

O'Neil

Lead for the Greater Good

Introduction to Environmental Science
SPEA-E 272
Fall 2021 Semester

Instructor: Dr. Mallory L. Barnes
Office: MSBII Room 304
Office Hours: Thursday 3:00 – 4:00 pm or by appointment
E-mail: malbarn@indiana.edu

Please use Canvas for all class correspondence. (allow 48 hours for response)

Teaching Assistant: Purandhya Vij, Office hours posted to Canvas

Class Meeting: Tuesday Thursday 11:30AM-12:45 PM; PV(SPEA) 276

Required Text: Essentials of Environmental Science. Friedland & Relyea
ISBN: 1-319-06566-X

Course Description: Introduction to Environmental Sciences: Application of principles from life and physical sciences to the understanding and management of the environment. Emphasis will be placed on (1) the physical and biological restraints on resource availability and use, and (2) the technological and scientific options to solving environmental problems

Learning Outcomes: This course will integrate the physical and biological aspects of environmental studies. We will look at different environmental issues and integrate the subject matter to evaluate earths systems. This course will give you the opportunity to look at real life issues and evaluate them both qualitatively and quantitatively. At the end of the semester, students will be able to assess complex environmental problems we face now and in the future.

Learning objectives for Introduction to Environmental Science include but are not limited to the following:

- Evaluate the credibility of written/oral/media information related to environmental science.
- Use scientific methods/scientific reasoning to evaluate complex environmental problems.
- Use quantitative skills to analyze complex environmental problems.
- Understand how fundamental scientific principles inform environmental policy.

CLASS MANAGEMENT

The course management will be through Canvas and your IU email. Please give 48 hours for response.

COURSE GRADING

Reading Quizzes:	10 %
In-class/Out of Class Short Assignments:	15 %
Popular Media Report/Presentation:	15 %
Homework Assignments:	20 %
Exam 1:	20 %
Final Exam:	<u>20 %</u>
TOTAL	100 %

GRADE STRUCTURE

A	100%	to 93%
A-	< 93%	to 90%
B+	< 90%	to 87%
B	< 87%	to 83%
B-	< 83%	to 80%
C+	< 80%	to 77%
C	< 77%	to 73%
C-	< 73%	to 70%
D+	< 70%	to 67%
D	< 67%	to 63%
D-	< 63%	to 60%
F	< 60%	to 0%

COURSE STRUCTURE

Course material is organized in units that each address a particular environmental science topic. Lectures will provide you with background information, pose questions, and explain ideas. Class time will allow us the opportunity to analyze facts, search for general principles, and develop logical approaches to environmental issues. I will make use of both the white board, PowerPoint presentations, in class activities and discussion. PowerPoint presentations will be made available after the lecture. Missing class will make all else in the course much more difficult!

Please bring your textbook, notes, a calculator, and scrap paper to each class. We will often use computers, tablets, and smartphones to look up information as well; however I highly encourage you to take notes long hand on paper.

Reading Quizzes: Prior to each lecture you will be assigned a short multiple-choice quiz based on the assigned readings in the textbook. These are submitted in Canvas. The purpose of these quizzes is to establish a common basis of knowledge prior to class, so our lecture time can be focused on discussion and addressing more complex issues.

Homework Assignments: There are three homework assignments, each containing problems to solve relating to the material that we will have covered to that point. Homework will be assigned on a regular basis (see the schedule). Please note the following important points.

- Assignments are due into Canvas at the end of the due date (11:59 PM).
- No late submittals will be accepted without arrangement made prior to the due date.
- You may work with other students in class, but the homework you submit must be your own. There is a fine line between collaboration and academic misconduct, please do not cross it. Note that referring to or copying solutions from previous semesters or the internet will be considered academic misconduct and treated accordingly.
- Please submit your assignments in accordance with the following general guidelines:
 - All submissions are via the Assignments in Canvas as a text file (e.g. Word docx.).

