

# ADSB 3000 - Global Environmental Change and Human Health 4 Credits

Woods College of Advancing Studies, Boston College

Spring 2023 Semester,

January 17 – May, 10 2023

Instructor Names: Mark Chandler

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**Best way to contact**

**Office Hours:** *by appointment and virtual*

**Class Location:** *Canvas*

**Class Meeting Time(s):** *None*

## Course Description

A thriving global society relies on stable and resilient Earth's systems including oceans, forests, agricultural, freshwater, urban, and more. What are sustainable environmental systems, how are they changing, and what limits or thresholds exist before these systems and their resources transition to an alternative and undesirable state that threatens human well-being? This course addresses complex interrelations among and between global environmental systems and human health in an increasingly interdependent world. The aim is to provide the core conceptual understandings of planetary systems as they relate to human well-being (e.g. climate, water, agricultural) and the complex interactions that make it possible for life to flourish on Earth. Much of the course will be focused on sustainable food systems as a model for understanding the opportunities and challenges for managing our climate, water, biodiversity and land use.

In this course, we examine the rapidly evolving trends in global environmental change and the responses aimed at slowing or addressing changes to the essential environmental systems. We will learn how unsustainable patterns of production and consumption challenge planetary resilience – and how our societies can develop in a just and safe way within the planet's boundaries. We will also focus on who is disproportionately impacted by global change, exacerbating social inequity. Through specific case studies and opportunities for praxis, the course also explores current challenges in conservation, and emerging issues around equity, social, and environmental justice. We will identify approaches and actions that individuals and society can take to regenerate a sustainable and healthy planet systems in different places and across multiple scales (local to global).

**Course Delivery:** **online, asynchronous**

**Textbooks (with ISBN ) & Readings (Required)**

***All articles/handouts will be available in Canvas unless otherwise noted.***

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- *DeFries. 2020. What Would Nature Do. Columbia University Press. ISBN: 9780231199438*
- *Myers, Sam and Frumpkin, H. Planetary Health: Protecting Nature to Protect Ourselves. Island Press, ISBN: 9781610919661*

### Other equipment / material requirements (optional)

None.

### Textbooks & Readings (Recommended)

All additional materials are located in the Canvas Course.

### Canvas

Canvas is the Learning Management System (LMS) at Boston College, designed to help faculty and students share ideas, collaborate on assignments, discuss course readings and materials, submit assignments, and much more - all online. Your course will make significant use of Canvas this semester; you should familiarize yourself with this important tool. For more information and training resources for using Canvas, click [here](#).

In the case of any technical difficulties or concerns, please contact [canvas@bc.edu](mailto:canvas@bc.edu) or 617-552-HELP (4357) for immediate assistance. Canvas requires [particular computer specifications](#) and wifi access. It is important that you plan accordingly.

NOTE: If a face-to-face class session is canceled, please go to Canvas to learn how that session will be taught.

### Course Outcomes

#### By the end of this course, students will be able to:

- Describe the dynamics of earth systems and characterize global environmental change over time.
- Identify the linkages between global environmental change and human health.
- Apply systems thinking to global environmental change and identify causes, impacts and solutions
- Determine and apply principles of good governance, nature-centered solutions, equity and justice, multiple ways of knowing, and evidence-informed policy to address GEC.
- Characterize global food systems to a.) provide a nutritious diet for all people while b.) adapting to a rapidly changing environment, and c.) reducing the global environmental footprint of food systems.

### Assessments and Grading Policy

Typically, each week will require readings and watching of videos to acquire the basic content and ideas for each module. For each module (i.e. each week), the student will be expected to engage in and submit "assignments" in each of four different ways:

1. Weekly **short answer** responses on that week's module content
2. Student interactions using a "**discussion**" format or annotation of a paper using the **Perusall**

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annotation tool.

3. **Practical application** or demonstration to engage students in the field of planetary health in some way.
4. A short **reflection** on week's content

Two larger assessments will also occur:

1. **Mid-term on Week 9** to assess familiarity with the core course content.
2. **Final project** due end of term - where students explore a case study of their interest, applying foundational concepts from the course.

