

Sustainability Science
SUMA PS5140
Summer Session B 2022
TBD
Location: TBD
[draft]

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Course Associate: TBD

Course Description:

Achieving sustainability requires an understanding of the capacities and dynamics of ecosystems, including their long-term ability to produce resources and to assimilate waste. Students will learn not only the fundamentals of ecology and environmental science, but also how to reconcile the disconnect between human actions and ecological consequences – as well as why managers should care. We will explore the science behind current issues in biodiversity, energy, agriculture, equity, freshwater use, marine conservation, and climate change.

Required text:

Wright RT. Boorse DF. 2017. 13th Edition. *Environmental Science: Towards a Sustainable Future*.

Grading:

Grading will be based on two non-cumulative exams (60%) and a 3000-word review paper examining the science behind a sustainability topic of the student's choosing (40%).

Key due dates for the term paper are as follows:

July 18: Topic

July 27: Outline

August 13: Final paper

Syllabus

Session	Date	Topic	Readings (13 th edition; additional readings and videos posted on Canvas)
1	TBD	Introduction to sustainability science; Fundamentals: Biodiversity I (valuing biodiversity)	Ch. 1, 3, 6, Ch. 22.5 (pp. 563-546)
2		Biodiversity II: threats	Ch. 4
3	TBD	Fundamentals: Population ecology (interactions within species)	Ch. 4
4	TBD	Fundamentals: Community ecology (interactions between species)	Ch. 4
5	TBD	Fundamentals: Ecosystem ecology; Sustainability of marine resources I: Eutrophication and invasive species Paper topic due	Ch. 3 (pp. 48-53, 62-70), Ch. 5; Ch. 20 (pp. 506-508, 512-515, 523-530)
6	TBD	Exam 1	
7	TBD	Sustainability of marine resources II: Overfishing	Ch. 7 (pp. 171-178)
8	TBD	Sustainability of agriculture	Ch. 12 (also relevant material about pesticides in Ch. 13)
9	TBD	Freshwater issues Paper outline due	Ch. 10
10	TBD	Energy issues	Ch. 14-16
11	TBD	Climate change	Ch. 18
12	TBD	Exam 2	

FINAL PAPER DUE: TBD

School and University Policies and Resources

Copyright Policy

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Academic Integrity

Columbia University expects its students to act with honesty and propriety at all times and to respect the rights of others. It is fundamental University policy that academic dishonesty in any guise or personal conduct of any sort that disrupts the life of the University or denigrates or endangers members of the University community is unacceptable and will be dealt with severely. It is essential to the academic integrity and vitality of this community that individuals do

their own work and properly acknowledge the circumstances, ideas, sources, and assistance upon which that work is based. Academic honesty in class assignments and exams is expected of all students at all times. SPS holds each member of its community responsible for understanding and abiding by the SPS Academic Integrity and Community Standards posted at <https://sps.columbia.edu/students/student-support/academic-integrity-community-standards>. You are required to read these standards within the first few days of class. Ignorance of the School's policy concerning academic dishonesty shall not be a defense in any disciplinary proceedings.

Diversity Statement

It is our intent that students from all diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that the students bring to this class be viewed as a resource, strength and benefit. It is our intent to present materials and activities that are respectful of diversity: gender identity, sexuality, disability, age, socioeconomic status, ethnicity, race, nationality, religion, and culture.

Accessibility

Columbia is committed to providing equal access to qualified students with documented disabilities. A student's disability status and reasonable accommodations are individually determined based upon disability documentation and related information gathered through the intake process. For more information regarding this service, please visit the University's Health Services website: <https://health.columbia.edu/content/disability-services>.

Class Recordings

All or portions of the class may be recorded at the discretion of the Instructor to support your learning. At any point, the Instructor has the right to discontinue the recording if it is deemed to be obstructive to the learning process.

If the recording is posted, it is confidential and it is prohibited to share the recording outside of the class.

SPS Academic Resources

The Division of Student Affairs provides students with academic counseling and support services such as online tutoring and career coaching: <https://sps.columbia.edu/students/student-support/student-support-resources>.

Columbia University Information Technology

[Columbia University Information Technology](#) (CUIT) provides Columbia University students, faculty and staff with central computing and communications services. Students, faculty and staff may access [University-provided and discounted software downloads](#).

Columbia University Library

[Columbia's extensive library system](#) ranks in the top five academic libraries in the nation, with many of its services and resources available online.

The Writing Center

The Writing Center provides writing support to undergraduate and graduate students through one-on-one consultations and workshops. They provide support at every stage of your writing, from brainstorming to final drafts. If you would like writing support, please visit the following site to learn about services offered and steps for scheduling an appointment. This resource is open to Columbia graduate students at no additional charge. Visit <http://www.college.columbia.edu/core/uwp/writing-center>.

Career Design Lab

The Career Design Lab supports current students and alumni with individualized career coaching including career assessment, resume & cover letter writing, agile internship job search strategy, personal branding, interview skills, career transitions, salary negotiations, and much more. Wherever you are in your career journey, the Career Design Lab team is here to support you. Link to <https://careerdesignlab.sps.columbia.edu/>