

Course Syllabus



IEE 561: Production Systems

Course Syllabus

Course Description: Understanding how manufacturing facilities operate, how performance is measured, and how operational changes impact performance metrics. Operational philosophies, increasing production efficiency through quantitative methods.

Course Time Commitment and Level of Difficulty:

THIS IS A DIFFICULT COURSE - The number of concepts covered in this 16 week course is high. Be prepared to self-learn/teach after viewing the video lectures. The required textbook offers many examples and practice exercises to help solidify the material and concepts. Students who succeed/excel in this course report spending more than 9 hours per week studying/learning/completing the homework exercises. It is expected, as a graduate level course, that you will take the initiative to self-learn each week, using the video lectures as a solid foundational starting point for each concept covered.

This three-credit course requires approximately 135+ hours of work. Please expect to spend around 9+ hours each week preparing for and actively participating in this course - **seriously, you WILL spend at least 9+ hours each week on this course!**

Credits: 3

Prerequisites:

1. Probabilistic Modeling (IEE 385/470)
2. Deterministic Optimization (IEE 376)
3. Basic familiarity with manufacturing processes and systems is desirable.

Instructor: Melissa Heiler

Contact Info: madunn@asu.edu (<mailto:madunn@asu.edu>)

Video Lecturer: Dr. Ron Askin

TA/Grader: Shubham Patel (spate246@asu.edu)

****While you will view Dr. Askin on the videos, all correspondence in this course will be with the instructor, Melissa Heiler. Any problems or questions you have should go to Melissa Heiler to be resolved.**

Course Delivery Mode

Section #77027: This is an online course. There are no face-to-face class meetings or exams. You can log into your course via MyASU at <https://my.asu.edu> ➞ <https://my.asu.edu>.

Section #77021: This is a hybrid course. There are no face-to-face class meetings, but there are in-person exams. You can log into your course via MyASU at <https://my.asu.edu> ➞ <https://my.asu.edu>. Exams will be held in Tempe BYAC 150 on the dates and times indicated on the schedule.

Course Access: Your ASU courses can be accessed by both my.asu.edu and <https://asu.instructure.com/>; bookmark both if one site is down.

ASU IT Help: 855-278-5080 or 480-965-6500 if you have any questions about getting and using software used in the course, including canvas, Lockdown Browser, Microsoft Access (in the Microsoft Office Suite), Microsoft Visual Studio 2015 or 2017.

Office Hours

Email to set up an appointment at a date and time fitting for you and the instructor.

Course Description & Objectives

Understanding how manufacturing facilities operate, how performance is measured, and how operational changes impact performance metrics. Operational philosophies, increasing production efficiency through quantitative methods.

The course is online, but all exams will be delivered in person for section #77021.

Section #77027 will have all exams delivered online using the online proctoring tool.

The intent of this course is to develop competence in developing and applying quantitative models to improve the design and operation of modern manufacturing systems. Many of the techniques also apply to service systems that directly serve customers or perform back-end business functions. The course focuses on facility logistics, namely the flow of production jobs through a manufacturing facility as materials are transformed into products. (The service system analogy is customers flowing through a service system to satisfy their needs). Emphasis is placed on understanding the principles of widely used production control systems and on analytical models for guiding how resources (humans, machines, tools and information) should be utilized to facilitate this flow. Upon completion of this course the student should be able to select an appropriate production control system for a given production environment and apply appropriate quantitative modeling and analysis techniques to optimally design and operate that system. Stochastic and deterministic techniques will be discussed. Optimal and heuristic algorithms will be covered.

At the completion of this course, students will be able to:

- Understanding of the basic physical and social laws that affect mfg. system performance.
- Ability to design an assembly system for one or more products.
- Ability to evaluate and exploit value of manufacturing flexibility.
- Understanding of the impact of WIP level and buffer capacity on system performance.
- Understanding of the basics of push and pull production control.
- Ability to apply stochastic models to analyze a proposed open or closed production system.
- Understanding of the impact of variability on production rate and cycle time.
- Ability to develop an appropriate model and solution algorithm for a manufacturing system.
- Understanding of the key principles of warehouse management.

