Institute Office: Room 3014, CCT Building

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WRI363H5S LEC0101 Communicating in a World of Data Course Outline - Winter 2024

Class Location & Time Thu, 01:00 PM - 03:00 PM CC 3124

Instructor Kaushar Mahetaji

Office Location https://utoronto.zoom.us/j/88958378415 (passcode: writing)
Office Hours 3–4pm (virtual or in person) on Thursdays or by appointment

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Course Web Site

Course Description

This course examines how professionals in a variety of contexts communicate data. The course explores the growing relevance and allure of data in all its forms. Students will learn to interpret data to tell a story through numbers by creating infographics, writing informative articles from their own data mining, and presenting further findings at the end of the semester.

Prerequisite: Completion of 8.0 credits with a minimum CGPA of 2.0 (SSc)

Distribution Requirement: SSc

It is your responsibility to ensure that the prerequisites for course have been met. Students without the prerequisites can be removed at any time. No waivers will be granted.

Goals and Learning Objectives

The goal of this course is to introduce students to data communication by experimenting with tools and resources for devising and evaluating data communication pieces. At the same time, this course demonstrates why students must be critical when communicating in a world with data, and how they can adopt critical approaches to data communication.

Students by the end of WRI363 will be able to...

- Examine the prevalence of data in everyday life and across industries, exploring the social, political, economic, and cultural implications of "datafication"
- Employ tools for data collection, processing, and analysis to compose data stories in different formats for various audiences and contexts
- Evaluate examples of data communication in different contexts using a critical lens (e.g., identifying biases and accessibility issues)

Required Materials

All required material will be made accessible on Quercus. Required material is listed in the "Course Schedule" section of the syllabus.

Assessment and Grading Policies

Type	Description	Due Date	Weight
Class Participation	Attendance and contribution to in-class discussions, in-class activities, and exit passes	On-going	10%
Assignment	Project proposal	2024-02-01	15%
Assignment	Data infographic	2024-03-14	20%
Assignment	Critique of data infographic	2024-03-21	20%

Presentations	Presentation	2024-03-28	10%
Assignment	Data portfolio piece	2024-04-04	25%
		Total	100%

You should receive at least one significant mark (15%) before the last day you can drop a course without academic penalty.

Requirements and Criteria

Participation-10% (ongoing)

Students are required to come prepared to lecture. There is an expectation that students are ready to engage, having reviewed the assigned materials before class. Participation grades will be based on a combination of attendance, meaningful contributions during in-class discussions and activities, and responses to short reflective exercises completed at the end of class.

Project Proposal-15% (due Feb. 1, 11:59pm)

Students will submit a project proposal outlining ideas for the data communication piece they plan to present. Components of the proposal include a research question or topic of interest, potential datasets, methods for processing and sharing data, useful tools and resources, and foreseeable limitations and challenges. This proposal is an opportunity for students to receive guidance for subsequent assignments.

Detailed instructions will be made available on Quercus.

Data Infographic-20% (due Mar. 14, 11:59pm)

Students will develop a data infographic which includes data visualizations and considers accessibility.

Detailed instructions will be made available on Quercus.

Critique of Data Infographic-20% (due Mar. 21, 11:59pm)

Students will write a critical analysis for a peer's data infographic, incorporating concepts from lectures and reading materials (e.g., biases, causation versus correlation).

Detailed instructions will be made available on Quercus.

Presentation-10% (in class Mar. 28 and Apr. 4 if needed, slides due before presentations at 1:00pm)

Students will present their data infographics in class.

Detailed instructions will be made available on Quercus.

Data Portfolio Piece-25% (due Apr. 4, 11:59pm)

Students will have an opportunity to update their infographics using peer feedback ("Critique of Data Infographic" assignment). They will reformat the infographic assignment into a portfolio piece, adding the purpose of their infographic, the intended audience, the underlying dataset, tools and resources used, any limitations and challenges, and a brief response to the peer feedback received.

Detailed instructions will be made available on Quercus.

