

****Disclaimer****

This syllabus is to be used as a guideline only. The information provided is a summary of topics to be covered in the class. Information contained in this document such as assignments, grading scales, due dates, office hours, required books and materials may be from a previous semester and are subject to change. Please refer to your instructor for the most recent version of the syllabus.

SOS 110 Sustainable World, Spring 2017
Mondays and Wednesdays: 4:35 – 5:50, SANTN 130

****This syllabus is subject to change****

Instructor:

Shirley-Ann Augustin-Behravesh

Office location & hours: SANCA 240L, By appointment

Course Overview:

Semester hours: 3

Pre-requisites & Co-requisites: None

Sustainable World will introduce you to the field of sustainability and explore the fundamental question of how human and natural systems interact. *Sustainable World* focuses on how the environment functions, but also addresses how humans interact with and shape the environment and how it shapes us. This class will also focus on an approach to solving sustainability problems that comes from an emerging field known as Sustainability Science. Using real world issues and problems such as biodiversity loss, agriculture, and climate change, you will learn about the fundamental Earth systems on which we depend.

Sustainability Literacy:

All courses in the School of Sustainability are designed develop your normative, anticipatory, strategic, and systems thinking competencies, enrich your interpersonal communication skills, 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.
- *Transdisciplinarity*: There is no one “solution” to address sustainability – no one person or field of study has the answer.

Learning Outcomes for *Sustainable World*:

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

- Describe and recognize what is meant by sustainability and ‘wicked’ problems.
- Outline an approach to frame and collaboratively solve sustainability problems.
- Articulate your own personal perspectives on sustainability and what role you might play as a ‘change agent’ in a societal sustainability transformation.
- Explain the biogeochemical cycles (carbon, nitrogen, sulfur and phosphorous) that are most relevant to sustainability.
- Describe the water cycle 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 ecological, economic and social systems within the context of specific cases.
- Demonstrate effective interpersonal communication, collaboration, and presentation skills.

Readings:

Required Textbook: Remington-Doucette, S. (2013). *Sustainable World: Approaches to Analyzing and Resolving Wicked Problems* (1st ed.). Kendall Hunt.

You may purchase a hard copy of this text at the ASU Bookstore, or you can purchase the hard copy or e-version format directly from the publisher via the following link:

<http://www.kendallhunt.com/author.aspx?id=93203>

Chapters from other books, academic journal articles, and/or educational blogs may be assigned in addition to textbook chapters. These will be posted on the course Blackboard site.

Required readings and other assignment deadlines can be found in the Course Schedule. The Remington-Doucette textbook is abbreviated in the schedule as 'RD'.

Course Websites:

This course has a Blackboard website. To access these sites, log in at <http://myasucourses.asu.edu> using your ASURITE ID and password.

You'll see a link to the SOS 110 Lecture course under the "My Courses" heading. This contains course announcements.

Assessment and Evaluation:

There are a total of 1300 points in this course. About half of the points are earned from weekly lectures and the other half are earned during weekly breakout sessions. The detailed point breakdown is below:

Points earned from Lecture:

Lecture activities and surveys (13 @ 10 pts each; 1 drops)	120
Individual Site Evaluation	30
Exam 1	240
Exam 2	240
Individual Essay	50
Class participation	140
Group Assignments (5 @ 30 pts each)	150
Group Annotated Bibliography	50
Group Presentation	50
Group Final Report	200
Peer Evaluations (preliminary and final)	30
Total (1300)	1300

Your final grade will be calculated using the scale in the table shown below. For example, if you earn 1200 out of 1300 total points then your percentage grade is $(1200/1300) \times 100 = 92\%$. This means that you earned an A- in the course.

