Description of Course
The goal of this graduate seminar course is to learn more about research in the general field of data systems. In this course, we will read and review research papers on data systems. We will also learn how to do research in computer science by reading, evaluating, presenting, and conducting a research project in data systems. Topics include big data systems, cloud database, machine learning for systems, high dimensional data management, data integration, data cleaning, and serverless computing, etc.

Course Prerequisites
No prerequisites. But students who have already taken graduate level databases and operating systems courses potentially will feel more comfortable.

Instructor and Contact Information
Lei Cao
712 Gould-Simpson
colei@arizona.edu
520-621-4632

Office hours: Tu 4:00PM – 5:00PM at my office or by email appointment
Instructor home page: https://www.cs.arizona.edu/~colei/
Piazza link: https://piazza.com/arizona/spring2023/csc696j, access code: 696j
D2L: https://d2l.arizona.edu/d2l/home/1259161
Course home page: https://www.cs.arizona.edu/~colei/teach.html

Course Format and Teaching Methods
The course will consist of instructor and student-led discussions of research papers. Students will do a semester-long research project. The course will also include writing paper reviews and presenting papers to the class. This course does not involve a textbook or any exams, but there will be periodic quizzes.

Obtaining Help

- **Advising:** If you have questions about your academic progress this semester, or your chosen degree program, consider contacting your graduate program coordinator and faculty advisor. Your program coordinator, faculty advisor, and the Graduate Center can guide you toward university resources to help you succeed. **Computer Science students** are encouraged to email gradadvising@cs.arizona.edu for advising related questions.

- **Life challenges:** If you are experiencing unexpected barriers to your success in your courses, please note the Dean of Students Office is a central support resource for all students and may be helpful. The **Dean of Students Office** can be reached at 520-621-2057 or DOS-deanofstudents@email.arizona.edu.
● **Physical and mental-health challenges:** If you are facing physical or mental health challenges this semester, please note that Campus Health provides quality medical and mental health care. For medical appointments, call (520-621-9202. For After Hours care, call (520) 570-7898. For the Counseling & Psych Services (CAPS) 24/7 hotline, call (520) 621-3334.

● **UA Ombuds:** The [UA Ombuds Office](https://ombuds.arizona.edu/) helps with a wide variety of issues, concerns, questions, conflicts, and challenges. The primary mission of the Ombuds Program is to assist individuals in resolving conflict, facilitating communication, and assisting the University by surfacing issues and providing feedback on emerging or systemic concerns. Communications with the Ombuds Committee are informal and off-the-record. The Ombuds Committee is governed by the following standards: (1) Confidentiality; (2) Impartiality; (3) Informality; and (4) Independence.

### Class Recordings

For lecture recordings, which are used at the discretion of the instructor, students must access content in D2L only. Students may not modify content or re-use content for any purpose other than personal educational reasons. All recordings are subject to government and university regulations. Therefore, students accessing unauthorized recordings or using them in a manner inconsistent with UArizona values and educational policies (Code of Academic Integrity and the Student Code of Conduct) are also subject to civil action.

### Course Objectives

The goal of this graduate seminar course is to learn more about data systems research, specific to the domain chosen by the instructor and students.

Students will learn the state-of-the-art in research within the chosen domain and with the following objectives:

- Learn to read and review research papers in data systems or related domains.

- Learn how to synthesize papers that attempt to solve similar research problems, make comparisons between such papers, and identify remaining limitations that could identify to future research.

- Understand, implement concepts of domain-specific research by conducting a semester-long research project.

- Develop computer science research skills that include effectively communicating research verbally and in writing through reports and presentations.
Expected Learning Outcomes

- Learn to identify and summarize the research problem, context, proposed approach, evaluation, and limitations in research papers.

- Learn to organize and plan the execution of a research project.

- Learn to effectively communicate the problem being solved, context, proposed approach, evaluation, and limitations of their own research project.

- Learn to provide constructive suggestions to others in the course about their research projects.

For a more granular description of the learning objectives, see the week-by-week schedule and the description of the assignments below.

Data Systems is a big field, and there is no way we can cover all of it in one course. With that said, this course covers a large amount of material, and the assignments are a central part of the course. Students are expected to dedicate a significant amount of time on the course outside of the classroom, especially if they have background deficiencies to make up.

Absence and Class Participation Policy

The UA’s policy concerning Class Attendance, Participation, and Administrative Drops is available at https://catalog.arizona.edu/policy/class-attendance-and-participation

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’s designee) will be honored. See https://deanofstudents.arizona.edu/policies/attendance-policies-and-practices

Participating in the course and attending lectures and other course events are vital to the learning process. As such, attendance is required at all lectures. Absences may affect a student’s final course grade. If you anticipate being absent, are unexpectedly absent, or are unable to participate in class online activities, please contact me as soon as possible. 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.