Teaching Methods

This course is divided into four parts:

- Part I. Understanding Data Communication
- Part II. Communicating About and With Data
- Part III. Critiquing Data Communication
- Part IV. Sharing Data Communication Pieces

Each part of the course covers a set of questions that help students better understand how to communicate and engage in a world of data. The questions are outlined in the "Course Schedule" section found at the end of the syllabus. Each class covers one key question and is broken down into theory and application.

- Theory (12:00-1:00pm): Explore key question using concepts from assigned readings. There is an expectation that you will have reviewed the materials prior to attending class.
- Application Activities (1:00-2:00pm): Explore data resources and/or experiment and apply data tool to key question. All activities will be explained in detail during lecture

Note that this course recognizes that communication can take various forms (e.g., text, video, images, sound). Accordingly, the materials in this course reflect this diversity in communication by including a mixture of chapters, journal articles, videos, audio clips, and images.

Procedures and Rules

E-Culture Policy

Only student U of T email accounts should be used for course communication and all emails from students must include the course code in the subject line and should be signed with the full student name and student number.

Please review the following email policies:

- Please allow 48 hours for a response on weekdays and longer for emails sent during the weekend.
- Please do not submit assignments by email. Only assignments submitted through Quercus will be accepted.
- Please review the syllabus and assignment instructions on Quercus before sending an email.
- Please do not use the Quercus inbox feature to send emails. Your U of T email is preferred.

It is your responsibility to read your U of T email on a regular basis. This will ensure that you receive important information from your instructors and the university.

It is your responsibility to read your email regularly and check course information updates and announcements through Quercus. Students who choose to opt out of receiving messages through Quercus are still responsible for actions required, or changes communicated through those announcements and messages.

Learning Technology

Please submit assignments in Word document or PDF format on Quercus.

Late Penalties

You are expected to complete assignments on time. There will be a penalty for lateness of 10% deducted per day and work that is not handed in one week after the due date will not be accepted.

Accommodation for Missed Tests and Late Assignments

Students in **CCT109H5**, **CCT110H5**, **CCT111H5**, **CCT112H5** and **CCT208H5** should always follow the Special Consideration Request (SCR) process outlined below. Students in other classes should follow the process below *only if they are seeking accommodation for tests or assignments worth 20% or more of the final grade*. Students in other classes seeking accommodation for tests or assignments worth less than 20% should contact their instructors directly.

Reasons for special consideration could **include**:

- Accident
- Illness
- Emergency procedure
- Bereavement
- University-sponsored athletics/competitions
- Compulsory legal duties e.g. (jury duty)
- Religious accommodations
- Disability accommodations

Reasons for special consideration do not include*:

- Pre-planned vacations or social commitments
- Transportation delays
- Technology malfunctions
- Time management, course loads
- Course conflicts, team work conflicts
- Misreading a deadline/timetable
- Late course enrolment
- Scheduled elective medical appointments

SCR Process:

^{*} For these situations, refer to your course syllabus and speak directly with your instructor.

You have three days or 72 Hours (including weekends) from the assignment deadline or date of the missed test/quiz to complete the SCR process in full.

The **first time** in the semester that you are seeking accommodation, please complete the following steps:

- 1. Login to ACORN, and click on Profile & Settings from the left-hand menu.
- 2. Click on Absence Declaration
- 3. Record each day that you are absent as soon as it begins up until the day you return to campus for classes or other activities.
- 4. Login to the <u>SCR</u> system and complete the required steps. Documentation is not required.

For **all subsequent times** that you require an accommodation, you should only login to the <u>SCR</u> system and complete the required steps. Documentation is not required, however, it may be requested after the SCR has been reviewed.

Important note about missed makeup tests: As stated in the <u>Academic Calendar</u>, "If the student is granted permission to take a makeup test and misses it, then they are assigned a mark of zero for the test unless the instructor is satisfied that missing the makeup test was unavoidable. Students are not automatically entitled to a second makeup test."

If you are registered with AccessAbility at UTM and/or Accessible Learning Services at Sheridan, and the reason for missing a test or a deadline pertains to a disability, you are still required to submit an SCR at the link above. In such cases, the department will accept documentation supplied by the UTM AccessAbility Resource Centre. If you require further information, please speak with your accessibility services advisor. Please see the section on "AccessAbility" for more information.