Textbook

Askin, R. & C. Standridge, Modeling and Analysis of Manufacturing Systems, John Wiley & Sons, 1993. ISBN -10: 0-471-51418-7; ISBN-13: 978-0471514183

Students may purchase a hard copy of the book from the ASU bookstore, Amazon.com or other similar sources. If an exam is open book, only a hard copy of the textbook is allowed during exams. An electronic copy of the textbook is NOT allowed during exams that are open book.

Reference Books (*not required*)

- Spearman, M. and W. Hopp, Factory Physics, McGraw Hill, 2000.
- Gershwin, S., Manufacturing Systems Engineering, Prentice-Hall, 1994.
- Yao, D. (ed.), Stochastic Modeling & Analysis of Mfg. Systems, Springer, 1994.
- Buzacott, & Shanthikumar, Stochastic Models of Mfg. Systems, Prentice-Hall, 1993.
- Pochet & Wolsey, Production Planning by Mixed Integer Programming, Springer, 2006 Askin, R. G. & J. Goldberg, Design and Analysis of Lean Production Systems, John Wiley, 2002. Gautam, N., Analysis of Queues: Methods and Applications, CRC Press, 2012.

Lecture notes: The purpose of lecture notes is to serve the instructor by prompting the instructor what to cover in lectures. Lecture notes are provided to students for convenience only. They are not meant to be complete course materials for students. Students need to have the textbook for the course.

Computer & Software Requirements

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

You will need, at the very least, a scientific calculator, but we strongly recommend a graphing calculator like TI-84 or TI-83. We do not permit use of HP or TI Inspire calculators, or any other device that connects to the internet for use during exams.

Student Work

- 3 Exams:

- Final Exam is comprehensive
- When applicable, only hard copies of the book and reference materials (like notes) are allowed (no access to online PDFs)
- Certain questions/problems from quizzes, exercises, and homework MAY be included in exams
- You will need a calculator for use in the exams. You may NOT pre-program any algorithms into the calculator for use in the exams nor use any device that connects to the internet (e.g., TInspire calculator)
- If a student has a valid reason for missing an exam at the scheduled time, **they must obtain instructor permission and notify at least 72hrs in advance in order to be considered**. It is highly recommended that all students make their best effort to take exams at the original scheduled date/time
- Homework Assignments (to be completed individually)
- Syllabus Quiz (optional extra credit; +2%)
- Literature Review Paper – Discover current technologies, assays, and other research and how it applies to an assigned area of industry
- Literature Review Presentation

****Solutions to homework and exams are NOT posted on Canvas.****

Grading

Midterm 1	20%
Midterm 2	20%
Final Exam	25%
Homework Assignments	5%
Literature Review Paper	10%
Literature Review Presentation	20%

*****If you do not take the Final Exam, you will receive a course grade of “E.” In order to pass this course, you must take all exams*****

Grading criterion: the following scores are for a guaranteed grade, cutoff scores for grades may be curved, and +/- may be used.

Final Average	Course Grade
> 90	A
80 - 90	B
70 - 80	C
60 - 70	D
< 60	E

+/- grades may be used in the event of a borderline situation

Course Topics, Schedule & Grading:

Activities used for instruction and assessment of learning include: discussion/presentations; textbook and supplemental readings; and individual activities/assignments.

A schedule of lecture topics, required reading, assignments, necessary discussions and exams are posted separately on Canvas and below. The recommended schedule and this syllabus may be subject to change with reasonable advance notice as needed.

Week	Topics	Reading
1	Introduction/Review Principles and Types of Mfg. Systems	Ch. 1
2	Principles Continued Assembly Line Balancing - Defn. & RPW	Ch. 2
3	Assembly Line Balancing - Optimization Mixed Model Sequencing	Ch. 2
4	Random Serial Systems (Transfer Lines): Without Buffers and With Buffers	Ch. 3

5	Random Serial Systems (Transfer Lines): Buffer Allocation Allocation of Work in Multistage Parallel Systems	Ch. 3 & 4
6	Lean Manufacturing Concepts and Scheduling Principles EXAM 1 - Modules 1-3 - Lectures 1-10	Ch. 4
7	JIT Kanban and Generalized Kanban Systems MRP Control Systems	Notes
8	Impact of Variability Flexible Manufacturing Systems - Loading	Ch. 5
9	BREAK - NO CLASS	
10	Group Technology - Coding Systems, Cell Formation	Ch. 6
11	Single Stage Poisson Queues Busy Periods; Priority Service	Ch. 11
12	Non-Poisson Queues Jackson Networks	Ch. 11
13	Open Model Extensions - General Service Time Closed Queueing Networks – Definition and Mean Value Analysis	Ch. 11
14	Closed Queueing Networks – Model Extensions and Generalizations EXAM 2 - Modules 4-8 - Lectures 11-24	Ch. 11
15	Facility Layout Algorithms – QAP, Planar Graphs, LP Operational Assignment/Sequencing Problems	Ch. 7 & 8
16	Warehouse Design/Management (Storage Allocation) Course Review FINAL EXAM - Cumulative (with greater emphasis on later material)	Ch. 10

