School of Sustainability
Arizona State University

SOS 212: Systems, Dynamics, and Sustainability
(3 credits)

Course Objective and Description: Students will be able to identify, model, and analyze complex dynamical systems using a computer simulation framework. Introduces the evaluation and construction of dynamical mathematical models used in the life and social sciences. Includes the basic steps in developing a model of a real system, validating it, and analyzing it to better understand the underlying processes or make suggestions on interventions for sustainability. Covers the first steps concerning how to use formal mathematical techniques including developing equation-based relationships, plotting graphs, estimating parameters, and solving differential equations numerically using computer software.

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 lectures each week

Prerequisites: 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: Dr. Theodore (Ted) P. Pavlic, Associate Professor
School of Computing and Augmented Intelligence
School of Sustainability / School of Complex Adaptive Systems / School of Life Sciences (adjunct)

- Contact Information:
  - E-mail (preferred): tpavlic@asu.edu
  - Office phone: +1-480-965-2899
- See **instructional staff** page on **Canvas** for details about instructional staff, office locations, and office hours.

Expected Learning Outcomes: By completing this course, students will have the ability to:

- identify systems appropriate for analysis via simulation
- build a simulation model in a high-level language
- parameterize simulation models from data
- interpret simulation output data to assist in understanding and intervening in real-world dynamical systems
- communicate simulation results effectively via written reports and presentations

Remote and In-Person Participation Options and ASU Sync: This course makes its content available using **ASU Sync,** a technology-enhanced approach designed to meet the dynamic needs of the class. During ASU Sync classes, students learn remotely through live class lectures, discussions, study groups, and/or tutoring. These technology-enhanced methods allow for much of the course content to be made available asynchronously after the related live exercises have been completed (see below about student privacy). Students can find more information about ASU Sync at: https://provost.asu.edu/sync/students

Detailed instructions for how to connect to the ASU Sync course as well as how to access any archived materials asynchronously are available on the **Canvas** web page.

Students may choose to use ASU Sync or the asynchronous recordings instead of physically attending class. Those participating asynchronously should take care to submit attendance assignments within designated availability windows for credit (see below). **Students do not need to seek special permission to make use of these alternative participation modalities.**

Required and Optional Course Materials

Required Course Reading Materials: Students must have access to this textbook (***free* PDF from library**):

- J. D. W. Morecroft. *Strategic Modelling and Business Dynamics: A Feedback Systems Approach*. John Wiley & Sons, second edition, 2015. ISBN 978-1-118-84468-7

This **textbook is available *for free*** as a PDF through the ASU Library[1]. It can be downloaded to a student's local computer or read on-line. **Readings will be assigned from this textbook.** Students will also be asked to read materials distributed via or linked from the course Canvas site.

Required Course Software: Students will be expected to use the following ***freely available*** software:

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/

Vensim PLE will primarily be used to draw Causal Loop Diagrams (CLD) in the class.

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.

Auxiliary Reading Materials: For additional information, these textbooks are recommended (but **optional**):

- A. Ford. *Modeling the Environment*. Island Press, second edition, 2010. ISBN 978-1-59726-472-3
- M. L. Deaton and J. J. Winebrake. *Dynamic Modeling of Environmental Systems*. Springer, 1999. ISBN 978-0387-98880-1

Several good, **free** web-based references are available. The following have made some influence on course content.

- *Beyond Connecting the Dots* is an interactive textbook on system dynamics modeling and thinking
  - Download: http://beyondconnectingthedots.com/
  - Read on-line: http://beyondconnectingthedots.com/download/gj4kDj3/BCtD_Web.html
- Craig W. Kirkwood's System Dynamics resources (ASU):
  - SD resources: http://www.public.asu.edu/~kirkwood/sysdyn/SDRes.htm
  - On-line textbook: http://www.public.asu.edu/~kirkwood/sysdyn/SDIntro/SDIntro.htm
  - Vensim PLE quick reference and tutorial: http://www.public.asu.edu/~kirkwood/sysdyn/VenPLE.pdf
- The Systems Thinker provides links to several helpful resources on systems thinking and systems dynamics modeling. It can be accessed at: https://thesystemsthinker.com/

Auxiliary Simulation Software: There is a wide variety of system dynamics software packages available. Students looking for a more full-featured simulation package than Vensim or Insight Maker may be interested in:

AnyLogic PLE Simulation Software: AnyLogic PLE is a **free**, academic version of the AnyLogic multimethod simulation software. AnyLogic is **not required for this course**, but students can download it at:

- http://www.anylogic.com/personal-learning-edition-download

AnyLogic PLE includes many example pre-built system dynamics models that may be instructive.