Further details regarding SCR policy are available here: https://www.utm.utoronto.ca/iccit/student-resources/policies-procedures/special-consideration-requests-scr-late-assignments

Re-marking Pieces of Term Work

General

A student who believes that his or her written term work has been unfairly marked may ask the person who marked the work for reevaluation. Students have up to one month from the date of return of an item of term work or from the date the mark was made available to inquire about the mark and file for an appeal. For example, should the work be returned or the mark be made available on March 3rd, the student has until April 3rd to inquire in writing and start the re-marking process. Instructors must acknowledge receipt of a student request for re-marking within **3-working days**, and decisions should be provided in a timely fashion.

If an academic misconduct case is in progress for the piece of term work in question, a student may not appeal until the matter is resolved.

Details

Regrade requests for term work worth less than 20% of the final mark may be submitted to the person who marked the work for re-evaluation. The student must submit (1) the original piece of work and (2) a written explanation detailing why they believe the work was unfairly/incorrectly marked. If the student is not satisfied with this re-evaluation, he or she may appeal to the instructor in charge of the course if the work was not marked by the instructor (e.g., was marked by a TA). In these instances where the instructor was not the one who marked the work, the student must now submit to the instructor (1) the original piece of work, (2) the written reasons as to why he or she believes the work was unfairly/incorrectly marked, and (3) communications from the original marker as to why no change in mark was made. If a re-marking is granted by an instructor, the student must accept the resulting mark as the new mark, whether it goes up or down or remains the same. Continuing with the remark or the appeal means the student accepts this condition. Instructors and TAs should ensure all communication with the student is in writing (e.g. follow-up email) and keep a copy for later reference.

Only term work worth at least 20% of the course mark may be appealed beyond the instructor. Such appeals must first follow the same guidelines as those mentioned directly above for work worth less than 20%. To escalate an appeal beyond the instructor, the student must submit to the department (1) all previous communications between the student, original marker, and the instructor (2) the detailed reason(s) documenting why the mark for the work was inappropriate and (3) the original piece of work. If the department believes that re-marking is justified, the department shall select an independent reader. The student must agree in writing to be bound by the results of the re-reading process or abandon the appeal. Again, the student must accept that the mark resulting from the appeal may be higher or lower or the same as the original mark. Where possible, the independent reader should be given a clean, anonymous copy of the work. Without knowing the original assigned mark, the reader shall determine a mark for the work. The marking of the work should be considered within the context of the course of instruction for which it was submitted. If the new mark differs substantially from the original mark, the department shall determine a final mark taking into account both available marks.

The final level of appeal is to the <u>Dean's Office</u>. Appeals must already have been considered at the two previous levels (Instructor followed by Department), with the decision reviewed by the head of the academic unit, before they will be considered by the

Dean's Office. Appeals must be submitted in writing, and include all previous correspondence, as soon as possible after the student receives the final response from the academic unit, but no later than one month after. Appeals to the Dean's Office about the marking of term work will be reviewed to ensure that appropriate procedures have been followed in earlier appeals, that the student has been treated fairly, and that the standards applied have been consistent with those applied to other students doing the assignment. Any mark resulting from such an appeal will become the new mark, whether it is higher or lower or the same as the previous one. This process applies only to term work; appeals for re-reads of final examinations are handled directly by the Office of the Registrar.

Issues Pertaining to Term Work and Instructional Activities

Issues arising within a course that concern the pedagogical relationship of the instructor and the student, such as essays, term work, term tests, grading practices, or conduct of instructors, fall within the authority of the department. Students are entitled to seek resolution of these issues, either orally or in writing to the course instructor and, if needed, the <u>ICCIT Director</u> for resolution.

Following a response from the ICCIT Director, students may submit an appeal, in writing, to the <u>Vice-Principal</u>, <u>Academic and Dean</u>.

Privacy and Use of Course Materials Notifications

This course, including your participation, will be recorded on video and will be available to students in the course for viewing remotely and after each session. Course videos and materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation, and are protected by copyright. Do not download, copy, or share any course or student materials or videos without the explicit permission of the instructor. For questions about recording and use of videos in which you appear please contact your instructor.

