MMC 6135
Data Visualization
Fall 2022

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Section: 6122
Location: Weil 0234
Day/Time: W 3:00-3:50 p.m.; F 1:55-3:50 p.m.

Instructor: Rachel Son
Office Hours: Wed 1:40-2:40 p.m. & Fri 12:30-1:30 p.m.
Email: rachelson@ufl.edu **Response time:** 24-48 hours

Course Overview

Course Description

This course introduces you to the basics of effective data visualization and storytelling. You will learn how to find stories in data sets, effective visual communication, the legal and ethical implications of data visualization, basic statistics, and understanding how to evaluate the reliability and validity of data sets.

Course objectives

- Learn how to find data sets and communicate stories from the data.
- Develop knowledge of core principles and guidelines for effective visual communication through data visualization, storytelling, and analysis for various audiences.
- Have a foundational understanding of relevant aspects of research methods to better evaluate the validity and reliability of data sets, including:
    - Current design tools (e.g., Tableau and Adobe Illustrator).
    - Basic statistics necessary for data visualization.
    - Statistical software (e.g., SPSS) for analyzing and managing data sets.
- Understand the legal and ethical issues related to data visualization.
- Develop skills to critique infographics and reimagine them for enhanced communication.

College of Journalism and Communications Objectives

The Accrediting Council on Education in Journalism and Mass Communications requires that by graduation all students should be able to:

- apply the principles and laws of freedom of speech and press, in a global context, and for the country in which the institution that invites ACEJMC is located;
- demonstrate an understanding of the multicultural history and role of professionals and institutions in shaping communications;
- demonstrate culturally proficient communication that empowers those traditionally disenfranchised in society, especially as grounded in race, ethnicity, gender, sexual orientation and ability, domestically and globally, across communication and media contexts;
- present images and information effectively and creatively, using appropriate tools and technologies;
- write correctly and clearly in forms and styles appropriate for the communications professions, audiences and purposes they serve;
- demonstrate an understanding of professional ethical principles and work ethically in pursuit of truth, accuracy, fairness and diversity;
- apply critical thinking skills in conducting research and evaluating information by methods appropriate to the communications professions in which they work;
- effectively and correctly apply basic numerical and statistical concepts;
- critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness;
- apply tools and technologies appropriate for the communications professions in which they work.

Class Demeanor

Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones and restrict eating to outside of the classroom. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all. Students will be given one short break during class at a time determined by the instructor.

Instructional Methods

This course is outcomes-based, and you will be evaluated primarily on your ability to transfer the theory and knowledge shared in class into workable solutions. It is essential that you keep up with the reading schedule and actively participate the class discussions. Not all materials that you read will be discussed or explained in lectures. Therefore, if you

need further explanation or clarification, please take advantage of office hours. Discussions, assignments, quizzes, exams, and the group projects will help keep you extend your conceptual understanding and learn from your classmates.

Required readings

1. **Textbook:** Wong, D.M. (2013) *The Wall Street Journal Guide to Information Graphics: The Dos and Don'ts of Presenting Data, Facts, and Figures*. W.W. Norton & Company, Inc.

2. **Online Textbook:** Wilke, C. O. (2022) *Fundamentals of Data Visualization*. O'Reilly Media, Inc. https://clauswilke.com/dataviz/telling-a-story.html

3. **Canvas Readings:** Additional required readings will be made available through the modules on Canvas as the course progresses.

Books have been ordered through the University of Florida's "Text Adoption" service and should be available at any participating bookstore.

Technology, Software & Privacy

Software/computing requirements

Canvas. Canvas will be used to facilitate course communication, final project, grades, and other materials (e.g., PowerPoint files, additional readings, handouts, assignment guidelines, evaluation forms). Since online assignments are the primary interaction tools of this class, it is very important for you to keep up with all the assignments due. Canvas can remind you of up-coming due dates. Please check the site daily for announcements and/or threads of comments from either classmates or the instructor.

Tableau. Students will receive an email providing a link to downloadthe Tableau software, which provides access for the entire semester. Tableau is one of the leading tools used in the field of advertising for data visualization. Tableau software will be used for assignments, as well as in-class activities to learn about how to create data visualizations using Tableau. We will discuss details about downloading Tableau in the first week of class.

R Computing Software. Some lectures will briefly cover how free, open-sourced software can be used to create charts, graphs & other data visualizations. Information on the R Project can be found on their website.

Details on how to download the R package will be covered during class time in the first week.

SPSS. Another method for managing data is through SPSS, which is a software tool often used for statistical analyses. Some of the assignments for the course involve using SPSS to clean and analyze data. More information will be provided during class on how to obtain this software. UF offers a free online version of SPSS through [UF apps](). However, if you would prefer to have a downloadable version of the software, you can purchase a subscription through the [UF Computing Helpdesk]().

