

IB 532: Sustainability & Global Change

Spring 2023 Syllabus

Course Overview

- CRN 65956; 4 credit hours
- Online, asynchronous via Moodle at learn.illinois.edu
- Synchronous session via Zoom, Tuesdays from 7:00-8:30pm CST
- Instructor: Allison O'Dwyer (she/her), Instructor, School of Integrative Biology
 - Office Hours: By appointment in Natural History Bldg. Room 2012 or Zoom
 - Contact: aodwyer@illinois.edu

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).

Course restricted to OMST or Integrative Biology graduate students in master's degree programs.

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.

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

IB 532 is an online, graduate-level, 4-credit course. In a graduate-level, 4-credit course, the student should be expected to devote at least 6-8 hours per week learning the advanced topics of this course (through video lectures and readings), and at least 8-16 additional hours per week on homework assignments and class projects. The instructor will be available for consultation online and/or face-to-face for students who may be on campus. 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.

In this course, a Module starts on MONDAY at 12:00 AM Central Time and ends on SUNDAY (+1 week) at 11:59 PM Central Time. Assignments are due by 11:55 PM CST, unless otherwise specified.

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 required readings and resources listed in the overview of each weekly module. As this is a graduate-level course, students should be prepared to consume and communicate your understanding of multiple primary and secondary literature sources and peer-reviewed journal articles weekly—skills we also develop within the course.

Grading

All assignments in the course are worth 100 points, with the following distribution and scale:

Grading Distribution

Category	Weight
Lessons and Resources	30%
Assignments	40%
PRTT Project	20%
Community Participation	10%
Total	100%

Grading Scale

Letter Grade	Percentage
A+, A, A-	97-100, 94-96.5, 90-93.5
B+, B, B-	87-89.5, 84-86.5, 80-83.5
C+, C, C-	77-79.5, 74-76.5, 70-73.5,
D+, D, D-	67-69.5, 64-66.5, 60-63.5
F	Below 59.5

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 Resources—30%, 6-8 hours/week

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 (around 8-10 hrs/week and more than 2000 words), the Lessons and Resources 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. In total, you will complete 20 lessons, each worth 100 points, evaluated according to our Lessons Rubric.

Assignments—40%, 6-8 hours/week

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 in a 500–1000-word essay. 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. In total, there are eight discussion grades worth 100 points each, evaluated according to our Discussion Rubric.

Science in Media Analysis

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. These 500-word analysis assignments 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 science communicator are critical when it comes to the topics discussed in this course. In total, there are six Science in Media Analysis grades worth 100 points each, evaluated according to our Science in Media Analysis Rubric.

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 and/or science communication? In total, there are seven weekly reflections worth 100 points each, evaluated according to our Reflections Rubric.

Community Participation—10%, 2-3 hours/week

Community participation in an online learning environment is essential to your commitment to engagement with our course. Additionally, in sharing resources as educators, biologists/engineers, and community members, we can amplify the impact of this course in your own classrooms and professional lives. 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.

Live Sessions

Each week (excluding week 1) on Tuesday nights from 7pm-8:30pm there will be a synchronous session in which all students will join online at the same time to discuss the course. 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. Active participation includes being prepared with required pre-reading content, providing feedback to peers, speaking and listening in groups, and asking questions of peers and speakers. In total, there are seven Live Sessions, evaluated according to our Live Session Participation Rubric.

Forum Participation

- 20 points: Social Forum postings and replies. Each post is worth 6 points and each reply is worth 4 points (for a maximum of 20 points total). Ideas for posts include:
 - K-12 Resources/Lesson Plans related to bioinspiration
 - Current Events/News articles related to bioinspiration
 - Reply to any post with meaningful commentary
- 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 total). Ideas for posts include:
 - Any non-personal (i.e. grade-related) questions related to the course
 - Reply to any question asked
- 60 points: Live Session Attendance. Each live session you attend is worth 20 points. (For a maximum of 60 points)

Actually, the hope is you will not see this "participation" as another box to check. Instead, students are encouraged to share findings and thoughts, sometimes beyond just the people in the course. It will be easy and is bound to be fun and fulfilling.

Peer-Reviewed Teaching Tool Project—20%

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. Student choice is built into this tool as it can be in the form of a video, podcast, comic, interview, etc. To increase accessibility in the course, you will also submit a written transcript. Once your project has been submitted in accordance with the rubric, your peers will grade your project, and you will grade your peers as we model the peer-review process. 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 student's identity verified, you will be required to show your face at least briefly on camera for this project.

This project is worth 300-points in total. Your first grade is earned from a 100-point PRTT Proposal evaluated according to the PRTT Proposal Rubric. For your final PRTT score, you will receive two separate 100-point scores, one for your final PRTT Project submission (peer-evaluated) and one for your PRTT Project assessment score, which evaluates the effectiveness of your peer evaluation. See the PRTT Project for rubrics on all three scores.

