



**ENSP 400  
Capstone in Environmental Science and Policy  
Fall 2016**

T/Th 12:30-1:45 p.m.  
**Tawes 0201 – Section 0101**  
**Plant Sciences (PLS) 1115 – Section 0201**

**BOTH SECTIONS WILL MEET IN TAWES ROOM 0201 FOR THE FIRST THREE WEEKS OF CLASS AND FOR OTHER CLASSES AS NOTED ON THE SCHEDULE BELOW**

<b>Section 0101</b>	<b>Section 0201</b>
<p><b><u>Instructor:</u></b> Joanna B. Goger Lecturer, Environmental Science and Policy Program Office: Room 0218 Symons Email: <a href="mailto:jgoger@umd.edu">jgoger@umd.edu</a> Office Hours: By appointment on Tuesday, Wednesday, and Thursday</p>	<p><b><u>Instructors:</u></b> Dr. Melissa Kenney Research Assistant Professor, Earth System Science Interdisciplinary Center (ESSIC) Office: Room 0206 Symons Email: <a href="mailto:kenney@umd.edu">kenney@umd.edu</a> Office Hours: By appointment Tuesday and Thursday</p> <p>Dr. Michael Gerst Research Assistant Professor, Earth System Science Interdisciplinary Center (ESSIC) Office: Room 0206 Symons Email: <a href="mailto:mgerst@umd.edu">mgerst@umd.edu</a> Office Hours: By appointment Tuesday and Thursday</p>
<p><b><u>Teaching Assistant:</u></b> Leah Schleifer Graduate student in Public Policy Office: Room 0220 Symons Hall (ENSP Suite) Email: <a href="mailto:leahschleifer@gmail.com">leahschleifer@gmail.com</a> Office Hours: Wednesday 10 a.m. to 12 p.m.</p>	<p><b><u>Teaching Assistant:</u></b> Bruce Levine Graduate student in Plant Sciences Office: Rm. 0220 Symons Hall (ENSP Suite) Email: <a href="mailto:levinebj@umd.edu">levinebj@umd.edu</a> Office Hours: By appointment Monday and Wednesday</p>

**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 major focus of this class is on learning synthesis skills and applying them in a capstone project. Teams of students will investigate a current environmental challenge in Maryland. The first few weeks of the course will use a class case study to teach students how to assess and synthesize multi-disciplinary science so that it can be used to inform and support environmental policy and management decisions. Students will then be introduced to their capstone topics. Students will work independently to assess the science or social science in their discipline related to the assigned issue and then the intersection of those disciplinary perspectives as part their teams. Weekly meetings with instructors will guide this work.

After conducting the scientific syntheses, students will return to the classroom to learn how the science they synthesized can be used to develop policy or management options for their environmental issue. Students will then work independently to identify 1-2 policy options and then as a group to develop a group options memo that is informed by the scientific synthesis completed in the first part of the course. This work will continue to be guided with weekly meetings with the instructors/TAs. There will be opportunities throughout the process to revise and resubmit work products based on instructor/TA feedback. The semester will conclude with group presentations of the group synthesis and policy options.

### **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 a bibliography of scholarly sources, government papers, and other authoritative and credible sources. This bibliography will be linked to and support each student’s scientific assessment and policy options paper and will be focused 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 scientific synthesis report, policy options memo, and presentation for an assigned environmental challenge.

3. Apply socio-environmental synthesis and transdisciplinary ways of knowing to produce a scientific synthesis and policy options memo 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 work 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 scientific synthesis and options/recommendations developed in the course 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**

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/)). We 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 we 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</u>	<u>Due Date</u>
Reflection and reading journal	50	Multiple due dates
Tangier Islands synthesis	100	Th Sept 15
Capstone: Individual scientific assessment	175	Tu Oct 4
Capstone: Team scientific synthesis	125	Tu Oct 18

