ENSP 101 Introduction to Environmental Science
Fall 2021
Meets August 31, 2021– December 9, 2021
TuTh 11am - 12:15pm
JMZ 0220

Syllabus

Instructor
Annette Spivy: Lecturer, Environmental Science and Policy Program
Advisor – Wildlife Ecology and Management Concentration, ENSP
Room 0214 Symons Hall
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Office Hours
By appointment

Graduate Teaching Assistants	**Discussion Section #s**	**Office Hours (0220 Symons)**
Carson Coriell ccoriell@terpmail.umd.edu	101,102,103	Wed – 1pm - 3pm
Camille Ann Hoffman Delett choffma5@umd.edu	104,105,106	Tues 1pm – 3pm
Michael Howerton howerton@terpmail.umd.edu	107	Mon – 11:30am – 1:30pm
Undergraduate Teaching Assistant		
Ayelet Fried ayeletf@terpmail.umd.edu		Mon – 4pm – 5pm

Course Overview

Scientific study of the complex and diverse natural environmental systems of the earth is a relatively young human endeavor that has rapidly gained stature as an academic field in the last 40 years, and it is now a high priority worldwide. Quantifying the spatial and temporal dimensions of the atmosphere, the lithosphere, and the hydrosphere is essential to a refined understanding of how these "great earth systems" influence and interact with ecosystems of the biosphere. New knowledge about these systems and their interactions has come from the "parent" basic sciences of environmental science (including chemistry, physics, geology, and biology) and from whole system studies that focus on element cycles, energy flows, and interfaces between diverse components of ecosystems. In addition, increasing concern about the environmental quality of water, air, soil, and ecosystems has led to direct connections between science and environmental public policy worldwide.

ENSP 101 is the required gateway course and introduction to the science component of the Environmental Science and Policy major. It also is approved as a CORE Physical Science (non-

lab, category PS) and a General Education Distributive Studies – Natural Sciences (category DSNS) course; and it is an "Environment" course for the College Park Scholars program in Environment, Technology, and Economy (ETE). As an offering in these four curricula, ENSP 101 engages you in learning approaches and methods of inquiry that complement any major whether in the natural sciences, social sciences, or humanities. You will learn critical thinking skills focusing on the sciences, but also ones related to current environmental issues and transdisciplinary ways of knowing. You will refine your problem-solving skills using some mathematical approaches and individual creative writing.

The Concept of Sustainability for Human Societies, Economies, and Their Supporting Natural Systems

In this course, you will engage in learning about natural living ecosystems, abiotic resources, and humans as members of natural eco-regions. Through a balance of conservation and preservation, humans forge modern complex societies that rely on ecosystem services and natural resources. However, if modern societies significantly alter ecosystems and deplete natural resources faster than they are replenished, they affect the potential for future human cultures to meet their basic needs and for ecological systems to maintain their essential material cycles and energy flows. The concept of sustainability embodies these ideas and has become a central tenet of environmental science and policy in recent years. In 1987, the World Commission on Environment and Development published Our Common Future (Oxford University Press), also known as the Brundtland Report (after its chair, Harlem Brundtland, former Prime Minister of Norway). Sustainable development is defined in this seminal report in this way:

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Many current human activities in the biosphere, including agriculture, forestry, urban development, energy use, and water management, may affect sustainability and the potential for future generations to meet their needs. In this course, you will have the opportunity to incorporate new thinking and learning related to sustainability into your intellectual growth. The Office of Sustainability at the University of Maryland has initiated Sustainable UMD to infuse the undergraduate experience with learning and thinking surrounding sustainability at many levels, from individual courses to program curricula, campus life, regional issues, and global concerns. Their website is http://www.sustainability.umd.edu/. The International Institute for Sustainable Development has an excellent website for general information on sustainability at http://www.iisd.org/sd/. You are encouraged to consult these and other resources during the semester and after completion of this course.