Academic Integrity

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (www.governingcouncil.utoronto.ca/policies/behaveac.htm) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

- Using or possessing unauthorized aids.
- Looking at someone else's answers during an exam or test.
- Misrepresenting your identity.

In academic work:

- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. You are instructed to read the following for more information: http://www.utm.utoronto.ca/academic-integrity/academicintegrity.utoronto.ca/).

Normally, students will be required to submit their course essays to the University's plagiarism detection tool for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation web site (https://uoft.me/pdt-faq).

Expectations for Conduct in the Academic Setting

Students agree that by taking this course, they agree to adhere to the <u>ICCIT Expectations for Conduct in the Academic Setting</u> set out at https://www.utm.utoronto.ca/iccit/student-resources/policies-procedures/iccit-code-conduct.

Copyright in Instructional Settings

If a student wishes to tape-record, photograph, video-record or otherwise reproduce lecture presentations, course notes or other similar materials provided by instructors, he or she must obtain the instructor's written consent beforehand. Otherwise all such reproduction is an infringement of copyright and is absolutely prohibited. In the case of private use by students with disabilities, the instructor's consent will not be unreasonably withheld.

For more information on copyright and the University of Toronto, please visit https://onesearch.library.utoronto.ca/copyright/copyright-resources.

Equity Statement

The University of Toronto is committed to equity and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect. As a course instructor, I will neither condone nor tolerate behaviour that undermines the dignity or self-esteem of any individual in this course and wish to be alerted to any attempt to create an intimidating or hostile environment. It is our collective responsibility to create a space that is inclusive and welcomes discussion. Discrimination, harassment and hate speech will not be tolerated. If you have any questions, comments, or concerns you may contact the UTM Equity and Diversity officer at edo.utm@utoronto.ca or the University of Toronto Mississauga Students' Union Vice President Equity at vpequity@utmsu.ca. http://www.utm.utoronto.ca/equity-diversity/

Other Resources

AccessAbility

The University provides academic accommodations for students with disabilities in accordance with the terms of the Ontario Human Rights Code, including those who have a physical, sensory, or learning disability, mental health condition, acquired brain injury, or chronic health condition, be it visible or hidden.

If you have a disability or health consideration that may require accommodations, please approach the AccessAbility Resource Centre as soon as possible. The AccessAbility staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. The sooner you let us know your needs, the quicker we can assist you in achieving your learning goals in this course.

To register with AccessAbility*, please call the centre at 905-569-4699 or e-mail access.utm@utoronto.ca. http://www.utm.utoronto.ca/access/

*Students attending Sheridan-based courses with accommodation needs must register with the AccessAbility Resources Centre at UTM and the Accessible Learning Services at Sheridan College. For assistance at Sheridan, please contact Accessible Learning Services at 905-845-9430, ext. 2530 or trafalgar.als@sheridancollege.ca. For more information, please visit: https://www.sheridancollege.ca/en/student-life/student-services/accessible-learning-services.

Robert Gillespie Academic Skills Centre

The centre offers wide-ranging support to help students identify and develop the academic skills they need for success in their studies, including: understanding learning styles; essay and report writing; time management; lecture-listening; note-taking; and studying for tests and exams.

http://www.utm.utoronto.ca/asc

UTM Library (Hazel McCallion Academic Learning Centre)

The UTM library provides access to a vast collection of online and print resources to faculty, staff, and students. Various services are available to students, including borrowing, interlibrary loans, online references, research help, laptop loans and the RBC Learning Commons.

http://library.utm.utoronto.ca

Course Schedule

Date	Торіс
2024-01-11	Part I. Understanding Data Communication
	Key Question: What is data?
	Main Concepts: - Data - Big data - Open data - Datafication
	Before Class (Material to Review): No materials.
	During Class (Activities): - Create data portraits using DALL-E - Explore bibliographic data with Zotero
2024-01-18	Part I. Understanding Data Communication
	Key Question: How do we describe data?
	Main Concepts: - Metadata - Critical data studies
	Before Class (Material to Review):
	 "Conceptualizing Data." 2014. <i>In The Data Revolution: Big Data, Open Data, Data Infrastructures and Their Consequences</i>, by Rob Kitchin. SAGE. [book chapter] Dalton, Craig, and Jim Thatcher. 2014. "What Does a Critical Data Studies Look Like, and Why Do We Care?" <i>Society + Space</i>, May. https://www.societyandspace.org/articles/what-does-a-critical-data-studies-look-like-and-why-do-we-care. [journal article]
	During Class (Activity): Create linked open data using Wikidata

2024-01-25 Part I. Understanding Data Communication

Key Question:

What kinds of stories can we tell with data?

