

## ESP 001: Environmental Analysis Course Outline and Schedule

**Instructors:** Prof. Gwen Arnold ([gbarnold@ucdavis.edu](mailto:gbarnold@ucdavis.edu))  
Office hour: Wednesday 4:10-5:00 p.m., Wickson Hall 2144 (alternate: Wickson 2135)  
Prof. Xiaoli Dong ([xldong@ucdavis.edu](mailto:xldong@ucdavis.edu))  
Office hour: Monday 3:10-4:00 p.m., Wickson 3156

**TAs:** Erica Orcutt (EO, [elorcutt@ucdavis.edu](mailto:elorcutt@ucdavis.edu))  
Office hour: Tuesday 12:10-1:00 p.m., Wickson 2148  
Emilie Graves (EG, [eegraves@ucdavis.edu](mailto:eegraves@ucdavis.edu))  
Office hour: Wednesday 1:10-2:00 p.m., Wickson 3004  
Mackenzie Johnson (MJ, [mrjohnson@ucdavis.edu](mailto:mrjohnson@ucdavis.edu))  
Office hour: Wednesday 10:00-10:50 a.m., Wickson 2148

*If you cannot attend office hours, send us an email and we will arrange another time to meet.*  
For absences from discussion or missed or late assignments, your first point of contact should be your section's TA. TAs are listed by discussion section in the table below.

Class meeting dates, times, and place:

Lectures	Tuesday and Thursday	6:10 to 7:30 pm	Giedt 1001
Discussion Sections	1. Tuesday (EG)	1:10-2:00 am	Wickson 2124
	2. Tuesday (EG)	2:10-3:00 pm	Wickson 2124
	3. Tuesday (EG)	3:10-4:00 pm	Wickson 2124
	4. Tuesday (EG)	4:10-5:00 pm	Wickson 2124
	5. Tuesday (MJ)	5:10-6:00 pm	Geidt 1006
	6. Wednesday (EO)	9:00-9:50 am	Wickson 2124
	7. Wednesday (EO)	10:00-10:50 am	Wickson 2124
	8. Wednesday (EO)	11:00-11:50 am	Wickson 2124
	9. Thursday (MJ)	9:00-9:50 am	Wickson 2124
	10. Thursday (MJ)	10:00-10:50 am	Wickson 2124
	11. Thursday (MJ)	11:00-11:50 am	Wickson 2124
	12. Thursday (EO)	12:10-1:00 pm	Wickson 2124

Initials correspond to TAs: EO = Erica Orcutt, EG = Emilie Graves, and MJ = Mackenzie Johnson

**Course objectives:** To provide students with knowledge/awareness of: (1) environmental and natural resource policies and management; (2) the scientific basis for policies and the role of science in the policy-making process; and (3) contemporary debates and issues in environmental science and public policy. We seek to foster (4) a balanced and objective perspective and appreciation of the technical, political, economic, and legal issues associated

with the making of environmental policy at federal, state, and local levels.

The overall structure of the course is:

- Part 1: Introduction to environmental science and policy
- Part 2: Biodiversity conservation in the U.S. and internationally
- Part 3: Managing natural resources in a changing climate

**Course web page and mailing list:** Log onto <http://canvas.ucdavis.edu> for downloading course materials and links to useful references. You will need a Kerberos (UC-Davis) username and password to access the site. Please opt in for receiving announcements, as we will use the announcement tool in Canvas to notify you of additional supplementary reading materials, changes in the schedule, and other course-related news.

**Grade breakdown:** Grades will be determined according to:

- active participation in discussion sections (15%)
- 3 short written assignments (8%, 9%, and 11% of your grade, respectively; 28% total)
- completion of 4 out of 5 in-class activities (10% total)
- midterm exam (22%)
- final exam (25%)

Each assignment will be out of 100 points.

**Format of assignments and exams:**

- Both the midterm and final exam will consist of a mix of short answer (requiring answers of up to a few sentences), fill-in-the-blank, draw or label a diagram, and multiple-choice questions. We will provide example questions as study guides. Exams will be written on the exam papers and paper provided by the TAs/instructors. No blue book or Scantron forms are needed. An English language translation device (or dictionary) that serves the sole purpose of translation may also be used in exams if it is preapproved by one of the professors. (Students should check with Profs. Arnold or Dong prior to exams.) It is also permissible to ask the meaning of words used in exam questions by raising your hand during exams.
- The written assignments: You will submit three papers, each 800 words or fewer excluding references. (800 words is about three pages double-spaced.) For the first paper, you will create a fact sheet summarizing the key environmental science dimensions of a current environmental problem. In the second, you will present a stakeholder analysis of the actors involved in or affected by the problem. The third will be a policy memo describing the political and legal issues raised by the problem. In the fourth paper, you will be assigned a role of a stakeholder with an interest in the problem (e.g., government agency official, industry executive, farmer, citizen) and, from this perspective, you will write a recommendation for how the problem should be handled. We will provide additional guidelines regarding the papers in separate handouts. Your topic (the environmental problem you analyze) will be assigned to you in your discussion section.
- Five in-class activities will be offered and you must complete at least four of them