Learning Outcomes

The following goals of this introductory course in environmental science will be achieved by engaging you in lectures, small group discussions, readings, papers, and case studies. The key words in bold font identify themes and topics in the course that will recur across the various units during the semester.

1.Develop knowledge and understanding of the **systems, cycles, flows, feedbacks, and interfaces** that characterize and govern the structure, function, and interactions of the atmosphere, lithosphere, hydrosphere, and biosphere.

2. Quantify the natural and anthropogenic processes that influence environmental systems on local, regional, and global **scales** (temporal and spatial)

3. Refine skills in the areas of analysis, synthesis, and evaluation of complex systems. Become familiar with scientific methods and processes by which knowledge is obtained and advanced in environmental science (**scientific epistemology** or ways of knowing).

4. Understand the nature of **scientific knowledge, uncertainty and methods of quantification** for environmental processes and systems

5. Identify and evaluate **human influences on the natural processes** of earth systems, and assess the extent of environmental problems and **sustainable** ways to address them.

Recommended Reading Material:

- Jay H. Withgott and Matthew Laposata . 2016. Environment: The Science behind the Stories **EDITION:** 6TH 18 **PUBLISHER:** PEARSON **ISBN:** 9780134204888

Evaluation and Grading Criteria

There will be three required unit exams (not cumulative in coverage). In addition, four homework assignments, one paper, and weekly reading discussion reviews (4 collected) will provide other means to assess your learning outside of class. You will have the opportunity to earn up to 1000 points in the course, and you can calculate your numerical average at any time during the semester. Individual letter grades for the course will be assigned on a curve if the final class average for the semester is <
75%, and on the standard basis if the class average is > 75%: 100-98% = A+, 97-92 = A, 91-90 = A-; 89-88 = B+, 87-82 = B, 81-80 = B-; 79-78 = C+, 77-72 = C, 71-70 = C-; 69-68 = D+, 67-62 = D,
61-60 = D-; ≤ 59 = F. **You are advised to keep all graded work throughout the semester in case you have a question about your final course grade**. Also, keep a personal record of your accumulated points as the semester progresses, or consult the Canvas grade book periodically.

Requirement	No.	Points/unit	Total Points
Unit Exams	3	150	450
Homework	4	50	200
Papers	1	200	200
Reading/Discussion Reviews	4	25	100
Class Discussion		50	50
TOTAL			1000

There will be opportunities to earn extra credit points during the semester. Details will be forthcoming. Any extra credit points earned will be added to your total points for the semester, not averaged in with required work; therefore, extra credit work cannot penalize you. In the past, these extra credit points have made a significant difference in students' learning and final grades, especially in compensating for a low score on an exam or paper.

The examinations will be online and comprise, short answer questions, and scenario-based questions and will be based on material covered in lecture and supported by assigned readings.
The lectures will follow the textbook format and topics. **Success in this course begins by attending zoom lectures, taking good notes, and questioning what you hear in lecture.**

The homework, class discussions, and paper will account for ~ 50% of your grade. These will be coordinated with the lecture material, and they will provide some economic and social science perspectives on the science covered in the lectures. Your class discussion grade for the semester will be decided by me at the end of the semester based on the quality and frequency of your contributions in discussion/group work.

Tips for Success in ENSP 101:

5. Attend all classes throughout the semester and arrive on time.

2. Ask questions of the instructor; don't be shy about this.

3. Take careful notes in class and review them soon after class.

4. Ensure that you know why you missed all points on exams and assigned work; if you do

not, consult with the instructor.

5. Communicate and study with fellow students, but always produce your own work. Do not plagiarize. Cite all your sources in the text of your papers and in a Works Cited section. Be especially assiduous and careful about using information from the Web—cite the source, and do not cut and paste text without attribution and quotation marks. **Please see this Web site for information on plagiarism and citing references:**

http://www.lib.umd.edu/ues/guides/citation-tools

6. Use all resources available to you in this course and at UMCP. Meet with and send email questions to the instructor; use the libraries on- and off-campus; access the Web; and follow the latest environmental news.