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.

Tentative Course Schedule

Week	Topic	Major Assignments Due
1 (Jan 17)	Module 1: Human Population/Ecological Footprints	<ul style="list-style-type: none">• Orientation Activities• Module 1 Lessons and Resources• M1 Discussion (post, replies)• M1 Current Events• Reflection
2 (Jan 23)	Module 2: Climate Change	<ul style="list-style-type: none">• Module 2 Lessons and Resources• Synchronous Session (Tues 7pm)• M2 Discussion (post, replies, wrap-up)• M2 Current Events• Reflection
3 (Jan 30)	Module 3: Climate Change & Biodiversity	<ul style="list-style-type: none">• Module 3 Lessons and Resources• Synchronous Session (Tues 7pm)• M3 Discussion (post, replies)• M3 Current Events• Reflection

4 (Feb 6)	Module 4: Ecosystem Disturbances	<ul style="list-style-type: none"> • Module 4 Lessons and Resources • Synchronous Session (Tues 7pm) • M4 Discussion (post, replies) • M4 Current Events • Reflection
5 (Feb 13)	Module 5: Ecosystem Services and Lessons from the Past	<ul style="list-style-type: none"> • Module 5 Lessons and Resources • Synchronous Session (Tues 7pm) • M5 Discussion (post, replies) • M5 Current Events • Reflection
6 (Feb 20)	Module 6: Sustainability	<ul style="list-style-type: none"> • Module 6 Lessons and Resources • Synchronous Session (Tues 7pm) • M6 Discussion (post, replies) • M6 Current Events • Reflection • PRTT Project Proposal
7 (Feb 27)	Module 7: Sustainable Harvest	<ul style="list-style-type: none"> • Module 7 Lessons and Resources • M7 Discussion (post, replies) • M7 Current Events • Reflection • PRTT Project Submission
8 (Mar 6)	Module 8: Conventional and Alternative Energy	<ul style="list-style-type: none"> • Module 8 Lessons and Resources • Synchronous Session (Tues 7pm) • M8 Discussion (post, replies) • Reflection • PRTT Project Peer Grading

Getting Help

The instructor is available for either in-person or virtual office hours by appointment. Please do not hesitate to reach out to set up an appointment to meet in person or virtually. Contact the instructor at aodwyer@illinois.edu (Allison O'Dwyer). To better facilitate our community, please only contact your instructor directly via email if you have a personal question.

For all other questions about course content, activities, deadlines, technical problems, etc., please check the General Q & A forum to see if someone else has already asked your same question and received a response. If your question isn't there yet, post your question to the General Q & A forum. Feel free to help your peers out if you know the answer! Your instructor will also respond on this forum as well, so rest assured, we will all help to find answers! If you have technical problems with the course, please fill out this form:

<http://www.atlas.illinois.edu/support/teaching/moodle/student/>

Accommodations

To obtain disability-related academic adjustments and/or auxiliary aids, students must contact both the instructors and the Disability Resources and Educational Services (DRES) as soon as possible (<https://www.disability.illinois.edu>). You can contact DRES at 1207 S. Oak Street, Champaign, (217) 333-4603 (V/TTY), or via email at disability@illinois.edu.

Attendance

It is realized that you have a life beyond the scope of this course. However, if you are unable to complete an assignment/attend class because of other obligations, you should notify the instructor(s) ahead of time. It is good practice to prepare/post any assignments early before a planned absence. Unexcused late work will receive a 10% per day penalty.

Regular class attendance is expected of all students, but the lowest participation score for synchronous session attendance will be dropped to allow for extenuating circumstances, particularly as instructors realize many are still dealing with the effects from the Covid pandemic.

Again, students should inform instructors in advance of missing class and generally adhere to the guidelines specified in the UIUC Student Code (http://studentcode.illinois.edu/article1_part5_1-501.html).

Diversity, Equity, and Inclusion (DEI)

In forming an inclusive course, it is meant 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.

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.

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 instructors at any time, anonymously using our [Inclusivity Feedback Form](#) (you may need to access this form via your Illinois Google Apps account but know that the form is still anonymous).

Support

Basic needs insecurity is common among college students and the negative impacts are real:

- Increases difficulty in concentrating and studying, lowers retention, and decreases graduation rate.
- Generates and/or elevates depression, anxiety, insomnia, headaches, and burnout.
- Lowers morale and motivation, reduces creativity, hinders communication, decreases productivity, increase absenteeism, and decreases social opportunities.

Students who are hungry, burned-out, depressed, preoccupied with issues like money are less likely to succeed academically, socially, and personally. If at any point in the semester you are struggling with mental health issues (anxiety, depression, grief, PTSD, addiction, cultural struggles, coming out, etc.), inconsistent access to nutritious foods, housing or financial instability, or lack of access to any other basic needs, know that I have an open door and can help point you to the many resources on campus to help. Seeking support is healthy and courageous.