Email & 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/GSA correspondence will be sent to your ASU email account.

Late or Missed Course Work

Exam dates are on the schedule in Canvas. No late submissions for exams. Follow up on the most current announcements.

Notify via email the instructor/GSA BEFORE each course work is due if an urgent situation arises and the course work will not be submitted on time. Published course work due dates (Arizona 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.

If a student has a reasonable excuse for submitting a homework assignment late, the student must notify via email the instructor/GSA the reason by the due time of the homework assignment via email message. The student must submit a guidance Memorandum from Student Advocacy and Assistance (<https://eoss.asu.edu/dos/srr/StudentAdvocacyandAssistance>) as the supporting document within one week of the notification or before the graded homework is returned to the class, whichever occurs first. Based on the evaluation of the reason and the supporting document, the instructor/GSA will determine if an extension is granted. Without notifying the instructor/TA via email with a reasonable excuse by the due time of the homework assignment, the student will earn a score of 0 points on the assignment.

If a student has a reasonable excuse for missing an exam, the student must notify the instructor/GSA the reason via email by the completion time of the exam via email. The student must submit a guidance Memorandum from Student Advocacy and Assistance (<https://eoss.asu.edu/dos/srr/StudentAdvocacyandAssistance>) as the supporting document within one week of the notification or before the graded exam is returned to the class, whichever occurs first. Based on the evaluation of the reason and the supporting document, the instructor/GSA will determine if the student is allowed to have the final exam "double count" for the missed exam score. No makeup exams will be administered. Without notifying the instructor/GSA via email with a reasonable excuse by the completion time of the exam, the student will receive 0 out of 100 for the missed exam.

No late submission of a quiz or exercise will be accepted. Do not email the instructor/GSA an assignment late - your email will not be answered. Please follow the guidance listed in the above paragraphs for excusable late assignments.

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 of religious holidays can be found here <https://eoss.asu.edu/cora/holidays>]; (3) work performed in the line-of-duty according [SSM 201-18]. Students who request an excused absences must follow the policy/procedure guidelines. Excused absences do not relieve students of responsibility for any part of the course work required during the period of absence.

Submitting Course Work

All course work should be submitted on the course canvas.

No course work received via email will be graded/reviewed.

Class Rules

1. Do not submit assignments via email - they will not be reviewed.
2. Students are responsible for all material presented in class and in the reading assignments. All material covered in the assigned sections of the textbook or supplemental reading assignments, included in homework assignments, or discussed in class is fair game for the exams.
3. Grades on the exams may be curved based on the instructor's discretion regarding the relative difficulty of the exam and performance of the class.
4. Makeup exams will not be given. Students unable to take an exam must have an authorized excuse and receive prior permission from the instructor. The final exam grade will replace the missed exam score for excused missed exams.
5. Prepare and study, A LOT! This is a difficult course, but a very rewarding course!

Grading Procedure

Grades reflect your performance on assignments and adherence to deadlines. The course grade will be guaranteed based upon the total points each individual student achieves in the following categories. Be assured that no one with an average lower than your average received a higher grade!

There will be no make-up or extra opportunities to collect points. Not attempted and not completed assignments, quizzes or exams can't be completed all together at the end of the semester (no last-minute submissions for the past due assignments). If you have a concern with your grade for whatever reason, you must be concerned about it starting from the beginning of the semester. No unexcused late work is accepted in this course. **DO NOT EMAIL ME YOUR LATE WORK - IT WILL NOT BE GRADED UNDER ANY CIRCUMSTANCE.**

Extra credit work is not available in this class. There may be built-in extra credit in exams and assignments if you opt to attempt those questions and points, but they are not guaranteed. If you need an honors contract, communicate early in the semester, there might be some opportunities. If you dispute the grading of your work, you will have three calendar days after graded work is returned to

request a review. When your request is received, a meeting will be scheduled if needed. No review can be done after the three calendar days pass, so plan accordingly. There is no review or taking the exams after the due date as correct answers will already be published. 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 further. However, the instructor maintains discretion over final grades. If a student disagrees with the grading, that student has the right to confer with the TA/grader or instructor before the conclusion of the next class period after the initial grade is recorded to discuss concerns.

