



MSWI-270C, Ecology, Environment, & the Anthropocene

Fall 2018

Department of Mathematics and Science, School of Liberal Arts and Sciences, Pratt Institute

Course Description:

Like any other organism, humans rely on their environment — most prominently the living part of that environment — in order to survive. But unlike any other species, humans have the ability to re-shape the diverse environments they inhabit in profound, fundamental, and potentially destructive ways. This course explores how living ecosystems function and how that functioning provides the resources required by both individual humans and the societies we form. It also considers how we have transformed our environment in ways that can threaten both our own health and the health of the ecosystems upon which human civilization depends. Many scientists suggest that we have entered a new geologic epoch, the Anthropocene; this course explores ways in which the “age of humanity” can become a sustainable — rather than apocalyptic — episode in evolutionary history.

Upon completion, this course is worth three (3) credits. This course counts as both a *Math & Science Core Course* and a *General Education Writing-Intensive Course*.

Meeting Time: Section 01: Mondays 9:00 am to 11:50 am, ARC LL E-09

Instructor: Dr. Christopher Jensen
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Course Goals:

- To understand how ecological systems function and how those functions provides services to humans.
- To explore how a variety of ecological interactions create ecological communities and allow nutrients, water, and energy to flow through ecosystems.
- To identify and understand the major ecological and environmental problems created by human activities.
- To frame the major human activities that threaten the sustainability of human civilization by creating excessive ecological and/or environmental impacts.
- To assess which technologies and policies have the most promising potential to reduce human impacts to sustainable levels.
- To refine students' ability to write about scientific ideas and scientific research through a process of drafting, feedback, and revision.

Learning Outcomes: Students who successfully complete *Ecology* will be able to...

- depict how different interactions in ecological communities produce the variety of ecosystems and emergent ecological flows observed on Earth.
- explain how ecologists and evolutionary biologists conduct studies to improve our understanding of how the natural world functions.
- connect the functioning of ecological systems with resources and services that human civilizations depend upon.
- catalog and assess the relative severity of different ecological and environmental problems.
- use critical, logical, and creative thinking to devise and assess solutions to major problems of human sustainability.
- perform research into the scientific literature that informs the written proposal and summary that accompany a creative Term Project.
- incorporate relevant scientific research into a creative Term Project.

Assessment Criteria:

Below is a summary of how you will be graded in this course. All grades will be posted on the *LMS*, so please take advantage of the fact that you can always know how you are doing in the course.

Contribution to Grade	Category	Description
40%	Coursework	<p>There are four (4) main categories of coursework for which you will receive grades:</p> <ol style="list-style-type: none"> 1. Each week there are one or more short-essay-based Reading Questions due two (2) hours before class starts. Based on the assigned readings for each day, these questions will provide you with the opportunity to demonstrate that you understood the material and to informally practice your writing about science. Reading Questions are worth ~7.3 of the 40 <i>Coursework</i> points. 2. In class, we'll be discussing ideas covered by course readings. I'll have questions for you; I will expect you to have questions for me. Come to class having read and thought about assigned readings, ready to actively engage in dialogue. To receive Participation credit you need to be present in class; to receive full participation credit you need to be actively engaged in class discussions and work. Based on your participation during each regular class session, I will assign you a specific grade and occasionally make comments on the strengths and weaknesses of your contribution. Participation is worth ~7.3 of the 40 <i>Coursework</i> points. 3. You will also complete Activities in class. Some of these assignments will be done individually, others will require group cooperation. I will be grading your work on each assignment based on its clarity of thought, level of insight, and contribution to class dialogue. Activities are worth ~18.9 of the 40 <i>Coursework</i> points. 4. During Week 08 each student will bring a Draft Proposal to Term Project Proposal Workshop, and provide feedback to other students on their <i>Draft Proposals</i>. These two assignments are worth ~3.2 of the 40 <i>Coursework</i> points. <p>The remainder of your <i>Coursework</i> grade (~2.2 of 40 points) will be based on miscellaneous assignments, all of which are listed on the <i>Learning Management System</i>. You are free to use any resource <i>other than another person</i> to complete all coursework: your notes, books/articles, the internet, and other media are all allowed (see Open Information Policy and Honor Code below).</p>
40%	Term Project	<p>The major independent assignment of this course is the production of a creative work that is informed by research into a topic or topics that are directly related to course content. This <i>Term Project</i> will be developed throughout the semester via an incremental process of planning, drafting, and refinement. This process emphasizes thoughtful conceptualization as a means of preparing to write and make. See the <i>Term Project Guidelines</i> for details.</p>
20%	Final Exam	<p>This course ends with a cumulative Final Exam that will be taken in class on the <i>LMS</i>. Please make sure to bring your Pratt I.D. to class on the day of your Final Exam, as we will be taking this exam in a Pratt computer lab. The final will focus on broad concepts learned in the course rather than the regurgitation of scientific facts. As per the <i>Open Information Policy</i>, you may use anything but another person to complete the Final Exam.</p>

