



ChEE 301A Chemical Engineering Lab I; Fall 20XX

Lecture: Location TBD • Day(s) TBD Time TBD
Lab: Harshbarger 1 • Day(s) TBD Time TBD

Instructors, Office Hours, and Contact Information

Instructor: Dr. Adrianna Brush, adriannabrush@email.arizona.edu, Harshbarger 134b
Office Hours: Monday 3-4pm, and by appointment. Harshbarger 134b

Laboratory Director: Dr. Gregory Ogden, Harshbarger 105E, gogden@email.arizona.edu

Teaching assistants: -----: -----@email.arizona.edu
-----: -----@email.arizona.edu

Topics

- 1) Heat Exchange Experiments – Two weeks of lab testing various heat exchangers and two weeks of report writing. You will work in lab groups of 4 and submit a group lab report. We will be reviewing the concepts related to these labs during lecture.
- 2) Introduction to Aspen – You will be learning Aspen, software for unit operations and process design. We will go over ASPEN in lecture, and you will complete 2 projects during the semester.
- 3) Quantifying Uncertainties in Experimental Measurements – We will be exploring concepts related to measuring and quantifying uncertainties and error in experiments and measurements.

Grading

Heat Exchange Laboratory: 40% - Grade based on in-lab participation, the one group lab report, associated assignments, and a peer evaluation from your group members. See the report guidelines and rubric for other requirements and penalties. 25% of your final grade is the final lab report, 5% is the rough draft, 5% is associated homework assignments, and 5% is a peer evaluation.

Aspen: 30% - Grade based on individual completion of two projects. An electronic copy of the ASPEN files and individual assignment will be turned in to the appropriate assignment submission folder on D2L.

Statistical Analysis of Experimental Data: 20% - Grade based on homework.

Central Facilities Plant Tour: 4% - Exposure to utility-scale applications of heat exchange during a tour of the UA campus Central Facilities Plant. Grade based on attendance and completion of assignment after

Participation: 6% - Portion of grade for being on time and actively participating in class.

Late policy for all assignments: 10% deducted for every day (24-hour period) late.

Software

You can use the computers in room 10 of Harshbarger to access Aspen Plus. Aspen Plus is also installed in the OSCAR lab in ENGR 318. Alternatively, you can use the College's RemoteApp server, <http://app.engr.arizona.edu>, to access Aspen Plus from your personal computer. The instructions for accessing Aspen Plus are posted on the D2L site.

Lab Protocols

Prior to the beginning of lab, review all documentation. Bring a printed copy of the lab instructions and data sheet for writing down data. You MUST wear long pants and closed toed shoes to lab. You MUST wear the provided safety glasses and hard hat (if needed) when completing laboratory experiments. If you are not wearing appropriate clothing and PPE to lab, you will NOT be able to participate in lab.

There is a General Laboratory Chemical Safety Training course that must be completed prior to performing the Heat Exchange Laboratory. This is accessed through D2L > Self Registration > Laboratory Chemical Safety. Complete prior to date TBD.

Course Format and Teaching Methods

I will primarily use active learning strategies in this course. This is not a class where you only come each day, listen, watch, and take notes! The primary method you will use for learning new engineering concepts and methods will be by reading any provided materials before class, participating in class activities and discussions, and working through assignments and quizzes.

This class has a strong component of teamwork and collaboration. Much of our class time will be spent working through concepts and problems in small groups and as a whole class.

Developing your ability to effectively work in teams is an important aspect of this course, so you will regularly work in small groups in class, and you will complete a team report worth approximately one-third of your grade.

Absence and Class Participation Policy

Participating in the course and attending lectures are vital to the learning process. As such, attendance is required at all lectures and assigned lab periods. Class attendance will be verified with a clicker question that appears at some point randomly in the day's activities and will be auto-recorded through that device. If you do not have a clicker, please get one as quickly as possible from the UA Bookstore or purchase a license for TurningPoint ResponseWare. Clickers will also be used to gauge understanding of reading material, support class discussions, facilitate understanding of new concepts and review previously taught material. If you forget your clicker, please see me after class, then email me regarding your attendance. If you miss class, you can watch the recording in Panopto in UA Tools on D2L and then email me to earn 75% of the attendance points.

To request a disability-related accommodation to this attendance policy, please contact the Disability Resource Center at (520) 621-3268 or drc-info@email.arizona.edu. If you are experiencing unexpected barriers to your success in your courses, the Dean of Students Office is a central support resource for all students and may be helpful. The Dean of Students Office is located in the Robert L. Nugent Building, room 100, or call 520-621-7057.

Please examine the course syllabus for potential conflicts at the start of the semester and promptly notify me via email of any anticipated accommodation needs, providing as much notice as possible. If you have a conflict with a potential lab day, please inform me before I assign groups, or as soon as you know of the conflict so accommodations can be made.

The UA's policy concerning Class Attendance, Participation, and Administrative Drops is available at: <http://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop>

The UA policy regarding absences for any sincerely held religious belief, observance or practice will be accommodated where reasonable, <http://policy.arizona.edu/human-resources/religious-accommodation-policy>.