Important Note about Grading Disputes: According to the academic integrity code, it is an academic violation to bring up the impact of a course grade on your enrollment status, graduation, scholarships, job prospects, etc. as an explicit or implicit, direct or indirect, written or spoken attempt to influence a change in announced grade. Therefore, you are strongly advised against approaching me or the course TA/grader (if applicable) with grading disputes that are unrelated to actual academic achievement, as such incidents will be forced to report these occurrences as potential academic code violations. Do not contact (verbal or email), direct or indirect) instructor for any grade or point bumps at the end of the semester, this is a serious academic integrity violation. This behavior will be reported.

You are guaranteed a course grade per the following: (EU, EN and Academic Integrity Violation grades are considered and evaluated case by case).

"Y" grades are not an option for this class, unless an ASU policy requiring this option is provided by the Provost's Office to ASU faculty this semester. If you are falling behind in the class due to medical issues or personal issues, please contact your advisor and the instructor. An "I" grade (Incomplete) might be provided. This grade will be changed to a letter grade when the missing work is completed per the agreement with the instructor.

Online Exam Proctoring

In accordance with the Provost's announcement on April 1st, 2020 regarding remote learning for summer sessions, the face-to-face exams originally scheduled for the hybrid course (campus-based students) will be delivered online.

This course uses online proctoring for exams. Online proctoring records both your computer screen activity and the physical room environment in order to mimic in-person proctoring conditions. The recordings are captured to help ensure academic integrity. Online proctoring records your face, your computer screen activity and your physical room environment in order to mimic in-person proctoring conditions. The recordings are captured to help ensure academic integrity. The proctoring service will flag your exam if suspicious activity is detected or if exam rules are broken. These recordings will be reviewed for exam rule compliance and academic integrity. Noncompliance with exam rules and regulations may result in exam grade deductions (e.g., 10% penalty per rule broken). You have to get familiar and have the necessary hardware, software and preparation for the exams with the proctoring service. Here are some basic rules and additional specific rules will be communicated prior to exams;

- You may use your own handwritten one-page (standard 8.5x11) reference sheet
- You must have a photo ID. Get an ASU Sun Card if you don't have one:

<https://cfo.asu.edu/cardservices-suncard>

- You must have a roster photo uploaded to ASU
- Your face and eyes must be on camera at all times
- You must do a complete and thorough 360 degree room scan, inclusive of all exam materials on the desk, the floor, the whole exam environment
- You must be alone in the room, no one must come into room during the exam
- You must have a calculator (if necessary) You may not use a TI-Nspire
- You may not use your cell phones. It must be in another room. If a phone vibration/ring can be heard in your proctored video, this may result in a grade penalty
- You may not leave the room
- You may not be on-line on any other devices
- You may not have any windows open other than the exam window
- You may not wear a watch of any kind. The exam has a timer that is visible.
- You may not discuss the exam with any other student while the exam is open/live
- You may not post exam questions anywhere online, in text messages, or reproduce the exam questions in any way at any time, even after the exam closes.
- You may not take photos or screen shots of any portion of any exam at any time, even after it closes.
- The exams, Quizzes and any assignments are the property of Arizona State University (ASU). It can NOT be copied or distributed or sold. No Screen Shots. Do not give it to a friend. Do not upload it to any internet site.

If any of the above musts are violated, you will receive a grade penalty or a zero on the exam. Should any of the above may nots occur, you will receive a zero on the exam and be reported to Academic Integrity Officer (AIO) for an academic integrity violation with the recommendation that your final course grade be lowered a full letter grade. Additionally, you may be suspended or expelled from ASU. After that moment, the process is not run by the instructor. Academic integrity is taken very seriously by both faculty, administration and leadership.

To help ensure that everything will function properly, you must complete a practice exam before the first exam. Additional information about the online proctoring service is posted with class materials. If you need assistance, contact the ASU Help Desk for assistance: access 24/7 live chat, create a case from your My ASU Service Center, or call 855-278-5080. More details are posted in course Canvas site.