★ **Under no circumstances will personalized extra-credit work be offered to any student** ★

Course workload:

As a 3-credit lecture/seminar course in Liberal Arts and Sciences, the expectation is that you will devote at least 6 hours per week to the course in addition to the 3 hours per week spent in class. This out-of-class time will be dedicated to: course reading assignments (approximately 2 hours for careful reading — the reading material in this course will introduce many new concepts and much new terminology); homework (approximately 0.5 hours); post-class review of lecture slides and feedback on classwork and homework (0.5 hours per week recommended); and work on the components of the “scaffolded” *Term Project* assignment (3 hours per week recommended). By following this “recommended” schedule of 6 hours per week outside of class, it will be entirely possible to avoid a pile-up of work around major deadlines.

Lateness and Absence:

Of Students: I expect you to arrive to class on time. Lateness and absence adversely affect your classwork grade.
Of Assignments: Late **Reading Questions** will not be accepted. Other late assignments will be penalized by 10% per day.

Allowance days:

Each student in this course will be afforded ten (10) total “allowance days” that can be used to avoid the usual 10% per day lateness penalty for assignments. These allowance days should be used for missed deadlines that would not otherwise be excused (see below for which causes of lateness are excusable). Please email your instructor to indicate that you wish to use some of these allowance days for a particular assignment. You are free to wait until the end of the semester to indicate where you wish to use these days, but make sure not to allow the semester to come to an end before emailing your instructor. Remember that using allowance days on one component of the *Term Project* does not push back any of the subsequent deadlines for later components.

How to submit documentation for an excusable absence and/or missed deadlines:

There are very few legitimate reasons to miss all or part of a class session or for submitting assignments after the stated deadlines. Valid excuses include family emergencies and personal health issues. The following reasons do not excuse lateness or absence: oversleeping, excessive work load in other classes, inability to use the *Learning Management System*, or “forgetting”. If you believe that you missed a class for a legitimate reason, please submit documentation that:

1. establishes a clear reason why you could not complete work and/or attend class; and
2. clearly delineates the period of time during which you were incapacitated.

Documentation should come from an appropriate source (*for example*: health care provider, employer, clergy) and include contact information that will allow your instructor to validate your excuse. Your instructor makes the final determination on what is and what is not a legitimate reason for missing class and/or submitting assignments after stated deadlines.

Absence from this class to complete other responsibilities on campus:

The time allotted for each your courses is sacred: no instructor or administrator should ever require you to miss any of your regularly-scheduled class meetings. For this reason, you will not be excused for absences that result from being “pulled out” by another professor or by your major program. If you are asked to miss this class for any reason please contact your instructor immediately so that the matter can be quickly resolved.

This course concludes with a final exam, which takes place during the final week of classes at the regular class meeting time. It is possible that your major program may require you to attend a final critique/review that conflicts with the final exam for this course; any such conflicts must be identified well in advance of this final week. True finals-week conflicts will be resolved by scheduling your final exam in this course on the *Exam Conflict Day*, which takes place on the day before the beginning of finals week. Please let your instructor know as soon as you learn of an actual or potential conflict with the scheduled final exam in this course.

