

SOS 220: Systems Thinking

Class Number: 29024, 29025

Credit Hours: 3

Semester & Year: Spring B, 2019 (3/11/19 - 4/30/19)

Prerequisite: PUP 190 or SOS 111 with C or better; SOS 110 with C or better

Instructor

Name: Emily Holleran

Email: emily.holleran@asu.edu

Office Hours: by appointment

Syllabus Disclaimer

All syllabi are subject to minor changes to meet the needs of the instructor, school, or class. Every effort will be made to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. The instructor reserves the right to make changes to the syllabus as deemed necessary. Students will be notified in a timely manner of any syllabus changes. Please check your ASU email and the Announcements on the course site often.

Course Description

Introduces systems thinking and complexity science, with an emphasis on analytical relevance for thinking about a myriad of issues involved in sustainability. Hones students' abilities to read critically, articulate their views clearly, and think about the many systems that shape their lives.

Learning Outcomes

As a result of taking this class, you should be able to

- Explain the structure, behavior, and functionality of systems (e.g., water, energy, cities, and ecosystems) including the characteristics and interconnections among environmental, social, and economic sub-systems.
- Discuss features of systems complexity, including diversity, redundancy, tipping points/thresholds, non-linearity, externalities, resilience, vulnerability, emergence, agency; and explain their relevance for sustainability.
- Define physical, social, and symbolic/analytical system boundaries and explain different ways of bounding problems and systems for sustainability problem-solving (problem framing) across multiple scales.
- Critically reflect on one's own ways of systems thinking in the context of different ways of acquiring knowledge as well as knowing, including different scientific methods and discipline as well as traditional knowledge systems.

Course Delivery and Access

Students will participate in this course through Canvas. Course content will be delivered in Canvas through video lectures, discussion boards, supplemental videos, guest speakers, and assessments. Three textbooks are required for the course (see below). Course content and assignments will be accessed online in Canvas, which can be accessed by my.asu.edu.

Course Textbook and Materials

Mitchell, M. (2009). [*Complexity: A guided tour*](#). Oxford University Press.

Available in both paperback (9780199798100) and hardcover(9780195124415) format. What enables individually simple insects like ants to act with such precision and purpose as a group? How do trillions of neurons produce something as extraordinarily. . .

Walker, B., & Salt, D. (2006). [*Resilience Thinking: Sustaining ecosystems and people in a changing world*](#). Island Press.

Available in both print (ISBN: 9781597260930) and eBook (ISBN: 9781597266222) format. Increasingly, cracks are appearing in the capacity of communities, ecosystems, and landscapes to provide the goods and services that sustain our planet's well-being.

Meadows, D. (2008). [*Thinking in systems*](#). Chelsea Green Publishing.

Available in both paperback (ISBN: 9781603580557) and eBook (ISBN: 9781603581486) In the years following her role as the lead author of the international bestseller, *Limits to Growth*—the first book to show the consequences of unchecked growth on a . . .

Grading Scale

Points	%	Grade
900 - 1,000	90 - 100%	A
800 - 899	80 - 89%	B
700 - 799	70 - 79%	C
600 - 699	60 - 69%	D
	-	EN - Failing for Not Participating
	-	XE - Academic Dishonesty

Assignment Weights:

Assessment	% of Grade
Discussions	24%
Systems Analysis Paper	25%
Quizzes	21%
Final Exam	30%
Total	100%

Discussion Board Posts

A large portion of this course will be assessed through weekly discussion boards. You will be required to post at least one main post for each question posed under each module by the due date indicated.

Communicating with the Instructor

Canvas is the main communication platform. For emergent cases or questions please email to the instructor. You should receive answer to your emails within 24 hours.

Submitting Assignments

All time frames used in class follow Arizona Mountain Standard Time (MST). Arizona does not observe daylight saving time (DST) from March through November; therefore, the time in Arizona will not align with other places that are on MST for half the year. Use a [Time Converter](#) to ensure you account for the difference in Time Zones.

All assignments, unless otherwise announced, MUST be submitted to the designated area of Canvas. Do not submit an assignment via email (unless asked to do so).

Assignments and assessments will not be due on observed holidays; however, due to the accelerated nature of online courses, students should not count on taking time off from studying and working on coursework due to holidays.

Attendance and Absences

Please follow the appropriate university policies to request absences or accommodations related to [ACD 304–04 Accommodation for Religious Practices](#) and [ACD 304–02 Missed Classes Due to University-Sanctioned Activities](#).