Points	Percentage	Letter Grade
> 1261 - 1300	> 97-100	A+

> 1209 - 1260	> 93 – 96	A
> 1170 - 1208	> 90 – 92	A-
> 1131 - 1169	> 87– 89	B+
> 1079 - 1130	> 83 – 86	B
> 1040 - 1078	> 80 – 82	B-
> 1001 - 1039	> 77 – 79	C+
> 949 - 1000	> 73 – 76	C
> 910 - 948	> 70 – 72	C-
> 780 - 909	> 60 – 79	D
> 650 - 779	> 50 – 59	E
< 649	< 49	F

Course components:

Lecture activities (120 points)

During lecture, you'll receive credit for attendance and discussion, class exercises, online and in-class surveys, quizzes, and games. Aggregated results of online surveys may be displayed in lecture, but the individual results are not saved. The surveys have no 'right' or 'wrong' answers. They are focused on values, ethics, and personal development, giving you a chance to become aware of your own perspectives on Sustainability.

Individual Site evaluation (30 points)

You will visit a sustainability-related site or project and evaluate it according to the main ideas of Transformational Sustainability Research. A list of potential sites and projects will be provided, but you are free to choose beyond the list according to your own interest. This assignment gives you an opportunity to apply the course concepts beyond the classroom.

Exams (2 at 240 points each)

There will be two exams given during the semester. **Exams cannot be made up without documentation of a medical emergency.** Both exams will include multiple choice, short answer, diagramming, and essay questions, covering material from lecture, readings, media, and breakout components of the course. Study guides will be provided for exams, which make up nearly 40% of your semester grade. No study aids will be allowed during the exam. Exams are not cumulative. There is **no** Final Exam for this class during finals week.

Breakout quizzes, class activities and participation (140 points)

Your participation in discussions and in-class group work will be evaluated based on your **attendance**, **attentiveness**, and **contributions** to discussion. This grade will also reflect your engagement in and contribution to the semester-long group project. This is a discussion-based course; therefore, it is crucial that you contribute. Short quizzes, debates, or activities will take place at the beginning of each session. These are meant to engage you in experiential learning and critical thinking about the course content and readings. If you are late to class you cannot make up this work, but one missed quiz will be dropped. **It is crucial that you consistently attend and actively participate in all course activities. Come prepared to class and it will pay off!**

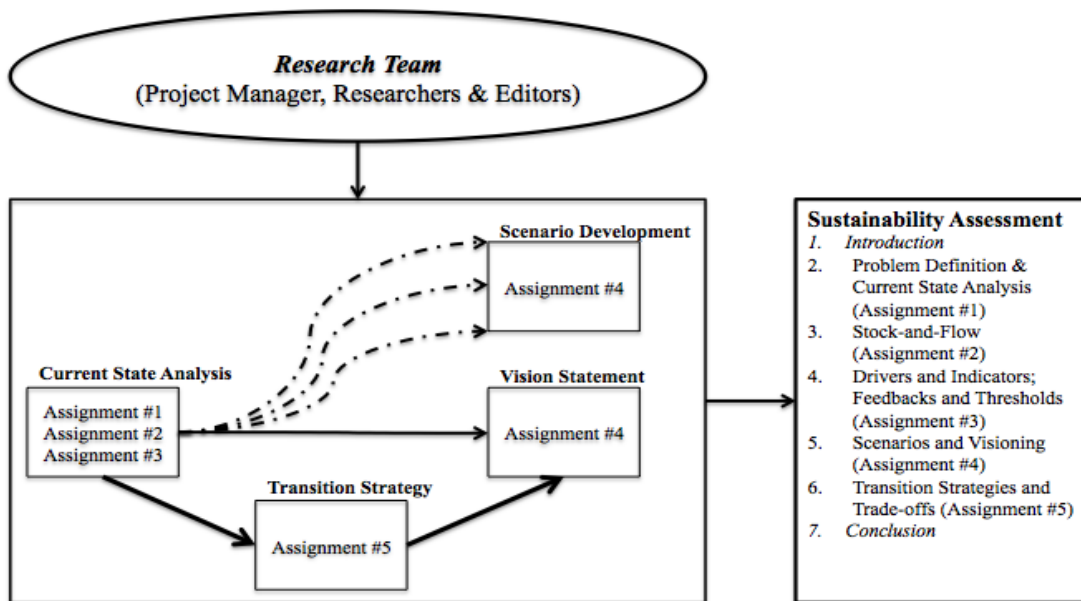
If you are uncomfortable speaking in public, we can discuss strategies to help you be more at ease. **Ask questions** and don't be afraid of offering an incorrect answer. Sustainability is an emerging, complex, and exciting field -- no one has all the answers.