Policy on Incompletes:

Incompletes (INCs) can be given at the discretion of the instructor following the written request of the student. The student must furnish satisfactory proof that the work in question was not completed because of illness or other circumstances beyond the student’s control. The student must understand the terms necessary to fulfill the requirements for the course and the date by which work must be submitted. If the work is not submitted by the understood date of submission – not exceeding the end of the following term – the incomplete will be converted to a failure. The agreement between the instructor and student must be documented and submitted to the department chair along with documentation proving that the student deserves the opportunity to make up missed work.

Extra-Credit Assignments that can improve your Coursework grade:

After each class you can answer a series of **Follow-Up Questions** on the LMS. If you emerge from class with a good understanding of the major ideas discussed, you should be able to complete these questions in very little time. The **Follow-Up Questions** are extra credit and represent a way to offset low in-class grades (or zeros caused by absence).

All students have the opportunity to complete an extra-credit assignment based on a trip to the *American Museum of Natural History* in Manhattan. The trip is self-guided, and you can complete this assignment any time before the due date listed on the *LMS*. To receive credit for this assignment, you must also submit your original museum ticket to your instructor. Please see the *LMS* for the *Guidelines* to this assignment and a place where you can upload your assignment.

In total, Extra-Credit assignments can be used to supplement up to 10 of the 40 points awarded for *Coursework* in the calculation of your final grade. Extra-Credit cannot be used to improve credit earned for the *Term Project* or the *Final Exam*, and the maximum credit that can be earned for *Coursework* is 40 points.

Readings:

You will be assigned a series of reading materials from popular science periodicals, books, and the scientific literature (see **Weekly Units** below). All required readings will be posted on the *LMS*. You are encouraged to save paper by viewing these readings electronically (as opposed to printing them out).

If you feel the need for a comprehensive *Ecology* textbook, these two will be on reserve in the library:

Smith, Thomas M. and Robert Leo Smith, 2006. *Elements of Ecology, 6th Edition*. Pearson/Benjamin Cummings. (ISBN #9780805348309)

Levin, Simon A. (editor), 2009. *The Princeton Guide to Ecology*. Princeton University Press. (ISBN #9780691156040)

There will be no required reading from these books; consulting them is purely at your discretion.

Open Information Policy and Honor Code:

You will never be required to memorize anything in this class: we maintain an “open information environment”, so you may use your notes, books/articles, the internet, and other media to complete homework, in-class assignments, and quizzes.

HOWEVER: Unless specifically stated otherwise, all work in this class is to be completed on your own. You may not and should not obtain help from any other person to complete any of your work: this includes all homework, all quizzes, and individual assignments. You should also not share any of your individual work with other students. “Studying together”, discussing material outside of class, and any other processing of the course materials prior to completing coursework is allowed and encouraged, but you need to do your own work. Students are asked to sign an oath to uphold and honor this code at the beginning of the semester, and are expected to take this commitment seriously even when violating the code would likely escape detection. Any violations of this policy will be considered cheating and reported as appropriate (see **Classroom Civility and Academic Honesty** below).

Learning Management System (LMS):

During the course of the semester, we will make extensive use of Pratt’s *Learning Management System (LMS)*. I recommend that you use the *Firefox* browser to access the *LMS* via this page: <https://lms.pratt.edu/> (I discourage you from using the *my.pratt.edu* entrance point, as it is not always working). Use your ONEKEY username and password to log in. I expect you to check the *LMS* several times a week for announcements, reading assignments, and updates to your class grade (note that you can also set the *LMS* to send you email messages every time our class page is updated). I will be using the *LMS* to send email announcements throughout the semester, so please make sure that you check the email address listed under your *LMS* profile regularly. “I forgot to check my Pratt email” is an invalid excuse.

I try to make the assignments, announcements, and other documents I post on the *LMS* as universally-readable as possible. The only proprietary program you will need to have loaded onto your computer is *Acrobat Reader*, which can be downloaded here: <http://www.adobe.com/products/acrobat/readstep2.html>. I strongly recommend that you use *Acrobat Reader*, rather than another program, to read all of the PDF’s provided in this class.

***Important*:** If you experience any problems with the *LMS*, you should:

1. Report the problem to the **Service Desk** and receive a “ticket number” by one of four means:
 - a. visiting their office in the basement of the ARC Building; or
 - b. calling (718) 636-3765; or
 - c. emailing services@pratt.edu; or
 - d. using the “Computers & Technology Services” section of the “Get Help With” tab of my.pratt.edu.
2. Receive an email from the **Service Desk** assigning your problem a “ticket number”.
3. Forward this email from the **Service Desk** to me.