- For problems requiring a graphical solution, an image must be electronically inserted into the docx.
- For quantitative problems, all your work must be shown. Equations, images, etc. can be inserted electronically into the submittal document.
- All homework assignments are weighted equally in calculation of your final grade.

Attendance and In Class/Out of Class Short Assignments: Attending class is required. Students will have a series of in class assignments throughout the semester that cannot be made up. These assignments will make up a total of 15% of your final grade. I will NOT announce the in-class assignments in advance. You will be able to drop your two lowest scores, which will allow you some leeway if you must miss a class. These cannot be made up. These assignments are designed to develop and gauge your understanding of the course material. They will not necessarily be graded on accuracy, but more on completion. Absences may be excused if you provide notice prior to the class period you plan to miss. If you are required to miss class due to isolation requirements, you will need to complete the in-class assignments from home **during the assigned class period**. You will need to contact me in advance of the class period to set this up.

Popular Media Presentation/Report: Each person in the course will be put into a group based on interest. You will work with a group to find an article in the popular media that relates to that week's topic. Each group will submit the article and a scientific journal article that supports/is in contrast with the topic. Presentations of the topics will be in the weeks surrounding that specific subject matter for class. Each group will give a 5 minute presentation on the article and supporting information on the article. The class will discuss the issue with questions provided by the group and instructor. Each team member will need to write up a summary report of the issue that includes how this directly links to us at IU and if there is a quantifiable connection to us. More details on the project will be given after groups are developed. Reports will start after the first exam and be delivered during most weeks. See schedule for details of topics.

Exams: There will be two exams in the course a midterm and a final each worth 20% of the course grade. All exams will be comprehensive. The exams are made up of a combination of multiple choice, short answer, and calculations.

GENERAL INFORMATION

I encourage you to be respectful to your fellow students by coming to class prepared to be an active participant each day. This includes, but is not limited to, arriving on time, keeping side-conversations to a minimum, focusing your attention on the course work for the day, keeping electronic device use to course work only, not packing early, and keeping your phones put away.

If you have a question regarding course policy, check the syllabus for answer. If you cannot find an answer, ask. If you need assistance in the course or struggle with the material, please come to office hours and see me. Office hours are set aside for you and will usually clear up any confusion. Feel free to email me for clarification; however, a conversation will often go a lot further for clarification. It is difficult to convey things via email and can often lead to more confusion.

I am happy to answer questions via email. Please allow at least 24-48 hours for email response. Please practice professionalism in your communications via email; this will be required in your future careers and now is a good time to start.

For help with homework assignments or to discuss course material in detail, office hours are highly encouraged. The learning process is centered on your effort.

E272 - COURSE SCHEDULE & READING ASSIGNMENTS

Topics and assignments will follow the class schedule as closely as possible; however, this schedule is subject to change. See Canvas for updates throughout the semester

Lecture No.	T/T	Lecture Topic	Friedland Reading	Assignments
1	24-Aug-21	Introduction and Course Overview		
2	26-Aug-21	Intro to Environmental Science	1	
3	31-Aug-21	Matter, Energy, and Change	2	
4	2-Sep-21	Ecosystem Ecology and Biomes	3	
5	7-Sep-21	Evolution, Biodiversity, and Community Ecology	4	Problem set 1
6	9-Sep-21			
7	14-Sep-21	Human Population Growth	5	
8	16-Sep-21			
9	21-Sep-21	Geologic Processes, Soils and Minerals	6	
10	23-Sep-21	Project Work Day		Project Work Plan Due
11	28-Sep-21	Land Resources and Agriculture	7	
12	30-Sep-21			PM Reports 1
13	5-Oct-21	Review		
14	7-Oct-21	Exam 1		
15	12-Oct-21	Renewable and Non-Renewable Energy	8	
16	14-Oct-21			PM Reports 2
17	19-Oct-21	Water Resources and Water Pollution	9	
18	21-Oct-21			Problem Set 2
21	26-Oct-21	Air Pollution	10	
20	28-Oct-21			PM Reports 3
21	2-Nov-21	Solid Waste Generation and Disposal	11	
22	4-Nov-21			PM Reports 4
23	9-Nov-21	Human Health Risk	12	
24	11-Nov-21			
25	16-Nov-21	Conservation of Biodiversity	13	Problem Set 3
26	18-Nov-21			PM Reports 5
--	23-Nov-21	Thanksgiving Break		
--	25-Nov-21	Thanksgiving Break		
27	30-Nov-21	Climate Alteration and Global Warming	14	
28	2-Dec-21			
29	7-Dec-21	Environmental Economics, Equity, and Policy	15	PM Reports 6
30	9-Dec-21			