These sections represent the following amounts as a proportion of your final grade:

<i>Short answer responses and assignments</i>	19 %
<i>Perusal annotations - student interaction</i>	19 %
<i>Practical applications</i>	14 %
<i>Student discussions/Voicethreads</i>	8 %
<i>Mid-term exam</i>	15 %
<i>End of module reflections</i>	10%
<i>End of term project</i>	15 %
Total	100%

## Rubrics

You will find all activity or assignment rubrics at the end of each assignment.

## Grading

The course will be graded out of 100 points.

A = 95-100; A- = 90-94; B+ = 87-89; B = 84-86; B- = 80- 83; C+ = 77-79; C = 73-76; C- = 70-72; D+ = 67-69; D = 63-66; D- = 60-62; F = 59 and below

All students can access final grades through Agora after the grading deadline each semester. Students who complete course evaluations can access grades earlier, as they are posted.

## Course Assignments

Each week will contain 4 to 8 hours of reading and/or watching other media - particularly videos. Typically, we will try to provide both video and reading for most core course content.

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It is expected that you will spend an additional 8 hours per week on out-of-class assignments and exercises. Please note that some weeks will require more time and some weeks less time.

Participation is important to this course - participation will occur primarily through the Discussion and Perusall assignments.

Typical Course Assignment Schedule:

DAY OF THE WEEK	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
ASSIGNMENT DUE				Short Answer Assignment due	Perusall Initial Posts due		Final Perusall/Discussion Summary Posts due Appy Assignment due Reflection due

### Due Dates and Extensions

Due dates are important. However, there's a certain amount of flexibility with them. If you need a day or two longer on an assignment, you can email me *ahead of time* to ask for an extension with a legitimate reason on an assignment, and that's usually fine. There is no extension for the mid term without a valid reason. If you ask for lots of extensions, we'll work together to find ways to help you keep up with the work in the course. Note that you may not get timely feedback if you get an extension on something.

### Late Work Submission Policies

All assignments are accepted late after the due date. For each day late, a 6% grade deduction penalty is applied to the final assignment grade. I can give a waiver on the late penalty for a few days (see extensions policy above) and for a small (2-3) number of assignments - see above - but not for more than a few assignments.

### Course Calendar

### Important Dates to Remember

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#### For the Fall sessions - some important dates to remember

- Add/Drop deadline: January 25, 2023
- Withdraw deadline: April 18, 2023
- December May 16, 2023- Final grades are submitted to Woods by noon!

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Course calendar - some changes may happen

Week	Dates	Key Topics
1	Jan 17- 22	<ul style="list-style-type: none"> <li>● Introduction to Planetary Environmental systems</li> <li>● Course overview and expectations; Meet the class</li> <li>● Community Agreement</li> </ul>
2	1/23-1/29	<ul style="list-style-type: none"> <li>● Planetary Systems; Global Environmental Change over time; historical perspectives</li> <li>● Systems thinking, Complexity, Feedback loops, circuit breaks</li> <li>● Carbon cycles</li> <li>● Ecological Footprint</li> </ul>
3	1/30 - 2/5	<ul style="list-style-type: none"> <li>● Planetary health; human and societal health well-being</li> <li>● Major kinds of human health challenges, including communicable and noncommunicable diseases, mental health challenges, and migration</li> <li>● Concept maps</li> </ul>
4	2/6 - 2/12	<ul style="list-style-type: none"> <li>● Food and global environmental change; Food, nutrition and human well being; Global and local food distribution, access, availability, Ethics and equity</li> <li>● Footprint of food systems</li> <li>● Personal assessment of food footprints</li> </ul>
5	2/13 - 2/19	<ul style="list-style-type: none"> <li>● Food Systems - inputs and outputs, pollution</li> <li>● What does it take to grow food? soil, fertilizer, plant health, Nitrogen and phosphorus cycles</li> <li>● Conventional, industrial, local, agroforestry, and organic</li> <li>● Labeling and standards</li> </ul>
6	2/20 - 2/26	<ul style="list-style-type: none"> <li>● Biodiversity - in Food Systems</li> <li>● Nature-based solutions to enhance food systems</li> <li>● Nature and mental health</li> <li>● Diversity in sustainable diets</li> </ul>
7	2/27 - 3/5	<ul style="list-style-type: none"> <li>● Land use and Food Systems</li> <li>● Land sparing vs land sharing, Land degradation, deforestation, fragmentation of natural habitats, irrigation</li> <li>● Water and irrigation</li> </ul>
<b>Spring Break 03 - 3/12</b>		
8	3/13 - 3/19	<ul style="list-style-type: none"> <li>● Climate change Impacts from food production and impacts to food</li> </ul>