In order for me to verify claims of *LMS* outages, you must contact the **Service Desk** when the *LMS* problem occurs, not hours or days later.

Reduced-Paper-Use Classroom:

Whenever possible, we will reduce the amount of paper that this course consumes. All of your out-of-class assignments will be submitted electronically via the *LMS*. Your work will be graded and returned electronically. Please do your best to reduce the amount of printing that you do for the course.

Classroom Civility and Academic Honesty:

I expect you to maintain the civility and integrity of our course in and out of the classroom. In class, this means arriving on time, turning off cell phone ringers and refraining from sending text messages, maintaining focus on class discussion, respecting the right of others to speak, and leaving the classroom in good condition (among other things). Out of class, this means properly citing all work that is not your own (in other words, not plagiarizing).

Students must adhere to all Institute-wide policies listed in the Bulletin under "Community Standards" and which include policies on attendance, academic integrity, plagiarism, computer, and network use. Please see <https://www.pratt.edu/student-life/student-affairs/office-of-the-vice-president-for-student-affairs/student-policies/community-standards/> for policies and procedures for handling academic conduct issues.

Plagiarism means presenting, as one's own, the words, the work, information, or the opinions of someone else. It is dishonest, since the plagiarist offers -- as his/her own -- the language, or information, or thought for which he/she deserves no credit. Types of plagiarism include: (1) The use of any material from any source other than yourself in a paper or project without proper attribution. This includes material from the Internet, books, papers or projects by other students, and the media; (2) The extensive use of the ideas of others in your work without proper attribution; and (3) Turning in work done by another person, downloaded from the web, purchased from any agency or supplier, as one's own. Plagiarism occurs when one uses the exact language of someone else without putting the quoted material in quotation marks and giving its source. The method for documenting sources and references is established by a number of standards; the standard that I prefer is outlined here: <http://www.christopherxjensen.com/teaching/for-students/#citation>. Any work submitted that does not use proper referencing will not be marked. Plagiarized assignments receive no credit, and all cases of plagiarism will be referred to the Registrar. For more information on avoiding plagiarism, please see: <http://www.christopherxjensen.com/teaching/for-students/#no-plagiarism>.

Help with Writing:

The *Term Project* in this class will require you to produce written work. All students can benefit from receiving feedback on their writing from both the Pratt's *Writing and Tutorial Center (WTC)* and your instructor. It is expected that you respond to feedback that you receive by revising and thereby improving your written work. Writing is a practice and a process!

The *WTC* will help you produce the best project possible. The center is located on the 1st Floor of North Hall (it has all the great fish tanks... you can't miss it!). Call them at 718-636-3459 or send an email to wtc@pratt.edu to make an appointment.

Your instructor will provide you with feedback on draft versions of both your *Project Table* and *Project Summary*. This feedback will be posted to the *LMS* so that you will have time to revise your work before submitting final versions.

Rights of Students with Disabilities:

If you have a physical or learning disability, ADD/ADHD, chronic disease, or physical condition that we should know about, please contact the Learning/Access Center at 718-802-3123 to discuss your needs and how we can best serve you. In order to receive classroom accommodations and other services, you must have documentation of your disability on file in the Learning/Access Center. Your records will be kept completely confidential. For more information, please see the Pratt webpage for the Learning/Access Center (<https://www.pratt.edu/student-life/student-affairs/learning-access-center/>).

