

SOS 110: Sustainable World
Mondays: 2:00 – 3:15, GIOS L1-04
Tuesdays: Breakout sessions as scheduled (See ASU Course Catalog)

The Teaching Team

Instructor: Dr. Sonya Remington	Semester hours:	3
Email: Sonya.Remington@asu.edu	Pre-requisites:	None
Phone: 480.727.0408	Co-requisites:	None
Office Location: GIOS 342		
Office Hours: Tues 10:30 – 12:30 pm; Wed 12:30 – 1:30		
Course Webpage: myasucourses.asu.edu		

Graduate Teaching Assistants (email, office hours and location*):

Benjamin Warner, Lead TA (benjamin.p.warner@asu.edu)
Genevieve Metson (gmetson@asu.edu, T 3 – 4 pm)
Ann Marie Raymond (annmarie.raymondi@asu.edu, T 10 – 11; Th 12:30 – 1:30 pm)
Lea Wilson (lea.wilson@asu.edu, M 9 – 10 am; W 9 – 10 am)

*All Teaching Assistant office hours will be held in the SOS Undergraduate Advising offices located on the 1st floor of the GIOS building except for Genevieve Metson. She will hold office hours in GIOS 215 just upstairs.

Course Overview

Sustainable World and its companion class, *Sustainable Cities*, will introduce you to the field of sustainability and explore the fundamental question of how human and natural systems interact. *Sustainable World* focuses more on how the environment functions, but also addresses how humans interact with the environment: how we shape the environment and how it shapes us. This class will also focus on a general approach to solving sustainability problems that come from an emerging field known as Sustainability Science. Using real world issues and problems such as biodiversity loss, agriculture and the Phoenix water system, you will learn about the fundamental Earth systems on which we depend and how people interact with these systems.

Sustainability Literacy:

All courses in the School of Sustainability are designed to build and deepen your understanding of the following key concepts:

- *Systems Dynamics*: Human systems and natural systems are linked. Changes in any part of any system have multiple consequences that reach far beyond the initial change.

- *Tradeoffs*: Solving almost all problems related to sustainability involves tradeoffs. There are rarely perfect solutions with no costs, and there are often winners and losers.
- *Cascading Effects and Unintended Consequences*: There are cascading effects (positive and negative, intended and unintended) of human policies, decisions and actions, all of which have implications for sustainability.
- *Scale*: Problems of sustainability exist at multiple scales. Solving a problem at a local level is a very different thing than solving a problem across international boundaries.
- *Transdisciplinary*: There is no one “solution” to address sustainability – no one person or field of study has the answer. We need scientists and social scientists of all disciplines, politicians, entrepreneurs, artists, farmers, business and community leaders, and *you* to work towards a sustainable future.

Learning Outcomes for *Sustainable World*:

After taking *this course*, you should be able to:

- Explain the biogeochemical cycles (carbon, nitrogen, sulfur and phosphorous) that are most relevant to sustainability;
- Describe the water cycles and its relevance to sustainability;
- Explain energy flow and relate it to current issues in sustainability;
- Outline the basic concepts of ecosystem science, such as ecosystem structure and function, evolution and population dynamics;
- Define and give examples of ecosystem services;
- Outline the state of the world’s renewable and non-renewable resources;
- Discuss the role of human values, aesthetics, preferences and patterns of consumption in understanding and making decisions about sustainability;
- Discuss the relationships among poverty, inequality and security, and understand the concept of environmental justice;
- Describe how social and political institutions (local to global) affect sustainability;
- Discuss the current and potential role of business and economics in creating a sustainable future;
- Evaluate the interconnectedness of elements of ecological, physical and social systems within the context of specific cases;

- Locate and evaluate the credibility of online and print resources related to sustainability;
- Demonstrate effective interpersonal communication and presentation skills;
- Describe and recognize what is meant by a sustainability or 'wicked' problem;
- Outline a general approach to framing and solving sustainability problems.

Assessment and Evaluation:

Exams: There will be three exams given this semester – two exams during the semester and a final exam. Exam 1 will be worth **10 % of your final class grade** and Exam 2 will be worth **15 % of your grade**. The final exam will be comprehensive and will be **20 % of your class grade**. Group study sessions with the Graduate Teaching Assistants will be scheduled to optimize your preparation for what should be a simple presentation of how much you have learned this semester.

Essays: You will be doing research to write an essay in which you will respond to a question posed to you. This means that you will answer the essay questions using information other than that found in your textbook or presented in class or during breakout sessions. In addition to materials presented in class or found in your textbook, you will need to search for credible sources of information about the case. Roger Knouff (Roger.Knouff@asu.edu) has created a Library Guide for our class that will help you with your essay writing: <http://libguides.asu.edu/SOS110>. Refer to this website often, as it will help you with everything from research using the library data base to understanding the APA citation style that will be required to for your essay to providing tons of useful information for your groups projects at the end of the semester. A detailed grading rubric for essay assignments will be provided on the Blackboard site. Each Essay will be 5 % of your final grade (5 % x 2 = **10 % of your final grade** for all Essays).

