

**ENSP 400**  
**Capstone in Environmental Science and Policy**  
**Fall 2015**

T/Th 12:30-1:45 p.m.  
Tydings Hall (TYD) 1108

**Instructor:** Joanna B. Goger  
Lecturer, Environmental Science and Policy Program

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Office Hours: Tuesdays and Thursdays from 10 a.m. to 12 p.m.

**Course Description:**

The capstone experience in ENSP will engage students in learning how seemingly intractable environmental concerns, situations, and problems can be addressed through multi-disciplinary methods in which a diverse group of people communicate, cooperate, and ultimately reach consensus on appropriate courses of action. In particular, students will consider and explore how values and science inform the policy and management solutions to “wicked” problems – those problems characterized by scientific uncertainty and a clash of values.

The first part of the course will consider how values and science inform the policy and management process. Any environmental issue can be viewed through the lens of ethics, and students will be encouraged to consider how the ethics of individuals or organizations leads to particular environmental management decisions. Then, students will consider how science is created, synthesized, and applied (and by whom) to make environmental policy and management decisions.

The second part of the course will engage students in learning how professionals in environmental science and policy address current environmental challenges. Each challenge will present ethical, scientific, legal, and policy questions that cannot be solved easily from the perspective of just one discipline. Small teams of students will be assigned to investigate one of several assigned environmental challenges. Students will prepare an individual report based on their discipline-specific research and will then work with other students in their group to prepare a full report on the problem that includes policy/management recommendations and an executive summary. The semester will conclude with group presentations of the final reports.

**ENSP 400 Curriculum notes:**

ENSP 400 is an approved Capstone course that fulfills one of the two CORE Advanced Study course requirements; and an approved Scholarship in Practice course that fulfills one of the two required in the new Gen Ed program. See your advisor or do a self-audit to be sure you have completed the second

Advanced Study or Scholarship in Practice course as required by your area of concentration. The exploration of sustainability issues in this course supports the Chesapeake Project, an initiative of the Office of Sustainability. This is an important, ongoing project at the University of Maryland that aims to infuse courses and curricula across campus with learning and new thinking about sustainability.

### **Learning Outcomes as a Scholarship-in-Practice course in the Gen Ed program**

By the end of this course, students will be able to:

1. Select, critically evaluate, and apply relevant areas of scholarship in environmental science and policy – by preparing and analyzing an annotated bibliography of scholarly sources, government papers, and other authoritative and credible sources. This bibliography will be linked to and support an individual research report that focuses on issues related to the student’s area of concentration, e.g., Environmental Economics, Politics and Policy, Land Use, Society and Environmental Issues, Biodiversity and Conservation Biology, Wildlife Ecology and Management, etc.
2. Collaborate to bring about a successful outcome – by participating in a team of students assigned to investigate an environmental problem and develop a group report, executive summary, and presentation for an assigned environmental challenge.
3. Apply socio-environmental synthesis and transdisciplinary ways of knowing to produce a report on an assigned environmental challenge in a form typically used by non-profit organizations, think tanks, and/or government agencies.
4. Critique, revise and refine a group report on an assigned environmental challenge by submitting weekly group and individual reports, outlines, and drafts for review by peers and instructors.
5. Effectively communicate the application of scholarship – by successfully preparing and delivering a formal presentation of the recommendations developed in the research reports and executive summary to classmates using PowerPoint.

### **Learning Outcomes for the Environmental Science and Policy Program**

By the end of enrollment in the Environmental Science and Policy major, students will demonstrate the ability to analyze, evaluate, utilize, and integrate cross-disciplinary knowledge and understanding of natural and social sciences in response to big questions related to environmental science and policy. This work will prepare them for similar intellectual work in which they may participate in their career.

### **Required Course Materials:**

White, E.B. 1952. Charlotte’s Web. Harper Collins Publishers, New York. (ISBN: 978-0-06-44055-8)

All other materials will be available through the ELMS Canvas System, <http://elms.umd.edu> or on Web links provided in the list of reading assignments below. To access book excerpts, you will go to the Course Reserves tab in ELMS. Articles can be found at the Files tab. These materials will be designated with “ELMS” in the list of assignments below. Web links should be self-explanatory.