Main Concepts:

- Data stories
- Data visualization
- Data infographics

Before Class (Material to Review):

- 1. Heer, Jeffrey, Michael Bostock, and Vadim Ogievetsky. 2010. "A Tour through the Visualization Zoo." *Communications of the ACM* 53 (6): 59-67. https://doi.org/10.1145/1743546.1743567. [journal article]
- 2. Explore stories from *The Pudding* [series of data infographics]
- 3. BBC. 2019. "Design Award for Fresh Look at Smart Speakers." BBC News, November 21, 2019. https://www.bbc.com/news/technology-50503842. [explore the "Anatomy of an AI System" described in the article]

During Class (Activity):

Explore data stories:

- Radio Garden
- Soundcities
- A Day in the Life of Americans
- Decoding Everything Everywhere All at Once
- DesignDensity Lab projects
- Information is Beautiful
- New York Times Graphics [use Research Library Prep link from University of Toronto Libraries]

2024-02-01 **Part I. Understanding Data Communication**

Key Question:

Why tell stories with data?

Main Concepts:

- Data stories
- Countermapping

Before Class (Material to Review):

- 1. Proctor, Adam. 2023. *Five Charts That Changed the World.* Video. BBC Ideas. BBC. https://www.bbc.co.uk/ideas/videos/five-charts-that-changed-the-world/p0fb69c1. [5:57 video]
- 2. Bliss, Laura. 2019. "MapLab: The Power of Counter-Maps." *Bloomberg*, December 4, 2019. https://www.bloomberg.com/news/articles/2019-12-04/maplab-the-power-of-counter-maps. [newspaper article]

During Class (Activity):

Explore counter-mapping and counter-data data stories:

- WatchtheMed
- This Is Not an Atlas: A Global Collection of Counter-Cartographies
- First Peoples' Map of BC
- Anti-Eviction Mapping Project
- EJAtlas Global Atlas of Environmental Justice

PROJECT PROPOSAL DUE AT 11:59pm

2024-02-08 Part II. Communicating About and With Data

Key Question:

What do we collect as data? How do we collect data?

Main Concepts:

- Data collection
- Data mining
- Categorization
- Biopower

Before Class (Material to Review):

- 1. Hacking, Ian. 2015. "Biopower and the Avalanche of Printed Numbers." In *Biopower: Foucault and Beyond*, edited by Vernon W. Cisney and Nicolae Morar, 65-81. University of Chicago Press. [book chapter]
- 2. Social media data policies: <u>TikTok data requests</u>, <u>Instagram data download</u> [company policies]

During Class (Activity):

Explore data repositories and data catalogues:

- Ontario Data Catalogue
- Our World in Data
- Kaggle
- Google Trends
- Google Dataset Search
- UC Irvine Machine Learning Repository

2024-02-15 **Part II. Communicating About and With Data**

Key Question:

What infrastructure allows for data collection?

Main Concepts:

- Data infrastructure
- Data annotation/labeling
- Data labour

Before Class (Material to Review):

- 1. Denton, Emily, Alex Hanna, Razvan Amironesei, Andrew Smart, and Hilary Nicole. 2021. "On the Genealogy of Machine Learning Datasets: A Critical History of ImageNet." *Big Data & Society* 8 (2): 20539517211035955. https://doi.org/10.1177/20539517211035955. [journal article]
- 2. BBC. 2023. *AI and Data Labelling: "I Felt like My Life Ended."* Video. BBC. https://www.bbc.com/news/av/world-africa-66514287. [3:27 video]
- 3. Download Tableau using instructions from University of Toronto's Map and Data Library [instructions]

During Class (Activity):

Explore Tableau and other tools for data analysis (examples found in UC San Diego library guide)

2024-02-22 Reading Week (No lecture and no material to review)

2024-02-29 Part II. Communicating About and With Data

Key Question:

What does it mean to process data?