Constructive Participation: Your breakout session classes have in-class discussions, problem-solving activities, debates or case studies nearly every week. Each breakout session class will be overseen by a Graduate Teaching Assistant, and will be further split into discussion groups of 3 – 5 students. Your participation in these discussions and in presentations to the greater breakout group will be monitored by your Graduate Teaching Assistant. In addition to attendance and active participation in breakout sessions, your participation grade will also be determined by how well you do on quizzes given at the beginning of breakout to test whether you've done the assigned reading, group assignments for your final project at the end of the semester, a student biography and a rough draft for Essay #1. It is crucial that you actively participate in all of these activities, as **20 % of your class grade** will reflect this. Note that your failure to attend breakout guarantees you the worst participation score possible!

Final Group Project Report: Your final group project will involve using of the problem-solving methodologies that you learned during the first half of the semester to analyze a sustainability problem related to water in the Phoenix area. This project will allow you to demonstrate: 1) your understanding of the concepts presented in class; 2) your ability to research a topic; 3) your proficiency with developing a sustainability case study and supporting an original solution; and 4) your written presentation skills. Details on this final project will be presented during the semester. A detailed rubric for this project, including grading criteria, will be provided on the Blackboard site. Your final group project will be due on May 3, and will be **10 % of your final grade**.

Final Group Project Presentations: Your group will present your final project to your breakout group during the final breakout sessions of the semester (see Tentative Schedule at the end of this syllabus). The format for these presentations will be described during your breakout sessions. Every member of the group must participate in the presentation, and its preparation, in a way that is clear to the Graduate Teaching assistant and the professor. This final group presentation will be **5 % of your class grade**. A rubric for the assignment, including grading criteria, will be provided on the Blackboard site.

Clicker Questions: We will evaluate whether you've done the readings and whether you're paying attention in class using Clicker questions. The clicker grade will be **5 % of your final grade**. Make sure that you have a clicker to answer questions during the first lecture in this class. Instructions on how to prepare for this can be found on our course website on the 'Clicker Information' page. Inappropriate clicking (e.g., bringing a friend's clicker to class) will be considered academic dishonesty and dealt with appropriately (see **Course Expectations and Policies** below).

Case Analyses: You will be required to do two case analyses during this class – one at the beginning of the semester and one at the end. These assignments should take you about 30 – 60 minutes each. There are not right or wrong answers to the questions that you will be asked during the case analyses. Therefore, the assignments will be graded based on the effort you put forth in completing the assignment: The more effort you put in, the better your grade will be. The purpose of this assignment is for us (the Instructors) to assess how your systems thinking and conflict resolution skills have changed by the end of the semester.

Extra Credit: You will have two, and only two, opportunities for earning extra credit points in this class. At the beginning of the semester, you can visit Dr. Remington during extended office hours (see Powerpoint presentation from first breakout session for times) being held during the 3rd and 4th weeks of the semester. Because this the lectures in this course take place in a big classroom with little chance for interaction between student and instructor, there are few opportunities for the instructor to get to know you. This will be an opportunity for her to learn about your background and academic goals, and for you to earn easy extra credit points. The second opportunity for extra credit is for you to fill out the on-line course evaluations at the end of the semester.

The detailed point breakdown for this class is as follows:

Exam 1	200
Exam 2	300
Final Exam	400
Essays (2 @ 100 pts each)	200
Participation	
General Participation	200
Essay 1 Draft	50
Student Biography	24
Quizzes (6 @ 6 pts each)	36
Group Assignment (4 @ 30 pts each)	120
Final Group Project Report	200
Final Group Project Presentation	100
Clicker Questions	100
Case Analysis (2 @ 50 pts each)	100
Extra Credit 1: Visit Dr. Remington	50
Extra Credit 2: Course Evaluation	25

Your final grade will be calculated using ASU's Grading Policies, which can be found at: <http://students.asu.edu/grades-grading-policies>.

Readings:

Required Text:

Miller, G.T. and S.E. Spoolman (2009). *Living in the Environment: Concepts, Connections, and Solutions* (16th ed.). Brooks Cole.

You can download a copy of the textbook as a pdf, or download individual chapters as pdfs at a significantly cheaper price than purchasing a new hard copy. This is also a more sustainable way to acquire your course text. To download, go to:

<http://www.ichapters.com/market/index.html>

Readings Posted on the Course Website:

You will have readings in preparation for breakout sessions on some weeks. These readings will be posted on Blackboard in your Teaching Assistant's breakout folder. There will also be readings outside of the text book that you will need to do prior to lecture. These readings will also be posted on the course website. All of the required reading can be found in the Tentative Schedule table at the end of this syllabus.

