This course introduces data literacy required as a key twenty-first century skill. You will learn the nature of data across different domains and the concepts and skills of data visualization by understanding, questioning, and problematizing how data are generated, analyzed, and used. You will be able to apply its concepts and skills to visualize your own data, interpret the findings, and examine the impacts of data-driven decisions.

Course Objectives

1. Gaining a basic understanding of the subject (e.g., factual knowledge, methods, principles, generalizations, theories)
2. Learning to analyze and critically evaluate ideas, arguments, and points of view.
3. Learning appropriate methods for collecting, analyzing, and interpreting numerical information
4. Developing specific skills, competencies, and points of view needed by professionals in the field most closely related to this course

By the end of this course, you will be able to:

1. Understand the fundamental design principles and different types of data visualization.
2. Identify both positive and negative impacts of data-informed decisions across a variety of domains.
3. Apply the fundamental concepts of data visualization to define a project in your field of study.
4. Practice the core principles using widely available tools (e.g. Tableau).
5. Demonstrate the best practice that presents your story in the process of creating data visualization including connecting to different data sources, assessing the quality of the data, and converting raw data into data visualizations that provide actionable information.

Instructor

Morgan Diederich
Messaging Preference: Canvas Messenger

Email: morgan.diederich@usu.edu

Office hours by appointment

To schedule an appointment, feel free to send me a Canvas message, or schedule some time directly on my calendar with this link:

Course Resources

Textbook: There is no required textbook for this course. All required readings and/or videos will be provided on the course site, Canvas.

Tools to Learn: Tableau offers a free one-year Tableau license to students.

Please download it here: https://www.tableau.com/academic/students If you would like to learn other advanced tools (e.g., R, Python, JavaScript), please discuss it with me by the end of Week 1.

Course Requirements

Each student will:

1. Complete the assigned materials and assignments each week on time.
2. Create a final project demonstrating their knowledge on the topic.

Evaluation Methods and Criteria

Evaluation will be completed by the instructor as outlined in each rubric for each given assignment. Students should carefully review the rubrics in order to understand what is expected.

Grade Scheme

The following grading standards will be used in this class:
Course Schedule/Outline