Most of the evaluation in this course will be based on your participation in class by presenting papers, discussing papers, presenting your research, etc. If you are going to miss any course sessions, please let me know ahead of time so we can discuss. You can also talk to the graduate coordinator in our department, Tina Mendoza, if attending this course becomes problematic.
Illnesses and Emergencies

- If you feel sick, or may have been in contact with someone who is infectious, stay home. Except for seeking medical care, avoid contact with others and do not travel.
- Notify your instructor(s) if you will be missing up to one week of course meetings and/or assignment deadlines.
- If you must miss the equivalent of more than one week of class and have an emergency, the Dean of Students is the proper office to contact (DOS-deanofstudents@email.arizona.edu). The Dean of Students considers the following as qualified emergencies: the birth of a child, mental health hospitalization, domestic violence matter, house fire, hospitalization for physical health (concussion/emergency surgery/coma/COVID-19 complications/ICU), death of immediate family, Title IX matters, etc.
- Please understand that there is no guarantee of an extension when you are absent from class and/or miss a deadline.

Statement on compliance with COVID-19 mitigation guidelines: As we enter the semester, your and my health and safety remain the university’s highest priority. To protect the health of everyone in this class, students are required to follow the university guidelines on COVID-19 mitigation. Please visit www.covid19.arizona.edu.

Makeup Policy for Students Who Register Late

Students who register after the first class meeting may make up missed assignments/projects at a deadline set in consultation with the instructor.

Course Communications

We will use official UA email and Piazza as the primary mode of contact. D2L will be used to provide grading and feedback.

Required Texts and Materials

The primary texts for this course will be research papers and related materials, distributed by the instructor throughout the semester.

Scheduled Topics/Activities

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>1/12</td>
<td>Lecture: course introduction and logistics</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Homework1: read and write critiques for papers:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>J. Dean, and S. Ghemawat, <strong>MapReduce: simplified data processing on large clusters</strong>, Communications of the ACM 51 (1): 107--113 (January 2008)</td>
</tr>
</tbody>
</table>
|      |        | Matei Zaharia, Mosharaf Chowdhury, Tathagata Das, Ankur Dave, Justin Ma, Murphy McCauley, Michael J. Franklin, Scott Shenker, and Ion Stoica, **Resilient distributed datasets: a fault-tolerant abstraction for in-memory cluster computing**. In Proceedings of the 9th USENIX
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>1/17</td>
<td>Lecture: MapReduce</td>
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<tr>
<td></td>
<td>Homework 1 due: the critique of MapReduce paper</td>
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<tr>
<td>1/19</td>
<td><strong>In class Quiz 1;</strong></td>
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<tr>
<td></td>
<td>Lecture: Spark</td>
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<tr>
<td></td>
<td>Homework 1 due: the critique of Spark paper (Resilient distributed datasets)</td>
</tr>
<tr>
<td></td>
<td>Homework2: read and write critiques for papers:</td>
</tr>
<tr>
<td></td>
<td>Sanjay Ghemawat, Howard Gobioff, and ShunTak Leung, <strong>The Google file system.</strong> In Proceedings of the nineteenth ACM symposium on Operating systems principles (SOSP ’03)</td>
</tr>
<tr>
<td>1/24</td>
<td>Student presentation: The Google file system</td>
</tr>
<tr>
<td></td>
<td>Homework 2 due: the critics of the Google file system paper</td>
</tr>
<tr>
<td>1/26</td>
<td>Student presentation: Dremel</td>
</tr>
<tr>
<td></td>
<td>Homework 2 due: the critique of the Dremel paper</td>
</tr>
<tr>
<td></td>
<td>Homework 3: read and write critiques for papers:</td>
</tr>
<tr>
<td></td>
<td>Bart Samwel, John Cieslewicz, et al, <strong>F1 query: declarative querying at scale.</strong> Proc. VLDB Endow. 11, 12 (August 2018), 1835–1848.</td>
</tr>
<tr>
<td></td>
<td>Yifei Yang, Matt Youill, Matthew Woicik, Yizhou Liu, Xiangyao Yu, Marco Serafini, Ashraf Aboulnaga, and Michael Stonebraker, <strong>FlexPushdownDB: hybrid pushdown and caching in a cloud DBMS.</strong> Proc. VLDB Endow. 14, 11 (July 2021), 2101–2113.</td>
</tr>
<tr>
<td>1/31</td>
<td>Student presentation: F1 query</td>
</tr>
<tr>
<td></td>
<td>Homework 3 due: the critics of the F1 query paper</td>
</tr>
</tbody>
</table>
| 4 | 2/2 | **In class Quiz 2**  
Student presentation: FlexPushdownDB  
Project option (1) discussion  
Homework 3 due: the critique of the FlexPushdownDB paper  
Homework 4: read and write critiques for papers:  
Optional reading:  
https://doi.org/10.14778/3415478.3415541 |
|---|---|---|
| 5 | 2/7 | Student presentation: the HNSW paper  
Homework 4 due: the critique of the HNSW paper |
| 5 | 2/9 | **In class quiz 3**  
Student presentation: the product quantization paper  
Project option (2) discussion  
Homework 4 due: the critique of the product quantization paper  
Homework 5: read and write critiques for papers:  
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</table>
|   |   | (SIGMOD '20). Association for Computing Machinery, New York, NY, USA, 985–1000.  
Optional reading:  
| 6 | 2/14 | Student presentation: Learned index structures  
Homework 5 due: the critique of the learned index structures paper |
| 6 | 2/16 | **In class Quiz 4**  
Student presentation: learning multi-dimensional indexes  
Project option (3) discussion  
Homework 5 due: the critique of the learning multi-dimensional indexes paper  
Homework 6: read and write critiques for papers:  
Lei Cao, Yizhou Yan, Yu Wang, Sam Madden, and Elke Rundensteiner. **AutoOD: Automatic Outlier Detection,** accepted by SIGMOD 2023. https://www2.cs.arizona.edu/~caolei/papers/AutoOD.pdf  
Optional reading:  
Yue Zhao, Ryan Rossi, Leman Akoglu. **Automatic Unsupervised Outlier Model Selection.** NeurIPS 2021 |
| 7 | 2/21 | Student presentation: the ML pipeline paper  
Homework 6 due: the critique of the ML pipeline paper |
| 7 | 2/23 | **In class Quiz 5**  
Student presentation: the AutoOD paper  
Project option (4) discussion |
Homework 6 due: the critique of the AutoOD paper

