

HST 318: History of Engineering

Spring 2024 Session A

iCourse

Arizona State University

Instructor Information

Instructor: Valerie Adams, Ph.D.

email: valerie.adams@asu.edu

Office Hours: I check email Monday - Friday. If you email me late at night or on the weekends you may have to wait for a reply.

Office: Santa Catalina Hall on Poly Campus, 251J.

Course Description

In this advanced history course, you will have opportunities to develop a range of skills that should serve you well while you are a student at ASU. You will hone your writing skills in discussion board assignments and through your research paper. You will improve your critical thinking skills as well as your time management skills. Of course, you will learn the history of engineering and technology, which ought to serve you well in your degree and in your overall well-roundedness.

There are all sorts of engineering and technological advances throughout history, but we can address only a limited number of them in a seven-week course. In general, we will look at major topics since antiquity, but with a post-1450 emphasis. However, there is great care in balancing Western and non-Western contributions to the advancement of engineering and technology.

Course Learning Goals

The general course learning goals are simple:

To develop a knowledge of major events in the history of engineering since 1500.

To identify the major events, people, dates in the story of global technological advances since antiquity.

To learn how technology shapes culture and how culture can shape technology.

To appreciate how an understanding of the past allows you to better shape your opinions and knowledge of the present and future.

To improve your writing, reading, and critical thinking skills.

Required Course Textbook

Ferguson, Eugene. *Engineering and the Mind's Eye*. Baltimore: MIT Press

Graded Work*Discussion Board Assignments*

There are four discussion board assignments, and these make up the crux of the course. In addition to posting your own original post (approx. 400 words), you must also respond in meaningful ways (approx. 100 words) to four of your peers. Each is worth 10 points...6 points for your original post and 1 additional points for each of the four peer responses.

Papers

This class is designated as a “L,” thus you must do some writing. The discussion boards (DBs) will take up much of your time, and I do expect them to be well written. However, you must also write two papers that will challenge your critical thinking skills, help you brush up on research techniques, and offer you experience with writing a strong thesis with a convincing argument. These are skills that you will use for the rest of your life.

First Paper. 4-pages of text. After having completed Eugene Ferguson's *Engineer and the Mind's Eye*, write a four-page paper that answers the questions: What is the nature of engineering design, as Ferguson lays out? What is the purpose of design? What is the process of design? How has the information in his book helped you become a better engineer?

Second Paper. 4-pages of text. Find an example from the last 100 years of engineering being used for some kind of “cultural display,” trivial or crucial. Write a 4-page paper explaining the object and its appropriate history. Your paper needs to explain the “why” it was built and the “how” it was built. You need to use no fewer than three quality sources.

Exams

There is a midterm and a final exam. Both tests your understanding of the module work. It is important to keep up with the assigned readings and videos in the modules.

Grading

As the following table suggests, all the work in the course is important because all of it is designed to help you achieve the general learning goals.

Assignment	Points
4 Discussion Board Posts	40
First Paper	50
Second Paper	50
Second Paper DB element	10
Midterm Exam	25
Final Exam	25

Total	200
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Grade Scale

Grades will be determined by the percentage you accumulate:

A	90-100	Excellent
B	80-89.9	Good
C	70-79.9	Average
D	60-69.9	Passing
E	<60	Failure
XE		Failure due to Academic Dishonesty
EU		Failing, did not complete
EN		Failing, never participated

Grades will be based on the following definitions: The grade of C shall indicate competent, acceptable performance and learning [average]; the grade of B shall indicate superior performance and learning [above average]; the grade of A shall indicate excellent performance and learning [superior]. With moderate effort and preparation, a grade of C should be obtainable to everyone in this class. An A will require vigorous effort and preparation.

Missing & Late Work: You are responsible for a variety of assignments. If you fail to hand in work by the due date I will accept late work at a penalty. My policy is to deduct a third of a letter grade per day late for papers. If your paper assignment is late, I will reduce your grade by one third of a letter for each day that it is late. For instance, if you earn a “B” on a paper that was due on Wednesday, but you turn it in on Friday, I will record “C+” in the grade book. Discussion boards will be scored down one point per day late.

Please note that if you do not submit written work, you will receive a zero for that work.
All work is to be original – not recycled from a previous or current class.

YOU MUST complete the two papers to pass the course. Failure to complete either will result in a final grade of “E” regardless of your numeric score.

Course Reading & Assignment Schedule for HST 318 Spring 2024 Session A

There are **additional documentary films** and **additional readings** located in the Canvas Modules.