Course Website:

This course has an accompanying myASU website. Log in to the site at <http://myasucourses.asu.edu> using your ASURITE ID and password. You should see “SOS 110: Sustainable World” under the “My Courses” heading. The website contains readings, assignments, links, email addresses and a discussion forum.

Note: myASU acquires your e-mail address directly from ASU’s EPO. This means that you will have to check your ASU e-mail, **or have it forwarded to your preferred account** to get information sent from instructors or from your classmates. For tutorials to assist you, go to: <http://help.asu.edu/node/1712>

Course Policies and Expectations:

Assignments. Written assignments must be word-processed and spell-checked. Your name and student number should appear at the top of each assignment. Please submit your work electronically as a pdf (preferred) or a *Word* (.doc) document using the Assignment feature on Blackboard. Late assignments will not be accepted. Period.

Academic Misconduct. Cheating on exams, plagiarism (the use of another person’s words, ideas or data without giving that person recognition), and other forms of academic misconduct will result in immediate dismissal from the class with a failing grade. Your graduate teaching assistants and professor will be using very sophisticated anti-plagiarism software to check all assignments (and you should note that this software is very good at identifying Google-copying and other forms of web plagiarism). Don’t do this! See ASU’s general policies on academic misconduct at <http://www.asu.edu/studentlife/judicial/index.html>

Classroom Civility. We will often talk about controversial topics in this class. We will ALWAYS do so in a professional manner and convey respect to all members of our classroom community, *especially* when we disagree with and challenge their ideas.

Cell Phones, Pagers, PDA’s, iPods and Blackberries. Turn them off! Feel free to take notes in class with your laptop or use it to answer Clicker questions, but that is all you should be doing with your laptop. If roaming graduate teaching assistants see you checking e-mail or IMing friends during class, your participation grade will be impacted.

Disability Accommodations. If you need disability accommodations for this class, please see me as soon as possible so that I may work with the Disability Resource Center (<http://www.asu.edu/studentaffairs/ed/drc/>) to meet your needs. Information regarding disability is confidential.

Study and Preparation Time. The Arizona Board of Regents specifies that students are expected to spend at least two hours per week on course-related research and scholarly activities per course credit. This means that each week you should expect to spend at least six hours preparing for class.

Subject to Change. All class syllabi are subject to minor changes as necessary to accommodate the needs of the professor, school or class.

Majoring in Sustainability:

Sustainability majors and concentration students: Welcome to our new and exciting field! If you have any questions, please feel free to drop by during office hours to introduce yourself and talk about your interests and plans. We encourage you to make an appointment with our Undergraduate Advisors who are located in Student Services on the 1st floor of the GIOS building, which is located just across the breezeway from the SOS 110 lecture hall (GIOS 101). Our advisors are Pamela Van Husen (Pamela.Vanhusen@asu.edu for students with last names beginning with A – L) and Carol Schulte (Carol.Schulte@asu.edu for students with last names beginning with M – Z). They will help you make choices about general studies courses and electives that are appropriate for the challenge area or track that you wish to study. Even if you do not have specific questions at this time, we encourage you to make an appointment with them to make sure that you are on track.

Maintaining your major. Sustainability Majors should refer to the appropriate catalog year of your major map for information about grade requirements for SOS 110 and SOS 111. You must earn a particular grade for this course, so make sure you understand what the grade expectations are. If you are unsure what they are, please send an email with your questions to sosadvising@asu.edu along with your full name and 10 digit ID number.

Sustaining Yourself:

Freshman year can be tough! ASU is a huge school and can sometimes seem impersonal. Fortunately, there are numerous support units on and off campus that provide training, tutoring, advocacy or just someone to talk to. Here are a few.

- *Computer Help Desk* – Provides assistance with computer-related problems and computer accounts. https://techbase.asu.edu/wiki/index.php/UTO_Help_Desk
- *ASU Writing Center* – If you need assistance with improving your writing skills, this center is available to you. You may seek their help yourself or you may be referred to the Writing Center by your Graduate Teaching Assistant or the professor. <http://studentsuccess.asu.edu/writing>
- *Counseling and Consultation* – Provides confidential mental health and career counseling services for all ASU students. http://www.asu.edu/counseling_center/