Breakout Team Sustainability Assessment Project (see point breakdown below)

You and your **research team** will develop a Sustainability Assessment of a sustainability problem. No sustainability problem exists alone and there are many interconnections with other problems. For this reason, your 'project definition' will evolve as your team discovers new insights throughout the semester. You are expected to develop a robust understanding of the sustainability problem and hone your interpersonal skills. Productive teamwork is essential.

Transformational Sustainability Research

The Transformational Sustainability Research (TSR) framework will be used to guide your groups' sustainability assessment throughout the semester. Your team must complete the five deliverables based on TSR. As you learn about TSR during this semester, it is important to continually update previous deliverables. The deliverables must then be synthesized and presented effectively in the final report of your Sustainability Assessment.



Individual Essay Assignment (50 points)

□ **Sustainability Problem Definition**

Your first assignment is an **individual essay** in which you will begin to research the wicked sustainability problem that you and your group will be exploring this semester. You will have the opportunity to choose a project topic of interest to you and research it in depth. We will spend time in Breakout reviewing appropriate research methods and citation techniques. This essay is meant to guide you through the research, writing, and citation process before you begin your group projects and final report. The individual essays will be peer reviewed and combined into a focused introduction to Team Assignment #1.

Team Assignment Descriptions (30 points each = 150 total points)

Five assignments help you complete the semester-long team project in manageable sections. These assignments are handed in through SafeAssign on Blackboard, and team members share grades for them. We will provide feedback on each assignment so that you can improve on it for the Final Report. It will be very difficult to complete these without having done the readings. **Course concepts are introduced in the textbook and lecture, discussed and clarified during class and then applied to your project topic in the team assignments.**

□ **Assignment #1: Problem Definition and Current State Analysis**

This assignment provides a basis for understanding the 'wicked' problem that your research team will research. The current state of the system includes numerous factors that influence actions, and these actions lead to impacts. There are positive and negative impacts that span various temporal and spatial scales.

Key concepts: Problem Definition, Current State Analysis, Stakeholders, Spatial and Temporal Scale, Values, Beliefs, Norms, Actions, Technologies

□ **Assignment #2: Stock-and-Flow Models**

Human activity can impact the Earth System's natural biogeochemical cycles. In this assignment your research team will examine how your topic area impacts a relevant biogeochemical cycle. You will construct a complex

Stock-and-Flow diagram relevant to your topic area. The diagram provides a basis for understanding impacts to the natural biogeochemical cycle, which result in outcomes for ecosystems and for humans.

Key Concepts: Biogeochemical Cycles, Impacts, Outcomes (ecosystems & humans)

□ **Assignment #3: Causal Chains & Indicators**

This assignment provides a basis for understanding the variables, feedbacks, and drivers related to your topic. You will identify stabilizing and reinforcing feedbacks as they relate to your topic. You will also perform a causal chain analysis. Your research team will identify various indicators at this stage. These indicators should provide a basis for understanding trends and magnitudes related to impacts, outcomes and responses.

Key concepts: Drivers (direct & indirect) and Indicators (of drivers and outcomes), Causal chains

□ **Assignment #4: Scenarios and Visioning**

This assignment differentiates between scenarios and visions in the context of your topic area. You will generate multiple plausible future scenarios related to your sustainability problem. In order to assess how these *plausible* future states compare to the current state, your research team will identify potential trends based on measurable indicators. Your team will also develop a *desirable* vision of the future. You will examine what a “day in the life” of stakeholders might entail, and you will compose a general vision statement.

Key concepts: Scenario description, “Day in the Life” vignettes, Vision statement, Collective action

□ **Assignment #5 – Transition Strategy**

The intent of this assignment is to assess the fundamental changes that are required to transition toward the vision from the current state. In this assignment, your team will identify assets, barriers, and strategic actions at intervention points that will aid in the transition. In order to determine if the strategic actions are effective, indicators will be used as a means to track progress toward the identified vision.