Homework 7: read and write critiques for papers:


Nan Tang, Ju Fan, Fangyi Li, Jianhong Tu, Xiaoyong Du, Guoliang Li, Samuel Madden, Mourad Ouzzani, RPT: Relational Pre-trained Transformer Is Almost All You Need towards Democratizing Data Preparation. Proc. VLDB Endow. 14(8): 1254-1261 (2021)

Optional reading:

Jiawei Tang, Yifei Zuo, Lei Cao, and Samuel Madden. Generic Entity Resolution Models. TRL @ NeurIPS 2022 Poster

| 8 | 2/28 | Student presentation: the deep entity matching paper

Project option (5) discussion

Homework 7 due: the critique of the deep entity matching paper

Homework 8: read and write critiques for paper:


Optional reading:


| 8 | 03/02 | Project proposal/initial results presentation

Project proposal due (except Option 5)

| 9 | 03/07 | Spring break; no class

| 9 | 03/09 |

| 10 | 03/14 | Student presentation: the RPT paper

Project proposal presentation (Option 5)

Project proposal due (Option 5)
<table>
<thead>
<tr>
<th></th>
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<th>Homework 7 due: the critique of the RPT paper</th>
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</thead>
</table>
| 10 | 03/16 | **In class Quiz 6**  
Student presentation: the column annotation paper  
Homework 8 due: the critique of the column annotation paper  
Homework 9: read and write critiques for papers:  
Optional reading:  
Xiaoying Wang, Changbo Qu, Weiyuan Wu, Jiannan Wang, Qingqing Zhou: **Are We Ready For Learned Cardinality Estimation?** Proc. VLDB Endow. 14(9): 1640-1654 (2021) |
| 11 | 03/21 | Student presentation: the deep unsupervised cardinality estimation paper  
Homework 9 due: the critique of the deep unsupervised cardinality estimation paper |
| 11 | 03/23 | **In class Quiz 7**  
Student presentation: the FactorJoin paper  
Homework 9 due: the critique of the FactorJoin paper  
Homework 10: read and write critiques for papers:  
Qingzhi Ma, Peter Triantafillou: **DBEst: Revisiting Approximate Query Processing Engines with Machine Learning Models**. SIGMOD Conference 2019: 1553-1570 |
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/03/28</td>
<td>Early project status presentation</td>
</tr>
<tr>
<td>12/03/30</td>
<td>Early project status presentation</td>
</tr>
<tr>
<td>12/04/04</td>
<td>Student presentation: the DBEst paper</td>
</tr>
</tbody>
</table>