Technology Policy

Students are welcome to use laptop computers or other devices as a form of notetaking or completing in-class activities during the appropriate time. However, students who are caught using devices for other purposes that are not relevant to class (e.g., checking social media, watching videos, etc.) will be given a warning and if caught repeatedly, will be asked to leave class.

Privacy/Security

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media

platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Grading Policy

Grading Scale

A	94 - 100%	C	74 - 76.9%
A-	90 - 93.9%	C-	70 - 73.9%
B+	87 - 89.9%	D+	67 - 69.9%
B	84 - 86.9%	D	64 - 66.9%
B-	80 - 83.9%	D-	60 - 63.9%
C+	77 - 79.9%	F(E)	0 - <59.9%

> If you have any questions regarding a grade, please contact me within *24 hours* after the grade is posted.

Grade Breakdown

The following shows how assignments and exams contribute to the overall grade for the course.

5% - Attendance/Participation. Your presence and contribution are important, and they are required for a successful class. You will be graded for both attendance and active class participation (meaning you speak in class).

If you are ill or have an absence that adheres to the UF excused absence policy, you need to notify me as soon as possible. Absences that do fall outside of what constitutes an excused absence include holiday travel, meetings for other classes, sporting events, social engagements, etc.. Students are allotted *one unexcused absence*. **Two or more unexcused absence will result in a loss of a full letter grade for each absence.** Additionally, arriving more than five minutes late to class will result in a loss of a ½ of a letter grade after the first tardy.

10% - Discussion Leader (DL). For each of the topics covered during the semester, one student will facilitate the discussion based on one of the assigned readings for that day. The discussion leader is responsible for posing questions and/or an activity that contributes to the class's understanding of data visualization related to the topic at hand. See the assignment description on Canvas for details.

20% - Online Assignment (OA). There will be several assignments designed for students to apply the skills or knowledge of concepts covered in the lectures and readings. Each assignment will vary depending on the

topic at hand, such as using SPSS to analyze data or providing a written response to one example of data visualization.

15% - Quizzes. Quizzes are intended to test the student's knowledge of the concepts covered during the semester. Students are responsible for completing all assigned readings, lectures, and any required supplementary material. Quiz questions are developed from any or all those sources and designed to test the student's ability to apply the concepts into a related scenario. **See the course schedule to know when the quizzes are taking place.**

20% - Storytelling Project (Group Project 1). As a group students will to tell a "how to" story to an audience through an infographic about hurricane preparedness. The project will be completed in the first half of the semester to practice the skills and gain knowledge vital to the completion of the infographic project. Details for each phase of the assignment is provided on the course calendar, as well as the Canvas page.

30% - Final Project (Group Project 2). Groups will design an infographic for a topic of their choosing. The project is multifaceted in that groups will need to (1) obtain data that informs the infographic, (2) write a summary that describes background information on the infographic (2-3 pages), (3) the visual infographic, (4) complete peer evaluations, and (5) complete a presentation at the end of the semester to present the work. Details for each phase of the assignment is provided on the course calendar, as well as the Canvas page.

Late Submission Policy

Any assignment submitted after the deadline will result in a late penalty. A percentage of the overall score will be deducted based on the when the late assignment is submitted:

1 min. - 24 hrs = 10% deduction
>24 hrs. - 48 hrs = 20% deduction

Any submission after 48 hrs. results in a zero for the assignment

Note. Late/make-up quizzes are not accepted unless it adheres there is a documented excuse as explained below.

Make-up Policy

The course adheres to the university's policy regarding class attendance and make-up exams, assignments, and other coursework. Students should arrange with the instructor for makeup material, and the student will receive one week to prepare for any makeup assignment if circumstances allow it. Any quizzes or exams will be allotted the

appropriate amount of time to complete it as given to other students, which will be clearly communicated to students during the correspondence.

Extra Credit Policy

Extra credit will be offered to any student who participates in research through CJC's SONA research management system (https://ufl-cjc.sona-systems.com). To participate in research:

1. Register a SONA account
2. Choose studies to participate in to receive extra credit for class
3. Check SONA regularly to see what studies are available (Typically, studies start to appear around the third week of the semester).
4. DO NOT wait until the last minute. Last minute participation results in limited choices.
5. Helpful video for SONA account setup: https://youtu.be/_10nT2ZU6QO
6. For questions, contact CJCSONA via email: uf-cjc-sonasystems@jou.ufl.edu
7. **EXTRA CREDIT: 1 SONA point = 1% extra credit.** Students can earn up to 1 percent of extra credit to apply to the overall score.

Note. It is important that you read the research description carefully to ensure they are eligible to complete the study Some studies may be specifically targeted towards undergraduate students. In the event you are unsure whether you are eligible to participate, please contact the researcher.