Outline dates and assignments- See course summary. It is important to note that our weeks go from Wednesday - Wednesday at midnight. This is so I can answer questions during the weekday, but you still get a weekend to work on your materials.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100 % to 93.0%</td>
</tr>
<tr>
<td>A-</td>
<td>&lt; 93.0 % to 90.0%</td>
</tr>
<tr>
<td>B+</td>
<td>&lt; 90.0 % to 87.0%</td>
</tr>
<tr>
<td>B</td>
<td>&lt; 87.0 % to 83.0%</td>
</tr>
<tr>
<td>B-</td>
<td>&lt; 83.0 % to 80.0%</td>
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<tr>
<td>C+</td>
<td>&lt; 80.0 % to 77.0%</td>
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<tr>
<td>C</td>
<td>&lt; 77.0 % to 73.0%</td>
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<tr>
<td>C-</td>
<td>&lt; 73.0 % to 70.0%</td>
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<td>D+</td>
<td>&lt; 70.0 % to 67.0%</td>
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<tr>
<td>D</td>
<td>&lt; 67.0 % to 60.0%</td>
</tr>
<tr>
<td>F</td>
<td>&lt; 59.0 % to 0.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assignment #1 (content checks, 60% of final points)</th>
<th>Assignment #2 (semester long project, 40% final points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What is data? And why should I care about visualizing it?</td>
<td>Concept map</td>
<td>Meet with Morgan</td>
</tr>
<tr>
<td>2</td>
<td>Data visualization in the real world</td>
<td>Discussion post describing the data visualization selected</td>
<td>Meet with Morgan</td>
</tr>
<tr>
<td>3</td>
<td>Working in Tableau- general introduction + refresh on data types and general chart exploration</td>
<td>Tableau Quiz (automatically scored)</td>
<td>Explore data set websites</td>
</tr>
<tr>
<td>Week</td>
<td>Activity</td>
<td>Activity Details</td>
<td>Assessment</td>
</tr>
<tr>
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<tr>
<td>4</td>
<td>Working with continuous data + data cleaning</td>
<td></td>
<td>Tableau Quiz (automatically scored)</td>
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<tr>
<td>5</td>
<td>What makes a quality visualization? The art of storytelling with data</td>
<td></td>
<td>Discussion board</td>
</tr>
<tr>
<td>6</td>
<td>Working with categorical data</td>
<td></td>
<td>Tableau Quiz (automatically scored)</td>
</tr>
<tr>
<td>7</td>
<td>Critical Data Literacy. What should we be aware of as we look at data sets? Who is represented, who is not?</td>
<td></td>
<td>Reflection/ discussion board</td>
</tr>
<tr>
<td>8</td>
<td>Working with geospatial data</td>
<td></td>
<td>Tableau Quiz (automatically scored)</td>
</tr>
<tr>
<td>9</td>
<td>Feature engineering + advanced tableau topics</td>
<td></td>
<td>Tableau Quiz (automatically scored)</td>
</tr>
<tr>
<td>10</td>
<td>Critiques for data visualization</td>
<td></td>
<td>Discussion Board</td>
</tr>
<tr>
<td>11</td>
<td>Data ethics</td>
<td></td>
<td>Discussion Board</td>
</tr>
<tr>
<td>12</td>
<td>Going beyond the powerpoint and dashboard. Data driving impact, alternative ways to display data visualizations</td>
<td></td>
<td>Discussion Board</td>
</tr>
<tr>
<td>13</td>
<td>Work on final project</td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>14</td>
<td>Thanksgiving</td>
<td></td>
<td>n/a</td>
</tr>
<tr>
<td>15</td>
<td>Final Project</td>
<td></td>
<td>n/a</td>
</tr>
</tbody>
</table>

Late Work, Attendance, and Excused Absences Policy

As an online class, there is no attendance. However, students are required to participate in weekly activities by deadlines set each week.
All work is due based on the specified due-dates except in emergency situations (family emergency, illness, or participation in a university sponsored activity). A late assignment without an excuse will lead to a zero grade on the assignment. Prior to the assignment due date, you should email a written excuse to your instructor to be considered excused. This policy is in effect as an incentive to stay current with the assigned work. Like many courses, the work of one session is based on understanding the work of the previous sessions. Falling behind in the work greatly reduces the chances of success at attempting later work. For 5 extra easter egg points, send Morgan a Canvas message with the subject line "I understand that the weeks run from Wednesday to Wednesday, and that late assignments without an approved excuse will lead to a 0 on the assignment." The body of the message should then say "Morgan understands that life does happen, so I should know to reach out as soon as possible so she can help make arrangements if I think I am unable to turn my assignment in on time. This does not guarantee approval for turning in late work for credit."

Library Services

All USU students attending classes in Logan, at our Regional Campuses, or online can access all databases, e-journals, and e-books regardless of location. Additionally, the library will mail printed books to students, at no charge to them. Students can also borrow books from any Utah academic library. Take advantage of all library services and learn more at libguides.usu.edu/rc.

Classroom Civility

Utah State University supports the principle of freedom of expression for both faculty and students. The University respects the rights of faculty to teach and students to learn. Maintenance of these rights requires classroom conditions that do not impede the learning process. Disruptive classroom behavior will not be tolerated. An individual engaging in such behavior may be subject to disciplinary action. Read Student Code Article V Section V-3 for more information.

University Policies & Procedures

Academic Freedom and Professional Responsibilities

Academic freedom is the right to teach, study, discuss, investigate, discover, create, and publish freely. Academic freedom protects the rights of faculty members in teaching and of students in learning. Freedom in research is fundamental to the advancement of truth. Faculty members are entitled to full freedom in teaching, research, and creative activities, subject to the limitations imposed by professional responsibility. Faculty Code Policy #403 further defines academic freedom and professional responsibilities.

