

**Syllabus for ENSP 400**  
Capstone for Environmental Science and Policy Majors  
Fall, 2009

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Class: 3:30-4:45 Tues. and Thur. in 0215 Symons (prompt start and stop; be on time, please!)

Web page: <http://www.ensp.umd.edu> (Then go to "About" and "Courses" and "ENSP 400")

Office Hours: By appointment or on the spur-of-the-moment  
Please call Joyce Brown at 5-8571 to make an appointment, or stop in.

Course Description:

The capstone experience in ENSP will engage you in learning how seemingly intractable environmental concerns, situations, and problems can be addressed positively through multi-disciplinary methods in which a diverse group of people cooperate, communicate, and ultimately reach consensus on appropriate courses of action. Following an introduction to environmental ethics as an integrating decision-making tool, emphasis will be placed on two contemporary environmental issues that are most pressing now and promise to engage graduates (and the Director!) of Environmental Science and Policy in the next 25-50 years ("800 Pound Gorillas"). These issues are freshwater resources as linked to population growth; and energy resources as related to climate change in the coming post -petroleum era.

You will be asked to read, think, discuss, and write both within and across the natural sciences, social sciences, and humanities during the course. This mix of disciplines will introduce you to innovative ways to view environmental decision-making and policy formulation through the lenses of environmental ethics, history, and science. You are encouraged to bring to the class your experiences in your specialty of ENSP and other learning relevant to the discussions, group work, and readings during the semester.

**The Concept of Sustainability for Human Societies, Economies, and Their Supporting Natural Resources:  
Links to Your Education at the University of Maryland**

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 while using ecosystem services and natural resources. In so doing, they affect the potential for future human cultures to meet their basic needs and for ecological systems to maintain their characteristic 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, Gro 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."*

Questions and concerns about sustainability and future generations have been linked to many human activities in the biosphere, e.g., agriculture, forestry, urban development, energy use, and water management. In this course, you will have the opportunity to incorporate new thinking and learning related to sustainability into your intellectual experience and growth.

The Office of Sustainability at the University of Maryland has initiated the Chesapeake Project 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 is an excellent site 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.

#### Course Requirements and Grading:

You will have the opportunity to earn up to 1000 points based on the following:

<u>Type of work</u>	<u>No.</u>	<u>Points/unit</u>	<u>Total points</u>
Exam (env. ethics)	1	200	200
Energy paper	1	400	350
Water paper	1	400	350
Learning portfolio	1	100	100
TOTAL			1000

A numerical score will be calculated for your semester's work, and final letter grades will be assigned using a scale if necessary (i.e., only if the class average is less than 75%). The following letter grades will apply if the class average is  $\geq 75\%$ :  $\geq 98$  (A+), 93-97 (A), 90-92 (A-), 88-89 (B+), 83-87 (B), 80-82 (B-), 78-79 (C+), 73-77 (C), 70-72 (C-), 68-69 (D+), 63-67 (D), 60-62 (D-), < 60 (F).

#### Information on the papers

You will be asked to write two papers (~2500 words, 10 pages) on specific case studies of controversial environmental issues. These will be based on the energy and water units. Your individual paper will be a chapter in a larger group document that you will prepare on each of the two units while working with a team of four or five other students. You will represent your specialty as an expert in this field, while developing a cross-disciplinary report on each unit. More details will be forthcoming on these papers and team projects.

#### Learning portfolio

As part of the University's assessment of learning outcomes for ENSP majors, you are required to submit a learning portfolio that comprises a short reflection paper on your experiences in ENSP, a resume, and two papers you have written while a student in the ENSP major. These submissions will not be graded, so you will receive 100 points for submitting them; no points for not submitting them. The details for this assignment will be forthcoming soon, and you may complete it any time during the semester.

#### The 800 Pound Gorilla Approach

Two broad issues that will be central to human-environment interactions in the coming decades, and that will likely dominate public discourse and societal concern, are the transition to the post-petroleum era and climate change; and freshwater resource distribution and quality. Because of their importance and global scale, I refer to them as “800 Pound Gorillas:”

How we address these issues will have significant implications for the quality of life for humans as members of the biosphere and its interactions with the Earth’s Great Systems (the lithosphere, the hydrosphere, and the atmosphere). While these broad themes are not mutually-independent, focusing on them separately will allow us to probe the most important scientific, historical, and ethical issues surrounding them.

We will spend approximately four weeks on each Gorilla. Each unit will comprise three background lectures and discussion on the pertinent science, history, and ethics; including some review of material from ENSP 101, ENSP 102, and other courses. This background material will be followed by team research, meetings with an advisor (the instructor and the TA), individual paper writing, and compilation of a multi-disciplinary report.

To sharpen your thinking skills for these Gorillas, we will spend approximately five weeks introducing some key concepts of environmental ethics. The study and application of environmental ethics will teach us how to ask the right questions and how to evaluate different, equally-reasonable points of view regarding how humans and natural systems of our environment “should” or “should not” interact.

Required readings for the ethics section will be taken principally from three books (listed below), and handouts will be provided by the instructor for other assigned readings. The books include:

Leopold, A. 1949. A Sand County Almanac (1966 Ballantine Books edn. is recommended)

DesJardins, J.R. 2006. Environmental Ethics: An Introduction to Environmental Philosophy. 4th edn. Wadsworth, Belmont, CA.