Continue to the next page for the course schedule

	Date	Topic	Readings	Assignments	Group Projects
Week 1	Wed 8/24	Syllabus & Overview			
	Fri 8/26	Visual Storytelling 1	Wilke Ch. 29 Canvas Readings		
Week 2	Wed 8/31	Visual Storytelling 2	Canvas Readings	DL 1	
	Fri 9/2	Statistics 1	Wong Ch. 3 (pp. 93-121) Canvas Readings	OA 1	
Week 3	Wed 9/7	Statistics 2	Canvas Readings	DL 2	Project Groups
	Fri 9/9	Evaluating Data 1	Canvas Readings	OA 2	
Week 4	Wed 9/14	Evaluating Data 2	Canvas Readings	DL 2	
	Fri 9/16	Principles: Guidelines & Aesthetics	Wong Ch. 1 (pp. 19-35) Wilke Ch. 2	**Quiz 1** (Storytelling & Data)	
Week 5	Wed 9/21	Principles: Guidelines & Aesthetics	Canvas Readings	DL 3	Storytelling Topic
	Fri 9/23	Principles: Processing & Perception	Canvas Readings	OA 3	
Week 6	Wed 9/28	Principles: Processing & Perception	Canvas Readings	DL 4	
	Fri 9/30	Principes: Color Theory	Wong Ch. 1 (pp. 36-47) Wilke Ch. 4	OA 4	
Week 7	Wed 10/5	Principes: Color Theory	Canvas Readings	DL 5	Story Project Draft
	Fri 10/7	**UF Homecoming - No Class**			
Week 8	Wed 10/12	Quiz & Group Meetings		**Quiz 2** (Design Principles)	Group Meetings
	Fri 10/14	Charts: Visualizing Data	Wilke Ch. 5	OA 5	

	Date	Topic	Readings	Assignments	Group Projects
Week 9	Wed 10/19	Charts: Visualizing Data	Canvas Readings	DL 6	Storytelling Project (Final)
Week 9	Fri 10/21	Charts: Tables,Pictograms, & Maps	Wong Ch. 2 (pp. 82-91) Wilke Ch. 15	OA 6	
Week 10	Wed 10/26	Charts: Tables,Pictograms, & Maps	Canvas Readings	DL 7	Infographic Topic
Week 10	Fri 10/28	Charts: Line Graphs	Wong Ch. 2 (pp. 49-61) Wilke Ch. 12-14	OA 7	
Week 11	Wed 11/2	Charts: Line Graphs	Canvas Readings	DL 8	Data & Write-up
Week 11	Fri 11/4	Charts: Bar Graphs & Pie Charts	Wong Ch. 2 (pp. 62-81) Wilke Ch. 6-7, & 10	OA 8	
Week 12	Wed 11/9	Charts: Bar Graphs & Pie Charts	Canvas Readings	DL 9	Infographic Draft
Week 12	Fri 11/11	**Veteran's Day - No Class**			
Week 13	Wed 11/16	Online Quiz & Virtual Group Meetings (no in-class meetings)		**Quiz 3:** (Charts)	Virtual Meetings
Week 13	Fri 11/18	**Research Day** (No Class) - NCA Conference			
Week 14	Wed 11/23	**Thanksgiving Break - No Class**			
Week 14	Fri 11/25				
Week 15	Wed 11/30	Q & A Class Time: Peer Review & Questions about project		*Tableau Extra Credit Deadline	In-class Research Day
Week 15	Fri 12/2	Group Project			Presentations
Week 16	Wed 12/7	Final Projects due by 11:59 p.m.			
Week 16	Fri 12/9	UF Last Day of Classes: Wednesday, Dec. 7			

Academic Honesty

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

> "We, the members of the University of Florida community pledge to hold ourselves and our peers to the highest standards of honesty and integrity."

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

> https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/
> http://gradschool.ufl.edu/students/introduction.html

Note. Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

Students with Disabilities

Students requesting accommodation for disabilities must first register with the Dean of Students Office (www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive; therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations. You will be notified by email when the evaluations are open near the end of the semester. Summary results are available to you and the general public.

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UF Resources

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Health and Wellness

- U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.
- Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.
- Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need or visit the Student Health Care Center website.
- University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).
- UF Health Shands Emergency Room/Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.
- GatorWell Health Promotion Services: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

Academic Resources

- Computers/IT/E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu. Also, see https://lss.at.ufl.edu/help.shtml
- Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.
- Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.
- Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, writing papers.
- Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information - https://sccr.dso.ufl.edu/policies/student-honor-%20code-studentconduct-code/
- On-Line Students Complaints: View the Distance Learning Student Complaint Process. https://distance.ufl.edu/getting-help/studentcomplaint-process/