Course Syllabus
SS 3300 – Environmental Problems
Department of Social Sciences

Instructor Information
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Office Hours: By appointment

Course Identification
Course Number: SS 3300
Course Name: Environmental Problems
Course Location:
Class Times: 
Prerequisites: none

Course Description/Overview
This course will provide a review of all of the major environmental problems, their causes and costs, at global, national, and regional scales. We will focus on the major ones: climate change; energy and water scarcity; biodiversity loss; increasing population and consumption; and failing agricultural and ecological systems. As you will find out, many of these problems are interconnected at the global scale, and increasingly at smaller scales as well. We will spend significant time on the consequences of these problems for human societies, and on concepts such as intercultural/intergeneration equity and environmental justice. However, the course will not be all gloom and doom! We will also discuss solutions, particularly those which involve economic incentives to coax everyone towards more sustainable behavior.

The format of the course will be predominantly lectures, with some in-class discussions and films to break up the monotony of my voice. There will be two in-class exams (one midterm, one final), covering the information in the readings, lectures, and films. Students will also complete one writing assignment and an in-class presentation on a local or state environmental problem of their choice. Each student will present their work to the rest of the class, so that we can all learn more about the environmental challenges and social implications of specific issues; hopefully together we can come up with some potential solutions for them!
**Course Learning Objectives**

By the end of the course, students should:

1. Have a thorough knowledge of the major global and national environmental problems;
2. Be able to explain these problems in broad scientific and layman terms;
3. Be able to discuss the risks the problems and their connectedness pose to human societies;
4. Offer a variety of potential solutions for each problem.

**Course Resources**

**Course Website(s)**
- Canvas &lt;http://mtu.instructure.com/courses/803063&gt;
- Personal Website &lt;http://www.mtu.edu/forest/about/faculty/mayer/&gt;

**Required Course Text**

**Grading Scheme**

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Percentage</th>
<th>Grade points/credit</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>93% &amp; above</td>
<td>4.00</td>
<td>Excellent</td>
</tr>
<tr>
<td>AB</td>
<td>87% – 92%</td>
<td>3.50</td>
<td>Very good</td>
</tr>
<tr>
<td>B</td>
<td>82% – 86%</td>
<td>3.00</td>
<td>Good</td>
</tr>
<tr>
<td>BC</td>
<td>76% – 81%</td>
<td>2.50</td>
<td>Above average</td>
</tr>
<tr>
<td>C</td>
<td>70% – 75%</td>
<td>2.00</td>
<td>Average</td>
</tr>
<tr>
<td>CD</td>
<td>65% – 69%</td>
<td>1.50</td>
<td>Below average</td>
</tr>
<tr>
<td>D</td>
<td>60% - 64%</td>
<td>1.00</td>
<td>Inferior</td>
</tr>
<tr>
<td>F</td>
<td>59% and below</td>
<td>0.00</td>
<td>Failure</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete; given only when a student is unable to complete a segment of the course because of circumstances beyond the student’s control. A grade of incomplete may be given only when approved in writing by the department chair or school dean.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td>Conditional, with no grade points per credit; given only when the student is at fault in failing to complete a minor segment of a course, but in the judgment of the instructor does not need to repeat the course. It must be made up within the next semester in residence or the grade becomes a failure (F). A (X) grade is computed into the grade point average as a (F) grade.</td>
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Grading Policy

Grades will be based on the following:

<table>
<thead>
<tr>
<th></th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams (2 @ 100 points each)</td>
<td>200</td>
</tr>
<tr>
<td>Research Paper (200 points)</td>
<td>200</td>
</tr>
<tr>
<td>Peer review of student papers</td>
<td>50</td>
</tr>
<tr>
<td>In class presentation</td>
<td>100</td>
</tr>
<tr>
<td>Class attendance</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total Points</strong></td>
<td><strong>650</strong></td>
</tr>
</tbody>
</table>

Late Assignments

A late assignment loses 10% of the highest possible grade for each day it is late. (These days INCLUDE weekends and holidays!) For example, if the assignment would have received a 95% if it were turned in on time, if it is turned in a day late is will receive an 85%. This penalty will be waived if students notify me **prior** to the deadline of potentially late assignments... and the reason must be unavoidable!

Collaboration/Plagiarism Rules

Both in-class exams are closed book. Research papers are to be completed individually, although discussion with classmates is acceptable and encouraged. Out of consideration for your classmates, cell phones, Blackberries, iPods, PDAs, or any other electronic devices are not to be used in the classroom, and must be shut off or put on silent mode. Information exchanges on these devices during class are also prohibited and violate the Academic Integrity Code of Michigan Tech.