Honors Contracts

Honors Contracts: Students enrolled in Barrett, the Honors College, may wish to pursue an honors contract in this course. Policies on honors contracts will be posted on the Canvas site under the Course Information module.

[1] Students should search for the title at http://lib.asu.edu/

Course Schedule

Detailed Topic and Assignment Schedule: A coarse outline of course topics is given below. A more detailed, but tentative, list of topics and assignments is available on Canvas (on-line)[2], within the Canvas Modules, Calendar, and Course Summary.

Tentative Lecture Topic Outline: The tentative schedule of topics for this course is as follows. Associated readings are given in brackets.

- Systems Thinking, CLD's, and System Dynamics Modeling
  - Unit A: Introduction to Simulation Modeling
    [Chapter 1, Morecroft (2015)]
  - Unit B: Causal Loop Diagrams
    [Chapter 2, Morecroft (2015)]
  - Unit C: CLD System Archetypes
    ["Applying Systems Archetypes" by Kim and Lannon (1997)]
  - Unit D: Introduction to Numerical Simulation of Dynamical Systems
    [Chapter 3, Morecroft (2015)]

- Review and Assessment: *Midterm over Units A through D*

- Advanced Topics in System Dynamics Modeling
  - Unit E: Building, Interacting with, and Interpreting Realistic Simulation Models
    [Chapter 6, Morecroft (2015)]
  - Unit F: The Modeling Process for Large, Complex, Realistic Models
    [Chapters 8–10, Morecroft (2015)]
  - Unit G (time permitting): Stochastic models, Chaos, Diff. eq'ns, Example applications, other adv. topics

- *Final Project Presentations*

- Review and Assessment: *Comprehensive Final Exam*

Syllabus continued on next page...

[2] ASU Canvas: http://canvas.asu.edu/

Course Evaluation and Grades

Course Structure and Evaluation: The grade for the course will be weighted as follows:

Activity	Fraction of Final Score	
Class Participation and Attendance *(Lowest 5 Dropped)*	5%	
Muddiest-Point Reflections *(Lowest 2 Dropped)*	5%	
Homework Assignments *(Lowest 1 Dropped)*	20%	
Reading Activities:		
Perusall exercises at home *(Lowest 2 Dropped)*	5%	
Canvas exercises at home *(Lowest 2 Dropped)*	5%	
Comprehension assessments (timed) before class *(Lowest 2 Dropped)*	5%	
Final Project:		
Group Formation (individual assignment)	1%	Project: 25% total
Proposal (group assignment)	4%	
Stock-and-Flow Model Check-in (group assignment)	1%	
Presentation (group assignment)	5%	
Project Report (group assignment)	10%	
Peer Evaluation of **Other** Presentation (individual assignment)	2%	
Peer Evaluation of **Other** Report (individual assignment)	2%	
Midterm Exam *(80% individual:20% group two-stage exam)*	15%	
Final Exam *(80% individual:20% group two-stage exam)*	15%	

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

- **Class Participation and Attendance** (nominally every lecture)
  Students receive credit for participating in each lecture. Typically, short in-lecture assessments of that day's material will be **graded for completion and not correctness**. The **lowest five scores will be dropped.** Students will have **24 hours** to submit responses after lecture videos are posted.
- **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 survesy 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 two scores will be dropped.**
- **Homework Assignments** (periodically; see Canvas for due dates)
  Eight 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 Activities** (nominally once every 1.5 weeks)
  Students will be expected to read a specified book chapter or a given reading assignment approximately once every 1.5–2 weeks. Each reading is associated with a lecture, and credit is divided among:
  - **Perusall** assignments (due night before lecture) award credit for completing reading online, making constructive annotations, and responding to other annotations. The **lowest two scores will be dropped.**
  - Canvas-based **Reading Exercises** (due night before lecture) prompt students with several auto-graded questions to help emphasize important portions of the text. The **lowest two scores will be dropped.**
  - Canvas-based **Reading Assessments** (**timed** and due before beginning of lecture) test a student's comprehension of the material. The **lowest two scores will be dropped.**
- **Final Project**
  Students will complete a 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

Grade-sharing policy: If a group member's name is left off of the cover page for any of these final-project group assignments, the instructor may give that member a "0" for the assignment if, after further review with other group members, the instructor determines that the student has not significantly contributed to the group.

