Data Storytelling and Visualization

MMC6456
Academic Term: Summer 2020
4 Credit Hours

Instructor
Name: Chad Skelton
Email Address: chad.skelton@jou.ufl.edu (but sending messages through Canvas is usually best)
Virtual Office Hours: I will make myself available for office hours on Skype by appointment. Please email me to schedule a meeting.

Course Communication: If your question is of a general nature that you think fellow students may also have, please ask your question in the General Questions discussion forum — that way your fellow students can benefit from the answer. If your question is of a personal nature, please email me. Sending me a message through the "Inbox" feature in Canvas is usually a quicker way to get a hold of me than emailing me on my UF email address, as I check Canvas more regularly. Also, please note that while I usually respond to messages within 24 hours, I do not typically check messages on the weekends. So if you have a question about an upcoming assignment, please get it in before Friday afternoon.

Teaching Assistants
- N/A

Course Description & Prerequisites

This course will introduce students to the fundamentals of effective data-driven storytelling. The students will learn how to detect and articulate the stories behind data sets and communicate data findings in visual, oral, and written contexts for various audiences and publics. The students will gain an understanding of Tableau, a data visualization tool.

Course Pre-Requisites / Co-Requisites
None

Course Delivery Mode & Time Commitment

This is a fully online course and you must log into Canvas with your gatorlink and password to access the materials and assignments. The course is organized into modules with due dates. Unless otherwise specified, each module begins on Monday at 12:00 AM, ET, and ends on Sunday at 11:59 PM, ET. The course begins with the Course Introduction Module on the home page, which will familiarize you with the course.

Time Commitment

Expect to spend between 10 to 20 hours per week, per course, watching or attending lectures, reading, working on assignments and projects, and engaging in discussions.

Course-Level Objectives

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

- CO:1 Detect and understand the stories within datasets and extract insights from that data.
- CO:2 Effectively present data visually to enhance audience comprehension of findings and insights.
- CO:3 Apply data visualization best practices to their work, including choosing the right chart type for the situation and avoiding visualization techniques that can mislead an audience.
- CO:4 Act as a data-driven visual storyteller for optimal presentation of trends, patterns and insights.
- CO:5 Effectively communicate insights about data in various formats, including oral presentations, written reports and interactive visualizations.
- CO:6 Prepare professional business reports and make effective client presentations of their work.
- CO:7 Find and download public data from open data portals such as data.gov and data.un.org.
- CO:8 Analyze datasets visually using Tableau Desktop.
- CO:9 Create static charts, interactive Dashboards and data stories using Tableau Desktop.
- CO:10 Explain the importance of communication skills and competencies for individuals who serve as data analysts.

Textbooks & Materials

Required Course Textbook(s)

Required Seminal Works (Older than 5 Years Old)

Nussbaumer Knaflic, C. (2015). *Storytelling with Data: A Data Visualization Guide for Business Professionals,* (1st ed.) Wiley.
- **ISBN-10:** 1119002257
- **ISBN-13:** 978-1119002253

Murray, D. (2013). *Tableau Your Data!: Fast and Easy Visual Analysis with Tableau Software,* (1st or 2nd ed.) Wiley.
- **ISBN-10: 1119001196**
- **ISBN-13: 978-1119001195**

Both **Storytelling with Data** and **Tableau Your Data!** are available in electronic format for free through the UFL library: http://cms.uflib.ufl.edu/

Recommended Textbook(s)
American Psychological Association. (2020). *Publication manual of the American Psychological Association: The official guide to APA style.* (7th ed.).
- ISBN-13: 978-1433832161
- ISBN-10: 143383216X

[Changes in the APA 7th Edition](#)

Publisher Materials
N/A

Course Reserves
Course Reserves will be accessible through Canvas.

Minimum Technology Requirements & Computer Skills

COMPUTER REQUIREMENTS

Basic [Computer Specifications](#) for Canvas
- [Specifications](#)
- Reliable Web Browser: Login to Canvas and make sure your Internet browser is compatible.

Peripherals
- A backup option should be available to minimize any loss of work such as an external hard drive, a USB drive, cloud storage, etc.

Hardware
- Dependable computer.
- Computer speakers.
- Headset with microphone.
- Webcam.