Dates _____ Topics & Assignments _____

January 8-12: Making Mistakes and Collaboration

Read: Ferguson: Chapters 1-4

Watch: Films in modules

Read: Additional files in module

Discussion Board: Engineering Failures

January 15-19: The Profession & Engineering and the Arts

Read: Ferguson: Chapters 5- 7

Watch: Films in modules

Read: Additional files in module

Discussion Board: What Makes a Great Engineer?

January 22- 26: The Ancient & Classical Worlds

Watch: Films in modules

Read: Additional files in module

First Paper Due on Ferguson and Design (Jan. 28)

January 29- Feb. 2: Renaissance

Watch: Films in modules

Read: Additional files in module

Midterm Exam due Sunday, Feb. 4

February 5- 9: Industrialization & Urbanization

Watch: Films in modules

Read: Additional files in module

Second Paper Due on Engineering as a Cultural Display:

DB element due Friday, Feb. 9 and paper due Sunday, Feb. 11

February 12-16: A Century of War

Watch: Films in modules

Read: Additional files in module

Discussion Board: Engineering for War

February 19- 23: A Century of Progress

Watch: [Films in modules](#)

Read: [Additional files in module](#)

Discussion Board: [Modernization Then and Now](#)

February 26-27: Final Exam

Final Exam due Tuesday Feb. 27

Email

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.

I will do my best to return emails received during business hours (i.e., Monday through Friday between 8:00 a.m. and 5:00 p.m.) in a timely fashion. Emails received after 5:00 p.m. or during nonbusiness hours will likely not be addressed until the following business day. This of course does not mean that I will not respond to emails at night or on the weekends, but it does mean that immediate responses are not guaranteed. Please allow for at least 24 hours response time, but a response will typically come much quicker. Do not send repeated messages as this will only confuse the process and possibly further delay a response. Emails should be constructed using basic English conventions. Please note that I am not “Hey” “Valerie” “Mrs./Ms. Adams.” Professor or Dr. Adams are appropriate.

Student Success

To be successful:

- check the course daily
- read announcements
- read and respond to course email messages as needed
- complete assignments by the due dates specified
- communicate regularly with your instructor and peers
- create a study and/or assignment schedule to stay on track
- access [ASU Online Student Resources](#) or [CISA Academic Resources](#)

Submitting Assignments

For your own protection, you should keep a copy of everything you hand in, and you should keep your graded assignments at least until grades are finalized at the end of the semester in the event you wish to contest any grades.

All assignments, unless otherwise announced by the instructor, **MUST** be submitted to the designated area of Canvas. Do not submit an assignment via email.

Assignment due dates follow Arizona Standard time. Click the following link to access the [Time Converter](#) to ensure you account for the difference in time zones. Note: Arizona does not observe daylight savings time.

Keeping & Labeling Your Work

Please keep your work after any course has ended. You may need it for such things as grade appeals.

To avoid confusion, please label all your work carefully. Include your name always, the course prefix and number, the date of submission, and the assignment label.

Course Time Commitment

Coursework includes all learning activities including reading, watching videos, studying, and completing assignments. Arizona Board of Regents (ABOR) requires 45 hours of coursework per credit for college-level courses, which translates to:

- 1 credit hour = 45 total hours
- 2 credit hours = 90 total hours
- 3 credit hours = 135 total hours
- 4 credit hours = 180 total hours
- 5 credit hours = 225 total hours

ASU courses range in length from 6 weeks to 15 weeks. Below is a breakdown of the 135-hour required time commitment for a three-credit course divided among weeks for courses of various lengths.

Course Length	Time on Coursework per Week for a 3-credit course	Total Time Requirement for a 3-credit Course
6 weeks	22.5 hours	135 hours
7.5 weeks	18 hours	135 hours
8 weeks	17 hours	135 hours
15 weeks	9 hours	135 hours

Drop and Add Dates/Withdrawals

If you are unable to take this course for any reason, be aware that there is a limited timeline to [drop or add the course](#). Consult with your advisor and notify your instructor to add or drop this course. If you are considering a withdrawal, review the following ASU policies: [Withdrawal from Classes](#), [Withdrawing as a Financial Aid Recipient](#), [Medical/Compassionate Withdrawal](#), and a [Grade of Incomplete](#).