Late or Missed Assignments Policy

Notify the instructor **BEFORE** an assignment is due if an urgent situation arises and the assignment will not be submitted on time. Published assignment due dates (Arizona Mountain Standard time) are firm and **late submissions without prior notification will not be accepted**. Late submissions are also subject to grade penalties. Please follow the appropriate University policies to request an [accommodation for religious practices](#) or to accommodate a missed assignment [due to University-sanctioned activities](#).

Course Schedule *(subject to change: see syllabus disclaimer)*

The course schedule is auto populated in *Home* from the left hand menu. You can see all the topics and due dates under each module. Clicking on *Modules* shows a breakdown of each module including its assignments, discussion board questions, and quizzes along with their due dates.

A module takes about a week and there is a quiz and a set of discussion questions for each module.

Students will write a 5- to 7-page paper that analyzes a given aspect of climate change (or the global food system) and its impacts and effects on society. It will examine this as a social-ecological system and incorporate the knowledge that we are acquiring in class. The report may be written from the perspective of specific groups of people, take a regional/national/international perspective, focus on specific effects, focus on adaptation efforts, systems conceptualization, etc. There is a great deal of flexibility from this perspective. This is an analysis so I will expect critical thought, cogent and coherent arguments, and personal insights only when building from evidence collected through research. A grading rubric will help you to understand the points from which I will be assessing the papers. The paper is not due until week five, however a link to the assignment details and grading rubric will be made available with Module 3.

Course Evaluations

Students are expected to complete the course evaluation. Feedback provides valuable information to the instructor and the college and is used to improve student learning. Students are notified when the online evaluation form is available and students can access it through myASU as well. See [Student FAQs](#) for more information.

Students with Disabilities

ASU's Disability Resource Center (DRC) is the entity that provides services to students with disabilities. If you desire accommodation for this course, [contact the DRC](#) to establish your eligibility and make sure they can provide you with the services you will need for this course. Students with disabilities must meet the same standards, deadlines, etc. as any other student in the course.

Student Code of Conduct and Academic Integrity

Students have the responsibility to understand and follow ASU's [Student Code of Conduct](#) and [Academic Integrity Policy](#). You may face ethical decisions during your time as a student. If you're not sure whether or not something is permitted, it is your responsibility to ask questions or find out by doing more research using the links above. Any violations in this course are subject to sanctions and will be reported to the School of Sustainability and the college or school of your major.

The Office of Student Rights and Responsibilities accepts [incident reports](#) from students, faculty, staff, or other persons who believe that a student or a student organization may have violated the Student Code of Conduct.

Academic Integrity (also known as cheating, copying others' work, or even reusing your own work) falls under the Student Code of Conduct. Possible sanctions for violations include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), suspension, and expulsion.

Beware that some websites promote themselves as tutoring and educational resource sites, but may actually be sites that put you at risk for an academic integrity violation if you are using the services to submit work that is not your own or gain knowledge of what to expect on a quiz or exam.

Important: Students must refrain from uploading to any course shell, discussion board, or website used by the course instructor or other course forum, material that is not the student's original work, unless the students first comply with all applicable copyright laws; faculty members reserve the right to delete materials on grounds of suspected copyright infringement.

Disruptive Student Behavior

Students are entitled to receive instruction free from interference by other members of the class. An instructor may withdraw a student from the course when the student's behavior disrupts the educational process per the [SSM 201-10 Instructor Withdrawal of a Student for Disruptive Classroom Behavior](#) and [SSM 104-02 Handling Disruptive, Threatening, or Violent Individuals on Campus](#) policies.

Appropriate online behavior (also known as netiquette) is defined by the instructor and includes keeping course discussion posts focused on the assigned topics. Students must maintain a cordial atmosphere and use tact in expressing differences of opinion. Inappropriate discussion board posts may be deleted by the instructor.

Discrimination, Harassment, and Retaliation

[ACD-401 Prohibition against Discrimination, Harassment, and Retaliation](#), prohibits discrimination, harassment or retaliation on the basis of race, sex, gender identity, age, religion, national origin, disability, sexual orientation, and veteran status. Violations of this policy may result in disciplinary action, including termination of employees or expulsion of students. Contact the Office of Student Rights and Responsibilities at (480) 965-6547, if you feel another student is harassing you based on any of the factors above; contact the Office of Equity and Inclusion at (480) 965-5057 if you feel an ASU employee is harassing you based on any of the factors above.