Academic Integrity – "The Honor System"
Each student has the right and duty to pursue his or her academic experience free of dishonesty. To enhance the learning environment at Utah State University and to develop student academic integrity, each student agrees to the following Honor Pledge: "I pledge, on my honor, to conduct myself with the foremost level of academic integrity." A student who lives by the Honor Pledge is a student who does more than not cheat, falsify, or plagiarize. A student who lives by the Honor Pledge:

- Espouses academic integrity as an underlying and essential principle of the Utah State University community;
- Understands that each act of academic dishonesty devalues every degree that is awarded by this institution; and
- Is a welcomed and valued member of Utah State University.

**Academic Dishonesty**

The instructor of this course will take appropriate actions in response to Academic Dishonesty, as defined the University’s Student Code. Acts of academic dishonesty include but are not limited to:

- **Cheating**: using, attempting to use, or providing others with any unauthorized assistance in taking quizzes, tests, examinations, or in any other academic exercise or activity. Unauthorized assistance includes:
  - Working in a group when the instructor has designated that the quiz, test, examination, or any other academic exercise or activity be done “individually;”
  - Depending on the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments;
  - Substituting for another student, or permitting another student to substitute for oneself, in taking an examination or preparing academic work;
  - Acquiring tests or other academic material belonging to a faculty member, staff member, or another student without express permission;
  - Continuing to write after time has been called on a quiz, test, examination, or any other academic exercise or activity;
  - Submitting substantially the same work for credit in more than one class, except with prior approval of the instructor; or engaging in any form of research fraud.

- **Falsification**: altering or fabricating any information or citation in an academic exercise or activity.

- **Plagiarism**: representing, by paraphrase or direct quotation, the published or unpublished work of another person as one’s own in any academic exercise or activity without full and clear acknowledgment. It also includes using
materials prepared by another person or by an agency engaged in the sale of
term papers or other academic materials.

For additional information go to: ARTICLE VI. University Regulations Regarding
Academic IntegrityLinks to an external site.

Discrimination and Sexual Misconduct

General Overview

USU strives to provide an environment for students and employees that is free from
discriminationLinks to an external site. and sexual misconductLinks to an external
site.. If you experience sexual misconduct or discrimination at any point during the
semester inside or outside of class, you are encouraged to contact the USU Title IX
CoordinatorLinks to an external site. via Old Main room 161 in
Logan, 435-797-1266, titleix@usu.edu, or at equity.usu.edu/reportLinks to an external
site.. You can learn more about the USU resources available for individuals who have
experienced sexual misconduct at sexualrespect.usu.eduLinks to an external site..
Resources for individuals who have experienced discrimination are listed
at equity.usu.edu/resourcesLinks to an external site..

Required Reporting of Sexual Misconduct

The instructor is designated by USU as a "reporting employeeLinks to an external site." This
means that if you share information about sexual misconductLinks to an external
site. (sexual harassment, sexual assault, relationship violence, or sex-based stalking)
with the instructor, they will report that information to the USU Title IX CoordinatorLinks
to an external site.. The instructor is also required to tell you about designated
classified resourcesLinks to an external site., supportive measuresLinks to an
external site., and how you can file a reportLinks to an external site. with the USU Title
IX Coordinator.

Withdrawal Policy and "I" Grade Policy

Students are required to complete all courses for which they are registered by the end
of the semester. In some cases, a student may be unable to complete all of the
coursework because of extenuating circumstances, but not due to poor performance or
to retain financial aid. The term ‘extenuating’ circumstances includes: (1) incapacitating
illness which prevents a student from attending classes for a minimum period of two
weeks, (2) a death in the immediate family, (3) financial responsibilities requiring a
student to alter a work schedule to secure employment, (4) change in work schedule as
required by an employer, or (5) other emergencies deemed appropriate by the
instructor.