### **E-mail List/ELMS:**

An e-mail list will be set up for this class through the ELMS/Canvas System. E-mail addresses

are pulled from the University Directory listing. Please be sure that your preferred and current e-mail address is listed in the Directory. You can check and update this information by going to Testudo ([www.testudo.umd.edu/apps/saddr/](http://www.testudo.umd.edu/apps/saddr/)). I will be posting course documents and information on the ELMS/Canvas system, so it is important that you use this system and that you are checking your e-mail for any announcements or assignments. **Please note that I will communicate with the class through e-mail and ELMS regarding any class cancellations, changes in meeting times, or room changes.**

**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>Points/unit</u>	<u>Due Date</u>
In-class exam	150	Tu Sept 22
Interdisciplinary Scholarship in practice	790	
<ul style="list-style-type: none"> <li>• Concept map (10 pts)</li> <li>• 7 Group Updates (70 pts)</li> <li>• 3 Individual Assignments (45 pts)</li> <li>• Draft Presentation Slides (15 pts)</li> <li>• Individual Report (300 pts)</li> <li>• Team Presentation (100 pts)</li> <li>• Team Report and Executive Summary (200 points)</li> <li>• Collaboration (50 pts)</li> </ul>		In class Th Sept 24 Due weekly for 7 weeks Tu/Th weeks 2, 3, and 4 Tu/Th week 7 Tu Nov 3 Tu Nov 24 – Th Dec 10 Tu Nov 24
Learning portfolio	60	Mon Dec 14
<ul style="list-style-type: none"> <li>• Individual report (15 pts)</li> <li>• Resume (15 pts)</li> <li>• Career Exploration (15 pts)</li> <li>• Personal reflections (15 pts)</li> </ul>		
<b>TOTAL</b>	<u>1000</u>	

**Grades:**

Grades will be awarded by converting the points earned into a percentage. 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. You may calculate your percentage grade at any time during the semester by dividing the number of points earned by the number of points possible at that point in the semester. Please see me if you have any questions.

If you would like to **appeal any grade** that you have received in this course, you may file an appeal within one week of the return of the assignment. Please submit the entire exam, homework, or paper and attach a typed explanation of the reason why you think your grade should be changed.

### **Information on the paper and presentation:**

For this assignment, students will be assigned to groups of 4-5 students based on their ENSP concentrations. These groups will have the opportunity to choose a topic from a list of current environmental challenges, or they may choose their own topic if approved by the instructor. Teams will be asked to identify their top three topic choices and describe their applicability to group member strengths with a 1-paragraph justification.

As part of the paper and presentation assignment, students will:

- (1.) Individually prepare a 6-8 page report/white paper on a specific aspect of an environmental challenge. In this report, students will represent their ENSP specialty as an expert in the field.
- (2.) Collaboratively prepare an introduction, recommendations for responding to the problem, and future research needs that are based on the individual reports, and a 2-page executive summary.
- (3.) Make a formal group presentation (using PowerPoint) conveying the group's findings to classmates.

The collaborative work will be facilitated by group meetings with me and your graduate teaching assistant during the second part of the semester. During these meetings, we will provide feedback on group functioning and offer suggestions on the direction of research and analysis. Feedback on effective group communication, including presentations, will be provided. The final team meeting will serve as a "dress rehearsal" where team members will orally present their recommendations and receive comments and suggestions from their teammates and instructors prior to the final in-class presentation.

Prior to each team meeting, students will complete a 10-point group assignment related to their paper or presentation. Students will also complete three 15-point individual assignments over weeks 2, 3, and 4 respectively. In week 7, teams will submit a draft of their completed presentation slides in addition to a draft of their introduction, recommendations and future research, and executive summary. These assignments will facilitate group discussion and must be submitted via ELMS by 11:59 p.m. on the night prior to the weekly team meeting (For example, if the team is meeting on Tuesday, the assignment should be submitted by 11:59 p.m. on Monday night. If the team meeting is on Thursday, the assignment should be submitted by 11:59 p.m. on Wednesday night). For each group assignment, students will receive either 10 points for timely submittal or 0 points for untimely submittal. No partial credit will be given. Individual assignments must be completed on time and include all required components to receive full credit.