Main Concepts:

- Data processing
- Data tools

Before Class (Material to Review):

- 1. Miller, Greg. 2014. "14 World-Changing Data Visualizations, From the Last 4 Centuries." *Wired*. Accessed January 1, 2024. https://www.wired.com/2014/03/beautiful-science/. [magazine article]
- 2. Berinato, Scott. 2016. "Visualizations That Really Work." *Harvard Business Review: Analytics and Data Science*, June 1, 2016. https://hbr.org/2016/06/visualizations-that-really-work. [magazine article]
- 3. Explore resources (based on interests) included in the "<u>Data Visualization</u>" guide from the University of Guelph's McLaughlin Library [library guide]

During Class (Activities):

- Guest Lecture: Victoria Chui, PhD Student, Faculty of Information, University of Toronto
- Continue to explore <u>Tableau</u> and other tools for data analysis (examples found in <u>UC San Diego library guide</u>)

2024-03-07 Part II. Communicating About and With Data

Key Question:

How do we present data?

Main Concepts:

- Accessible data stories
- Inclusive data stories

Before Class (Material to Review):

Explore "Accessible data visualizations" guide from UW-Madison Information Technology [library guide]

During Class (Activity):

Explore tools to support accessible data stories (e.g., contrast check with <u>ColorBrewer 2.0, WebAIM</u> resources)

2024-03-14 **Part III. Critiquing Data Communication**

Kev Question:

How do we critically analyze data stories?

Main Concepts:

- Data bias
- Causation and correlation

Before Class (Material to Review):

- Olteanu, Alexandra, Carlos Castillo, Fernando Diaz, and Emre Kıcıman. 2019. "Social Data: Biases, Methodological Pitfalls, and Ethical Boundaries." *Frontiers in Big Data* 2: 1-33. https://doi.org/10.3389/fdata.2019.00013. [journal article]
- 2. Harvard Business Review. 2015. "Beware Spurious Correlations." *Harvard Business Review: Business Management*, June 1, 2015. https://hbr.org/2015/06/beware-spurious-correlations. [magazine article]
- 3. Explore "This Person Does Not Exist" [online project]

During Class (Activities):

Create and explore "Spurious Correlations"

DATA INFOGRAPHIC DUE AT 11:59pm

2024-03-21 Part III. Critiquing Data Communication

Key Question:

How do we re-envision the stories we tell with data?

Main Concepts:

- Data feminism
- Emotion in data visualization
- Embodiment in data visualization

Before Class (Material to Review):

D'Ignazio, Catherine, and Lauren F. Klein. 2020. "On Rational, Scientific, Objective Viewpoints from Mythical, Imaginary, Impossible Standpoints." In *Data Feminism*, 73-96. MIT Press. [book chapter]

During Class (Activities):

Reimagine data communication piece of your choosing (e.g., reimagining TTC Subway and Streetcar Map)

CRITIQUE OF DATA INFOGRAPHIC DUE AT 11:59pm

2024-03-28 **Part IV. Sharing Data Communication Pieces**

Key Question:

What data stories can we share?

Main Concept:

Data stories

IN-CLASS PRESENTATIONS (PLEASE SUBMIT SLIDES BEFORE THE START OF CLASS-1:00pm)

2024-04-04 Part IV. Sharing Data Communication Pieces

Key Question:

What data stories can we share?

Main Concept:

Data stories

IN-CLASS PRESENTATIONS (PLEASE SUBMIT SLIDES BEFORE THE START OF CLASS-1:00pm)

DATA PORTFOLIO PIECE DUE AT 11:59pm

Last Date to drop course from Academic Record and GPA is March 11, 2024.

Every attempt will be made to follow this syllabus, but its content are subject to change, according to the rules as outlined in the UTM Instructor's Handbook, section 3.2.2.