to receive any points. Each is worth 2.5% of the course grade. No points will be awarded unless you complete four activities. Completion of all five activities does not result in more than 10% of the course grade.

**Readings:** There are two types of readings: required readings for discussion sections and optional readings that provide background for the lecture material. There is no book for this course because no single text adequately covers the material. Instead, we provide the optional readings to supplement the lecture materials and provide a secondary resource for understanding relevant concepts. All readings are available on Canvas in the Resources folder. We will announce in lectures, discussion section, and on Canvas any changes to the readings. Please allow yourself time to study the readings and look ahead in the syllabus so that you know what is expected for upcoming lectures and discussions.

**Lectures and lecture materials:** You are expected to attend lectures. We will not always make summary notes or Powerpoint slides available on Canvas. We will endeavor to make podcasts available. However, we have had some trouble with the podcasting technology in the past and cannot guarantee podcast availability. Furthermore, the critical information may not be readily discernable from slides or the podcast alone, especially if there are questions and answers in class. If you miss a lecture, we highly recommend that you get notes from a classmate and listen to the podcast (if available).

**Discussions:**

The discussion grade will break down as follows:

- 50% for attendance
- 50% for informed participation

Active and informed participation in discussions is required. “Active” means that on average you talk for 2-3 minutes per discussion section. “Informed” means that you have read the assigned materials and thought about them.

If you cannot attend a discussion session in a particular week, you should attend a different section that week. This accommodation is on a space-available basis. Please arrange to attend an alternate session with your TA as soon as possible. If you cannot attend a different section, you may be able to write a one-page summary of the readings in order to earn points for attendance and participation for that week. You must tell your TA in advance that you want to pursue this option and explain why. If the reason is acceptable (i.e., your absence is due to an unavoidable event or commitment), your TA will indicate the deadline by which you must submit this summary and provide you with additional instructions.

**Important dates:**

- First written assignment due on Oct. 16 both in lecture AND electronically
- Midterm: Oct. 30 in class
  - Midterm review sessions: To be announced

- Second written assignment due on Nov. 8 both in lecture AND electronically
- Third written assignment due on Dec. 4 both in lecture AND electronically
- Final exam: Tuesday Dec. 11, 8:30pm-10:30pm, Geidt 1001
- Final review session TBA

**Academic conduct:** We all agree to uphold the University Code of Academic Conduct, which is available at <http://sja.ucdavis.edu/cac.html>. Any violations will be reported to Student Judicial Affairs.

***Your assignments must be independent pieces of work written by you.*** We encourage having friends and classmates proofread your work, but you must turn in independently written work that does not copy the wording of another student, a website, or any other source. Avoiding plagiarism means not only avoiding identical wording, but also avoiding very similar statements with only a few words changed. This requires restructuring an idea in your own words and citing sources. If using original wording is unavoidable, then use quotations and cite the source. For a very informative set of examples, see <http://sja.ucdavis.edu/files/plagiarism.pdf>.

**Assignment policies:** *The written assignments are due at the beginning of class on the specified day as hard copies.* If you cannot attend class due to illness, you can turn in assignments by getting a hard copy to the submission box outside Profs. Arnold's office door (2144 Wickson) by the due date and time. Also submit an electronic copy on Canvas as per the assignment instructions.

***Late assignments will be deducted 10 points for each 24-hour period after the due date and time. (All assignments are out of 100 points.) Assignments that are more than three 24-hour periods will be assigned a zero unless a documented reason is accepted by us.*** Please note that a missing assignment can have a significant impact on your grade. If you are turning in a late assignment during a 24-hour period that falls on a weekend, email a scanned or typed copy to us to establish the turn-in time **and** submit the hard copy to the submission box outside of Dr. Arnold's door on the following Monday. If you have a doctor or other official note, please be sure that it specifies the dates affected and activity constraints. There will be no early exams or make-up exams without a written excuse from a treating physician or counselor.