- Week 1 – 1-page group update describing central problem (scope, intended audience, major stakeholders and information needed to address it).
- Week 2 – 1-page group update outlining breakdown of topic by team member, when and where the group will have meetings, how you plan to collaborate and deal with issues in your group, annotated list of individual sources
- Week 3 – 1-page group update discussing highlights of individual research and potential gaps in approach, submission of individual paper outline and personal communication source
- Week 4 – 1-page group update on progress, submission of individual paper draft (min. 4 pages)
- Week 5 – 1-page group update on progress, final individual papers due
- Week 6 – 1-page group update on progress on presentation, introduction, recommendations, and executive summary (all students should have read all reports in group)
- Week 7 - completed draft of presentation slides, draft of introduction, recommendations and

future research, and executive summary (which will count as the final group update)

Additional details on this assignment will be provided in class.

### **Learning portfolio:**

We are asking each student to prepare and submit a Learning Portfolio during this course. This portfolio will be used: (1) by the University to assess learning outcomes for ENSP majors; and (2) by the ENSP Program to evaluate how well we are meeting student educational and career needs. It will include a newly-prepared, current **resume** that summarizes your academic and career preparation for employment and graduate school; a **Career Exploration assignment** that will provide you with the opportunity to consider your future career and educational plans; a copy of your **individual research report** written for this course; and a **personal reflection** on your education in ENSP and at Maryland. **Please note that points will be deducted if (1) the portfolio is not submitted on time; and/or (2) it is missing one of the four required components.** More details on this assignment will be provided.

### **Late Policy:**

All papers and assignments are due on the designated date. Unless you see me in advance of the due date and obtain an approved excuse, 5 percent of the total possible points will be deducted from your score for every day the paper or assignment is late, including weekend days. (So, for example, on a 100-point scale, a student who would have earned a 94 on a timely paper will earn 89 if the same paper is turned in one date late, 84 if turned in 2 days late, etc.). Late weekly assignments will receive 0 points.

### **Attendance and Absences:**

**In general:** In accordance with University policy, students are expected to attend classes regularly, and on-time. *While attendance will not be taken during the ethics section of the course, you will be required to attend all assigned team meetings with your coach. You will also be required to attend class on your group presentation day.*

An absence will only be considered “excused” under the circumstances described by the University’s attendance policy, available at:

<http://www.umd.edu/catalog/index.cfm/show/content.section/c/27/ss/1584/s/1540>.

In summary, it is the policy of the University to excuse the absences of students that result from the following causes: illness of the student, or illness of a dependent as defined by Board of Regents policy on family and medical leave; religious observance (where the nature of the observance prevents the student from being present during the class period); participation in university activities at the request of University authorities; and compelling circumstance beyond the student's control. **Students claiming an excused absence must (1) apply in writing and (2) furnish documentary support for their assertion that absence resulted from one of these causes.**

**Illness:** The University will accept as an excused absence a self-signed note from a student who has missed a single lecture, recitation, or laboratory, attesting to the date of the illness. The note must also contain an acknowledgement by the student that the information is true and correct and that providing false information is prohibited under Code of Student Conduct. The student is also obligated to make a reasonable attempt to inform the instructor of his/her illness in advance.

For non-consecutive, medically necessitated absences from more than a single lecture or team meeting, I will follow the same policy. If absences become frequent, I will require further documentation from the Health Center or an outside health care provider.

A student experiencing a prolonged absence from class or a student who will be absent for a major scheduled grading event is required to provide written documentation of the illness from the Health Center or from an outside health care provider. In cases where written verification is provided, the Health Center or outside health care provider shall verify dates of treatment and indicate the time frame that the student was unable to meet academic responsibilities. No diagnostic information shall be given. For further information on this policy, please see <http://www.president.umd.edu/policies/v100g.html>.