Capstone: Individual policy options paper	100	Tu Nov 1
Capstone: Team Policy Options memo	175	Tu Nov 22
Capstone: Draft Team Presentation Slides	25	Tu Nov 22
Capstone: Team Presentation	100	Tu Nov 29 – Tu Dec 6
Capstone: Weekly Project Updates	75	Multiple due dates
Capstone: Team Logistics and Management	25	instructor assessment
Learning portfolio	50	Mon Dec 12
<ul style="list-style-type: none"> <li>• Capstone: Individual scientific assessment (10 pts)</li> <li>• Capstone: Individual policy options paper (10 pts)</li> <li>• Resume/CV (10 pts)</li> <li>• Career Exploration (10 pts)</li> <li>• Personal reflections (10 pts)</li> </ul>		
TOTAL	<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 revise and resubmit any graded work in this course, you will have one full week from the date of return of the assignment to do so.**

### Capstone Projects

Students will be assigned to groups of 3-4 students based on their ENSP concentrations. These groups will have the opportunity to choose a topic from a list of current environmental challenges in Maryland. Teams will be asked to identify their top choice during the second week of class.

Students will:

- (1.) Individually prepare a 3-page (single-spaced) scientific assessment of a specific aspect of the assigned capstone topic. In this assessment, students will represent their ENSP specialty as an expert in the field.
- (2.) Collaboratively prepare a 3-page (single-spaced) scientific synthesis assessment that synthesizes the linkages between the individual scientific assessments for the capstone topic.
- (3.) Individually prepare a 1-page (single-spaced) policy options paper that presents the pros and cons of 1-2 policy options for responding to the environmental capstone topic.
- (4.) Collaboratively prepare a 3-4-page (single-spaced) policy options memo that provides

background on the problem, 2-3 options, and pros and cons of those options for the capstone topic.

- (5.) Make a formal group presentation (using PowerPoint) conveying the group's capstone synthesis and policy option findings to classmates.

The collaborative teamwork will be facilitated by group meetings with your instructors and graduate teaching assistants during class. During these meetings, we will offer suggestions on the direction of research and analysis, with much of the focus of the meetings dictated by the team's meeting agenda. Feedback on effective group communication, including presentations, will be provided.

Prior to team meetings, students will be responsible for completing assignments to facilitate discussion. Additional details on these assignments 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/CV** 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 scientific assessment and policy options paper** 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 five 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 reflection and reading journal assignments or team meeting updates will receive 0 points.

### **Course Related Policies**

Information on university-wide course policies can be found at this link:

<http://www.ugst.umd.edu/courserelatedpolicies.html>. Please let us know if you have any questions about these policies.

Topics include:

- **Academic Integrity** What is cheating? What is plagiarism? What is the Honor Pledge?
- **Code of Student Conduct** What behavior is prohibited?

- **Sexual Misconduct** What to do in case of sexual harassment or sexual assault.
- **Discrimination** Procedures to prohibit discrimination, complaints about discrimination, harassment, and retaliation.
- **Accessibility** Information about disability support accommodations.
- **Attendance, Absences, or Missed Assignments** Read this prior to Schedule Adjustment date. **Please note: 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.**
- **Student Rights Regarding Undergraduate Courses** What should I find in the course syllabus? Am I allowed to see my exams after they are graded?
- **Official UMD Communication** Use of email, communication with faculty, communication about cancelled class meetings, and weather-related or other urgent notifications.
- **Midterm Grades**
- **Complaints About Course Final Grades**
- **Copyright and Intellectual Property** Who owns the work that I produce in class.
- **Final Exams and Course Evaluations**
- **Campus Resources** ELMS, counseling, learning workshops, tutoring, writing help, questions about graduation, adding or dropping classes, withdrawing from 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. 8/30	Review syllabus Begin Synthesis Case Study: Tangier Islands <b>BOTH SECTIONS 0201 Tawes</b>	<ul style="list-style-type: none"> <li>• Read syllabus</li> </ul>
2	Thurs. 9/1	Synthesis Case Study: Stakeholder Needs Assessment <b>BOTH SECTIONS 0201 Tawes</b>	<ul style="list-style-type: none"> <li>• <u>NY Times article: Should the U.S. Save Tangier Island From Oblivion?</u></li> <li>• Dilling et al, 2015, <i>Weather Climate and Society</i></li> <li>• Independently identify one article or report related to stakeholder needs in the Chesapeake Bay and of relevance to Tangier Island</li> </ul> <p><b>Reflection and Reading Journal</b></p>

