

BIO 407: SUSTAINABLE HUMAN ECOLOGY

Instructor: Dr. Kerry Byrne
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Office: DOW 205
Office Hours: T 1-2pm, WF 2-4 pm, or by apt.

Lecture: MWF 11 -11:50 am in DOW E255

Lab: T 3 – 5:50 pm in DOW E255

Course overview: this is the required capstone course for Environmental Science majors and Sustainability minors. It is intended to ensure that every student graduating in the Environmental Science major and Sustainability minor is knowledgeable of the basic principles of sustainability (the environmental, social, and economic dimensions) and the interconnections between humans and natural systems. The course is structured around three main elements:

- 1) An individual project where students evaluate their carbon foot print and make some change in their daily lives for a three-week period and blog about their experience;
- 2) A set of required readings and discussions that cover a range of issues relating to sustainability science; and
- 3) A campus-oriented group project that students will present to the OIT campus sustainability committee and interested other members of the OIT and Klamath Falls community at the end of the quarter.

Course learning objectives: in this course, students should be able to demonstrate an understanding of the environmental, social, and economic dimensions of sustainability. Specifically, students should leave this course able to:

- Define and understand the concept of sustainable development;
- Critically evaluate primary literature focused on sustainability;
- Understand how their actions affect the environment, and become more aware of the interconnectedness between humans and natural systems; and
- Work collaboratively with students from diverse disciplines to conduct a campus-oriented sustainability research project and communicate the findings in written and oral format to your peers and the OIT community.

Required reading: there is no required textbook for this course. Required weekly readings will be assigned and posted on blackboard well in advance of the week in which they will be discussed. Most of the course readings will come from the on-line compilation of “Readings in Sustainability Science and Technology”, a document published in 2010 under the auspices of the Sustainability Science Program at Harvard University.

Student assessment: course grades at Oregon Tech follow a “whole grade” structure: A = 100-90%, B = 89-80%, C= 79-70%, D = 69-60%, F < 60%. Student performance will be assessed using the following criteria:

Component	% of grade
Quizzes (best 6/7)	15
Midterm (1)	15
Participation	5
Discussion prep (9)	10
Discussion lead (1)	10
Lifestyle Project (1)	15
Group presentation (1)	15
Group report (1)	15

Quizzes: there will be seven unannounced quizzes, based on the reading assignment just for that day. This is a small, discussion-based class, so it is imperative that everyone is prepared to actively participate in the course by keeping up with the reading. Reading takes time, so I believe that your effort to keep up with the reading should be reflected in your evaluation for the course. Quizzes will be OPEN NOTES, but not open book. You cannot make up quizzes. However, your quiz grade will be based on your best six out of seven; so if you are unlucky enough to miss class on day with an unannounced quiz, it will not hurt your grade.

Midterm: there will be one take home short answer and essay exam. The exam will be posted on blackboard by Wednesday, 4/29, and will be *due via email* no later than **Monday, 5/4, at 5:00 pm**. The exam should take you no more than two hours to complete, as long as you have done all of the reading and participated in class discussions.

Participation: attending class and actively participating in discussions is important! I will evaluate your participation in class discussions, along with your attendance.

Discussion lead: once in the quarter you will lead a discussion with one other student. You should provide a: (1) short (3-4 sentence) summary of the paper; its main point and the approach taken by the authors; (2) critique the methods, interpretation, creativity, and significance of the work; and (3) make suggestions about how to make the research and the paper better. You must also provide 4 original discussion questions (cannot overlap with your partner) that you will use to help guide the discussion that you will lead.

Discussion prep: in the weeks that you are not leading discussion, you must respond (briefly) to three questions about the paper(s) assigned for the week. These questions are designed to help you think critically about the paper as you read it.

- 1) Describe one thing you liked about the paper.
- 2) Describe one thing you did not like about the paper, or something you would have done differently.
- 3) What is something this paper made you wonder about? This could be a conceptual question, or something practical/logistical. You can write your answer to this question in the form of a question.

Lifestyle project: you will receive a separate handout and timeline for this project in week 2.

Group presentation & group report: you will receive a separate handout and timeline for this project in lab during week 2.

General Details

Make up exams or deadline extensions are issued only for university-excused absences. There are no early exams or extra credit. Late assignments are penalized 20% per day overdue.

Policy on contesting grades: I like to consider my classroom a democratic monarchy. I am the first to admit that I am not perfect- I may grade something incorrectly, or there may be more than one right answer that I have not thought of. Thus, I encourage you to contest your grade if you feel your answer falls into one of those categories. If you feel your answer was graded incorrectly on a test, quiz, or other assignment, you have **one week** after the test is returned to contest. You must return your original assignment with a typed statement of why you think your answer is correct and why we should consider it for regrading.

Student success center: <http://www.oit.edu/current-students/student-support>

The Student Success Center provides a wide range of student support services including Testing Services which promotes academic success by working with faculty by providing testing services for any of the OIT academic courses as well as specialized testing services such as those needed for accommodations for students with disabilities, in-class test proctoring, and a computer lab, and Career Services which offers career advising, resume writing, job interviewing workshops, job search assistance, career fairs, and job listings.