Software
- [Microsoft Office 365](#).
- Tableau Desktop (a free academic license is available to UF students at https://www.tableau.com/academic/students)
- [UF Apps](#) – access UF software applications from any device from any location, at any time.
- Canvas Mobile App: Download instructions for [iOS device](#) or [Android device](#).
- [Adobe Reader](#)
- https://ufl.zoom.us/

Internet Connection
- Recommended: Broadband Internet connection with a speed of 4 Mbps or higher.
- To function properly, Canvas requires a high-speed Internet connection (cable modem, DSL, satellite broadband, T1, etc.). The minimum Internet connection speed to access Canvas is a consistent 1.5 Mbps (megabits per second) or higher.
- [Check your Internet speed here.](#)

Subscriptions, Plug-Ins, and Other Tools
- [Adobe Flash Player](#) (Good until the Microsoft update December 31, 2020.)

- [JAVA](#)

MINIMUM COMPUTER AND DIGITAL INFORMATION LITERACY SKILLS REQUIREMENTS

The general and course-specific computer and digital information literacy skills you must have to succeed in the course include, but are not limited to, the following:
- Accessing the Internet.
- Using Canvas.
- Using email with attachments.
- Creating and submitting files in processing program such as Microsoft Office Tools.
- Copying and pasting functions.
- Downloading and installing software.
- Using presentation, graphics, and other programs.
- Posting and commenting in an online discussion.
- Searching the University of Florida library and websites.
- Basic familiarity with Excel and with the concept of structured data (i.e. storing data in columns and rows).

Technical Support

In the event that you have technical difficulties with your course, please contact the [UF Computing Help Desk](#) either by filling out an [online request form](#) or calling 352-392-4357 - select option 1. The Help Desk is located on the ground floor of the Hub on the UF campus.

If your technical difficulties caused you to miss a due date, you MUST report the problem to the Help Desk and then email your instructor. Include the ticket number that you are given from the Help Desk in an email to the instructor to explain the late assignment/quiz/test.

IT Support
For all Technical assistance questions please contact the UF Computing Help Desk:
Phone: 352-392-HELP (4357)
Email: helpdesk@ufl.edu

Please Note
Your instructor is not able to handle technological issues or answer questions related to computer issues. If a problem of this nature arises that causes you to miss an assignment, you must provide your Help Desk ticket number to the instructor in order to receive an extension.

Course Grading Policies
Grading Criterion, Late Assignment Policy, and Expectations for Assignments

GRADING CRITERION

Weekly Quizzes (Total 10%)

Each week, you will be required to complete a short online quiz that will be based on that week's assigned lectures and readings. Each quiz will contain three to five multiple choice and true/false questions and will have a time limit of 10 minutes. The quiz is open book but is recommended you do the quiz only after you have watched all of that week's lectures and done all of the assigned readings. The quiz will be due at 11:59pm Eastern time on the Sunday of each weekly module.

Discussion Boards (Total 25%)
All students will be expected to participate each week in the online discussion boards. Each week's discussion question or topic will be posted on Canvas no later than the Monday of each weekly module (often it will be available well before that). Your initial post responding to that question should be posted in Canvas no later than 11:59pm Eastern time on Thursday. However, any replies to other students' posts are not due until 11:59 pm Eastern time on Sunday (to allow a bit of extra time for replies).
As a general rule, the instructor will refrain from commenting on a students' discussion post until at least one other student has done so first. The hope is this will encourage students to think critically about each others' work rather than waiting to first see what the "right" answer is from the instructor.

Each week's Discussion Posts — both the student's original post and their responses to their fellow students — will be marked using the following rubric:

90-100 Excellent	80-89 Good	Less than 80 Unsatisfactory
The initial post is accurate, relevant and well-written. The student has answered the question with substance and depth, offering something original to the discussion. Replies to fellow students' posts are thoughtful, helpful and reflect an in-depth understanding of the course material. The posts meet any minimum requirements for word count and are without grammatical or spelling errors.	The initial post is accurate, relevant and well-written. The student has answered the question with substance and depth, offering something original to the discussion. Replies to fellow students' posts are thoughtful, helpful and reflect an in-depth understanding of the course material. However, the posts do not meet the minimum requirements for word count and/or contain several grammatical or spelling errors.	The quality of response in the initial post and responses is weak, with disorganized ideas and/or severe grammatical or spelling errors.

Data Plan (Total 10%)
Find a dataset that will serve as the basis for the other assignments in this course (Narrated PowerPoint Slide Deck, Data Memo and Interactive Data Story). This dataset can be located on an open data portal or can be a dataset that you have access to through your work. The dataset can be on any topic you choose — ideally, pick one that's about something you're interested in and/or is about where you live. This will make it a lot more fun to complete the assignments in this course.

Further details about the assignment, including the marking rubric, are available on the assignment page on Canvas.