Homework 10 due: the critics of the DBEst paper

12/04/06

In class Quiz 8

Student presentation: the DeepDB paper

Homework 10 due: the critique of the DeepDB paper

Homework 11: read and write critiques for papers:


Optional reading:


<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/04/11</td>
<td>Student presentation: the training data debugging paper</td>
</tr>
</tbody>
</table>

Homework 11 due: the critics of the training data debugging paper

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<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/04/13</td>
<td>Student presentation: the DeepEverest paper</td>
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</table>

Homework 11 due: the critique of the DeepEverest paper

Homework 12: read and write critiques for papers:
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>Student presentation: the one step forward, two steps back paper</td>
</tr>
<tr>
<td></td>
<td>Homework 12 due: the critique of the one step forward, two steps back paper</td>
</tr>
<tr>
<td>15</td>
<td>In class Quiz 9</td>
</tr>
<tr>
<td></td>
<td>Student presentation: the starling paper</td>
</tr>
<tr>
<td></td>
<td>Homework 12 due: the critique of the starling paper</td>
</tr>
<tr>
<td>16</td>
<td>Course wrap up</td>
</tr>
<tr>
<td></td>
<td>Michael Stonebraker: Top 10 Big Data Blunders</td>
</tr>
<tr>
<td>16</td>
<td>Project Presentation/Demo (Projects starting early)</td>
</tr>
<tr>
<td>17</td>
<td>Project Presentation/Demo (Option 5 or other projects starting late)</td>
</tr>
<tr>
<td></td>
<td>Project report due: 05/04</td>
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</tbody>
</table>

**Final Examination or Project**

There is no final exam.

Link to the Final Exam Regulations and Final Exam Schedule: [https://registrar.arizona.edu/faculty-staff-resources/room-class-scheduling/schedule-classes/final-exams](https://registrar.arizona.edu/faculty-staff-resources/room-class-scheduling/schedule-classes/final-exams)

**Grading Scale and Policies**

Each student will be evaluated in the following categories:

- Class Participation / Group discussion of related readings
- Quizzes throughout the semester
- Written reviews and evaluation of research papers
- Presentations throughout the semester of research topics.
Grading Scale and Policies

- Final Project: 40%
- Written Reviews of Papers: 30%
- Quizzes: 20%
- Class Participation / In-class presentation / Discussion Leading: 10%

The final grade in the course is determined by the better of a per-class grading curve and overall performance:

- 90% or better: A;
- 80% or better: B;
- 70% or better: C;
- 60% or better: D;
- below 60%: E.

All graded material will follow the Department of Computer Science Grading Policies: Graded homework will be returned before the next homework is due. For due dates, see “Assignments and Examinations”. The homework will be returned to students before the next homework is due. Grading delays beyond promised return-by dates will be announced as soon as possible with an explanation for the delay. As a rule, homework will not be accepted late except in case of documented emergency or illness.

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

Incomplete (I) or Withdrawal (W):
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.

Dispute of Grade Policy: If you wish to dispute your grade for an assignment, you have two weeks after the grade has been turned in. In addition, even if you only dispute one portion of the grading for that unit, I reserve the right to revisit the entire unit (assignment or project).

Bibliography

We recommended the following texts for optional reading:

Designing Data-Intensive Applications: The Big Ideas Behind Reliable, Scalable, and Maintainable Systems; Publisher, O'Reilly Media; 1st edition (May 2, 2017).
Department of Computer Science Code of Conduct
The Department of Computer Science is committed to providing and maintaining a supportive educational environment for all. We strive to be welcoming and inclusive, respect privacy and confidentiality, behave respectfully and courteously, and practice intellectual honesty. Disruptive behaviors (such as physical or emotional harassment, dismissive attitudes, and abuse of department resources) will not be tolerated. The complete Code of Conduct is available on our department web site. We expect that you will adhere to this code, as well as the UA Student Code of Conduct, while you are a member of this class.

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.

Some learning styles are best served by using personal electronics, such as laptops and iPads. These devices can be distracting to other learners. Therefore, students who prefer to use electronic devices for note-taking during lecture should use one side of the classroom.

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
At the University of Arizona, we strive to make learning experiences as accessible as possible. If you anticipate or experience barriers based on disability or pregnancy, please contact the Disability Resource Center (520-621-3268, https://drc.arizona.edu/) to establish reasonable accommodations.

