SOS 212: Systems, Dynamics, and Sustainability

Class Number: 85430

Credit Hours: 3

Semester & Year: Fall, 2024

Prerequisite: SOS 211 OR Visiting University Student

Important:

Students are expected to have a sufficient background in:

- *Calculus: SOS 211* (e.g., ability to recognize and apply basic differentiation and integration) – Although the computational tools used in the class will not require students to solve calculus problems by hand, students should be familiar with these concepts to understand the models developed within these tools.

This prerequisite can usually be waived for students that have taken a college-level calculus course.

- *Basic Quantitative Skills*:

Students should be comfortable with basic algebra and the use of graphs for conveying quantitative arguments. The problem sets and lectures will assume that students have mastered these basic academic skills.

Instructor Information

	TA Information
Name: Datu Buyung Agusdinata Email: bagusdin@asu.edu (preferred) Office: WCPH 492 G (Tempe Campus) Office Hours: Based on appointments	Name: Email: Office Hour Times: Tbd Office Hours Location: Tbd

Course Description

Introduces the evaluation and development of system dynamics simulation models used in the field of sustainability. Discusses the fundamental concepts and includes basic steps in developing a dynamic model, analyzing it, and simulating it with actual data. Integrates policy narratives into developing a system dynamics model for real-world sustainability issues.

Course Overview

The focus of the course is to address various sustainability and sustainable development issues using simulation modeling approaches. The course will equip students with system dynamics tools to enable a qualitative and quantitative analysis of sustainable development. The fundamental concepts of system dynamics such as stock and flow, feedback, and delays will be discussed in depth. Issues of sustainability and sustainable development are concerned with a focus on natural-human systems in a city environment.

Course Objective

Students will be able to **identify**, **model**, and **analyze** complex **dynamical systems** using a **system model f**ramework.

Expected Learning Outcomes

After completing this course, students will have the ability to:

- Identify systems appropriate for analysis via simulation (*Systems and Strategic Thinking)*
- Build a simulation model in a high-level language (*Systems and Futures Thinking)*
- Develop system models to represent real-world sustainability challenges (*Systems Thinking)*
- Interpret system models in the service of better understanding and intervening in real-world dynamical systems (*Futures, Systems, and Strategic Thinking)*
- Communicate system models effectively via infographics and presentations (*Collaborative Competency*)

Fulfills Special Program Requirements for:

B.S., Sustainability: Required course

B.S., Conservation Biology and Ecology: Meets Quantitative & Spatial Analysis requirement

Course format:

Two 75-minute in-person class sessions each week.

Canvas Inbox

All student/instructor communication will be directed through the Canvas Inbox. This ensures the security, privacy, and record of the communication. Note: You must have your primary Canvas email address set as your asurite@asu.edu, not firstname.lastname@asu.edu or a personal email account.

Course Communication Policy: Three Before Me

This course uses a "three-before-me" policy regarding student/instructor communications. When course-related questions arise, please check these three sources for an answer before emailing the instructor with your question:

1. Course Syllabus
2. Canvas Announcements
3. Community Forum: This is a discussion forum in Canvas used for general questions about the course. You are encouraged to respond to your classmates' questions and comments.

Course Textbook and Materials

Required Textbook(s)

There is no required textbook for this class. Reading will be posted to Canvas. Students should read assigned texts listed on the meeting date before each discussion in our class.

Course Materials

Suggested Books

Relevant book chapters and journal articles pertinent to the topics will be shared during class. Library access will be given to students to download the articles.

- (free library access): Strategic Modeling and Business Dynamics: A Feedback Systems Approach (second edition, by JDW Morecroft, 2015)
- Limits to Growth: The 30-Year Update, Donella H. Meadows, Jorgen Randers, Dennis L. Meadows ISBN: 978-1931498586
- Andrew Ford (2010), Modeling the Environment, 2nd Edition, Island Press: ISBN-13: 978-1597264730
- Sterman, J. (2000). Business dynamics: Systems thinking and modeling for a complex world. Boston: Irwin/McGraw-Hill.