Two charts, a "lead" and an "elevator pitch" (Total 10%)
This assignment will show the results of your initial analysis of your dataset. It should include:
1. A single sentence identifying the most interesting thing you've discovered in your dataset, much like the "lead" of a news story. This "lead" should intrigue the reader and make them want to learn more.
2. Two static charts, created using Tableau, that illustrate key insights you've discovered in your data. At least one of your two charts should support the statement made in your lead sentence.
3. To accompany the charts and lead sentence, an "elevator pitch" of 30-45 seconds in which you are seen on camera explaining why the insights you've discovered are worth paying attention to. For your elevator pitch, there should be nothing on camera except yourself (i.e. no slides, no charts). You should wear business-appropriate clothing (i.e. no sweatpants, shorts or jeans) and be seated in an office-style setting or standing up (i.e. no lounging on the couch).

Further details about the assignment, including the marking rubric, are available on the assignment page on Canvas.

Narrated PowerPoint Slide Deck (Total 15%)
Using Zoom, you will record a video presentation between 8 and 12 minutes long that explains some of the key findings of your data analysis. You must prepare your presentation using PowerPoint and must be visible on camera for the entirety of your presentation. For the purposes of this assignment, you should imagine your audience are members of the public (i.e. voters, customers, clients) and that you are tasked with explaining your key findings to them. Assume that your audience does not have any specialized knowledge of the subject matter and do your best to avoid jargon.

Further details about the assignment, including the marking rubric, are available on the assignment page on Canvas.

Data Memo – Written Report (Total 15%)
You will write a 1,500- to 2,000-word "Data Memo" outlining the key findings of your data analysis as well as clear recommendations for how your intended audience should respond to your findings. This assignment will build on the findings in your Narrated PowerPoint Slide Deck, exploring them in greater depth. For the purposes of this assignment, you should imagine your audience is a decision-maker in an organization you work for (i.e. a CEO, board member of a non-profit, head of a government agency).

Further details about the assignment, including the marking rubric, are available on the assignment page on Canvas.

Interactive Data Story (Total 15%)
Using Tableau, you will create a "Data Story" that uses maps and charts — some interactive, some not — to explain the results of your data analysis and anticipates the user's questions about your data. For the purposes of this assignment, you should imagine your audience is a frontline worker or mid-level manager who needs to use your Data Story to help make day-to-day decisions. For example, this could be a police sergeant who needs crime data to help deploy officers effectively, a park warden who needs data on park visitors to help set staffing schedules or a school principal who needs to know how their school is doing on standardized tests.

Further details about the assignment, including the marking rubric, are available on the assignment page on Canvas.

Your grade will be calculated based on the following:

Assignments/Assessments	Points	Weight (%)
Course Orientation: These assignments are required; however, they not count towards the final grade. • Student Introduction • Course Evaluation	0	0%

11 Quizzes • Worth up to 100 points each.	1100	10%
15 Discussions • Worth up to 100 points each.	1500	25%
5 Major Assignments • Data Plan (10%) • Two charts, a "lead" and an "elevator pitch" (10%) • Narrated PowerPoint Slide Deck (15%) • Data Memo – Written Report (15%) • Interactive Data Story (15%) • Worth up to 100 points each.	500	65%
TOTAL	**1800**	**100%**

Grade	Percentage
A	92.5-100%
A-	89.5-92.4%
B+	86.5-89.4%
B	82.5-86.4%
B-	79.5-82.4%
C+	76.5-79.4%
C	72.5-76.4%
C-	69.5-72.4%
D+	66.5-69.4%
D	62.5-66.4%
D-	59.5-62.4%
E	0 – 59.4%

The only passing grades for graduate students are A, A-, B+, B, B-, C+, C, and S. Grades of B-, C+ or C count toward a graduate degree if an equal number of credits in courses numbered 5000 or higher have been earned with grades of B+, A- and A, respectively. Grade points are not given for S and U grades; S and U grades are not used to calculate grade point averages. All letter-graded courses eligible to count toward the graduate degree, except 1000- and 2000-level courses, are used to calculate the cumulative grade-point average. Letter grades of C-, D+, D, D- or E are not considered passing at the graduate level, although the grade points associated with these letter grades are included in grade point average calculations. See the UF grading policy for more information.

LATE ASSIGNMENT POLICY

Late assignments will not be accepted unless it is a University excused absence as stated in the attendance policies. **No late work will be accepted for final projects or work due in the final week of class due to the university grading deadlines.** If potential issue arise concerning submitting final work, students should contact their instructors before deadlines to discuss the possibility of an Incomplete Grade Contract.