[SEE COURSE CALENDAR ON SUBSEQUENT PAGES]

Weekly Units:

Week	Date	Major Topic(s)	Key Questions	Readings	Events & Assignments
01	Aug. 27th	Introduction to Ecology & Ecosystem Services	<ol style="list-style-type: none"> 1. What is ecology? 2. How is the field of ecology organized? 3. How does ecology relate to other biological sciences? 4. How are ecology and environmental science related? 5. What benefits and services do we derive from healthy, functioning ecosystems? 	<ul style="list-style-type: none"> ▶ <i>Millennium Ecosystem Assessment</i> "Living Beyond Our Means: Natural Assets and Human Well-Being" ▶ <i>Scientific American</i> "The economist has no clothes" 	<ul style="list-style-type: none"> ▶ Reading Questions due 2 hours before your class section meets (extra credit this week only) ▶ <i>Syllabus</i> distributed ▶ <i>LMS Warm-up Assignments</i> discussed ▶ There are extra-credit Follow-Up Questions for this week
	Sept. 3rd	No Class (Labor Day)			
02	Sept. 10th	Change in Nature	<ol style="list-style-type: none"> 1. What is ecological succession? 2. How are ecological and evolutionary change different? 3. How are ecological and evolutionary change intertwined? 4. How have ecosystems of the past changed in response to large-scale change? 5. How do scientists know determine whether species will be able to adapt to anthropogenic change? 	<ul style="list-style-type: none"> ▶ <i>Kimball's Online Biology Text</i> "Forest Succession" ▶ <i>Scientific American</i> "Tiny Plants that Once Ruled the Seas" ▶ <i>Scientific American</i> "The Last Great Global Warming" ▶ <i>Science</i> "Entering the Sixth Mass Extinction" 	<ul style="list-style-type: none"> ▶ Reading Questions due 2 hours before your class section meets ▶ Class visits a computer lab: remember to bring your Pratt ID!! ▶ <i>Term Project Guidelines</i> distributed & discussed ▶ There are extra-credit Follow-Up Questions for this week ▶ Change your profile image on the LMS due, September 10th, 2018 @ 23:55 EST

Week	Date	Major Topic(s)	Key Questions	Readings	Events & Assignments
03	Sept. 17th	Interaction in Ecological Communities	<ol style="list-style-type: none"> 1. What forms can population growth take? 2. What factors regulate population growth? 3. What are the different ways in which organisms can interact? 4. What comprises an ecological community? 5. How does ecological efficiency limit the size of food webs? 6. What makes an ecological community stable? 	<ul style="list-style-type: none"> ▸ <i>Jensen</i> "Eco 101: Exponential Growth and Decay" ▸ <i>Jensen</i> "Eco 101: Carrying Capacity" ▸ <i>Science</i> "Lessons from the Wild Lab" ▸ <i>Nature</i> "Legend of the Wolf" ▸ <i>Scientific American</i> "Ecosystems on the Brink" 	<ul style="list-style-type: none"> ➔ Reading Questions due 2 hours before your class section meets ➔ There are extra-credit Follow-Up Questions for this week
04	Sept. 24th	Ecological Cycling	<ol style="list-style-type: none"> 1. How does energy move through an ecosystem? 2. How does matter move through an ecosystem? 3. How does water move through an ecosystem? 4. What roles do organisms play in the cycling of water, energy, and matter? 	<ul style="list-style-type: none"> ▸ <i>Scientific American</i> "Global Population and the Nitrogen Cycle" ▸ <i>Nature</i> "The Power of Plankton" ▸ <i>Nature</i> "A Long Dry Summer" ▸ <i>Scientific American</i> "The Hidden Life of Truffles" 	<ul style="list-style-type: none"> ➔ Reading Questions due 2 hours before your class section meets ➔ Class visits a computer lab: remember to bring your Pratt ID!! ➔ There are extra-credit Follow-Up Questions for this week
05	Oct. 1st	Biomes & Ecological Resilience	<ol style="list-style-type: none"> 1. What are the major characteristics of different earth biomes? 2. How does ecological succession produce biomes? 3. What factors determine the form and function of different biomes? 4. What are the major threats to these biomes? 5. What determines whether species are resilient to human impacts on biomes? 	<ul style="list-style-type: none"> ▸ <i>Kimball's Online Biology Text</i> "Biomes" ▸ <i>NASA Earth Observatory</i> "Biomes" ▸ <i>National Geographic</i> "Our Good Earth" ▸ <i>National Geographic</i> "Ghost Cats" ▸ <i>NPR Weekend Edition Saturday</i> "On The Trail Of A Mountain Lion..." 	<ul style="list-style-type: none"> ➔ Reading Questions due 2 hours before your class section meets ➔ There are extra-credit Follow-Up Questions for this week ➔ Term Project Initial Source List due, October 1st, 2018 @ 11:55 pm