Students with Disabilities

USU welcomes students with disabilities. If you have, or suspect you may have, a
physical, mental health, or learning disability that may require accommodations in this
course, please contact the Disability Resource Center (DRC) Links to an external
site. as early in the semester as possible (University Inn # 101, (435) 797-
All disability related accommodations must be approved by the DRC. Once approved, the DRC will coordinate with faculty to provide accommodations.

Students who are at a higher risk for complications from COVID-19 or who contract COVID-19 may also be eligible for accommodations.

**Respect for Diversity**

Regardless of intent, careless or ill-informed remarks can be offensive and hurtful to others and detract from the learning climate. If you feel uncomfortable in a classroom due to offensive language or actions by an instructor or student(s) regarding ethnicity, gender, or sexual orientation, contact:

- Division of Student Affairs: [https://studentaffairs.usu.edu](https://studentaffairs.usu.edu), (435) 797-1712, studentservices@usu.edu, TSC 220
- Student Legal Services: [https://ususa.usu.edu/student-association/student-advocacy/legal-services](https://ususa.usu.edu/student-association/student-advocacy/legal-services), (435) 797-2912, TSC 326
- Access and Diversity: [http://accesscenter.usu.edu](http://accesscenter.usu.edu), (435) 797-1728, access@usu.edu, TSC 315
- Multicultural Programs: [http://accesscenter.usu.edu/multiculture](http://accesscenter.usu.edu/multiculture), (435) 797-1728, TSC 315
- LGBTQA Programs: [http://accesscenter.usu.edu/lgbtqa](http://accesscenter.usu.edu/lgbtqa), (435) 797-1728, TSC 3145
- Provost's Office Diversity Resources: [https://www.usu.edu/provost/diversity](https://www.usu.edu/provost/diversity), (435) 797-8176

You can learn about your student rights by visiting: The Code of Policies and Procedures for Students at Utah State University: [https://studentconduct.usu.edu/studentcode](https://studentconduct.usu.edu/studentcode).

**Grievance Process**

Students who feel they have been unfairly treated may file a grievance through the channels and procedures described in the Student Code: [Article VII](https://studentconduct.usu.edu/studentcode).

**Full details for USU Academic Policies and Procedures can be found at:**

- [Student Conduct](https://www.usu.edu/provost/diversity).
- [Student Code](https://www.usu.edu/provost/diversity).
- [Academic Integrity](https://www.usu.edu/provost/diversity).

**Emergency Procedures**

In the case of a drill or real emergency, classes will be notified to evacuate the building by the sound of the fire/emergency alarm system or by a building representative. In the event of a disaster that may interfere with either notification, evacuate as the situation dictates (i.e., in an earthquake when shaking ceases or immediately when a fire is
discovered). Turn off computers and take any personal items with you. Elevators should not be used; instead, use the closest stairs.

**General Health Protocols**

The cold, flu, COVID-19, and other illnesses can have an impact on the health of our university community. USU welcomes the wearing of masks in all university buildings and encourages taking measures to mitigate risk as recommended by federal and state public health officials: getting vaccinated, staying home if you are sick (even with mild symptoms), and frequent hand washing.

**Mental Health**

Mental health is critically important for the success of USU students. As a student, you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. Utah State University provides free services for students to assist them with addressing these and other concerns. You can learn more about the broad range of confidential mental health services available on campus at Counseling and Psychological Services (CAPS) [Links to an external site.].

Students are also encouraged to download the “SafeUT App” [Links to an external site.] to their smartphones. The SafeUT application is a 24/7 statewide crisis text and tip service that provides real-time crisis intervention to students through texting and a confidential tip program that can help anyone with emotional crises, bullying, relationship problems, mental health, or suicide related issues.