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 that summarizes what will be modeled (e.g., making use of a simplistic CLD demonstrating the issue of interest).

Stock-and-Flow Model Check-in: Midway between the formation of final-project groups and the submission of the project presentation, groups will present a minimal, working stock-and-flow digram 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 as a **video upload to Canvas**
- A written final report report detailing the selected problem, the model used to address the problem, the results from the model, and conclusions related to the problem based on those results

Grades will be determined by the instructor **making use of peer evaluation scores and comments.**

Peer Evaluations: Each student will be randomly assigned a presentation and a report from another group to evaluate on Canvas. Students will receive peer-evaluation credit (for both a presentation and a report, separately) for submitting a constructive peer review (i.e., both with numerical scores submitted in a standardized rubric and also useful comments).

- **Midterm Exam** (semester midpoint; see schedule on Canvas; **80%:20% two-stage exam**)
  This exam comprises the topics (listed above) from *Unit A* to *Unit D.* The exam will be given as a **two-stage exam, as described below.**
- **Final Exam** (at end of semester; see schedule on Canvas; **80%:20% two-stage exam**)
  This exam is **comprehensive,** but it will be mostly focused on the second half of the course. The exam will be given as a **two-stage exam, as described below.**

Both the midterm and final exam are structured as **two-stage exams**.

- The first stage ("**individual stage**") represents 80% of the exam score and is to be completed **individually** with **closed book** and **closed notes** by each student and reflect the student's individual comprehension of the material. However, during this stage, students will be allowed to use **one two-sided, hand-written formula sheet**, which they will be expected to turn in with their exams.
- The second stage ("**collaborative stage**") represents 20% of the exam score and will occur several days after the first stage. The second-stage test will be **identical to the first-stage test**; however, the test may be completed with **open book**, **open notes**, and **in collaboration** with **any other student currently in the course.** No answers to the first-stage test will be provided before the second-stage test is to be completed.

Letter Grades: The following grade ranges will be used to guarantee each letter grade in the course. The grade ranges are given in percent of the total number of points in the course, as described above.

Grade Range	Guaranteed Letter Grade
Above 100%	A+
93% – 100%	A
90% – 93%	A−
87% – 90%	B+
83% – 87%	B
80% – 83%	B−
77% – 80%	C+
70% – 77%	C
60% – 70%	D
0% – 60%	E

However, based on the distribution of scores in the course, the actual letter grades may be curved upward.

Course Policies and Expectations

Late Policy, Grace Periods, and Acceptable Excuses: Assignment due dates will be published on Canvas, and students should make every effort to turn in submissions by the due date. Most assignments will also include a date corresponding to when the assignment ceases to be available ("Availability Date"). **Unless otherwise explicitly specified,** the difference between the posted due date and the posted availability date is a no-penalty grace period. For example, a lab report may be due at 11:59pm on a Sunday night, but an availability window until 10:00am the following Monday morning indicates that submissions will be accepted without penalty until that time, and no submissions will be allowed after that time. In these cases, Canvas may indicate that the submission is "late", but submissions before the availability date will not face any penalty. **The standard grace period for most assignments is until 10:00am the next morning after the due date**; however, the instructor may explicitly adjust grace periods on a per-assignment basis.

For certain assignments, it will be **explicitly stated that there is no grace period and students will only be given credit for work submitted before the formal due date.** The final-project report and final-project presentation are two such assignments that must remain avaialble for long after they are due to facilitate Canvas peer-review mechanisms, but these assignments have a hard deadline at their due date and will have no grace period.