University Policies

Academic regulations and procedures are governed by University policy. Academic dishonesty cases will be handled in accordance the University’s policies.

Academic Integrity:
http://www.studentaffairs.mtu.edu/dean/judicial/policies/academic_integrity.html

If you have a disability that could affect your performance in this class or that requires an accommodation under the Americans with Disabilities Act, please see me as soon as possible so that we can make appropriate arrangements. The Affirmative Action Office has asked that you be made aware of the following:

*Michigan Tech complies with all federal and state laws and regulations regarding discrimination, including the Americans with Disabilities Act of 1990. If you have a disability and need a reasonable accommodation for equal access to education or services at Michigan Tech, please call the Dean of Students Office, at 487-2212. For other concerns about discrimination, you may contact your advisor, department head or the Affirmative Action Office, at 487-3310*
Disability Services:
http://www.admin.mtu.edu/urel/studenthandbook/student_services.html#disability

Michigan Tech is committed to providing a living, learning, and working environment that is free from harassment or discrimination based on race, religion, color, national origin, age, sex, sexual orientation, gender identity, height, weight, genetic information, marital status, ability, or veteran status. Michigan Tech prohibits any conduct that threatens or endangers the health or safety of any individual or group, including physical abuse, verbal abuse, threats, stalking, intimidation, harassment, sexual misconduct, coercion, and/or other communication or conduct that creates a hostile living, learning, or working environment. Any behavior that makes other students feel intimidated in this classroom will not be tolerated.

Affirmative Action:
http://www.admin.mtu.edu/aa/

Equal Opportunity Statement:

Course Assignments

Exams (100 points each)
This course is a survey of many different environmental problems and solutions, and so unfortunately there is no better way other than exams to make sure you’ve come out of the lectures and discussions with a good sense of what these problems are. There will be two exams, a midterm right before Spring Break, and a final exam on the LAST DAY OF CLASS, not during finals week! The exams will be a mix of true/false, multiple choice, short answer (1-2 words), brief answer (1-2 sentences), and 2-3 essays (roughly 2 paragraphs, or drawing diagrams, etc.). These are certainly not meant to be “weed out” exams, so I will not be asking tiny details, just big-picture questions that tell me that you have been paying attention.

Research Paper (200 points: 100 for the rough draft, 100 for the final draft)
At the beginning of the semester, look over this syllabus, and skim through the textbook to get an idea of the diversity of environmental problems we are facing. Then think about your hobbies and interests, things you see on campus or on the news, and choose an environmental issue in which you are interested. For example, if you love outdoor sports, how polluted is the air you breathe? Does it change with the seasons? Where does the air pollution come from? Are the policies and programs that have helped some sports make a smaller environmental impact?

You have many potential sources of information for this project, and I will cover them in class (“Research resources”). You can also talk to the librarians to help you search through
scientific journals, newspaper and magazine articles, and meeting minutes of local and state governmental agencies. You can also contact employees of these agencies, and ask for reports, data, and interviews of relevant officials. There may also be nonprofit groups with local chapters, such as Ducks Unlimited, the Sierra Club, the Nature Conservancy, etc. which can be good sources of information, reports, and interviews.

**Paper:** The paper should be at least 10 pages long (12 point font, double spaced), with the following sections:

1. **Background:** This section should be 3 to 4 pages long, and describe the problem, why it is a problem, how it affects human health or environmental amenities (such as good fish populations for fishing), etc.
2. **Trends:** This section should be 2-3 pages, and use data to show the issue over time; has it gotten better or worse? Are there some places that are worse than others (that is, is there a spatial pattern to the problem)? Are there targets set by federal, state or local laws that aren’t being met?
3. **Potential solutions:** This section should be 3-4 pages, and should discuss solutions to the problem that have been tried in the past (and succeeded or failed), solutions that are planned or could be tried, and obstacles to the solutions that need to be overcome.
4. **References:** Remember to cite all of the information sources you used for this paper, including newspaper and journal articles, reports, websites, and interviews.