### **Academic Accommodations:**

If you have a documented disability, please contact Disability Support Services in 0126 Shoemaker Hall to obtain accommodation request forms that you give me (and your other instructors) 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 website at <http://www.counseling.umd.edu/DSS>. Please submit your paperwork to me as soon as possible, and well before any due date or exam to ensure that any accommodation needs can be satisfied.

### **Learning Assistance:**

If you are experiencing difficulties in keeping up with the academic demands of this course, contact the Learning Assistance Service, 2202 Shoemaker Building, 301-314-7693. Their educational counselors can help with time management, reading techniques, math learning skills, note-taking and exam preparation skills. All services are free to UMD students.

### **Religious Observances:**

The University System of Maryland policy provides that students should not be penalized because of observances of their religious beliefs. Students 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. *It is the responsibility of the student to inform the instructor of any intended absences for religious observances in advance.* Notice should be provided as soon as possible but no later than the end of the schedule adjustment (drop/add) period (**September 14, 2015**).

### **Code of Academic Integrity:**

Academic dishonesty (such as cheating on exams, plagiarism from the internet or other students, submitting the same paper for credit in two courses without authorization, buying papers, submitting fraudulent documents and forging signatures) is unacceptable and will result in referral to the Student Honor Council, after which a determination of a violation could result in a failing grade in the course and a note on your transcript indicating a violation of the rules of academic integrity. The University's Code of Academic Integrity sets standards for academic integrity at Maryland for all undergraduate and graduate students. As a student, you are responsible for upholding these standards in this course:

1. No cheating ("intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise");
2. No fabrication ("intentional and unauthorized falsification or invention of any information or citation in an academic exercise");

3. No facilitating academic dishonesty (“intentionally or knowingly helping or attempting to help another to violate any provision of this Code”);
4. No plagiarism (“intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise”).

Please see me if anything about these rules is unclear, and for more information on the Code of Academic Integrity or the Student Honor Council, visit [www.shc.umd.edu](http://www.shc.umd.edu).

### **Copyright Protection for Class Materials:**

Commercial firms have been paying students to take notes and collect course materials, which are then copied and sold. Course materials that exist in a tangible medium, such as written or recorded lectures, Power Point presentations, handouts and tests, are copyright protected. Students **may not** copy and distribute such materials except for personal use and with the instructor's permission.

### **Course Evaluation:**

Your participation in the evaluation of courses and teachers through CourseEvalUM is a responsibility you hold as a student member of our academic community. Your feedback is confidential and important to the improvement of teaching and learning at the University, as well as to the tenure and promotion process for professors. CourseEvalUM can be accessed at this website: [www.courseevalum.umd.edu](http://www.courseevalum.umd.edu). By completing all of your evaluations each semester, you will have the privilege of accessing the evaluation reports for the thousands of courses offered at UM during the semester.

**Class Schedule and Assigned Readings**

<b>Class Period</b>	<b>Date</b>	<b>Topic</b>	<b>Assignment (to be completed for the corresponding date)</b>
1	Tues. 9/1	Review syllabus; Introduction	Hand in completed questionnaire
2	Thurs. 9/3	Environmental Ethics	Charlotte’s Web (all), Zuckerman’s Dilemma (ELMS, Files)
3	Tues. 9/8	Environmental Ethics	<p>Murphy, K. 2007. Birder Admits Killing Cat, but Was it Animal Cruelty? The New York Times, <a href="http://www.nytimes.com/2007/11/14/us/14cats.html? r=0">http://www.nytimes.com/2007/11/14/us/14cats.html? r=0</a> <b>(Last names ending in A-L read this article)</b></p> <p>Barcott, B. 2007. Kill the Cat that Kills the Bird? The New York Times, <a href="http://www.nytimes.com/2007/12/02/magazine/02cats-v--birds-t.html?pagewanted=all&amp; r=0">http://www.nytimes.com/2007/12/02/magazine/02cats-v--birds-t.html?pagewanted=all&amp; r=0</a> <b>(Last names ending in M-Z read this article)</b></p> <p>Whole class will read both articles after class assignment is complete</p>
4	Thurs. 9/10	Science for Policy	<p>Doremus, Holly, Rescuing Science from Politics, Chapter 7, Using Science in a Political World: The Importance of Transparency in Natural Resource Regulation, pp. 143-164 (ELMS, Course Reserves)</p> <p>The Ethics of Communicating Scientific Uncertainty, ELI 2015, pp. 10105-10108, (ELMS, Files)</p> <p><b>Teams formed &amp; project topics introduced</b></p>
5	Tues. 9/15	Science for Policy	<p><b>Topic selection due</b></p> <p>U.S. EPA, Connectivity of Streams and Wetlands to Downstream Waters, Executive Summary (ELMS, Files)</p> <p>U.S. EPA, Fact Sheet, Connectivity of Streams and Wetlands to Downstream Waters, Fact Sheet (ELMS, Files)</p> <p>U.S. EPA, Final Rule, Executive Summary (ELMS, Files)</p>
6	Thurs. 9/17	Case study of contemporary environmental problem; and discussion of scoping and concept	<p><b>Teams notified of project topics</b></p> <p>SESYNC Tutorial 1: Overview of Socio-environmental</p>