Week	Date	Major Topic(s)	Key Questions	Readings	Events & Assignments
06	Oct. 8th	Biodiversity Conservation	<ol style="list-style-type: none"> 1. Why is biodiversity important? 2. How is the growth of human populations impacting the earth's biodiversity? 3. How do we conserve biodiversity? 4. What are invasive species and how do they threaten biodiversity? 	<ul style="list-style-type: none"> ▸ <i>Scientific American</i> "Which Species Will Live?" ▸ <i>Scientific American</i> "Conservation for the People" ▸ <i>Encyclopedia of Life</i> "What is an Invasive Species?" ▸ <i>Scientific American</i> "A Friend to Aliens" 	<ul style="list-style-type: none"> ➔ Reading Questions due 2 hours before your class section meets ➔ Class visits a computer lab: remember to bring your Pratt ID!! ➔ There are extra-credit Follow-Up Questions for this week
07	Oct. 15th	Climate Change	<ol style="list-style-type: none"> 1. What evidence suggests that climate change is affecting ecosystems? 2. How might climate change affect the earth's ecosystems in the future? 3. What are the major anthropogenic causes of climate change? 	<ul style="list-style-type: none"> ▸ <i>National Climate Assessment</i> "Ecosystems, Biodiversity, and Ecosystem Services" ▸ <i>Scientific American</i> "Arctic Plants Feel the Heat" ▸ <i>Scientific American</i> "Can We Save the Corals?" 	<ul style="list-style-type: none"> ➔ Reading Questions due 2 hours before your class section meets ➔ There are extra-credit Follow-Up Questions for this week
08	Oct. 22nd	Term Project Proposal Workshop			<ul style="list-style-type: none"> ➔ Draft Term Project Proposal due in printed form when you arrive in class ➔ Scan of your "workshopped" Draft Term Project Proposal due the day after the in-class workshop
09	Oct. 29th	Pollution: Nutrients & Toxics	<ol style="list-style-type: none"> 1. What is the impact of human activity on the nutrient levels experienced by ecosystems? 2. How have human activities altered the flow of materials within and between ecosystems? 3. How does pollution alter the functioning of ecosystems? 4. What risks does pollution pose to human health? 	<ul style="list-style-type: none"> ▸ <i>Scientific American</i> "Fixing the Global Nitrogen Problem" ▸ <i>National Geographic</i> "The Pollution Within" ▸ <i>NPR Morning Edition</i> "We're Drowning In Plastic Trash. Jenna Jambeck Wants To Save Us." ▸ <i>Trends in Ecology & Evolution</i> "Microplastics: No Small Problem for Filter-Feeding Megafauna" 	<ul style="list-style-type: none"> ➔ Reading Questions due 2 hours before your class section meets ➔ Class visits a computer lab: remember to bring your Pratt ID!! ➔ There are extra-credit Follow-Up Questions for this week