1. Late Assignment Grade Reductions
   a. 0-24 Hours Late: 10% reduction in grade.
   b. Over 24 Hours (24 hours and 1 minute) to 7 Calendar Days Late: 20% reduction in grade.
   c. After the 7th Calendar Day: Work will not be accepted.

2. Late Discussions will not be accepted.

EXPECTATIONS FOR ASSIGNMENTS

- **Missed Live Lectures** - In courses where there are live weekly or bi-weekly lectures, a recording of the lecture will be provided if you cannot attend. You will be responsible to "make-up" the missed lecture by viewing the recorded lecture and completing a required assignment.

- **Course Evaluation**
  Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

Accessibility Policy

Students requiring reasonable access to services and resources required by the Americans with Disabilities Act of 1990, Section 504 of the Rehabilitation Act of 1973, and other applicable federal and state regulations, please access UF Accessibility for all options available to you. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodations. Please register early!

Contact Information
- For ADA questions: Dr. Russ Froman, rfroman@ufl.edu , Phone: 352 - 273-1094
- Disability Resource Center: Gerry Altamirano, galtamirano@ufl.edu , Phone: 352 - 392-8565
- Electronic Information Technology & Communication Accessibility: Anne Allen, alallen@ufl.edu , Phone: 352-871-2707
- For persons with hearing or speech related accessibility needs: When trying to access an office on campus that does not list a TDD/TTY number, contact the Florida Relay Service at 800-955-8771(TDD) or 711 (V/TDD).

Accessibility Resource Center
University of Florida
PO Box 114085
Gainesville, FL 32611-4085
Phone: 352-392-8565
Email: accessuf@dso.ufl.edu

Address
Environmental Health and Safety Administrative Offices
916 Newell Dr
Gainesville, FL 32603

For more information, see UF's Electronic Information Technology Accessibility (EITA) Policy.

Communication Policy

EXPECTATIONS FOR STUDENTS

Announcements
You are responsible for reading all announcements posted in the courseroom each time you log in.

Email
You are responsible for reading all your course email and responding in a timely manner (within 24 hours).

Video Conferencing
You are responsible for attending course video conferencing meetings. If you cannot attend the video conferencing meeting, please advise the instructor and/or your team at least 24 hours in advance (exceptions can be made for legitimate emergencies). You are expected to demonstrate netiquette and etiquette communication expectations.

Course-Related Questions
Post course-related questions to the "General Questions" discussion board. This allows other participants with the same question to benefit from the responses. Also, make sure you review this forum prior to posting a question. Someone may have already asked and answered the question in previous posts.

INSTRUCTOR'S PLAN FOR CLASSROOM RESPONSE TIME AND FEEDBACK

Email Policy
Except for weekends, holidays, and University breaks, the instructor will typically respond to emails within 48 hours. You should ask course-related questions in the "General Questions" discussion board. If you have questions of a personal nature, please message the instructor through Canvas (the instructor will get these messages quicker than if you email him at his UF email address).

Assignment Feedback Policy
The instructor will provide feedback on submitted assignments within one week of the submission date. Some assignments may require a longer review period, which the instructor will communicate to you.

Course-Related Questions Policy
Except weekends and holidays, the instructor will generally answer questions within 48 hours.

Video Conferencing
The instructor will provide any information on required video conferencing within the courseroom.

Electronic Communication Policy
In addition to the University's policy, please consider the following:
- Privacy, confidentiality, and security in all electronic communications. See Information Security.
- All electronic communication resources must be used for the course and in alignment with to the CJC Online and University mission. See the Acceptable Use Policy.
- Prohibited use of false identity, false identity pseudonyms, or anonymous (sender's name or electronic identification is hidden).
- Prohibited online access without consent.
- Prohibited disruption of services including introducing computer contaminants (viruses).
- Prohibited harassment of any kind.

Please see UF's Information Technology policies for additional information.

Academic Integrity Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code." The Student Honor Code, Violation of the Student Honor Code, specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to the appropriate personnel. If you have any questions or concerns, please consult with the instructor or TA's in this class.

Netiquette

Casual style of communication is commonly found in the online environment and students are sometimes tempted to relax their grammar, word choice, syntax (arrangement of words to create well-formed sentences), writing mechanics (capitalization, punctuation, and spelling), and/or professionalism. Keep in mind when communicating with others to be courteous, civil, respectful, and professional. Please remember that you are adult students and professionals—your communication must be appropriate.

Online Attendance Policy

Since the course is online, you should access your course at least four times per week to ensure you do not miss pertinent postings, messages, or announcements. It is imperative that you meet course deadlines and stay active in discussion boards, group projects, etc. If you are experiencing a major illness, absences due to University duties, or other large-scale issues, contact the instructor immediately.