Testing services: 541-885-1791

Career services: 541-885-1020

Peer consulting services: <http://www.oit.edu/current-students/student-support/tutoring> Peer Consulting is a **completely free** academic support service available for all students of Oregon Tech. Peer Consultants are typically Oregon Tech students who have taken the same classes you have and have earned a B or better in their areas of expertise. We often have professors and staff that offer their time and assistance in the Center as well. Our goal is to provide assistance in all areas, majors, and courses offered at Oregon Tech. Peer Consulting reinforces what you are learning in your classes, fosters your sense of community and strengthens intercultural communication. Peer Consulting helps empower you to become successful in your academic career and reach your graduation goal. **Office:** LRC 233 **Tel:** 541.851.5236

Disability services: <http://www.oit.edu/current-students/student-support/disability-services> If you may need a course adaptation or academic accommodation because of a disability, or if you might need special arrangements in case the room or building must be evacuated, please see me as soon as possible. I rely on the Disability Services for assistance in verifying the need for accommodations and developing accommodation strategies. If you have not previously contacted that office, I encourage you to do so. Staff will assist in communicating information about needs and adjustments to instructors. **Call:** 541-885-1031 or 541-851-5227 for further assistance. **Office:** LRC 230B

Statement on recording lectures and in-class discussions: Please be advised that this class may be recorded. HOWEVER, if you would like permission to record this class you must speak with the professor prior to making any recordings.

The honor code: cheating and plagiarism are strictly enforced in this course. Students may work together on assignments and projects, but each individual is expected to contribute equally, not rely on the work of others. Students caught cheating will receive a zero on the exam or assignment and be reported to student services. www.plagiarism.org for more info.

Plagiarism means to:

- to steal and pass off (the ideas or words of another) as one's own
- to use (another's production) without crediting the source
- to commit literary theft
- to present as new and original an idea or product derived from an existing source

All of the following are considered plagiarism:

- turning in someone else's work as your own
- copying words or ideas from someone else without giving credit
- failing to put a quotation in quotation marks
- giving incorrect information about the source of a quotation
- changing words but copying the sentence structure of a source without giving credit
- copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not (see our section on "fair use" rules)

Lecture Schedule (subject to change)

WEEK	TOPICS	READING
1 3/30, 4/1, 4/3 Sustainability introduction	M: course introduction	~
	W: in class activity & discussion: how does the media portray sustainability?	~
	F: sustainability & sustainable development	Kates et al. 2005
2 4/6, 4/8, 4/10 Population & global sustainability	M: population growth & development	Bloom 2011; Lee 2011
	W: population solutions; LIFESTYLE PROJECT	~
	F: population policy options in the developing world	Bongaarts 1994
3 4/13, 4/15, 4/17 Global economy 4/19 Food production	M: wealth & capital http://www.eoearth.org/view/article/154792/	See link to left
	W: poverty & affluence	Kates & Dasgupta 2007
	F: the green revolution	International Food Policy & Research Institute, 2002
4 4/20, 4/22, 4/24 Food production, cont.	M: King Corn documentary	~
	W: Big River documentary and in-class activity/discussion	~
	F: can we feed the world & sustain the planet?	Godfray et al. 2010; Foley 2011
5 4/27, 4/29, 5/1 Water	M: water resources sustainability	Lant 2004
	W: history of water issues in the Klamath Basin <i>Guest speaker:</i> Todd Kepple	~
	F: meeting ecological & societal needs for freshwater	Baron et al. 2002
6 5/4, 5/6, 5/8 Sustainable design	M: sustainable buildings <i>Guest speaker:</i> Nicolette Mueller, USGBC	~
	W: planning sustainable cities; Lerner TED Talk http://nyti.ms/1ukq5ph	NYT article (linked)
	F: urbanization & the metropolitan environment	Solecki & Leichenko 2006
7 5/11, 5/13, 5/15 Energy	M: how sustainable are renewable energy technologies? http://nyti.ms/1JqYOeF	Evans et al. 2009 NYT article (linked)
	W: TBD, <i>guest speaker</i>	TBD
	F: toward a hydrogen economy	Pacala and Socolow 2004
8 Global change 5/18, 5/20, 5/22	M: climate and global biogeochemistry: background & mitigation strategies	IPCC 2014
	W: climate and global biogeochemistry: background & mitigation strategies, cont.	~
	F: tipping points in the Earth's climate system	Lenton et al. 2008
9 5/27, 5/29 Sustainable business practices	No class – memorial day holiday	~
	W: TBD, <i>guest speaker</i>	~
	F: <i>what can we do at OIT?</i> http://nyti.ms/1IOJhbR http://nyti.ms/1teTOzr	NYT articles linked other articles to be added by students
10 6/1, 6/3, 6/5 putting it all together	M: Linking knowledge & action for sustainable development	Kerkhoff & Level 2006
	W: cont.	~
	F: Course summary	~

Lab (project) schedule

Week	Date	Lab Activities	Assignments
1	3/31	No lab this week	Read OIT sustainability plan (2008) for next week
2	4/7	Discuss OIT sustainability plan and break into project groups	~
3	4/14	Group work	~
4	4/21	Present project proposals, get feedback	Project proposal and timeline due before lab
5	4/28	Discuss methods/information display. Work on projects	~
6	5/5	Group work; individual group meetings with Dr. Byrne during lab time	~
7	5/12	Group work	~
8	5/19	No lab this week	Draft presentation due by end of lab
9	5/26	PROJECT PRESENTATIONS , regular lab time, Location TBD	~
10	6/2	Digest presentation feedback. Peer and self evaluations. Group work time, or short lab.	Draft report due by end of lab
FINALS WEEK	6/9	No meeting during exam week	Final written report due by 2 pm