White, E.B. 1952. Charlotte’s Web. Harper Collins Publishers, New York.

#### CORE note

ENSP 400 is an approved Capstone course that fulfills one of the two Advanced Study course requirements of CORE; check with your advisor or do a self-audit to ensure that you have completed the second one required for graduation.

#### Make up exams

Make-up exams will be available only if the instructor is contacted before the exam, and the reason for missing the exam is approved.

#### **University of Maryland Policies for All Courses:**

- **Academic Accommodations:** If you have a documented disability, you should contact Disability Support Services 0126 Shoemaker Hall. Each semester students with documented disabilities should apply to DSS for accommodation request forms which you can provide to your professors as proof of your eligibility for accommodations. The rules for eligibility and the types of accommodations a student may request can be reviewed on the DSS web site at [http://www.counseling.umd.edu/DSS/receiving\\_serv.html](http://www.counseling.umd.edu/DSS/receiving_serv.html).
- **Religious Observances:** The University System of Maryland policy provides that students should not be penalized because of observances of their religious beliefs. They shall be given an opportunity, whenever

feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. The student should inform the instructor in advance of any intended absences for religious observances. Notice should be provided as soon as possible, but no later than the end of the schedule adjustment period. Prior notification is especially important in connection with final exams, since failure to reschedule a final exam before the conclusion of the final examination period may result in loss of credits during the semester. The problem is especially likely to arise when final exams are scheduled on Saturdays.

- Academic Integrity: The University of Maryland has a nationally recognized code of Academic Integrity, administered by the Student Honor Council. This Code sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student you are responsible for upholding these standards for this course. It is very important for you to be aware of the consequences of cheating, fabrication, facilitation, and plagiarism. For more information on the Code of Academic Integrity or the Student Honor Council, please visit <http://www.studenthonorcouncil.umd.edu/whatis.html>. The University of Maryland is one of a small number of universities with a student-administered Honors Code and an Honors Pledge, available on the web at <http://www.jpo.umd.edu/aca/honorpledge.html>. The code prohibits students from cheating on exams, plagiarizing papers, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents, and forging signatures.

I encourage, but do not require, you to write the following signed statement on each examination or assignment: "I pledge on my honor that I have not given or received any unauthorized assistance on this examination (or assignment)."

Class Schedule and Assigned Readings

Class no.	Date	Class Activity	Assignment or preparation for this class (added readings may be assigned in class)
1	1/27	Review syllabus, course goals; “sense of place” exercise	Hand in completed personal information sheet
2	1/29	Fundamentals of & introduction to environmental ethics	DesJardins chap. 1
3	2/3	Intrinsic vs. instrumental value	Charlotte’s Web (all) & DesJardins chap. 6.1-6.4
4	2/5	Zuckerman’s Dilemma	Sagoff reprint
5	2/10	Teleology & utilitarianism	DesJardins chap. 2.1-2.7
6	2/12	Utilitarianism & deontology	DesJardins chap. 2.8-2.11
7	2/17	Environmental economics & sustainability (Ben)	DesJardins chap. 3
8	2/19	Environmental economics & sustainability (Ben)	DesJardins chap. 3
9	2/24	Responsibilities to future generations and to non-human life	DesJardins chap. 4 and 5.1-5.5
10	2/26	Wilderness	DesJardins chap. 7
11	3/3	Sand County Almanac & Land Ethic	Leopold pp. 1-233 & 237-264; DesJardins chap. 8 [sections to emphasize TBA]
12	3/5	<b>Exam #1</b>	<b>Coverage: Ethics unit</b>
13	3/10	Lecture #1 on energy systems	TBA
14	3/12	Lecture #2 on energy systems	TBA
15	3/24	Lecture #3 on energy systems	TBA <b>Return exams</b>
16	3/26	Teams 1 & 2 meet with BRJ Teams 3 & 4 meet with BS	Meeting place & time TBA
17	3/31	Teams 1 & 2 meet with BRJ Teams 3 & 4 meet with BS	Meeting place & time TBA
18	4/2	Teams 1 & 2 meet with BRJ Teams 3 & 4 meet with BS	Meeting place & time TBA
19	4/7	Teams 1 & 2 meet with BRJ Teams 3 & 4 meet with BS	Meeting place & time TBA

20	4/9	Four 15-min., oral presentations on energy case studies	<b>Paper #1 due on Tues., April 14 @ 5 pm</b>
21	4/14	Lecture #1 on water resources	Readings TBA
22	4/16	Lecture #2 on water resources	Readings TBA
23	4/21	Lecture #3 on water resources	Readings TBA <b>Paper #1 returned</b>
24	4/23	Teams 1 & 2 meet with BS Teams 3 & 4 meet with BRJ	Meeting place & time TBA
25	4/28	Teams 1 & 2 meet with BS Teams 3 & 4 meet with BRJ	Meeting place & time TBA
26	4/30	Teams 1 & 2 meet with BS Teams 3 & 4 meet with BRJ	Meeting place & time TBA
27	5/5	Teams 1 & 2 meet with BS Teams 3 & 4 meet with BRJ	Meeting place & time TBA
28	5/7	Four, 15-min. oral presentations on water resource case studies	<b>Paper #2 due on Tues., May 12 @ 5 pm</b>
29	5/12	<b>Ice Cream and Wrap-Up</b>	
	5/19	Course grades on Testudo in the afternoon	Paper #2 available in 0220 Symons