7. Be looking for linkages between this course and your major and personal interests.

8. Write in clear, grammatically-correct English. Post papers that are neatly formatted and free of spelling errors, and that demonstrate attention to detail. Produce polished, professional work.

Course Policies

Late work, attendance, grade appeals, and make-up exams

Papers and homework will lose 5% of the assigned points for each day that the work is posted late, unless a valid excuse is approved by the instructor before the due date. **Homework assignments are due by electronic posting through the mastering site Canvas on specified dates by midnight. Papers will be submitted through canvas on specified date by midnight.**

Make-up tests will be given only if a valid excuse for missing the originally-scheduled test is approved by the instructor prior to the exam time. All three tests will be in-class.

If you believe that any grade you have received in this course is not correct or fair, you are entitled to file an appeal within one week of when the graded work is returned to you. To do this, please make an appointment to see me during office hours.

Course Guidelines

Academic Integrity

For this course, some of your assignments will be collected via Turnitin on our course ELMS page. I have chosen to use this tool because it can help you improve your scholarly writing and help me verify the integrity of student work. For information about Turnitin, how it

works, and the feedback reports you may have access to, visit Turnitin Originality Checker for Students

Names/Pronouns and Self-Identifications
The University of Maryland recognizes the importance of a diverse student body, and we are committed to fostering inclusive and equitable classroom environments. I invite you, if you wish, to tell us how you want to be referred to both in terms of your name and your pronouns (he/him, she/her, they/them, etc.).

Additionally, how you identify in terms of your gender, race, class, sexuality, religion, and dis/ability, among all aspects of your identity, is your choice whether to disclose (e.g., should it come up in classroom conversation about our experiences and perspectives) and should be self-identified, not presumed or imposed. I will do my best to address and refer to all students accordingly, and I ask you to do the same for all of your fellow Terps.

Communication with Instructor and TAs:
EMAIL: If you need to reach out and communicate with me, please email me at aspivy@umd.edu. Please DO NOT email me with questions that are easily found in the syllabus or on ELMS (i.e. When is this assignment due? How much is it worth? etc.) but please DO reach out about personal, academic, and intellectual concerns/questions.

ELMS: We will send IMPORTANT announcements via ELMS messaging. You must make sure that your email & announcement notifications (including changes in assignments and/or due dates) are enabled in ELMS so you do not miss any messages. You are responsible for checking your email and Canvas/ELMS inbox with regular frequency.

Communication with Peers:
With a diversity of perspectives and experience, we may find ourselves in disagreement and/or debate with one another. As such, it is important that we agree to conduct ourselves in a professional manner and that we work together to foster and preserve a virtual classroom environment in which we can respectfully discuss and deliberate controversial questions.

I encourage you to confidently exercise your right to free speech—bearing in mind, of course, that you will be expected to craft and defend arguments that support your position. Keep in mind that free speech has its limit and this course is NOT the space for hate speech, harassment, and derogatory language. I will make every reasonable attempt to create an atmosphere in which each student feels comfortable voicing their argument without fear of being personally attacked, mocked, demeaned, or devalued.

Any behavior (including harassment, sexual harassment, and racially and/or culturally derogatory language) that threatens this atmosphere will not be tolerated. Please alert me immediately if you feel threatened, dismissed, or silenced at any point during our semester together and/or if your engagement in discussion has been in some way hindered by the

learning environment.