Code of Academic Integrity
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 https://deanofstudents.arizona.edu/student-rights-responsibilities/academic-integrity.

Uploading material from this course to a website other than D2L (or the class piazza) is strictly prohibited and will be considered a violation of the course policy and a violation of the code of academic integrity. Obtaining material associated with this course (or previous offerings of this course) on a site other than D2L (or the class piazza), such as Chegg, Course Hero, etc. or accessing these sites during a quiz or exam is a violation of the code of academic integrity. Any student determined to have uploaded or accessed material in an unauthorized manner will be reported to the Dean of Students for a Code of Academic Integrity violation, with a recommended sanction of a failing grade in the course.

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12/6/2022
The University Libraries have some excellent tips for avoiding plagiarism, available at https://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.

**Nondiscrimination and Anti-harassment Policy**
The University of Arizona is committed to creating and maintaining an environment free of discrimination. In support of this commitment, the University prohibits discrimination, including harassment and retaliation, based on a protected classification, including race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, gender identity, or genetic information. For more information, including how to report a concern, please 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
Visit the UArizona COVID-19 page for regular updates.

- **Campus Health**
  http://www.health.arizona.edu/
  Campus Health provides quality medical and mental health care services through virtual and in-person care. Voluntary, free, and convenient COVID-19 testing is available for students on Main Campus. COVID-19 vaccine is available for all students at Campus Health.
  Phone: 520-621-9202

- **Counseling and Psych Services (CAPS)**
  https://health.arizona.edu/counseling-psych-services
  CAPS provides mental health care, including short-term counseling services.
  Phone: 520-621-3334

- **The Dean of Students Office’s Student Assistance Program**
  https://deanofstudents.arizona.edu/support/student-assistance
  Student Assistance helps students manage crises, life traumas, and other barriers that impede success. The staff addresses the needs of students who experience issues related to social adjustment, academic challenges, psychological health, physical health, victimization, and relationship issues, through a variety of interventions, referrals, and follow up services.
  Email: DOS-deanofstudents@email.arizona.edu
  Phone: 520-621-7057

- **Survivor Advocacy Program**
  https://survivoradvocacy.arizona.edu/
The Survivor Advocacy Program provides confidential support and advocacy services to student survivors of sexual and gender-based violence. The Program can also advise students about relevant non-UA resources available within the local community for support.

Email: survivoradvocacy@email.arizona.edu
Phone: 520-621-5767

Campus Pantry
Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live and believes this may affect their performance in the course, is urged to contact the Dean of Students for support. In addition, the University of Arizona Campus Pantry is open for students to receive supplemental groceries at no cost. Please see their website at: campuspantry.arizona.edu for open times.

Furthermore, please notify me if you are comfortable in doing so. This will enable me to provide any resources that I may possess.

Pronouns and Preferred Names
This course affirms people of all gender expressions and gender identities. If you prefer to be called a different name than what is on the class roster, please let me know. Feel free to correct instructors on your pronoun. If you have any questions or concerns, please do not hesitate to contact me directly in class or via email (instructor email). If you wish to change your preferred name or pronoun in the UAccess system, please use the following guidelines:

Preferred name: University of Arizona students may choose to identify themselves within the University community using a preferred first name that differs from their official/legal name. A student’s preferred name will appear instead of the person’s official/legal first name in select University-related systems and documents, provided that the name is not being used for the purpose of misrepresentation. Students are able to update their preferred names in UAccess.

Pronouns: Students may designate pronouns they use to identify themselves. Instructors and staff are encouraged to use pronouns for people that they use for themselves as a sign of respect and inclusion. Students are able to update and edit their pronouns in UAccess. More information on updating your preferred name and pronouns is available on the Office of the Registrar site at https://www.registrar.arizona.edu/.

Safety on Campus and in the Classroom
Familiarize yourself with the UA Critical Incident Response Team plans:
https://cirt.arizona.edu/

Department of Computer Science Evacuation Plan for Gould-Simpson: https://drive.google.com/file/d/1iR11cGcV_BgbGnEFBzZ2-do0FbLC3cvo/view?usp=sharing

Also watch the video available at https://ua-saem-aiss.narrasys.com/#/story/university-of-arizona-cert/active-shooter
Confidentiality of Student Records

Land Acknowledgement Statement
We respectfully acknowledge the University of Arizona is on the land and territories of Indigenous peoples. Today, Arizona is home to 22 federally recognized tribes, with Tucson being home to the O’odham and the Yaqui. Committed to diversity and inclusion, the University strives to build sustainable relationships with sovereign Native Nations and Indigenous communities through education offerings, partnerships, and community service.

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.