Tools and Technologies

Required Course Software:

Students will be expected to use the following freely available software:

- **Vensim PLE will primarily be used to draw Causal Loop Diagrams (CLD) in the class. Vensim** PLE Simulation Software: Vensim PLE is a free, academic version of the Vensim system dynamics modeling software from Ventana Systems. Students can find more information and download Vensim PLE at: Vensim PLE: http://vensim.com/vensim-personal-learning-edition/ Free download: http://vensim.com/free-download/
- **Insight Maker** Browser-based Simulation Software: Insight Maker is a free system dynamics modeling tool that operates entirely inside a web browser. Insight Maker will primarily be used to draw and simulate Stock-and-Flow Diagrams. Students should create a free account at: http://insightmaker.com/
- **Spreadsheet Software**: A basic spreadsheet program like Microsoft Excel or Google Sheets may periodically be used to demonstrate certain numerical simulation concepts. ASU students receive Excel for free through Office 365 and Sheets for **free** from Google Apps for Education

Articles and Multimedia

Articles, book chapters, and short and feature length documentaries are available on the course website, or through the online reserve service from ASU Libraries. Some will be required; others will be suggested background reading if you are particularly interested in or unfamiliar with the topic.

Computer Requirements

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.

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

- Web browsers (Chrome, Microsoft Edge, Mozilla Firefox, or Safari)
- Adobe Acrobat Reader (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

See Technology and time; Important factors for ASU Online students for additional information.

Course Workload Expectations

This class is 135 credit hours over 15 weeks. You should plan to spend approximately 9 hours per week on reviewing class materials and completing activities and assessments.

Course Overview

The course is organized through seven modules:

- Module 1: <Introduction to System Modeling>
- Module 2: <Archetypes of Dynamical Systems>
- Module 3: <Dynamics of Human-Natural Systems>
- Module 4: < Policy Leverage Points>
- Module 5: <Final Project: System Model for Sustainable Cities>

Please see the most updated course schedule here. The time outline of module topics is given below (subject to change):

Week	Module Topics
Week 1:	System Modeling -1 (Module 1)
Week 2:	System Drivers and Outcomes (Module 1)
Week 3:	Causal Loop Diagram (Module 1)
Week 4:	Stock-and-Flow Model (Module 1)
Week 5:	Feedback Systems Thinking (Module 2)
Week 6:	Exponential Growth Behavior and Numerical Simulation (Module 2)
Week 7:	Delays and Goal Seeking Behavior (Module 2)
Week 8:	Predator-Prey and Fishery Dynamics (Module 3)
Week 9:	Spring break
Week 10:	Review and Midterm Exam (Module 1 and 2)

Week 11:	**Policy Leverage Points (Module 4)**
Week 12:	**Final Project Introduction (Module 5)**
Week 13:	**Final Project Preparation (Module 5)**
Week 14:	**Final Project Preparation (Module 5)**
Week 15:	**Final Project Preparation (Module 5)**
Week 16:	**Final Project Presentation and Final Report (Module 5)**

Assessment Weights

Assignment Weighting

Assessment	**% of Grade**
Class Attendance and Participation	5%
Quizzes	15%
Muddiest-Point Reflections	5%
Assignments (individual)	20%
Reading and Viewing Activities	10%
Mid-term exam	20%

Final Project consists of the following:	25% including the following:
Group Formation (individual assignment) 5% of Project grade	1.25%
Proposal (group assignment) 15% of Project grade	3.75%
System Variables, Drivers, and Outcomes Check-in (group assignment) 10% of Project grade	2.5%
Presentation (group assignment) 25% of Project grade	6.25%
Project Report (group assignment) 40% of Project grade	10%
Peer Evaluation of Other Presentation (individual assignment) 5% of Project grade	1.25%
Extra Credit	2%
Total	**102%**

Assessment Descriptions

Students can find assignments grouped by category under both "Modules" and "Assignments" on Canvas. For each category, students are expected to complete:

Class Participation (nominally every lecture)

Students receive credit for participating in each lecture by asking & voting (using Poll Everywhere), and responding to questions raised in class and doing tutorial and class exercise. Typically, short in-lecture assessments of that day's material will be graded for completion and not correctness. The 3 lowest scores will be dropped.

- **Quizzes** (every new topic)

These quizzes will be based on the review of the lectures. The quiz will be given in two rounds. The first quiz is for practice whereas the second one will be graded. The 1 lowest score will be dropped.

- **Muddiest-Point Reflections** (every week)

Students will be asked to complete short Canvas surveys at the end of each week. Each student will use the survey to reflect upon topics from the week that were the clearest, the muddiest, or the ones the student wishes to learn more about in future weeks. Muddiest-Point assignments can be found under "Assignments" or the "Muddiest Point Reflections" module on the Canvas course page, and they should be completed individually. To account for the rare event when a student forgets to submit the weekly muddiest-point reflection, the lowest score will be dropped.

- **Homework Assignments** (periodically; see Canvas for due dates)

Assignments will be given periodically through the semester. In many cases, time will be given at the end of lectures to **start assignments in class**. Homework assignments are expected to be completed individually unless explicitly stated otherwise. The lowest score will be dropped.