Final Exam: Thursday December 16th 12:35 - 2:35 pm

O'Neill School expectations of civility and professional conduct¹

The O'Neill School takes matters of honesty and integrity seriously because O'Neill is the training ground for future leaders in government, civic organizations, health organizations, and other institutions charged with providing resources for the public, and for members of society who are vulnerable and who are lacking in power and status. Precisely because O'Neill graduates tend to rise to positions of power and responsibility, it is critical that the lessons of honesty and integrity are learned early.

O'Neill requires that all members of its community – students, faculty, and staff – treat others with an attitude of mutual respect both in the classroom and during all academic and nonacademic activities outside the classroom. A student is expected to show respect through behavior that promotes conditions in which all students can learn without interruption or distraction. These behaviors foster an appropriate atmosphere inside and outside the classroom:

- Students are expected to attend class regularly and to be prepared for class.
- Students must be punctual in their arrival to class and be present and attentive for the duration of the class. Eating, sleeping, reading the newspaper, doing work for another class, wandering in and out of the classroom, and packing up or leaving class early are not civil or professional behaviors.
- Students must abide by the course policy regarding use of electronic devices in the classroom.
- Students must responsibly participate in class activities and during team meetings.
- Students must address faculty members, other students, and others appropriately and with respect, whether in person, in writing, or in electronic communications.
- Students must show tolerance and respect for diverse nationalities, religions, races, sexual orientations, and physical abilities.
- Students must not destroy or deface classroom property nor leave litter in the classroom.

<https://myspea.indiana.edu/doc/ugrad-doc/ugrd-student-honor-code.pdf>

Academic Dishonesty

O'Neill faculty do not tolerate cheating, plagiarism, or any other form of academic dishonesty. If you have not done so, you should read the IUB Code of Student Rights, Responsibilities, and Conduct, which can be accessed at <http://www.iu.edu/~code/code/index.shtml> so you will be sure to understand what these terms mean and what penalties can be issued for academic dishonesty. Academic dishonesty can result in a grade of F for the class (an F for academic dishonesty cannot be removed from the transcript). Significant violations of the Code can result in expulsion from the University.

Plagiarism is using another person's words, ideas, artistic creations, or other intellectual property without giving proper credit. According to the Code of Student Rights, Responsibilities, and Conduct, a student must give credit to the work of another person when he/she does any of the following:

- a. Quotes another person's actual words, either oral or written;
- b. Paraphrases another person's words, either oral or written;
- c. Uses another person's idea, opinion, or theory; or
- d. Borrows facts, statistics, or other illustrative material, unless the information is common knowledge.

Course Withdrawals

Students who stop attending class without properly withdrawing from the class may receive a grade of F. It is important to withdraw from a course within specified timeframes (see chart below). Note that withdrawals after

¹ These expectations are excerpted from the O'Neill School Honor Code which can be found at: https://oneill.indiana.edu/doc/undergraduate/ugrd_student_honorcode.pdf

Week 12 of a regular session or Week 4 of a summer session are rarely granted. Poor performance in a course is not grounds for a late withdrawal.

No withdrawal forms will be processed in the Office of the Registrar after the last day of classes. Any requests for a late withdrawal after the last day of classes must go through the grade appeal process, but each student should remember that in accordance with campus policy, SPEA does not permit a student to withdraw from a course if he/she has completed the course requirements. Grade replacement should be used in this case. To withdraw, obtain a withdrawal slip (DROP/ADD Form) from the SPEA Student Services window. Instructions for completing it are given on the form.