Grade Appeals

Students must first speak with the instructor of the class to discuss any disputed grades. If, after review, a resolution is not achieved, students may proceed with the appeal process. Student grade appeals must be processed in the regular semester immediately following the issuance of the grade in dispute (by commencement for fall or spring), regardless whether the student is enrolled at the university. Complete details are available in the [CISA Grade Appeals policy](#).

Incomplete Grade

A course grade of “Incomplete” will be given only in extreme situations because the sad story is that most students who request incompletes never finish the course.

Please visit <http://www.asu.edu/registrar/forms/regforms.html> under the Academic Record Forms section for the Incomplete Grade Request form, which is available in both Word and as a PDF. The form must be completed by the student, signed by the student, the instructor, and the department chair or school director.

Classroom Behavior

We want to build a classroom climate that is comfortable for all. It is important that we 1) display respect for all members of the classroom – including the instructor and students; 2) pay attention to and participate in all class sessions and activities; 3) avoid unnecessary disruption during class time (e.g. having private conversations, reading the newspaper, surfing the Internet, doing work for other classes, making/receiving phone calls, text messaging, etc.); and 4) avoid racist,

sexist, homophobic, or other negative language that may unnecessarily exclude members of our campus and classroom. This is not an exhaustive list of behaviors; rather, it represents examples of the types of things that can have a dramatic impact on the class environment. Your final grade may be reduced by 5% each time you engage in these sorts of behaviors.

Academic Integrity

Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions 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), loss of registration privileges, disqualification and dismissal. For more information, see provost.asu.edu/academicintegrity.

If you fail to meet the standards of academic integrity in any of the criteria listed on the university policy website, sanctions will be imposed by the instructor, college, and/or dean. Academic dishonesty includes, but is not limited to, cheating on an academic evaluation or assignment, plagiarizing, academic deceit (such as fabricating data or information), or falsifying academic records. Turning in an assignment (all or in part) that you completed for a previous class is considered self-plagiarism and falls under these guidelines. Any infractions of self-plagiarism are subject to the same penalties as copying someone else's work without proper citations. Students who have taken this class previously and would like to use the work from previous assignments should contact the instructor for permission to do so. In addition, the use of AI (ChatGPT or similar program) may not be used to generate output for assignments.

Plagiarism in papers is also intolerable and grounds for failure and even expulsion as per University policy. As explained in one writing manual by Diana Hacker in *A Pocket Style Manual*, 3rd Edition:

Your research paper is collaboration between you and your sources. To be fair and ethical, you must acknowledge your debt to the writers of these sources. If you don't, you are guilty of plagiarism, a serious academic offense. Three different acts are considered plagiarism: (1) failing to cite quotations **and borrowed ideas**, (2) failing to enclose borrowed language in quotation marks, and (3) failing to put summaries and paraphrases in your own words (p. 171).

If you are unsure what plagiarism is or how to avoid it, see me before you turn in a paper.

If you have any questions about your work and the academic integrity policy, please discuss your assignment or concerns with your instructor, teaching assistant, or your college Academic Integrity Officer in advance of submitting an assignment. Student resources on Sun Devil Integrity and strategies for completing your work with integrity and avoiding plagiarism are available here: [ASU Student Resources for Academic Integrity](#) or provost.asu.edu/academicintegrity for more information.

Harassment Prohibited

ASU policy prohibits harassment on the basis of race, sex, gender identity, age, religion, national origin, disability, sexual orientation, Vietnam era veteran status, and other protected veteran status. Violations of this policy may result in disciplinary action, including termination of employees or expulsion of students. Students are encouraged to report harassment to instructors and the Dean of Students Office.

Establishing a Safe Classroom Environment

Learning takes place best when a safe environment is established in the classroom. ASU and the College of Integrative Sciences and Arts 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](#). 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.

In accordance with [SSM 104-02](#) of the Student Services Manual, students enrolled in this course have a responsibility to support an environment that nurtures individual and group differences and encourages engaged, honest discussions. The success of the course rests on your ability to create a safe environment where everyone feels comfortable to share and explore ideas. We must also be willing to take risks and ask critical questions. Doing so will effectively contribute to our own and others' intellectual and personal growth and development. We welcome disagreements in the spirit of critical academic exchange, but please remember to be respectful of others' viewpoints, whether you agree with them or not.

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](#). If either office determines that the behavior poses or has posed a serious threat to personal safety or to the welfare of the campus, the student will not be permitted to return to campus or reside in any ASU residence hall until an appropriate threat assessment has been completed and, if necessary, conditions for return are imposed. ASU PD, the Office of the Dean of Students, and other appropriate offices will coordinate the assessment in light of the relevant circumstances.