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Week	Dates	Key Topics
		<ul style="list-style-type: none"> <li>production</li> <li>● Carbon cycles</li> <li>● Climate Smart Agriculture</li> <li>● Climate justice</li> </ul>
9	3/20 - 3/26	Review and mid-term
10	3/27 - 4/2	<ul style="list-style-type: none"> <li>● Towards an integrated view on knowledge solutions</li> <li>● Solutions: Our relationship with nature - belief systems and ethical dimensions</li> <li>● Two-eyed seeing</li> </ul>
11	4/3 - 4/5	<ul style="list-style-type: none"> <li>● Planetary Boundaries</li> <li>● Safe operating space, tipping points, thresholds, uncertainty</li> <li>● Case studies</li> </ul>
12	4/11 - 4/16	<ul style="list-style-type: none"> <li>● Solutions: Equity based priorities for action</li> <li>● Solutions: mitigation, adaptation and resilience</li> </ul>
13	4/18-4/23	<ul style="list-style-type: none"> <li>● Global agreements, SDGs</li> <li>● SDGs, International frameworks (IPCC, COP meetings); Governance</li> <li>● Local vs global policies</li> <li>● Developing your own case study</li> </ul>
14	4/24 - 5/4	<ul style="list-style-type: none"> <li>● Movement building to change</li> <li>● Pathways to Action: Policies, governance - Global agendas and goal setting/Interventions and making change</li> </ul>

### Participation/Attendance

Participating in class is an important component of learning. Students are expected to participate in and complete all discussions, assignments, and assessments. While this is an asynchronous course, participating in online class discussion boards and Perusall assignments is an critical component of learning. These virtual “student engagement” *discussions* will take the place of our in-class interactions and should be used as both a space to provide opinions and thoughts, while also posing questions or asking for clarification on theories and concepts.

Consistent with BC’s commitment to creating a learning environment that is respectful of persons of differing backgrounds, we believe that every reasonable effort should be made to allow members of the university community to observe their religious holidays without jeopardizing their academic status. Students are responsible for reviewing course syllabi as soon as possible, and for communicating with the instructor promptly regarding any possible conflicts with observed religious holidays. Students are responsible for completing all class requirements for days missed due to conflicts with religious holidays.

## **Boston College Policies**

### **Accommodation and Accessibility**

Boston College is committed to providing accommodations to students, faculty, staff and visitors with disabilities. Specific documentation from the appropriate office is required for students seeking accommodation in Woods College courses. Advanced notice and formal registration with the appropriate office is required to facilitate this process. There are two separate offices at BC that coordinate services for students with disabilities:

- [The Connors Family Learning Center \(CFLC\)](#) coordinates services for students with LD and ADHD.
- [The Disabilities Services Office \(DSO\)](#) coordinates services for all other disabilities.

Find out more about BC's commitment to accessibility at [www.bc.edu/sites/accessibility](http://www.bc.edu/sites/accessibility).

### **Scholarship and Academic Integrity**

Students in Woods College courses must produce original work and cite references appropriately. Failure to cite references is plagiarism. Academic dishonesty includes, but is not necessarily limited to, plagiarism, fabrication, facilitating academic dishonesty, cheating on exams or assignments, or submitting the same material or substantially similar material to meet the requirements of more than one course without seeking permission of all instructors concerned. Scholastic misconduct may also involve, but is not necessarily limited to, acts that violate the rights of other students, such as depriving another student of course materials or interfering with another student's work. Please see the [Boston College policy on academic integrity](#) for more information.

### **Health Integrity Policy**

Particularly during this time of the COVID-19 pandemic, we must take even greater measures to care for ourselves, for each other and for our community. Therefore, we are asking that all Woods College students care for themselves by monitoring their health and washing their hands thoroughly before class.