Academic Integrity

The University's **Code of Academic Integrity** is designed to ensure that the principles of academic honesty and integrity are upheld. In accordance with this code, ENSP does not tolerate academic dishonesty. Please ensure that you fully understand this code and its implications because all acts of academic dishonesty will be dealt with in accordance with the provisions of this code. All students are expected to adhere to this Code. It is your responsibility to read it and know what it says, so you can start your professional life on the right path. **As future professionals, your commitment to high ethical standards and honesty begins with your time here in ENSP.**

It is important to note that course assistance websites, such as CourseHero, are not permitted sources, unless the instructor explicitly gives permission for you to use one of these sites. Material taken or copied from these sites can be deemed unauthorized material and a violation of academic integrity. These sites offer information that might not be accurate and that shortcut the learning process, particularly the critical thinking steps necessary for college-level assignments.

To help you avoid unintentional violations, ***the following table*** lists levels of collaboration that are acceptable for each type of assignment. If you ever feel pressured to comply with someone else's academic integrity violation, please reach out to me straight away. Also, ***if you are ever unclear*** about acceptable levels of collaboration, ***please ask***!

					
Homework Assignments	✓	✓	✓	X	X
Projects	✓	✓	✓	✓	✓
Papers	✓	✓	✓	✓	X
Exams	X	X	X	X	X

Resources & Accommodations

Accessibility and Disability Services

The University of Maryland is committed to creating and maintaining a welcoming and inclusive educational, working, and living environment for people of all abilities. The

University of Maryland is also committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the University, or be subjected to discrimination. The **Accessibility & Disability Service (ADS)** provides reasonable accommodations to qualified individuals to provide equal access to services, programs and activities. ADS cannot assist retroactively, so it is generally best to request accommodations several weeks before the semester begins or as soon as a disability becomes known. Any student who needs accommodations should contact me as soon as possible so that I have sufficient time to make arrangements.
For assistance in obtaining an accommodation, contact Accessibility and Disability Service at 301-314-7682, or email them at **adsfrontdesk@umd.edu**. Information about **sharing your accommodations with instructors**, **note taking assistance** and more is available from the **Counseling Center**.

Student Resources and Services
Taking personal responsibility for your own learning means acknowledging when your performance does not match your goals and doing something about it. I hope you will come talk to me so that I can help you find the right approach to success in this course, and I encourage you to visit **UMD's Student Academic Support Services website** to learn more about the wide range of campus resources available to you.
In particular, everyone can use some help sharpening their communication skills (and improving their grade) by visiting **UMD's Writing Center** and schedule an appointment with the campus Writing Center.
You should also know there are a wide range of resources to support you with whatever you might need (**UMD's Student Resources and Services website** may help). If you feel it would be helpful to have someone to talk to, visit **UMD's Counseling Center** or **one of the many other mental health resources on campus**.

Basic Needs Security
If you have difficulty affording groceries or accessing sufficient food to eat every day, or lack a safe and stable place to live, please visit **UMD's Division of Student Affairs website** for information about resources the campus offers you and let me know if I can help in any way.

Participation
- Given the interactive style of this class, attendance will be crucial to note-taking and thus your performance in this class. Attendance is particularly important also because class discussion will be a critical component for your learning.
- Each student is expected to make substantive contributions to the learning experience, and attendance is expected for every session.
- Students with a legitimate reason to miss a live session should communicate in advance with the instructor, except in the case of an emergency.
- Students who miss a live session are responsible for learning what they miss from that session.

Course Evaluation
Please submit a course evaluation through CourseEvalUM in order to help faculty and administrators improve teaching and learning at Maryland. All information submitted to CourseEvalUM is confidential. Campus will notify you when CourseEvalUM is open for you to complete your evaluations for fall semester courses. Please go directly to the **Course Eval UM website** to complete your evaluations. By completing all of your evaluations each semester, you will have the privilege of accessing through Testudo, the evaluation reports for the thousands of courses for which 70% or more students submitted their evaluations.