If a student has a reasonable excuse for submitting homework, project report, or laboratory assignment late, the student must notify the instructor of the reason via e-mail, phone, or in person **before the time the assignment is due. Medical excuses** must be submitted **as soon as possible** and must be able to be verified by the instructor by telephone. Due to HIPPA privacy regulations, students should consult their medical professional to confirm that the formal excuse can be verified by the instructor by telephone. If a medical emergency prevents the student from notifying the instructor before the due date, the student must make a request for an accommodation as soon as it is safe and practical for the student to do so. Based on the evaluation of the reason and the submitted evidence, the instructor will determine if an extension is granted. Assignments submitted after the grace period (e.g., after the availability window has closed on Canvas) without an approved excuse will not be accepted.

In general, **submissions must be made through Canvas in order to be accepted for credit,** and submissions by e-mail will not ben accepted for credit. **Technical issues with submissions are not an acceptable excuse for missing an assignment submission deadline.** In the rare case of a technical issue, a submission by e-mail may be used to demonstrate that an assignment was completed by a critical time (e.g., before the end of an availability window), but a special arrangement will need to be made with the instructor (at the instructor's discretion) for the assignment to be uploaded through the Canvas interface in order to receive credit. **No assignment submissions will be accepted after a solution set for that assignment has been posted.**

No exception of the above policies will be considered.

Grade Correction Policy: A student may request a grade to be checked for possible correction by notifying the instructor with the request via e-mail, phone, or in person **within one week** after the return of work is returned to the student. **No exception of the above policies will be considered.** Students should also note that the student obligations listed under the ASU Academic Integrity Policy[3] state that academic dishonesty can include "attempts to influence or change any Academic Evaluation, assignment or academic record for reasons have no relevance to academic achievement." Thus, it is a violation of ASU Academic Integrity to request a grade change for reasons such as keeping a scholarship or maintaining some form of academic eligibility.

E-mail and Correspondence Policy: 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. Special notes:

- Although email will be used for course-related communication, assignments should not be submitted by email unless explicitly requested.
- When e-mailing your instructor, your e-mail should include "**SOS 212**" (without the quotes) **at the start of the subject,** as in "SOS 212: Request for grade correction".
- ***All instructor correspondence will be sent to your ASU email account or will use the messaging features within Canvas.***

[3] "Student Obligations to Academic Integrity" at http://provost.asu.edu/academic-integrity/policy

- Students may leave comments on Canvas submissions, but these comments are meant to provide notes to the grader during grading. They should not be used for more urgent communication with the instructional staff. **The instructional staff should be contacted by e-mail as described above.**

Absence Policy and Illness Procedures: Students are responsible for all assignments, change of assignments, announcements, and other course-related materials. In accordance with the ASU Academic Affairs Manual (ACD) and the Student Services Manual (SSM), so long as the appropriate notice is provided ot the instructor in advance, absences may be excused without penalty to the grade in the case of to:

- university-sanctioned activities in accord with ACD 304–02[4]
- religious practices that are in accord with ACD 304–04[5]
  - A list of university-recognized holidays can be found at: https://eoss.asu.edu/cora/holidays
  - By ACD 304–04, students must notify instructor **at the beginning of the semester** about the need to be absent from class due to religious observances
- military line-of-duty activities in accord with ACD 304–11[6] and SSM 201–18[7]

Excused absences do not relieve students from responsibility for any part of the course work required during the period of absence. If the appropriate notice is not provided in advance of the absence, the instructor reserves the right to determine when absences may be excused.

In the case of an absence due to illness, the student must provide verifiable documentation from a medical professional of the illness in order for the absence to be excused. This documentation must be provided **as soon as the student is well enough to attend classes again**. Due to HIPPA privacy regulations, students should **confirm with the medical professional that the instructor will be able to verify the absence by telephone**.

For the ASU Academic Affairs Manual, see: http://www.asu.edu/aad/manuals/acd/index.html

Obligation for Waiting on Delayed Instructor: Students that appear at a designated time for an obligatory course-related activity are expected to wait 15 minutes after the designated time if an instructor (or a representative of the instructor) has not arrived. Students may be directed to wait longer by someone from the academic unit.