- *Disability Resources Center* – Provides a comprehensive range of academic support services and accommodations for qualified students with disabilities. <http://www.asu.edu/studentaffairs/ed/drc>
- *Student Financial Aid Office* – Offers information and applications for student funding such as grants, loans, scholarships and student employment. <http://www.asu.edu/fastt/>
- *Student Health and Wellness Center* – Provides non-emergency medical health care to all ASU students regardless of insurance status. Most visits with a physician or nurse practitioner are free of charge, but fees will be incurred for x-rays, lab results, etc. <http://www.asu.edu/health/>
- *Student Recreational Center* – Offers individual and group fitness opportunities, as well as information on nutrition and wellness, and massages. Use of the general facilities (weights, circuit training and cardio machines) are free. Other services (yoga classes, massages) are fee-based. <http://www.asu.edu/src>
- *Student Legal Assistance* – Provides legal advice and counsel free of charge to all ASU students in areas such as landlord-tenant law, credit reports and collection issues, taxability of scholarships and grants, etc. Notary service is also available at no charge. <http://www.asu.edu/mu/legal>
- *EMPACT Crisis Hotline* – Offers free 24-hour support for mental health crises. Call (480) 784-1500 in the Phoenix area, (866) 205-5229 for the toll-free number outside Phoenix and (480) 736-4949 for the sexual assault hotline. All services are free and confidential. <http://www.empact-spc.com/>

Tentative Schedule

Week	Date	Topic	Reading or Assignment Due
1	Jan 17	Lecture: NO LECTURE	
1	Jan 18	Breakout: Introduction	
2	Jan 24	Lecture: Introduction to Sustainability Problems (Wicked Problems)	Chapter 1 in Miller <i>1st Clicker Questions</i>
2	Jan 25	Breakout: Approach to Sustainability Science I (Problem Solving Framework)	Read the excerpt from Chapter 1 of Dialogue Mapping <i>Case Analysis & Student Bio Due; Quiz on Reading</i>
3	Jan 31	Lecture: Human Dimensions	Chapter 25 in Miller

3	Feb 1	Breakout: Approach to Sustainability Science II (Systems Analysis Framework)	Read Walker and Salt (2006), Case Study 2: The Goulburn-Broken Catchment, Aus <i>Quiz on Readings</i>
4	Feb 7	Lecture: Ecosystems Ecology	Chapters 2 & 3 in Miller
4	Feb 8	Breakout: Visioning	Read Ch1 Newman & Jennings; <i>Quiz on Readings</i> <i>Essay 1 Draft Due</i>
5	Feb 14	Lecture: Community Ecology and Biodiversity	Chapters 4 & 5 in Miller
5	Feb 15	Breakout: Indicator Setting	Read Breakout Session Handout on Indicator Setting and 'Walker and Salt (2006), Case study 3: Losing the Jewel in the Crown' <i>Quiz on Readings</i>
6	Feb 21	Lecture: Human Population & Agriculture	Chapters 6 & 12 in Miller
6	Feb 22	Breakout: Thresholds	Read Walker and Salt (2006), Chapter 3 – Crossing the Threshold for next week <i>Quiz on Readings</i> <i>Essay 1 Due</i>
7	Feb 28	Lecture: Earth Systems & Nonrenewable Resources	Chapters 14 & 15 in Miller
7	Mar 1	Breakout: Causal chain analysis	Read Breakout Session Handout on Causal Chain Analysis <i>Quiz on Readings</i>
8	Mar 7	Lecture: Exam 1	Exam 1
8	Mar 8	Breakout: Scenarios I	
9	Mar 14	NO LECTURE – Spring Break	
9	Mar 15	NO BREAKOUT – Spring Break	

10	Mar 21	Lecture: Managing Natural Resources - Overview	Hardin 1968 (Reading posted on Blackboard website)
10	Mar 22	Breakout: Final Project Introduction	Final Project Packet Draft Problem Definition due in class
11	Mar 28	Lecture: Economics – The Invisible Hand	Chapter 23 in Miller; Costanza 1997 (Reading posted on Blackboard website)
11	Mar 29	Breakout: Scenarios II	Read Case Study 4 on Lake Scenarios in Walker & Salt; <i>Essay 2 Due</i> Meet at Decision Theatre
12	Apr 4	Lecture: Government – Policy & Politics	Chapter 24 in Miller
12	Apr 5	Breakout: Problem-solution chain analysis	<i>Group Project Problem Definition Due</i>
13	Apr 11	Lecture: Canceled due to power outage	None
13	Apr 12	Breakout: Final project visioning	Group vision due in class
14	Apr 18	Lecture: EXAM 2	EXAM 2
14	Apr 19	Breakout: Final project strategies	<i>Group sustainability strategies due</i>
15	Apr 25	Lecture: Community-Based Management	Dietz et al 2003
15	Apr 26	Breakout: Group presentations of final projects	<i>Final reports due by 3 am</i>
16	May 2	Lecture: NO LECTURE	<i>Case Analysis #2 Due</i>
16	May 3	Breakout: NO BREAKOUT	
Final Exam Week	5-May through 11-May	Final Exam: Monday, May 9 12:10 – 2 pm, PSH 151	