Week	Date	Major Topic(s)	Key Questions	Readings	Events & Assignments
10	Nov. 5th	Urban Ecology	<ol style="list-style-type: none"> 1. In what ways do cities function like ecosystems? How well do urban systems mimic ecosystems? 2. How does the way a city is designed affect the way that city impacts ecosystems? 3. What kinds of ecological communities are excluded by urban development? 4. What kinds of ecological communities can be fostered by urban development? 	<ul style="list-style-type: none"> ▸ <i>The New Yorker</i> "Green Manhattan" ▸ <i>Scientific American</i> "Bigger Cities Aren't Always Greener, Data Show" ▸ <i>Motherboard</i> "The World's Most Wasteful Megacity" ▸ <i>NYC Mayor's Office</i> "One City: Built to Last" (Executive Summary only) ▸ <i>Scientific American</i> "Wading in Waste" 	<ul style="list-style-type: none"> ➔ Reading Questions due 2 hours before your class section meets ➔ <u>Class conducted remotely</u>: please see the <i>LMS</i> for details on how to join the class online. ➔ There are extra-credit Follow-Up Questions for this week ➔ Term Project Proposal due, November 5th, 2018 @ 11:55 pm ➔ Ecological Footprint Report due, November 9th, 2018 @ 11:55 pm
11	Nov. 12th	Sustainability 1: Boundaries for Maintaining Civilization	<ol style="list-style-type: none"> 1. What is sustainability? 2. How can ecological footprints be used to understand the sustainability of human practices? 3. How do we conceptualize sustainability from an ecological perspective? 4. What are some ways that human civilization can avoid destroying the ecological systems on which we depend? 	<ul style="list-style-type: none"> ▸ <i>Global Urbanization</i> "Human Population Grows Up" ▸ <i>National Geographic</i> "Age of Man: Enter the Anthropocene" ▸ <i>Scientific American</i> "Living on a New Earth" ▸ <i>Science</i> "Planetary boundaries: Guiding human development on a changing planet" (Summary) 	<ul style="list-style-type: none"> ➔ Reading Questions due 2 hours before your class section meets ➔ Class visits a computer lab: remember to bring your Pratt ID!! ➔ There are extra-credit Follow-Up Questions for this week ➔ Term Project Sketch due, November 12th, 2018 @ 11:55 pm ➔ Choice Readings for Week 12 should be registered on the <i>LMS</i> by November 17th, 2018 @ 11:55 pm
12	Nov. 19th	Sustainability 2: Design, Technology, & Culture	<ol style="list-style-type: none"> 1. How is sustainability infused into the designs and practices of modern society? 2. What technologies are needed to create a more sustainable global human society? 3. How can we design in a more sustainable manner? 	<ul style="list-style-type: none"> ▸ <i>Scientific American</i> "The Efficient City" ▸ <i>Scientific American</i> "The Carbon Capture Fallacy" ▸ CHOICE readings from one of these categories: A. Biofuels; B. Food; C. Ecotourism; D. Energy efficiency; E. Geoengineering; F. Green roofs; or G. Solar power (see the <i>LMS</i> to sign up for one of these categories). 	<ul style="list-style-type: none"> ➔ Reading Questions due 2 hours before your class section meets ➔ There are extra-credit Follow-Up Questions for this week ➔ Draft Project Summary due, November 19th, 2018 @ 11:55 pm

Week	Date	Major Topic(s)	Key Questions	Readings	Events & Assignments
13	Nov. 26th	Sustainability 3: Quantifying the Impact of Design	<ol style="list-style-type: none"> 1. Why does sustainability have to be quantitative rather than qualitative? 2. How do we quantify the potential and actual impacts of designed products? 	<ul style="list-style-type: none"> ▸ <i>Jensen</i> "There's no such thing as qualitative sustainability" ▸ <i>Autodesk</i> "Lifecycle Assessment: An introduction for students" ▸ <i>Environment Magazine</i> "The Short List" 	<ul style="list-style-type: none"> ➔ Reading Questions due 2 hours before your class section meets ➔ Class visits a computer lab: remember to bring your Pratt ID! ➔ There are extra-credit Follow-Up Questions for this week ➔ Choice Readings for Week 14 should be registered on the <i>LMS</i> by December 1st, 2018 @ 11:55 pm
14	Dec. 3rd	Sustainability 4: Science & Policy	<ol style="list-style-type: none"> 1. How can science be used to make informed policy decisions? 2. What is the boundary between science and politics? 	<ul style="list-style-type: none"> ▸ CHOICE readings from one of these categories: A. Individual; B. Institutional; C. Local; D. National; or E. International (see the <i>LMS</i> to sign up for one of these categories). 	<ul style="list-style-type: none"> ➔ Reading Questions due 2 hours before your class section meets ➔ Course Evaluations ➔ Bring any questions you have in preparation for the Final Exam ➔ There are extra-credit Follow-Up Questions for this week ➔ Term Project & Term Project Summary due, December 3rd, 2018 @ 11:55 pm
	Dec. 10th	No Class (Study Day/Exam Conflict Day)			
15	Dec. 17th	Final Exam taken <u>in class</u> on the <i>LMS</i>.			<ul style="list-style-type: none"> ➔ Class visits a computer lab: remember to bring your Pratt ID!! ➔ Extra credit AMNH Assignment due, December 17th, 2018 @ 9 am