Withdrawal Deadlines	
Course deleted from record, no grade assigned, 100% refund (Advisor signature IS NOT required)	Week 1 (last day)
Withdrawal with automatic grade of W (Advisor signature IS required)	Week 2– Week 7 (regular session) Week 2 – Week 3 (summer session)
Withdrawal with grade of W or F (Advisor and instructor signatures ARE required)	Week 8 – Week 12 (regular session) Week 3 – Week 4 (summer session)

Incompletes

A grade of incomplete (I) indicates that a ‘substantial portion’ of the work in a course has been satisfactorily but not entirely completed by the student as of the end of the semester. The incomplete can be given to a student facing a hardship such that it would be unjust to hold the student to the established time limits for completing the work. To be eligible for the incomplete in a SPEA course, the student’s work must be of passing quality, and the student must have completed 75% of the course requirements. Poor performance in a course is not grounds for an incomplete. SPEA follows the campus guidelines in awarding incompletes which may be accessed at the Office of the Registrar’s website at:

http://registrar.indiana.edu/stu_grades.shtml

Incompletes must be removed within a time period not to exceed one year after the semester in which the student was enrolled in the course. The incomplete will revert to an ‘F’ if the work is not completed within the allotted timeframe established by the instructor.

Students Called to Active Duty

SPEA encourages any student who is in the Indiana Military Reserves and is called to active duty to finish his/her coursework if at all possible. Students who cannot complete their courses have the option of withdrawing with 100% fee refund, but this request must be made within one week of being called to active duty. Students who are called to active duty may qualify for an incomplete (provided that all the above criteria have been met). For further information, please see the Office of the Registrar’s website at:

http://registrar.indiana.edu/stu_infopoli.shtml

Final Exam Schedule

If a final exam is given, it must be held on the day and time set in the final exam schedule. If an instructor has changed the final exam date, the student should first consult with the instructor. Students who have more than three final exams in one day or insufficient time to get from one exam to another should consult with their instructors to resolve these conflicts. Exams may not be given in the week before the final exam week. If a student is not able to resolve a final exam problem with the instructor, the student may report the problem to the Director of Undergraduate or Graduate programs. The final exam week schedule can be found at the Office of the Registrar’s website at:

http://registrar.indiana.edu/stu_calsche.shtml

Additional information for students:

1. Counseling and Psychological Services For information about services offered to students by CAPS: <http://healthcenter.indiana.edu/counseling/index.shtml>.

2. Disability Services for Students For information about support services or accommodations available to students with disabilities, and for the procedures to be followed by students and instructors: <https://studentaffairs.indiana.edu/disability-services-students/>.

3. Sexual Harassment. As your instructor, one of my responsibilities is to help create a safe learning environment on our campus. Title IX and our own Sexual Misconduct policy prohibit sexual misconduct. If you have experienced sexual misconduct, or know someone who has, the University can help. If you are seeking help and would like to talk to someone confidentially, you can make an appointment with:

- i. The Sexual Assault Crisis Service (SACS) at 812-855-8900
- ii. Counseling and Psychological Services (CAPS) at 812-855-5711
- iii. Confidential Victim Advocates (CVA) at 812-856-2469
- iv. IU Health Center at 812-855-4011

For more information about available resources: <http://stopsexualviolence.iu.edu/help/index.html>. It is also important to know that federal regulations and University policy require me to promptly convey any information about potential sexual misconduct known to me to our campus' Deputy Title IX Coordinator or IU's Title IX Coordinator. In that event, they will work with a small number of others on campus to ensure that appropriate measures are taken and resources are made available to the student who may have been harmed. Protecting a student's privacy is of utmost concern, and all involved will only share information with those that need to know to ensure the University can respond and assist. I encourage you to visit <http://stopsexualviolence.iu.edu/help/index.html> to learn more.