The paper will be graded (by me and your peer reviewers!) using the following grading scheme:

- **Organization (20 points):** You are free to organize your paper however you wish, as long as it is coherent and easy to follow.
- **Clarity (20 points):** This section is a bit subjective, but basically if you have many phrases, sentences, or entire paragraphs that I can’t understand, you will lose points.
- **Completeness of argument (20 points):** Again, I will start with 20 points and subtract points for each time that you leave me asking “Why?” Of course I am not going to take this to an extreme (because even a 2-year-old can ask “why?” to everything), but if you make a major statement without any explanation or evidence to back it up (including information from other, cited sources), I will subtract points. For example, if you say “The glass that goes into the lenses of eyeglasses are the most polluting part of a pair of eyeglasses and should be replaced with plastic.”, and you have absolutely no sentences following it explaining how it is polluting, or sources cited, nor an explanation of why plastic would be less polluting, you will lose points.
- **Grammar/technical proficiency (15 points):** If you have a lot of grammatical and spelling errors, using words interchangeably that are not interchangeable (e.g., “they’re”, “their”, “there”), and other clearly wrong mistakes, you will lose a lot of points. This is where it helps not only to use the word processing software’s spellchecker and grammar-checker, but also to have a friend read through it and catch those things that just got by you.
• Sources (number and style = 10 points; strength and relevance = 15 points): I don’t care which citation style you use (e.g., APA, MLA, Chicago, etc.), as long as you are consistent. I will take points off if you use different styles throughout the paper. You can find information for them on the library’s website (http://www.lib.mtu.edu/eresources/recsites/recsiteresults.aspx?Subject_Index=53).

I am looking for at least 10 strong and relevant sources: journal articles from peer-reviewed science or engineering journals, investigative reporting pieces (newspapers or magazines, online or in print), or government or industry reports. However, the more sources you have the better. If some of your sources are what I would consider “weak” (from blogs or other unsubstantiated sources) or “irrelevant” to your topic, then having more than 10 sources will still allow you to receive the full 10 points (because more sources also gives strength to an argument).

Peer review of student papers (2 @ 25 points each)

All students will be assigned two student draft papers to peer review (using the peer review form available on CANVAS). The point of this exercise is not only to help each other improve your papers, but also to learn from each other. Reviewing others’ writing allows you to practice putting yourself in the shoes of a reviewer, so that you can be more critical and insightful with your own writing.

50 of your points for the rough draft will come from an average of the two student assessments (the other 50 points will come from me). Your final paper will be graded just by me, using the same grading rubric as for the rough draft.

Presentation (100 points)

In your 10 minute in-class presentation, you will educate your classmates about the issue on which you chose to write your research paper. It should summarize the information in each of the four sections of your paper. You can use PowerPoint slides if you like, but you can also go more “low tech” with the white board. You may also read a prepared statement from a piece of paper, if you are not comfortable with speaking without notes.

The presentation will be graded using the following grading scheme:

• Organization (20 points): See description above.
• Clarity (20 points): See description above.
• Sources (10 points): You do not have to pack all of the sources you had in the paper into this presentation, but when you use quotes, or data, or other things from the sources, I expect to see some acknowledgement of this, for example as a footnote at the bottom of the slide (it can be in small font).
• Staying within 10 minutes (10 points): Last semester I also had oral presentations as an assignment, and I had so many students that went over their 10 minutes that it nearly killed my schedule. These presentations are at the end of the semester, so we don’t have a lot of wiggle room. Also, it is very good practice for you to give these
short presentations and hit your time mark. Many professional conferences these
days only provide 10-15 minutes for presentations, and going over time is not
allowed.
- Grade from your peers (40 points): I will ask every student in class to give a rank (1
  through 5, 5 being the best) of each student’s presentation. I will then take the
  average, multiply it by 8, and that will comprise 40 points of your total score. So, for
  example, if you give an excellent presentation that everyone loves and gives a 5, you
  will get 5(8) = 40 points. I will round up to the full point.

**Attendance**
Students will receive two unexcused absences without any penalty. For each absence
thereafter, students will lose 10 points.

In the past, some students have not liked this attendance policy. Due to a new federal law,
professors are required to note the date of last attendance for all students receiving an “F”
in their class. This law is in response to the growing number of financial aid fraud cases
that are being reported. Since I do not know which of you are receiving financial aid, and I
certainly do not know who will fail the class, I must take attendance. I have a fairly flexible
excused absence policy (the earlier you contact me, the better), so the points given for this
part of the class are intended to help your grade, not hurt it.

**Course Schedule**

**Weekly Modules:**
- CLIMATE CHANGE
- ENERGY
- RESEARCH RESOURCES
- WASTE/POLLUTION
- WATER
- AGRICULTURE
- OTHER NATURAL RESOURCES
- BIODIVERSITY/ECOSYSTEMS
- HUMAN POPULATION
- CONSUMPTION TRENDS
- ENVIRONMENTAL JUSTICE
- POLICY SOLUTIONS

**Plus Student Presentations on their Research Topics**