ASU continues to implement U.S. Department of Education guidance regarding sexual assaults under Title IX federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources on ASU's [Sexual Violence Awareness](#) page.

As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. [ASU Counseling Services](#) are available if you wish discuss any concerns confidentially and privately.

Add/Drop/Withdrawals Deadline

ASU's [Academic Calendar](#) contains important dates by which you can add or drop this course without penalty called "Last Day to Drop/Add Without College Approval". After this date, if you choose to withdraw from the course, you may do so by the "Course Withdrawal Deadline", but will receive a 'W' on your official transcript. Consult with your advisor and notify your instructor if you have questions about [Drop/Add and Withdrawal](#).

Grade Appeals

Grade disputes must first be addressed by discussing the situation with the instructor. If the dispute is not resolved with the instructor, the student may appeal to the School of Sustainability per the [University Policy for Student Appeal Procedures on Grades](#). See additional instructions for [undergraduate SOS courses](#) and [graduate SOS courses](#) (under Grade Appeal).

Computer Requirements

This course requires a computer with Internet access and the following:

- Web browsers ([Chrome](#), [Internet Explorer](#), [Mozilla Firefox](#), or [Safari](#))
- [Adobe Acrobat Reader](#) (free)
- [Adobe Flash Player](#) (free)
- A webcam, microphone, headset/earbuds, and speaker
- Microsoft Office ([Microsoft 365](#) is free for all currently-enrolled ASU students)
- Reliable broadband internet connection (DSL or cable) to stream video

Note: A smartphone, iPad, Chromebook, etc. will not be sufficient for completing your work in online courses. While you will be able to access course content with mobile devices, you must use a computer for some assessments.

Email and Internet

You must have an active ASU email account and access to the Internet. ASU email is an [official means of communication](#) among students, faculty, and staff. Students are expected to read and act upon email in a timely fashion. Students bear the responsibility of missed messages and should check their ASU-assigned email regularly. All instructor correspondence will be sent to your ASU email account.

Technical Support Contact Information

If you are experiencing technical issues, visit the [My ASU](#) “Service Center” tab for immediate support, to review answers to frequently asked questions, or to submit a request for service.

The number for immediate assistance is 1-855-278-5080 with staff available 24 hours/day, 7 days/week to help direct your call. Also see [ASU's Contact Us](#) page. Known issues and system outages will be shared on [ASU's System Health](#) site.

Students also have access to several [computing sites](#).

Power and System Outages

In the event of a power outage or other event affecting the ability of the University to deliver ground and online classes, any decision to cancel classes will be announced using the ASU emergency notification system for ground campus students. Ground campus students should register with the [ASU LiveSafe](#) mobile app. Additionally, ground campus and online students can learn about power and system outages on the [ASU System Health](#) site.

Additional Information and Resources

- [School of Sustainability](#) – this course is offered through the School of Sustainability at Arizona State University. Questions about the course should first be addressed with the instructor. If necessary, you can also contact the school at (480) 727-6963 or schoolofsustainability@asu.edu.
- [Career Services](#) – offers assistance to students in choosing their major, setting career goals, interviewing and job hunting strategies. Students pursuing a degree program through the School of Sustainability also have access to a [sustainability career advisor](#).
- [Counseling Services](#) – professional counseling and crisis services for students experiencing emotional concerns, problems in adjusting, and other factors that affect their ability to achieve their academic and personal goals. Support is available 24/7 between campus locations and EMPACT's 24-hour ASU-dedicated crisis hotline.
- [Financial Aid and Scholarship Services](#) – offers information and applications for student funding such as grants, loans, scholarships and student employment.
- [GPA Calculator](#) – students can use this calculator to project their GPA.
- [Health Services](#) – provides non-emergency medical health care to all ground campus 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.,
- [Libraries](#) - offers 24/7 access to librarians through "Ask a Librarian" online chat and help by librarians in person at the Reference Desk during most hours the libraries are open.
- [ASU Online Students](#) – students pursuing fully online programs have access to success coaches and additional tips for success.
- [Sun Devil Fitness](#) – 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.
- [Tutoring and Writing Centers](#) – provides students with academic support services such as tutoring, peer advising, computer assisted instruction, writing support, and supplemental instruction
- [Contact Arizona State University](#) – provides frequently asked question resources and contact information for new questions.