3	Tues. 9/6	Synthesis Case Study: Environmental Assessment  <b>BOTH SECTIONS 0201 Tawes</b>	<ul style="list-style-type: none"> <li>Schulte et al, 2015, <i>Scientific Reports</i></li> <li>Mastrandrea et al, 2011, <i>Climatic Change</i></li> <li>Independently identify one article or report related to biophysical or environmental impacts in the Chesapeake Bay and of relevance to Tangier Island</li> </ul> <b>Reflection and Reading Journal</b>
4	Thurs. 9/8	Synthesis Case Study: Socioeconomic and Cultural Assessment Introduction to the Projects/Team Topic Selection <b>BOTH SECTIONS 0201 Tawes</b>	<ul style="list-style-type: none"> <li>Phillips &amp; McGee, 2016, <i>Coastal Management</i></li> <li>Independently identify one article or report related to cultural implications in the Chesapeake Bay and of relevance to Tangier Island</li> </ul> <b>Reflection and Reading Journal</b>
5	Tues. 9/13	Synthesis Case Study: Integration synthesis of environmental, societal, and stakeholder needs <b>BOTH SECTIONS 0201 Tawes</b>	<b>Reflection and Reading Journal</b>
6	Thurs. 9/15	Tangier Islands Synthesis assignment – review and discuss Project Management /Topics Assigned <b>BOTH SECTIONS 0201 Tawes</b>	<ul style="list-style-type: none"> <li>To be added on ELMS</li> </ul> <b>Reflection and Reading Journal</b> <b>Tangier Islands Synthesis Assignment Due</b>
7	Tues. 9/20	Team Meetings	<b>Project Updates</b>
8	Thurs. 9/22	Team Meetings	<b>Project Updates</b>
9	Tues. 9/27	Team Meetings	<b>Project Updates</b>
10	Thurs. 9/29	Team Meetings	<b>Project Updates</b>
11	Tues. 10/4	Team Meetings	<b>Capstone: Individual Scientific Assessment Due</b> <b>Project Updates</b>
12	Thurs. 10/6	Team Meetings	<b>Project Updates</b>
13	Tues. 10/11	Team Meetings	<b>Project Updates</b>
14	Thurs. 10/13	Team Meetings	<b>Project Updates</b>
15	Tues. 10/18	Policy Options Lecture: Return to case study <b>BOTH SECTIONS MEET 0201 Tawes</b>	<ul style="list-style-type: none"> <li>To be added on ELMS</li> </ul> <b>Capstone: Team Scientific Synthesis Due</b> <b>Reflection and Reading Journal</b>
16	Thurs. 10/20	Policy Options Lecture: Return to case study <b>BOTH SECTIONS MEET 0201 Tawes</b>	<ul style="list-style-type: none"> <li>To be added on ELMS</li> </ul> <b>Reflection and Reading Journal</b>

17	Tues. 10/25	Team Meetings	<b>Project Updates</b>
18	Thurs. 10/27	Team Meetings	<b>Project Updates</b>
19	Tues. 11/1	Team Meetings	<b>Capstone: Individual Policy Options Paper Due Project Updates</b>
20	Thurs. 11/3	Team Meetings	<b>Project Updates</b>
21	Tues. 11/8	Team Meetings	<b>Project Updates</b>
22	Thurs. 11/10	Team Meetings	<b>Project Updates</b>
23	Tues. 11/15	Career Workshop <b>BOTH SECTIONS 0201 Tawes</b>	<b>Reflection and Reading Journal</b>
24	Thurs. 11/17	Career Workshop <b>BOTH SECTIONS 0201 Tawes</b>	<b>Reflection and Reading Journal</b>
25	Tues. 11/22	Presentation Prep	<b>Capstone: Group policy options Memo Due</b>
26	Thurs. 11/24	Thanksgiving Break	
27	Tues. 11/29	Capstone: Team presentations	
28	Thurs. 12/1	Capstone: Team Presentations	
29	Tues. 12/6	Capstone: Team Presentations	
30	Thurs. 12/8	Last Class, plenary discussion and synthesis	<b>Reflection and Reading Journal</b>
31	Mon. 12/12	NO CLASS	<b>Final portfolio due via ELMS</b>