To help ensure that everything will function properly, you must complete a practice exam before the first exam. Additional information about the online proctoring service is posted with class materials. If you need assistance, contact the ASU Help Desk for assistance: access 24/7 live chat, create a case from your My ASU Service Center, or call 855 278 5080.

Students enrolled in the on-campus section are expected to take the exams in designated classroom. On-campus students not in attendance during an in-class exam will receive a 0 for that exam unless a

prior excuse has been approved or a doctor's note showing a specific ailment that prevented attending class is presented to the instructor within one week of the exam.

Exam Instructions

There are pre-exam preparations that apply to every online exam. In addition, there will be exam-specific instructions for each exam that address exam time, permissible materials, and other exam information. Exam instructions will include, but not be limited to:

- You must have an approved photo on file to confirm your identity.
- You must complete a room scan of your testing area that shows the entire work environment. Otherwise you will be in violation of the exam instructions, and you may also be in violation of ASU's Student Academic Integrity Policy. Exam points may be deducted for violating exam instructions.
- You must not have access to a cell phone, smart watch, TI-Nspire calculator, or other internet-capable device during the exam. If a cell phone, smart watch, TI-Nspire calculator, or other internet-capable device is seen out in any way or is accessible during an exam, you will be in violation of the exam instructions, and you may also be in violation of ASU's Student Academic Integrity Policy. 10% Exam points may be deducted for violating exam instructions.

Please review further exam instructions and rules outlined in the modules section of your course Canvas page.

Communicating with the Instructor

This course uses the discussion board for general questions about the course. Prior to posting a question, please check the syllabus, announcements, and existing posts. If you do not find an answer, post your question. You are encouraged to respond to the questions of your classmates.

Email questions of a personal nature to your instructor. You can expect a response within 48 hours.

ASU e-mail is an official means of communication among ASU's students, faculty, and staff (refer to SSM 107-03). Students are expected to ensure that e-mail is accessed, read, and acted upon in a timely fashion. Students bear the responsibility of missed messages and should check their ASU-assigned e-mail on a regular basis. You MUST send all email from your official ASU email account. Emails not sent from that account will be filtered and ignored. I do not respond to messages sent through Canvas Inbox or a personal email account (like iCloud, Gmail, yahoo and all others). All instructor correspondence is sent to your ASU email account. If you have it forwarded elsewhere, you may miss important information. Not forwarding your ASU email at the first place is highly suggested. Always include the e-mail subject line such that it facilitates the process. One such example can be "IEE XXX" followed by a descriptive subject line (e.g., "IEE XXX question about the homework 1"). Emails not sent with "IEE XXX" in the subject line will be filtered and ignored. Expect a response in the second business day after

the day you emailed. If you do not receive any response, kindly follow up. If you think the concern is time sensitive (meaning it can't wait until the second business day), start your subject with phrase "URGENT". Do not expect email responses over the weekend.

Course Canvas Inbox, SpeedGrader Comments section and platforms like Yellow Dig are not a way of communication with the instructor in this course for urgent and important matters.

Calculators

We will do computations on a calculator. You will need a calculator for exams. Most students use a TI-83, 84 or 89 but any calculator with financial functions is sufficient. You may not use a TI-Nspire or an internet-capable calculator during exams in this course. If you do, you will receive a score of 0 on that exam, and you may be reported for an academic integrity violation.

Required: Approved Photo on File

Arizona State University requires each enrolled student and university employee to have on file with ASU a current photo that meets ASU's requirements (your "Photo"). ASU uses your Photo to identify you, as necessary, to provide you educational and related services as an enrolled student at ASU. If you do not have an acceptable Photo on file with ASU, or if you do not consent to the use of your Photo, your access to ASU resources, including access to classes (online or in person) may be negatively affected or denied.

Online students must have an approved photo on file with Sun Devil Card Services (additional information at "ID photos for ASU Online students").

This university requirement supports academic integrity. The photo ID that you provide for exams will be compared with the photo on file. You will receive a "0" for all exams taken without a photo on file. The first exam comes quickly, so you should start the process immediately.

Drop and Add Dates/Withdrawals

Consult with your advisor and notify your instructor/GSA to add or drop this course. If you are considering a withdrawal, review the following ASU policies: Withdrawal from Classes, Medical/Compassionate Withdrawal, and a Grade of Incomplete.