		maps	<p>synthesis, Appendix: What is a Concept Map (ELMS, Files)</p> <p>Policy Priorities for Managing Drought, Public Policy Institute of California, March 2015 (ELMS, Files)</p> <p>Williams, et al, Contributions of Anthropogenic Warming to California Drought during 2012-2014, Geophysical Research Letters, August 2015 (ELMS, Files)</p> <p>California Drought Tests History of Endless Drought, NY Times,  <a href="http://www.nytimes.com/2015/04/05/us/california-drought-tests-history-of-endless-growth.html? r=0">http://www.nytimes.com/2015/04/05/us/california-drought-tests-history-of-endless-growth.html? r=0</a></p>
7	Tues. 9/22	<b>Exam</b>	Coverage: Environmental ethics, science for policy lectures and readings
8	Thurs. 9/24	<p>Introduction of project: Work through elements of strong papers, presentations, and executive summaries</p> <p>Concept map exercise, team meetings, and discipline specific meetings</p>	<b>Group Concept maps due (in class activity)</b>
9	Tues. 9/29	Team Meetings: Week 1	Group Update
10	Thurs. 10/1	Team Meetings: Week 1	
11	Tues. 10/6	Team Meetings: Week 2	Group Update Individual Paper Sources
12	Thurs. 10/8	Team Meetings: Week 2	
13	Tues. 10/13	Team Meetings: Week 3	Group Update Individual Paper Outline and Personal Source
14	Thurs. 10/15	Team Meetings: Week 3	
15	Tues. 10/20	Career Center Visit	Class will meet on the 3rd floor of South Hornbake Library, Resource Room
16	Thurs. 10/22	Resume Workshop with Dr. Whittemore	Class will meet in our normal classroom, 1108 Tydings Bring draft resume to class
17	Tues. 10/27	Team Meetings: Week 4	Group Update Individual Paper Draft
18	Thurs. 10/29	Team Meetings: Week 4	
19	Tues. 11/3	Team Meetings: Week 5	Group Update Individual Report Final
20	Thurs. 11/5	Team Meetings: Week 5	

21	Tues. 11/10	Team Meetings: Week 6	Group Update
22	Thurs. 11/12	Team Meetings: Week 6	
23	Tues. 11/17	Team Meetings: Week 7	Draft of Presentation Slides, Draft Group Introduction, Recommendations and Future Research, and Executive Summary (functions as Group Update)
24	Thurs. 11/19	Team Meetings: Week 7	
25	Tues. 11/24	Team Presentations: Teams 1 & 2	Full Group Paper and Executive Summary due
26	Thurs. 11/26	Thanksgiving Break	
27	Tues. 12/1	Team Presentations: Teams 3 & 4	
28	Thurs. 12/3	Team Presentations: Teams 5 & 6	
29	Tues. 12/8	Team Presentations: Teams 7 & 8	
30	Thurs. 12/10	Team Presentations: Team 9 Last Class, plenary discussion and synthesis	
31	Mon. 12/14	NO CLASS	Final portfolio due via ELMS