Absences pre-approved by the UA Dean of Students (or Dean Designee) will be honored.

Course Communications

Online communication will occur via Piazza, which can be found here: <https://piazza.com/arizona/fall2019/chee301a/home> Make sure you have joined the class site, and check Piazza regularly for information and to post any questions.

Required Materials

Turning Technologies clickers (or ResponseWare) will be used in this course on a regular basis. Be sure to bring your clicker to each class. The clickers will be used to track attendance and participation. Please see the D2L Announcements for instruction on how to register your clicker. You will need access to a laptop for in-class working days (can be borrowed from the U of A library: <http://new.library.arizona.edu/tech/borrow/pc-laptop>)

Submission of Work

All work for this course will be submitted or completed online via the University of Arizona's (D2L) system. D2L is the only method by which assignments will be accepted. Your submissions will be checked with D2L's plagiarism tool. You are responsible for keeping up to date on the requirements of the course. All schedules, documents, lecture slides, assignments, and other materials relating to the course will be maintained on the D2L website. Check D2L for information related to assignments.

Grading Scale and Policies

Letter grades on reports or assignments will not be determined; a final letter grade will be given at the end of the semester instead. This course will be graded on a straight scale as follows:

| <u>Total Percentage of Points Earned</u> | <u>Grade</u> |
|--|--------------|
| 90 – 100% | A |
| 80 – 89.99% | B |
| 70-79.99% | C |
| 60-69.99% | D |
| < 60% | E |

I will not be curving individual assignments, including the lab report. However, I may curve the final grades at my discretion. The straight scale above is the most stringent metric I will use (i.e. if I curve, it will only result in higher letter grades). Do not assume I will curve grades.

University policy regarding grades and grading systems is available at <http://catalog.arizona.edu/policy/grades-and-grading-system>

Dispute of Grade Policy: If you have questions how a problem was graded on your report, please write a note describing the issue, attach the note to your report, and give the report and note to me. Resubmissions must be done within one week after a report is returned.

Requests for incomplete (I) or withdrawal (W) must be made in accordance with University policies, which are available at <http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete> and <http://catalog.arizona.edu/policy/grades-and-grading-system#Withdrawal> respectively.

Classroom Behavior Policy

To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.).

Students are asked to refrain from disruptive conversations with people sitting around them during lecture. Students observed engaging in disruptive activity will be asked to cease this behavior. Those who continue to disrupt the class will be asked to leave lecture or discussion and may be reported to the Dean of Students.

Threatening Behavior Policy

The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

Accessibility and Accommodations

Our goal in this classroom is that learning experiences be as accessible as possible. If you anticipate or experience physical or academic barriers based on disability, please let Professor Muscat know immediately so that we can discuss options. You are also welcome to contact the Disability Resource Center (520-621-3268) to establish reasonable accommodations. For additional information on the Disability Resource Center and reasonable accommodations, please visit <http://drc.arizona.edu>.

If you have reasonable accommodations, please plan to meet with Dr. Brush by appointment or during office hours to discuss accommodations and how the course requirements and activities may impact your ability to fully participate.

Please be aware that the accessible table and chairs in this room should remain available for students who find that standard classroom seating is not usable.

Code of Academic Integrity

Plagiarism and other violations of Academic Integrity will **not** be tolerated.

Students are encouraged to share intellectual views and discuss freely the principles and applications of course materials. However, graded work/exercises must be the product of independent effort unless otherwise instructed. Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: <http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>.

The University Libraries have some excellent tips for avoiding plagiarism, available at <http://new.library.arizona.edu/research/citing/plagiarism>.

Selling class notes and/or other course materials to other students or to a third party for resale is not permitted without the instructor's express written consent. Violations to this and other course rules are subject to the Code of Academic Integrity and may result in course sanctions. Additionally, students who use D2L or UA e-mail to sell or buy these copyrighted materials are subject to Code of Conduct Violations for misuse of student e-mail addresses. This conduct may also constitute copyright infringement.

UA Nondiscrimination and Anti-harassment Policy

Harassment, discrimination, hateful or disrespectful language, and bullying will **not** be tolerated.

If you have been subjected to any of this, please contact me.

The University is committed to creating and maintaining an environment free of discrimination; see <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Our classroom is a place where everyone is encouraged to express well-formed opinions and their reasons for those opinions. We also want to create a tolerant and open environment where such opinions can be expressed without resorting to bullying or discrimination of others.

Additional Resources for Students

UA Academic policies and procedures are available at <http://catalog.arizona.edu/policies>

Student Assistance and Advocacy information is available at <http://deanofstudents.arizona.edu/student-assistance/students/student-assistance>

Confidentiality of Student Records

<http://www.registrar.arizona.edu/personal-information/family-educational-rights-and-privacy-act-1974-ferpa?topic=ferpa>

Subject to Change Statement

Information contained in the course syllabus, other than the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.