 Reading and Viewing Activities (See canvas)

Students will be expected to read a given reading and video-viewing assignment. Each reading and video is associated with a lecture. To account for non-content factors that might prevent students from performing at their best on every assessment, the lowest two scores will be dropped.

Final Project

Students will complete a system modeling project for this course. Based on the enrollment in the course, this project may be completed in small teams of size specified by the instructor (e.g., 3–4 students). If course enrollment is small, the instructor may choose to make this an individual assignment or devise some way for students to work independently on small aspects of a larger problem. Ideally, teams will define their own project. The goal will be to use systems dynamics tools to model a sustainability-related issue in a complex real-world system. The grade for the project will be split between these components:

Group Formation: Each individual student will submit names of team members that will work together in the final-project group.

Proposal: A proposal document will be submitted midway through the semester to select which case study will be modeled and to provide the motivation and reasoning behind the selection (e.g., significance of the issues and possible scenarios demonstrating the issue of interest).

Causal Loop Diagram (CLD) Model Parameter Check-in: Midway between the formation of final-project groups and the submission of the project presentation,

groups will present a minimal, working CLD in class to the instructor (or TA) to receive credit for their progress.

Presentation and Report: In the middle of the final week of the semester (i.e., the week before finals week), each group will submit two different deliverables (as two separate assignment submissions):

– A presentation on their work to Canvas

– An infographic detailing the selected problem, the model used to address the problem, the discussion from the model, and conclusions related to the problem.

Midterm Exam (semester midpoint; see schedule on Canvas;)

This exam comprises the topics (listed above) from Week 1 to Week 8 (Module 1-4). A review session will be held before the exam.

Submitting Assignments

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.

Write all submissions in a word processing program to ensure that you are submitting a high quality written piece, with care to grammar and messaging. Submit the assignment in the requested format per the assignment directions.

Late or Missed Assignments Policy

In case of late submission, **10% point** will be automatically deducted per day from the deadline.

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. Please follow the appropriate University policies to request an accommodation for religious practices or to accommodate a missed assignment due to University-sanctioned activities.

Grading Scale

This course will be graded on an A-E plus/minus scale.

Grading Scale

%	Grade
99 to 102%	A+
93 to < 99%	A
90 to < 93%	A-
87 to < 90%	B+

83 to < 87%	B
80 to < 83%	B-
76 to < 80%	C+
70 to < 76%	C
60 to < 70%	D
Below 60%	E = Failing, participated in class EN = Failing, never participated EU = Failing, insufficient participation in class and did not complete XE - Academic dishonesty

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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.

Write all submissions in a word processing program to ensure that you are submitting a high quality written piece, with care to grammar and messaging. Submit the assignment in the requested format per the assignment directions.

Course Workload Expectations

This class is 135 credit hours over 15 weeks. You should plan to spend approximately 18 hours per week on reviewing class materials and completing activities and assessments.

Arizona Mountain Standard Time (MST)

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. If you are located in time

zone other than Arizona MST, go to your account on the Global Canvas Navigation bar (black background) and edit your settings to reflect your actual time zone. This will adjust the due dates and times in your courses (here is [more information](#) about this).

Attendance and Absences

Attendance and participation in class activities is an essential part of the learning process, and students are expected to attend class regularly. *Attendance will be assessed during the discussion sections of course*.

Attendance and participation in class activities is an essential part of the learning process, and students are expected to attend class regularly. Some absences are, however, unavoidable. Excused absences for classes will be given without penalty to the grade in the case of (1) a university-sanctioned event [ACD 304-02]; (2) religious holidays [ACD 304-04; a list can be found here https://eoss.asu.edu/cora/holidays]; (3) work performed in the line-of-duty according [SSM 201-18]; and (4) illness, quarantine or self-isolation related to illness as documented by a health professional.

Anticipated absences for university-sanctioned events, religious holidays, or line-of-duty activity should be communicated to the instructor by *email* at least a week before the expected absence. For any medical or other emergencies please let the instructors know by email as soon as possible. Absences for illness, quarantine or self-isolation related to illness should be documented by a health professional and communicated to the instructor as soon as possible by email.

Excused absences do not relieve students from responsibility for any part of the course work required during the period of absence. If there is a disagreement as to whether an absence should be accommodated, the instructor and student should contact the academic unit chair immediately for resolution.

Course Delivery and Access

Students will participate in this course through Canvas. Course content will be delivered in Canvas through readings, videos, discussions, quizzes, and assessments. Course content and assignments will be accessed online in Canvas, which can be accessed through [my.asu.edu.](http://my.asu.edu)

Computer Requirements

This course requires the following technologies:

- Web browsers ([Chrome](#), [Mozilla Firefox](#), or [Safari](#))
- [Adobe Acrobat Reader](#) (free)
- 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 videos.