**Grade changes:** If you feel that you have been unfairly graded or we incorrectly added up your grade on any course assignment or exam, please write a short statement of explanation. You can either email this statement to Prof. Arnold along with a readable photo or scan of the assignment (once it is returned to you), or print the statement, attach it to the assignment, and submit both to the submission box outside Prof. Arnold's office door. You must do this within one week of when the graded assignment is returned to you. We will not accept grading petitions after the week has passed.

**Resources for success:** If you are struggling with this class or with classes in general, or need help with your writing, then we urge you to contact one of the following campus resources: The writing center (for writing help): <http://success.ucdavis.edu/academic/writing.html>. The Student Academic Success Center (study skills): <http://success.ucdavis.edu/study-skills/>.

## Course Outline

Readings listed are to be read before the lectures or discussions with which they are associated (GA=Gwen Arnold, XD=Xiaoli Dong).

Lecture Dates	Class topic	Readings for Lecture	Readings for Discussion Section	Important Dates
<b>Part 1. Introduction to Environmental Science and Policy</b>				
W1_Sept 27	Introduction to the course and environmental science and policy (GA & XD)	Lubchenco 1995	<i>No discussion section</i>	
W2_Oct 2	Attitudes and approaches in environmental analysis (GA)	Rothenberg 2002 (Chp1); Salzman et al. 2010	<i>What role should scientists play in policy formation?</i> Weible 2007 & <i>How do we do science?</i> Platt 1964; Cox 2015	
W2_Oct 4	Scientific investigation methods and environmental monitoring (GA & XD)	Alexander 2008		
W3_Oct 9	Ecosystems, their cycles, and the role of humans (XD)	Raven et al. 2008	Vitousek et al. 1997; Steffen et al. 2018	
W3_Oct 11	Human population growth, environmental impacts and carrying capacity (XD)	Dimmick 2014		
W4_Oct 16	Human population part 2, the demographic transition, education and resource consumption (XD)	Pimentel et al. 2010	<i>Can we solve the tragedy of the commons?</i> Hardin 1968; Ostrom et al. 1999	1 <sup>st</sup> written assignment due
W4_Oct 18	The market and the environment (GA)	Rothenberg 2002 (Chp2)		
W5_Oct 23	Instrument choice in environmental policy I (GA)	Goulder & Parry 2008	<i>What is the best way to regulate carbon?</i> Grantham Research Institute 2013; Stavins 2008; Wittneben 2009	
W5_Oct 25	Instrument choice in environmental policy II (GA)	U.S. Congress Office of Technology Assessment 1995		
W6_Oct 30	<i>Midterm</i>		<i>No discussion section</i>	Midterm
<b>Part II. Biodiversity Conversation in the U.S. and Internationally</b>				
W6_Nov 1	Conservation strategies (XD)	Wilcove et al. 1998; "Conservation"		

		2010		
W7_Nov 6	Non-market valuation and the economic value of biodiversity (GA)	Johnston et al. 2010	<i>How to conserve and value biodiversity?</i> <a href="#">Kareiva et al. 2012</a> ;	
W7_Nov 8	Conservation policy, pitfalls, and trends (GA)	Brown & Shogren 1998	Odling-Smee 2005; McCauley 2006; Brook et al. 2008	2 <sup>nd</sup> written assignment due
W8_Nov 13	Canceled due to Camp Fire			
<b>Part 3. Managing Natural Resources in a Changing Climate</b>				
W8_Nov 15	Canceled due to Camp Fire			
W9_Nov 20	Canceled due to Camp Fire			
W9_Nov 22	<i>Canceled due to Thanksgiving</i>			
W10_Nov 27	Biodiversity & Policy strategies for tackling climate change I (GA)	Aldy et al. 2009	<i>U.S. approaches to climate change:</i> Pacala & Socolow 2004; Council on Foreign Relations 2013; McCright & Dunlap 2011	
W10_Nov 29	Science of climate change (XD)	Parmesan & Yohe 2003; Vörösmarty et al. 2000; Lobell et al. 2008		
W11_Dec 4	Policy strategies for tackling climate change II (GA)	<a href="#">IPCC 2014</a> ; Kelly & Adger 2000	In-class discussion of the environmental problems	3 <sup>rd</sup> written assignment due
W11_Dec 6	Climate change impacts, mitigation, and adaptation (GA & XD)			
W12_Dec 11	<i>Final exam</i>			Final Exam