Mental Health

Significant stress, mood changes, excessive worry, substance/alcohol misuse or interferences in eating or sleep can have an impact on academic performance, social development, and emotional wellbeing. The University of Illinois offers a variety of confidential services including individual and group counseling, crisis intervention, psychiatric services, and specialized screenings which are covered through the Student Health Fee (see <https://wellness.illinois.edu>). If you or someone you know experiences any of the above mental health concerns, it is strongly encouraged to contact or visit any of the University's resources provided below. Getting help is a smart and courageous thing to do for yourself and for those who care about you.

- Counseling Center (217) 333-3704
- McKinley Health Center (217) 333-2700
- National Suicide Prevention Lifeline (800) 273-8255
- Rosecrance Crisis Line (217) 359-4141 (available 24/7, 365 days a year)
- If you are in immediate danger, call 911.

Community of Care

As members of the Illinois community, we each have a responsibility to express care and concern for one another. If you come across a classmate whose behavior concerns you, whether in regard to their well-being or yours, your instructor(s) encourage you to refer this behavior to the Student Assistance Center 217-333-0050

or <http://odos.illinois.edu/community-of-care/referral/>). Based on your report, the staff in the Student Assistance Center reaches out to students to make sure they have the support they need to be healthy and safe.

Further, it is understood the impact that struggles with mental health can have on your experience at Illinois. Significant stress, strained relationships, anxiety, excessive worry, alcohol/drug problems, a loss of motivation, or problems with eating and/or sleeping can all interfere with optimal academic performance. All students are encouraged to reach out to talk with someone, and make sure you are aware that you can access mental health support at McKinley Health Center (<https://mckinley.illinois.edu/>). Or the Counseling Center (<https://counselingcenter.illinois.edu/>). For urgent matters during business hours, no appointment is needed to contact the Counseling Center. For mental health emergencies, you can call 911.

Food Assistance and Wellbeing Program

Among college students, 35-51% report experiencing food insecurity. At UIUC around 1 in 5 students experience food insecurity. Proper nutrition has been linked to positive brain function and better academic outcomes; don't settle for the "right of passage" of living on cheap, processed food. There are several community and campus resources to get you the nutrition you need to succeed. You can find them here: <https://odos.illinois.edu/community-of-care/resources/students/food-resources/>

Instructor Responses and Office Hours

Questions posted via email or to the Course Q & A forum generally will be answered within 48 hours. Students are encouraged to answer questions posted by other students to the Course Q & A forum rather than waiting for an instructor's response.

Another way to communicate with the instructors is to make use of the virtual office hours. The instructors will be available for office hours via Zoom by scheduled appointment (just email us!).

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 work

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, using the FAIR system (<https://studentcode.illinois.edu/article1/part4/1-401/>). If you do not understand relevant definitions of academic infractions, contact your instructors for an explanation within the first week of class.

Copyright

Student Content

Participants in University of Illinois courses retain copyright of all assignments and posts they complete; however, all materials may be used for educational purposes within the given course. In group projects, only the portion of the work completed by a particular individual is copyrighted by that individual. The University of Illinois may request that students' materials be shared with future courses, but such sharing will only be done with the students' consent. The information that students submit during a course may, however, be used for the purposes of administrative data collection and research. No personal information is retained without the students' consent.

Non-Student Content

Everything on this site and within University of Illinois courses is copyrighted. The copyrights of all non-student work are owned by the University of Illinois Board of Trustees, except in approved cases where the original creator retains copyright of the material. Copyrights to external links are owned by or are the responsibility of those external sites. Students are free to view and print material from this site so long as

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- Copies of any material include the respective copyright notice.

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Student Behavior

Student Conduct

Students are expected to behave in accordance with the penal and civil statutes of all applicable local, state, and federal governments, with the rules and regulations of the Board of Regents, and with University regulations and administrative rules. For more information about the student code and handbook, see academic integrity policy and procedure (<https://studentcode.illinois.edu/article1/part4/1-402/>).

Netiquette

In any social interaction, certain rules of etiquette are expected and contribute to more enjoyable and productive communication. The following are tips for interacting online via e-mail or discussion board messages, adapted from guidelines originally compiled by Chuq Von Rospach and Gene Spafford (1995):

- Remember that the person receiving your message is someone like you, deserving and appreciating courtesy and respect.
- Be brief; succinct, thoughtful messages have the greatest effect.
- Your messages reflect on you personally; take time to make sure that you are proud of their form and content.
- Use descriptive subject headings in your e-mails.
- Think about your audience and the relevance of your messages.
- Be careful when you use humor and sarcasm; absent the voice inflections and body language that aid face-to-face communication, Internet messages are easy to misinterpret.
- When making follow-up comments, summarize the parts of the message to which you are responding.
- Avoid repeating what has already been said; needless repetition is ineffective communication.
- Cite appropriate references whenever using someone else's ideas, thoughts, or words.