Key concepts: Pre-transition, Post-transition, Assets, Barriers, Strategic Actions, Indicators and targets, Tragedy of Commons, Economic and Policy impacts

Final Course Outputs (330 total points)

□ **Annotated Bibliography (50 points)**

The Annotated Bibliography will be used as a means to structure your notes and ensure proper attribution of ideas and facts. At the end of the semester, based on your research, each group member is required to contribute a minimum of 5 credible sources with annotations. Annotation is an important skill to minimize the transaction costs of doing collaborative research. We suggest that you also share notes in this format.

□ **Sustainability Assessment Presentation (50 points)**

Each research team is responsible for developing a 10-minute presentation on their research. This task will demonstrate that you are able to effectively convey the primary findings of your work. The research you will be performing is extensive and complex; this is your opportunity to represent the problem as a compelling narrative. Each team member must participate in this final presentation.

□ **Sustainability Assessment (200 points)**

As your final course deliverable, the Sustainability Assessment integrates team assignments #1 - 5 into a comprehensive document that synthesizes the revised team assignments (#1-5) from earlier in the semester. This report should be a coherent, logically ordered document that flows smoothly from one section to the next, following the Transformational Sustainability Research Framework. This will require your team to work collaboratively. This report makes up **15% of your course grade**. You will have feedback to help you revise and clarify your research before turning in the final report at the end of the semester.

□ **Peer Evaluations (30 points)**

The development of competence in transdisciplinary work and collaboration is one of the main learning outcomes of this course. For this reason, your individual contribution and collaborative skills such as reliability, communication, and cooperation, will be evaluated by your peer team members. Peer evaluations are due once at mid-term and again after the submission of the Sustainability Assessment. An evaluation template will be provided. The second peer eval *will affect your individual score on the Final Sustainability Assessment*.

Course Policies and Expectations:

- *Assignments.* Written assignments must be word-processed and spell-checked. Your name should appear at the top of each assignment. Please submit your work electronically as a .pdf or .doc file, using the Assignment feature on Blackboard. **Late assignments will not be accepted.**
- *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 instructors will be using SafeAssign anti-plagiarism software to check all assignments. This software is very good at identifying Google-copying and other forms of web plagiarism. 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.
- *Email.* When school is in session, **check email every 24 hours.** We will check email during weekdays, Monday through Friday from 8 – 6 pm, and will get back to you with 24 hours during that time period. **Check your ASU e-mail regularly, or have it forwarded to your preferred account.**
- *Disability Accommodations.* If you need accommodations for this class, please see your breakout leader and professor so that we can work with the DRC (<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.**

Majoring or Concentration in Sustainability:

Sustainability majors and concentration students: Welcome to our new and exciting field! If you have any questions, please 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 will be visiting the Polytechnic campus on Mondays and are located in Student Services on the 1st floor of the WGHL building. They can help you make choices about general studies courses and electives that are appropriate for the challenge area or track that you wish to study.

Maintaining your major. Refer to the appropriate catalog year of your major 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 <mailto:sosadvising@asu.edu> along with your full name and 10 digit ID number.

Preparing for your career through internships. For students majoring in Sustainability, the School of Sustainability has its own Internship Coordinator (Carolyn Savalle, Caroline.Savalle@asu.edu) dedicated to helping Sustainability students find internships. If you are not sure of your career path, internships can help you explore options by providing structured professional experiences so that you will be competitive on the job market after you graduate.

Sustaining Yourself:

College can be tough! ASU is a huge school and can sometimes seem impersonal. Your instructor and your TA are both here to support you, and fortunately, there are also resources on and off campus that provide training, tutoring, advocacy and support.

- *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 an instructor. <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 Organizations and Clubs* - There are hundreds of opportunities to get involved with groups and clubs of interest on campus, or start your own. <https://eoss.asu.edu/clubs>
- *Student Recreational Center* – Offers individual and group fitness opportunities, 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/>