview page.

Lessons and Readings/Resources

Each module will contain a list of lessons (recorded lectures) and assigned readings/resources. In some cases, optional or supplemental readings and curriculum materials may be listed for further study. Lessons cover major topics from the readings but do not necessarily include all important information from the readings. Questions within lectures will be graded for participation, but since this is a majority of the work within this course, the Lesson Participation category will account for 20% of your overall grade.

Live Sessions

Each week there will be a synchronous session in which all students will join together online at the same time to talk. These sessions will use *Blackboard Collaborate* to join all participants together in a session where you can text chat, voice chat, and see the computer desktop of the instructor. You

are not required to attend these sessions live, but material covered on them is fair game for assessments and they are important to feel part of a learning community. Additionally, attending the lectures live is one way to add to your point total within the Community Participation portion of your grade for this course. The recordings of the live sessions will be available after each session, thus if you are unable to attend a live session you may view the recording of it.

Assignments

There are several assignments in this course that will make up your Assignment grade:

- **Discussion Forums**

Each week, you will answer discussion questions. There will be two parts to your discussion grade. First, you will create an **Initial Post** which answers the discussion question/task. Next, you will post two **Replies** to your peer's posts giving them constructive feedback. You are also encouraged to facilitate the thread within your original post by responding to those who reply to your initial post.

- **Current Events**

It is important that you understand the events that are happening across the world and how they are related to the topics discussed in this course. This assignment should encourage you to form a reasoned opinion on the issues presented in the course and get you to explore your mindset as a biologist on various topics that are discussed in the popular media, as well as analyzing media for bias. Your experiences as a scientist and as a teacher are critical when it comes to the topics discussed in this course.

- **Reflections**

Every week take a moment for reflection when you are (almost) done with the Module. Consider the topic or topics addressed during the module (readings, lessons, discussion forum, current events, etc.). What was your initial knowledge about the topics? Has your thinking changed based on your current understanding of the topic or topics discussed? Your reflection should include insights gained from interactions with your peers, your own self-reflections about the importance of this topic, insights gained from the additional readings provided in this module, etc. How might new knowledge about the topic be incorporated into your own teaching?

Quizzes

At the end of each module, students will take a self-paced quiz to evaluate new knowledge obtained (from lecture, readings, videos, synchronous discussion, etc.). This will be a mixture of multiple choice, true/false, matching, and short answer questions.

Community Participation

Community participation points are primarily intended to encourage the establishment of a community learning & teaching environment. You can earn participation points by attending live sessions, posting in the Q&A and social forums.

Peer-Reviewed Teaching Tool Project

As a final project for the course you are tasked to create a Teaching Tool related to a topic discussed in the course. This tool has to be creative, yet informative. The tool can be a video,

podcast, comic, etc. etc. Once your project has been submitted your peers will grade your project, and you will grade your peers.

A note about sources of information: It is highly recommend that you only consult sources from the Reputable Sources list, and, of course, peer-reviewed articles available to you through our fantastic UIUC library. Use of another source (such as Internet sites found via Google) may provide information that is unreliable.

Topical Course Outline

- Week 1: Human Population/Ecological Footprints
- Week 2: Climate change
- Week 3: Biodiversity and Lessons from the past
- Ecosystem services
- Week 4: Biological Invasions
- Week 5: Introduction to Sustainability
- Week 6: Sustainable harvest
- Week 7: Conventional Energy
- Week 8: Alternative Energy

Grading

Grading Distribution

Category	Grade Weight
Assignments	40%
Lesson Participation	20%
Quizzes	20%
PRTT Project	15%
Community Participation	5%
Total	100%

Grading Scale

Percentage	Letter Grade
97-100	A+
94-96.5	A
90-93.5	A-

87-89.5	B+
84-86.5	B
80-83.5	B-
77-79.5	C+
74-76.5	C
70-73.5	C-
67-69.5	D+
64-66.5	D
60-63.5	D-
Below 59.5	F

Additional Important Information

In addition to the information found on this page, the following pages contain essential information about this course:

- **Policies**
- **Instructor Information**

Accommodations

To obtain disability-related academic adjustments and/or auxiliary aids, students should contact both the instructor and the Disability Resources and Educational Services (DRES) as soon as possible. You can contact DRES at 1207 S. Oak Street, Champaign, (217) 333-1970, or via email at disability@illinois.edu.