Students are responsible for meeting all academic objectives as defined by the instructor. In general, acceptable reasons for absences include illness, serious family emergencies, special curricular requirements, military obligation, severe weather conditions, religious holidays, and participation in official University activities. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused. Excused absences must be consistent with university policies in the Graduate Catalog and require appropriate documentation. For additional information, see the attendance policies.

Plagiarism

Plagiarism is unacceptable; especially, in the academic communities. All academic work must be an original work of your own thought, research, or self-expression. Plagiarism includes, but is not limited to, prohibited collaboration, consultation, submission of academic work that has been purchased or obtained (see the UF Policy: Student Conduct Violation). Remember that plagiarism is not acceptable in any of your work including all discussion board posts, journal entries, wikis, and other written and oral presentation assignments. Always cite your sources!

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Notification to Students of FERPA Rights

There are federal laws, FERPA, protecting your privacy with regards to grades earned in courses and on individual assignments.

Video Conferencing Etiquette

Video conferencing is an excellent tool to interface with your peers and instructor(s) and there are also netiquette expectations to ensure that all participants are respected and treated with civility. Please make sure that you follow all of the netiquette and etiquette expectations including the following:

1. Be punctual and courteous.
2. Position your camera at eye level with good lighting.
3. Show respect and professionalism by dressing business casual or business professional.
4. Make sure your background is in a proper setting with minimal distractions.
5. Mute your microphone when you are not speaking.

Writing Style

In order to meet the academic rigor and standards of a graduate program, all students are required to use the Publication Manual of the American Psychological Association (APA) 7th Edition style in their courses. The APA 7th Edition Manual has a plethora of guidelines that includes scholarly writing, publishing principles, elements and format for your papers, writing style and grammar, bias-free language guidelines, mechanics of style, intext citing and references, etc. For additional information on notable changes, see changes between APA 6th Edition and APA 7th Edition.

Academic and Student Resources

Academic Resources

- One UF Student Portal – Course registration, final grades, transcript requests, degree audit.

- GatorEvals – Online faculty evaluations and results.

- UF Bookstore: Phone: 352-392-0194, Email: ufbookstore@bsd.ufl.edu

- Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.
  UF Library Services for Distance Students
  Ask a Librarian – chat with librarians online.
  CJC Librarian - April Hines, Phone: 352-273-2728, Email: aprhine@uflib.ufl.edu.
  Course Reserves: Electronic resource reserve items that can be accessed via links or files.

- Copyright Concerns of Graduate Researchers: Information and resource guide on copyright concerns.

- Teaching Center: General study skills and tutoring. Broward Hall, Phone: 352-392-2010 or 352-392-6420.

- Writing Studio: Provides one-on-one consultations and workshops tailored to specific classes (graduate and undergraduate). 302 Tigert Hall, Phone: 352-846-1138.

- Online Student Complaints: This process is designed to make every attempt to resolve student complaints within its academic and administrative departments at the program level.

- Information for Veterans: Veterans Affairs Certification: Phone: 352 - 294-2948

Student Resources

- [Graduate Student Resources](#): Available resources for graduate students. Your advisors are here to support you, answer questions, help with registration, and other sources. Email [onlineadvising@jou.ufl.edu](#).

- [U Matter, We Care](#): If you or a friend is in distress, please contact [umatter@ufl.edu](#) or Phone: 352-294-2273 so that a team member can reach out.

- [Counseling and Wellness Center](#): [3190 Radio Road, Gainesville, FL 32611](#) [Phone: (352) 392-1575](#), [Fax: (352) 273-4738](#)

- [Sexual Violence Response](#): Victim services, Care Area, UF Police Department, and Title IX.

- [University Police Department](#): Resources available include the Office of Victim Services and Community Services Division. Emergency: 9-1-1; Non-Emergency: 352-392-1111.

- [Gator Connect](#): Online database of student organizations.

- [Career Connection Center](#): Career assistance and counseling. Reitz Union, Phone: 352-392-1601.

- [Veteran Services](#): Office of Student Veteran Services, Phone: 352-294-2948, email: [vacounselor@ufl.edu](#). | Collegiate Veterans Success Center, Phone: 352- 294-7215, email: [charlotte.kemper@va.gov](#).

- [Student Financial Affairs:](#) Financial aid counseling including Aid-a-Gator program. Phone: 352-392-1275.

- [Student Success Coach](#): Meet with a graduate student coach that can support you in numerous ways during your time in graduate school, such as time and stress management, motivation, organization, and much more.

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The instructor reserves the right to adjust this syllabus, as necessary.