Student Conduct

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.

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. The results are always anonymous and cannot be reviewed by the instructor/department until after final grades have been posted.

Title IX

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>.

Student Accessibility and Inclusive Learning Services (SAILS)

Qualified students with disabilities who will require disability accommodations in this class are encouraged to make their requests to the instructor at the beginning of the semester either during office hours or by appointment. Note: Prior to

receiving disability accommodations, verification of eligibility from the Student Accessibility and Inclusive Learning Services is required. Disability information is confidential.

Student Accessibility and Inclusive Learning Services (eoss.asu.edu/drc)

Email: DRC@asu.edu

SAILS Phone: 480-965-1234

SAILS FAX: 480-965-0441

Tutoring

Free tutoring support is available in person and online for most courses. Services are offered through ASU's University Academic Success Programs for currently enrolled students.

- Tutoring is available in math, business, science, statistics, and engineering courses.
- Writing tutoring is available for any writing project at any stage of the writing process.
- Supplemental Instruction (SI) facilitates collaborative study groups for selected courses.
- Graduate academic tutoring is available for writing and statistics.
- Academic skills tutoring can help with critical reading, study skills, note taking, and more.
- Resources are available through our YouTube channel, Zoom recordings, and handouts.

Visit <https://tutoring.asu.edu> or call (480) 965-9072 for more information about these services, to view our schedules, or to book an appointment.

Statement on Inclusion

Arizona State University is deeply committed to positioning itself as one of the great new universities by seeking to build excellence, enhance access, and have an impact on our community, state, nation, and the world. To do that requires our faculty and staff to reflect the intellectual, ethnic, and cultural diversity of our nation and world so that our students learn from the broadest perspectives, and we engage in the advancement of knowledge with the most inclusive understanding possible of the issues we are addressing through our scholarly activities. We recognize that race and gender historically have been markers of diversity in institutions of higher education. However, at ASU, we believe that diversity includes additional categories such as socioeconomic background, religion, sexual orientation, gender identity, age, disability, veteran status, nationality, and intellectual perspective.

Mental Health

As a student, like anyone else, you may experience a range of challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating, and/or lack of motivation. These emotional health concerns or stressful events may diminish your academic performance and/or reduce your ability to participate in daily activities. ASU Counseling Services provides counseling and crisis services for students who are experiencing a mental health concern. Any student may call or walk-in to any ASU counseling center for a same-day or future appointment to discuss any personal concern. Here is the website: eoss.asu.edu/counseling. After office hours and 24/7 ASU's dedicated crisis line is available for crisis consultation by calling 480-921-1006.

Establishing a Safe Environment

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Prohibition of Commercial Notetaking Services

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 note taker's name as well as the instructor's name, the course number, and the date.

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. The results are always anonymous and cannot be reviewed by the instructor/department until after final grades have been posted.

Trigger Warning

Please note that some course content may be deemed offensive by some students, although it is not my intention to offend anyone. In addition, some materials that we link with online might also be considered offensive, troubling, or difficult to review in terms of language or graphics. I attempt to provide warnings when introducing this kind of material; yet, if I forget to do so, or if something else (in my materials or posts from fellow students) seems offensive, please contact me at valerie.adams@asu.edu, or the faculty head, Andrew.Mara@asu.edu.

Academic Affairs Manual

For a complete guide to Arizona State University course policies, please refer to the [Academic Affairs Manual \(ACD\)](#).

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. Remember to check your ASU email and the course site often.

Campus Resources

As an ASU student you have access to many resources on campus. This includes tutoring, academic success coaching, counseling services, financial aid, disability resources, career and internship help and many opportunities to get involved in student clubs and organizations.

- Tutoring: <https://students.asu.edu/academic-success>
- Counseling Services: <http://students.asu.edu/counseling>
- Financial Aid: <http://students.asu.edu/financialaid>
- Disability Resource Center: <http://www.asu.edu/studentaffairs/ed/drc/>
- Major/Career Exploration: <http://uc.asu.edu/majorexploration/assessment>
- Career Services: <http://students.asu.edu/career>
- Student Organizations: <http://www.asu.edu/studentaffairs/mu/clubs/>
- [ASU Writing Centers: https://tutoring.asu.edu/writing-centers](https://tutoring.asu.edu/writing-centers)

- ASU Police Department: <https://cfo.asu.edu/police>
International Student Resources: <https://students.asu.edu/international/support/academic>