Note: A smartphone, iPad, Chromebook, etc. will not be sufficient for completing your work in ASU courses. While you will be able to access course content with mobile devices, you must use a computer for all assignments, quizzes, and discussions.

Laptops are useful for note-taking and discussion-summary posts on Canvas. The use of iPads or Chromebooks is not recommended because these devices do not work for the posting in Canvas. If you are not able to personally finance the equipment you need to attend class, check with the ASU laptop loan program: https://lib.asu.edu/laptops for options to get a laptop from the library.

Community of Care

The health of the Sun Devil community is a top priority. This situation has raised many questions. If you have an issue that is not addressed here, please call 1-855-278-5080 or use the live-chat option at uto.asu.edu/ExperienceCenter/chat

For up-to-date information, please visit Live well, be well

Face Cover Policy (In Person)

The ASU Face Cover Policy currently requires the wearing of face covers in the classrooms, teaching laboratories, studios and workshop settings. The space for this class has been designated as a space requiring face covers. Please wear a face covering over your nose and mouth at all times during class for the health and safety of yourself and others.

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Help

For technical support, use the Help icon in the black global navigation menu in your Canvas course or call the ASU Help Desk at +1-(855) 278-5080. Representatives are available to assist you 24 hours a day, 7 days a week.

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.

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.

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.

Title IX is a 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 at https://sexualviolenceprevention.asu.edu/faqs.

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, https://eoss.asu.edu/counseling is available if you wish to discuss any

concerns confidentially and privately. ASU online students may access 360 Life Services, https://goto.asuonline.asu.edu/success/online-resources.html.

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.

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.

Class Recordings and Copyrighted Materials

Students wishing to record lectures electronically must first get permission from the instructors. We realize that for some, recordings may be beneficial to the way you process new information. A learning community requires trust, however, and misuse of recordings would damage that trust. It is our duty, as your instructors, to make sure that trust is not harmed.

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 the grounds of suspected copyright infringement.

All content in this course, including video meetings, presentations, assignments, and discussions (our internal work) is protected by copyright and may not be shared, uploaded, sold, or distributed outside of our learning community without prior permission. Any recording of sessions by students is prohibited, except as part of an accommodation approved by the Student Accessibility and Inclusive Learning Services.

Emergency Evacuation Plan

Students should be aware of the evacuation route posted on the exit door of each classroom. Students who cannot walk up or down stairs should notify the instructors as early in the course as possible so the instructors can provide information regarding the location of a designated meeting area on each floor of the building.

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](#). Undergraduate students, please see additional instructions for [undergraduate College of Global Futures courses](#). Graduate student grade appeals are initiated within the school offering the course (please email [CGF@asu.edu](#) for more information about initiating a grade appeal for a graduate course in the College of Global Futures).

How Long Students Should Wait for an Absent Instructor

In the event the instructor fails to indicate a time obligation, the time obligation will be 15 minutes for class sessions lasting 90 minutes or less, and 30 minutes for class sessions lasting more than 90 minutes. Students may be directed to wait longer by someone from the academic unit if they know the instructor will arrive shortly.

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.

Prohibition of Commercial Note Taking Services

Course content, including lectures, are copyrighted materials. Students may not share outside the class, upload, sell, or distribute course content or notes taken during the conduct of the course (see [ACD 304-06 Commercial Note Taking Services](#) for more information).

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, uploading your work online to encourage cheating by others, 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.

Students with Disabilities

All students requesting accommodations for disabilities must work with the [ASU Student Accessibility and Inclusive Learning Services](#), the central location for establishing eligibility and obtaining services and accommodations for qualified students with disabilities.

You may contact the ASU Student Accessibility and Inclusive Learning Services at (480) 965-1234 or email directly at student.accessibility@asu.edu.

Religious Accommodations for Students

The observance of religious holidays or cultural celebrations and practices (activities observed by a religious or cultural group of which a student is a member) are an important expression of identity and diversity. As your instructors, we are committed to providing equivalent educational opportunities to students of all belief systems. At the beginning of the semester, you should review the course requirements to identify foreseeable conflicts with assignments, exams, or other required attendance. If at all possible, please contact us within the first two weeks of the first class meeting to allow time for us to discuss and make fair and reasonable adjustments to the schedule and/or tasks. This is the student's responsibility to contact the class instructor for making up tests/assignments within a reasonable time.

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.

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.

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.