Academic Integrity: All students in this class are subject to ASU's Academic Integrity Policy (see link to AIP below) and should acquaint themselves with its content and requirements, including a **strict prohibition against plagiarism.** All violations will be reported to the Dean's office. Special rules for this class (potentially above and beyond the policies of ASU and the School of Sustainability) are:

- Sharing course-related files (e.g., homework assignments, solution sets, lecture slides, etc.) with Internet websites or other 3rd parties is strictly forbidden.
- Sharing student-created documents based on course-related files (e.g., student notes, copies of homework assignments, etc.) with Internet websites or other 3rd parties is strictly forbidden.
- Sharing student assignment responses (e.g., homework submissions, graded exams, etc.) with Internet websites or other 3rd parties, including other students, is strictly forbidden.
- Students are forbidden from seeking outside help for course-related work.
- Students may not collaborate on course assignments unless explicitly allowed by the particular assignment.
- Students may not copy the work of others. Likewise, students may not submit the work of others as their own. Plagiarism is strictly prohibited.
- Students may not falsify or fabricate data or other information collected for an assignment.
- Students witnessing potential violations of these rules and the ASU Academic Integrity Policy are expected to report these violations to the course instructor.
  - In the case of witnessing a violation during an in-class assignment or exam, there are methods that protect the anonymity of the student while still directing the instructor toward the potential integrity violation. For example, a student may ask for clarification on an assignment point and signal the direction of the potential violation to the instructor by writing on the assignment.

The ASU student academic integrity policy states that[8] "each student must act with honesty and integrity, and must

[4] ACD 304–02, Missed Classes Due to University-Sanctioned Activities: http://www.asu.edu/aad/manuals/acd/acd304-02.html
[5] ACD 304–04, Accommodation for Religious Practices: http://www.asu.edu/aad/manuals/acd/acd304-04.html
[6] ACD 304–11, Missed Class Due to Military Line-of-Duty Activities: https://www.asu.edu/aad/manuals/acd/acd304-11.html
[7] SSM 201–18, Accommodating Active Duty Military: https://www.asu.edu/aad/manuals/ssm/ssm201-18.html
[8] From "Student Obligations to Academic Integrity" at http://provost.asu.edu/academic-integrity/policy

respect the rights of others in carrying out all academic assignments." Failure to meet these standards may result in a reduction in assignment grade, reduction in course grade, suspension or expulsion from the university, or other sanctions consistent with the university policy and the Student Code of Conduct[9]. By law and regulation, this course will be conducted within the ethical standards of ASU at large, which preclude such activities as plagiarism, cheating, and various forms of harassment. For the university policy and statement on these issues, see: http://provost.asu.edu/academic-integrity

Title IX, Harassment, and Sexual Discrimination: Arizona State University is committed to providing an environment free of discrimination, harassment, or retaliation for the entire university community, including all students, faculty members, staff employees, and guests. ASU expressly prohibits discrimination, harassment, and retaliation by employees, students, contractors, or agents of the university based on any protected status: race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, and genetic information.

Title IX[10] 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: http://sexualviolenceprevention.asu.edu/faqs

As an employee of the University, **the instructor is considered a mandated reporter** and is therefore obligated to report any information that is made 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 students wish discuss any concerns confidentially and privately.** ASU Online students may access 360 Life Services, https://goto.asuonline.asu.edu/success/online-resources.html.

Students with Disabilities: Suitable accommodations will be made for students having disabilities. Students who wish to request accommodation for a disability must be registered with Student Accessibility and Inclusive Learning Services (SAILS), formerly known as the Disability Resource Center (DRC), and provide the instructor documentation from SAILS in sufficient time for accommodations to be properly arranged. Students seeking accommodations should see ACD 304–08[11]. More information about ASU SAILS (formerly DRC) can be found at: https://eoss.asu.edu/accessibility

Threatening or Disruptive Behavior: This course will follow the ASU Student Services Manual (SSM 104–02)[12] if there are any cases of disruptive, threatening, or violent behavior that arise. Individuals can be asked to leave the premises, or the police may be called in an extreme situation.

In particular, students, faculty, staff, and other individuals do not have an unqualified right of access to university grounds, property, or services. Interfering with the peaceful conduct of university-related business or activities or remaining on campus grounds after a request to leave may be considered a crime. All incidents and allegations of violent or threatening conduct by an ASU student (whether on or off campus) must be reported to the ASU Police Department (ASU PD) and the Office of the Dean of Students.