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Tentative Course Agenda

Week	Dates	Topic	Course lectures/ Discussion	Readings	HMWK Due Dates
1	31 - Aug	Foundations of Environmental Science	Course Introduction		
	02- Sept		Introduction to Environmental Science	Ch.1	
	sections		**No Section**	**No Section**	
2	7-Sep		Earth's Physical Systems: Matter, Energy, & Geology	Ch.2	
	9-Sep		Earth's Physical Systems: Matter, Energy, & Geology	Ch.2	
	Sections 9/9 & 9/10		**Introduction/Library resources**	N/A	
3	14-Sep		Evolution, Biodiversity, & Population Ecology	Ch.3	Homework 1 Due Friday 9/17 by Midnight
	16-Sep		Evolution, Biodiversity, & Population Ecology	Ch.3	
	Sections 9/16 & 9/17		**Discussion**	**Posted on ELMS**	
4	21-Sep		Species Interactions & Species Ecology	ch.4	
	23-Sep		Environmental Systems & Ecosystem Ecology	Ch.5	

	Sections 9/23 & 9/24		**Discussion**	**Posted on ELMS**	
5	28-Sep		Environmental Systems & Ecosystem Ecology *cont.*.		
	30-Sept		Ethics, Economics, & Sustainable Development	Ch. 6 & 7	
	Sections 9/30 & 10/01		**Discussion**	**Posted on ELMS**	
6	5-Oct	Environmental Issues and The Search for Solutions - *Agriculture & Conservation Biodiversity*	**Test 1**		**Homework 2 Due Friday 10/08 by Midnight**
	7-Oct		Ethics, Economics, & Sustainable Development	Ch. 6 & 7	
	Sections 10/7 & 10/8		**No Section**		
7	12-Oct		**Guest Speaker**		
	14-Oct		Biodiversity	Ch 11	
	Sections 10/14 & 10/15		Paper topics writing/peer review/ and citations		
8	19-Oct	Environmental Issues and The Search for Solutions - *Urban & Water*	Biodiversity	Ch 11	
	21-Oct		Agriculture	Ch.9/10	
	Sections 10/21 & 10/22		**Return Exams**		
9	26-Oct		Agriculture	Ch. 9/10	Homework 3 Due Friday 10/29 by Midnight
	28-Oct		Forest Systems	Ch.12	
	Sections 10/28& 10/29		**Discussion**	Posted on ELMS	
10	02 - Nov		The Urban Environment: Creating Sustainable Cities	Ch.14	
	04 - Nov		**Guest Speaker**		

	Sections 11/4 & 11/5		**Discussion**	**TED Talk - In-Class Exercise**	
11	9-Nov		**Test 2 -**		
	11-Nov	Environmental Issues and The Search for Solutions - *Marine, Climate & Energy*	Environmental Health & Toxicology	Ch. 14	
	sections 11/11 & 11/12		**No Section**	**No Section**	
12	16-Nov		Freshwater/Marine Systems	Ch.15/16	Homework 4 Due Friday 11/19 by Midnight
	18-Nov		Atmospheric Science, Air Quality, & Pollution Control	Ch.17	
	Sections 11/18 & 11/19		**Rough Draft Peer Review**	Posted on ELMS	
13	23-Nov		**No Class**		
	25-Nov		BREAK		
	Sections 11/25 & 11/26		**No Section**		
14	30 - Nov	Environmental Issues and The Search for Solutions - *Marine, Climate & Energy*	Global Climate Change	Ch.18	**Paper Due12/03**
	02 - Dec		Global Climate Change	Ch.18	
	Sections 12/02 & 12/03		**Discussion/**	**Test return/ Wrap up**	
15	7-Dec		New Renewable Energy Alternatives	Ch.19	
	9-Dec		Sustainable solutions Wrap up/		

Final Exam - Wednesday, December 15	8:00-10:00am

Note: This is a tentative schedule, and subject to change as necessary – monitor the course ELMS page for current deadlines. In the unlikely event of a prolonged university closing, or an extended absence from the university, adjustments to the course schedule, deadlines, and assignments will be made based on the duration of the closing and the specific dates missed.