Grade Check and Correction

A student may request a grade check and possible correction for a course work by notifying the GSA with the request via email within a week after the return of the graded course work to students. A student

should do grade check and correction with GSA as GSA grades all course work. Only if the student disagrees with GSA, the student may email the instructor to discuss the issue.

Grade Appeals

Grade disputes must first be addressed by discussing the situation with the instructor/GSA. If the dispute is not resolved with the instructor/GSA, the student may appeal to the program chair per the University Policy for Student Appeal Procedures on Grades. Follow instructions at

<https://engineering.asu.edu/grade-grievance/> ↗ (<https://engineering.asu.edu/grade-grievance/>).

Generative AI

Generative AI is a technology that can often be useful in helping students learn the theories and concepts in this course. However, unless explicitly allowed by your instructor, the use of generative AI tools to complete any portion of a course assignment or exam will be considered academic dishonesty and a violation of the ASU Academic Integrity Policy. Students confirmed to be engaging in non-allowable use of generative AI will be sanctioned according to the academic integrity policy and FSE sanctioning guidelines.

Student Conduct and Academic Integrity

Students in this class are expected to acknowledge and embrace the FSE student professionalism expectation located at: <https://engineering.asu.edu/professionalism/>

Students in this class must adhere to ASU's academic integrity policy, which can be found at

<https://provost.asu.edu/academic-integrity/policy> ↗ (<https://provost.asu.edu/academic-integrity/policy>). Students are responsible for reviewing this policy and understanding each of the areas in which academic dishonesty can occur. All engineering students are expected to adhere to the ASU Student Honor Code.

All work submitted for the course cannot have been submitted for any other course or any previous section of this same course. Student academic integrity violations are reported to the Fulton Schools of Engineering Academic Integrity Office (AIO). Withdrawing from this course will not absolve you of responsibility for an academic integrity violation and any sanctions that are applied. The AIO maintains a record of all violations and has access to academic integrity violations committed in all other ASU college/schools.

Unless explicitly allowed by your instructor, the use of generative AI tools to complete any portion of a course assignment or exam will be considered academic dishonesty and a violation of the ASU

Academic Integrity Policy. Students confirmed to be engaging in non-allowable use of generative AI will be sanctioned according to the academic integrity policy and FSE sanctioning guidelines.

ASU expects and requires its students to act with honesty, integrity, and respect. Required behavior standards are listed in the Student Code of Conduct and Student Disciplinary Procedures, Computer, Internet, and Electronic Communications policy, ASU Student Academic Integrity Policy, and outlined by the Office of Student Rights & Responsibilities. Anyone in violation of these policies is subject to sanctions.

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 Instructor Withdrawal of a Student for Disruptive Classroom Behavior.

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.

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.

If a student is caught cheating on any one of the course work, the student will receive zero credit for the course work and have the final grade lowered by one grade for each occurrence of cheating.

Copyrighted Course Material and Prohibition of Commercial Note Taking and Audio/Video Recording Services

The course content, including lectures, is copyrighted material. In accordance with ACD 304-06 Commercial Note Taking Services, written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes. Notes must have the notetaker's name as well as the instructor's name, the course number, and the date. Students may not sell notes in written, audio and video forms taken during the conduct of the course without the written permission of the instructor.

All engineering students are expected to adhere to the ASU Student Honor Code and the ASU academic integrity policy, which can be found at <https://provost.asu.edu/academic-integrity/policy>). Students are responsible for reviewing this policy and understanding each of the areas in which academic dishonesty can occur. If you have taken this course before, you may not reuse or submit any part of your previous assignments without the express written permission from the instructor.

All student academic integrity violations are reported to the Fulton Schools of Engineering Academic Integrity Office (AIO). Withdrawing from this course will not absolve you of responsibility for an academic integrity violation and any sanctions that are applied. The AIO maintains a record of all violations and has access to academic integrity violations committed in all other ASU college/schools.

You must refrain from uploading to this course shell, discussion board, website used by the course instructor or any other course forum, material that is not your own original work, unless you first comply with all applicable copyright laws. Course instructors reserve the right to delete materials from the course shell on the grounds of suspected copyright infringement.

The contents of this course, including lectures and other instructional materials, are copyrighted materials.