Recording of Class Sessions by Instructor (and Student Privacy): The instructor of this class may periodically record classroom sessions (e.g., for use in ASU Sync, for enabling asynchronous review of classroom discussions, or to assist in providing material to accommodate student absences), and these recordings may be posted online for remote access by students. During recordings of live class exercises, every effort will be made to anonymize student participation and sanitize the content to protect student privacy. If students have concerns about being recorded, they should contact the instructor.

[9] The ASU Student Code of Contact: http://eoss.asu.edu/dos/srr/codeofconduct
[10] Information about Title IX and ASU's commitment to an environment free from discrimination based on sex: http://www.asu.edu/titleIX/
[11] ACD 304–08, Classroom and Testing Accommodations for Students with Disabilities: http://www.asu.edu/aad/manuals/acd/acd304-08.html
[12] The ASU policy on handling of disruptive/threatening/violent individuals on campus: http://www.asu.edu/aad/manuals/ssm/ssm104-02.html

Recording Devices, Copyrighted Course Material, and Commercial Note Taking: Students may record course content for personal use using devices that do not disrupt the classroom experience. However, the course content, including lectures and instructor-provided recordings of lectures, is copyrighted material. Furthermore, in accordance with ACD 304–06[13] of the ASU Academic Affairs Manual as well as ABOR Policy 5–308 F.14[14], **students may not sell or distribute notes taken during the conduct of the course without the express written permission of the instructor.**

A student must refrain from from uploading to any course shell, discussion board, website, or other course forum used by the course instructor material that is not the student's original work unless the student first complies with all applicable copyright laws. The instructor reserves the right to delete materials on the grounds of suspected copyright infringement.

Any recording of class sessions is authorized only for the use of students enrolled in this course during their enrollment in this course. Recordings and excerpts of recordings (including those made by the instructor and distributed on the Canvas course website) may not be distributed to others.

Offensive Content: Some course content may be deemed offensive by some students. Students should voice any such concerns immediately with the instructor to help ensure a productive classroom experience.

Classroom Etiquette, Professionalism, and the Learning Environment: It is an extremely high priority of the instructor that the classroom experience be one that promotes a learning environment for all students present. Students, taxpayers, and many other university stakeholders have paid of their money, time, and resources to make this classroom environment available to each enrolled student. There are a variety of behaviors which are violations of classroom etiquette because they: (a) distract other students, (b) distract the instructor, and (c) distract the student exhibiting the behavior. In order to assure an environment that promotes learning for everyone present, the following behaviors will absolutely not be tolerated:

- Using electronic devices such as laptops, phones, pagers, or tablets for anything other than class business (e.g., web surfing)
- Using headphones for any activity not related to a disability unless specifically directed to use headphones by the instructor or TA as part of a classroom or laboratory exercise
- Talking during inappropriate times
- Showing up late for class
- Doing homework for another class during the normally scheduled class time
- Listening and/or viewing audio/video devices during class

When participating in **ASU Sync**, students are expected to behave in a way consistent with good classroom etiquette. For example, students are expected to wear appropriate dress when on video and maintain audio background noise to a minimum. Furthermore, the following behaviors will absolutely not be tolerated:

- Changing screen names in an attempt to hide the identity of the student or be offensive to others
- Using an inappropriate background
- Attempting to share screen without instructor permission
- Attempting to annotate on a shared screen without instructor permission
- Posting offensive content in chat

Each minor instance where a student is found to be in violation of classroom etiquette will cost that student 1% off the total 100% available for the class score, and there is no limit to these deductions. The instructor may also require that students who have disrupted a class leave the class exercise for the day. Particularly egregious offenses (e.g., those that violate the ASU Student Code of Conduct) may require additional sanctions including, but not limited to, removal from the course.

Faculty, staff, students, and visitors should abide by posted university policies on wearing of face masks in classrooms, labs, offices, and community spaces. Where required to wear masks, a person's mask should cover both the nose and mouth.

The information in the syllabus, other than grade and absence policies, may be subject to change with reasonable advance notice. Additional details related to the implementation of these course policies will be given on the

[13] ACD 304–06, Commercial Note-Taking Services: http://www.asu.edu/aad/manuals/acd/acd304-06.html
[14] ABOR Policy 5–308, Student Code of Conduct: https://public.azregents.edu/Policy%20Manual/5-308-Student%20Code%20of%20Conduct.pdf

course Canvas web page. This document was last updated on September 25, 2022.

This is the end of the syllabus.