

IB 532: Global Change and Sustainability

Course Overview

This 4-credit hour, fully online, 8-week course examines how on-going global change affects the world around us, and how sustainability might lessen the effects. This online course uses Moodle available at learn.illinois.edu as our learning management system (LMS). 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).

Instructor Information

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Student Learning Outcomes

Upon completing this course, students will be able to:

- relate how climate and biology are interrelated.
- explain how ecological principles relate to understanding environmental problems.
- recognize the nature and importance of biodiversity and ecosystem services.
- synthesize and analyze evidence on the causes and drivers of global climate change.
- relate how humans affect this global change.
- interpret how climate change might affect human societies directly or indirectly by altering the ecosystems around us.
- model the importance of sustainability as a key concept.
- evaluate how sustainability might help human societies through sustainable development, sustainable harvesting, etc.
- make predictions about the future of American and global resources.
- better facilitate middle- and high-school students as they learn 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

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 reading/video lessons) and assigned readings/resources. Lessons will be mainly reading-focused towards the end of the course so as to allow you more flexibility in your timing for our end of term project. 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 and effort, but since this is a majority of the work within this course, the Lesson Participation category will account for 30% of your overall grade. Expectations for answering the in-lesson questions include evidence of critical thinking on the lesson content--a good faith effort to reflect on the questions. This space in the lesson is mainly for you to think critically and creatively about the lesson content--be prepared to write here! You can always save a return to your work at any point during the lessons. Feel free to post out in the Q & A Forum for any further clarification.

Live Sessions

Each week (excluding week 1) on Tuesday nights from 7pm-8pm there will be a synchronous session in which all students will join together online at the same time to talk. These sessions will use *Zoom* to join all participants together in a session where you can text chat, video/voice chat, and see the computer desktop of the instructor. These sessions will typically involve a guest lecturer from UIUC presenting on their research and a Q & A session, or a series of group activities/discussions. You are not required to attend all of these sessions live (you can view a recording and make-up any participation work if needed), 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.

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?

Community Participation

Community participation in an online learning environment is essential to your commitment to engagement with our course. Thus, 10% (100 points total) of your overall course grade will come from a measure of your participation in our weekly live sessions, involvement in our Social Forum, and in our Q & A Forum. Ways to attain points in this Community Participation category are listed below.

- 20 points: Social Forum/Twitter/Facebook* postings and replies. Each post is worth 6 points and each reply is worth 4 points. (For a maximum of 20 points)
- 20 points: Q & A Forum postings and replies. Each post is worth 6 points and each reply is worth 4 points. (For a maximum of 20 points)
- 60 points: Live Session Attendance. Each live session you attend is worth 20 points. (For a maximum of 60 points)

Actually, we hope you will not see this "participation" as another box to check. We want to encourage you to share your findings and thoughts, sometimes beyond just the people in the course. It will be easy and is bound to be fun and fulfilling.

*If you are not inclined to participate in online social media, be sure to use the Social Forum created here in Moodle just for our course. On Facebook, search for: SIB OMST Student and Faculty Group (it is a closed Facebook group-- we will review your request to be part of the group.) Also note, Twitter postings must have the #IB532 hashtag to receive credit.

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. Once your project has been submitted your peers will grade your project, and you will grade your peers. In satisfying the College of Liberal Arts and Sciences requirement that at least 20% of an online course's grade come from work that has the students identify verified, you will be required to show your face at least briefly on camera for this project.

A note about sources of information: It is highly recommended 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 and Instructional Activities

- Week 1: Human Population/Ecological Footprints
- Week 2: Climate Change

- Week 3: Climate Change and Biodiversity
- Week 4: Ecosystem Disturbances
- Week 5: Ecosystem Services and Lessons from the Past
- Week 6: Sustainability
- Week 7: Sustainable Harvest
- Week 8: Conventional and Alternative Energy

Instructional Activities. Each week, we will follow a schedule such as this:

Deadline*	Estimated Time to Complete	Activity
Tuesday, Week 1	1 hr	Orientation Activities <ul style="list-style-type: none"> • Orientation Quiz • Getting to Know Your Classmates • How to Research Scientific Literature
Skip this week	---	Week 1 Live Session is not taking place. Instead, please complete the orientation activities with this time. Other weeks, this will be held from 7-8pm on Tuesdays via Zoom. (See the Live Session Zoom link at the top of the page)
Thursday, Week 1	8 hrs	Week 1 Lessons and Resources
Friday, Week 1	2 hrs	Week 1 Discussion (Initial Post)
Saturday, Week 1	1 hr	Week 1 Current Events
Sunday, Week 1	2 hrs	<ul style="list-style-type: none"> • Week 1 Discussion (Replies) • Week 1 Reflection
All semester	---	Feedback Survey: You can leave us feedback on how lessons are structured and topics you would like us to cover here. Any feedback is highly appreciated. We are trying to have this course be as much as possible for your benefit, and we need your feedback to do so! Note, you may need to authenticate with your Illinois Google Apps to use this Google Form.

* All deadlines are 11:55pm CST unless otherwise noted ([time zone conversion](#))

Grading

Most assignments in the course are worth 100 points, unless otherwise noted.

Grading Distribution

Category	Grade Weight
Assignments	40%
Lesson Participation	30%
PRTT Project	20%
Community Participation	10%
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

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.

Inclusivity

In forming an inclusive course, we mean a course that values and creates space for all identities such as those based on ethnicity, culture, sexual identity, gender identity, religious identity and beyond. Research shows that inclusive courses allow for better learning outcomes, a more positive learning experience, better community, and better leadership training in engaging humanity.

In order to create an inclusive space in this course, we must all work to collaboratively create a safe and respected space that supports and encourages everyone to share their views and concerns. We must value multiple perspectives and experiences, while also reducing student experiences of marginalization. We must treat each other as individuals.

In working toward a more inclusive environment, we will review how many academic fields, including science, have marginalized certain people.

Finally, students are encouraged to share any feedback on how instructors, TAs, or fellow students could work to better create this inclusive space. Feedback can be given to the instructor at any time, anonymously using this form (you may need to access this form via your [Illinois Google Apps account](#), but know that the form is still anonymous).

Academic Integrity

Academic dishonesty will not be tolerated. Examples of academic dishonesty include the following:

- Cheating
- Fabrication
- Facilitating infractions of academic integrity
- Plagiarism
- Bribes, favors, and threats
- Academic interference
- Examination by proxy
- Grade tampering

- Non-original works

Should an incident arise in which a student is thought to have violated academic integrity, the student will be processed under the disciplinary policy set forth in the [Illinois Academic Integrity Policy](#). If you do not understand relevant definitions of academic infractions, contact your instructor for an explanation within the first week of class.

Additional Important Information

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

- Course Policies
- Instructor Information