Students may not share outside the class, including uploading, selling or distributing course content or notes taken during the conduct of the course. 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 may not be distributed to others. (see ACD 304–06, “Commercial Note Taking Services” and ABOR Policy 5-308 F.14 for more information).

Course Evaluation

Students are expected to complete the course evaluation. The 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.

Syllabus Disclaimer

The syllabus is a statement of intent and serves as an implicit agreement between the instructor and the student. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. Please remember to check your ASU email and the course site often.

Academic Status Report (ASR)

Approximately twice during this session, ASRs are submitted for students who are not meeting expectations and who are in danger of earning a D or E grade. The criteria for ASRs are very subjective. We will use our experience and current grades to determine if an ASR is appropriate.

Academic Integrity and Student Code of Conduct

ASU has a very strict academic integrity policy. All students are expected to know what it is. Any form of violation in this course will be met with a significant penalty and a report to the Dean’s Office, which goes into the official student record until graduation.

Each student must act with honesty and integrity and must respect the rights of others in carrying out all academic assignments. A student may be found to have engaged in academic dishonesty if, in connection with any Academic Evaluation or academic or research assignment (including a paid research position), he or she:

1. Engages in any form of academic deceit;
2. Refers to materials or sources or uses devices (e.g., computer disks, audio recorders, camera phones, text messages, crib sheets, calculators, solution manuals, materials from previous classes, or commercial research services) not authorized by the instructor for use during the Academic Evaluation or assignment;
3. Possesses, reviews, buys, sells, obtains, or uses, without appropriate authorization, any materials intended to be used for an Academic Evaluation or assignment in advance of its administration;
4. Acts as a substitute for another person in any Academic Evaluation or assignment;
5. Uses a substitute in any Academic Evaluation or assignment;
6. Depends on the aid of others, including other students or tutors, in connection with any Academic Evaluation or assignment to the extent that the work is not representative of the student's abilities;
7. Provides inappropriate aid to another person in connection with any Academic Evaluation or assignment, including the unauthorized use of camera phones, text messages, photocopies, notes or other means to copy or photograph materials used or intended for Academic Evaluation;
8. Engages in Plagiarism;
9. Uses materials from the Internet or any other source without full and appropriate attribution;
10. Permits his or her work to be submitted by another person in connection with any Academic Evaluation or assignment, without authorization;
11. Claims credit for or submits work done by another;
12. Signs an attendance sheet for another student, allows another student to sign on the student's behalf, or otherwise participates in gaining credit for attendance for oneself or another without actually attending;
13. Falsifying or misrepresenting hours or activities in relation to an internship, externship, field experience, clinical activity or similar activity; or
14. Attempts to influence or change any Academic Evaluation, assignment or academic record for reasons having no relevance to academic achievement.

Here are a couple of violations of the Academic Integrity Policy that most students do not realize:

- Students may not provide old notes, reports, assignments, homework solutions, or exams/quizzes to friends or others who take a class later.
- Students may not post, sell or provide notes, reports, assignments, homework solutions, or exams/quizzes to online sites such as Chegg.com or CourseHero.com.


At Arizona State, the governing phrase about what is allowed and is not allowed during a course is as follows:

Everything is forbidden until the teacher says it is permitted.

If a student violates the Academic Integrity Policy, the following will occur:


1. He/she is reported to the dean's office for an academic integrity violation
2. He/she receives a zero on the work item
3. His/her final course grade will be demoted by a full letter grade
4. He/she is ineligible, suspended or expelled if it is a second academic integrity offense

Disability Accommodations


Suitable accommodations are made for students having disabilities. Students needing accommodations must register with the ASU Student Accessibility and Inclusive Learning Services office and provide documentation of that registration to the instructor. Students should communicate the need for an accommodation in enough time for it to be properly arranged. See [ACD 304-08](#)  (<https://www.asu.edu/aad/manuals/acd/acd304-08.html>) Classroom and Testing Accommodations for Students with Disabilities.

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 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>  (<https://sexualviolenceprevention.asu.edu/faqs>).

Students, faculty, staff, and other individuals do not have an unqualified right of access to university grounds, property, or services (see SSM 104-02). 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.

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> , (<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> 

(<https://goto.asuonline.asu.edu/success/online-resources.html>).

Notice: *Any information in this syllabus (other than grading and absence policies) may be subject to change with reasonable advance notice.*