

# mmc 6135. data visualization

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office hours: W 3& 6; TH 4

**prerequisites:** students must be familiar with Adobe Illustrator before taking this course.

**teaching assistant:** Mo Chen (chenmo0825@ufl.edu). She will be grading homework and “quizzes” on readings, so contact her first with grading issues (denoted by \* in syllabus). If it cannot be resolved, contact me next.

## 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.

## objective

- learn how to find data sets online
- learn how to discover and communicate stories from data sets
- learn data visualization and visual communication principles and guidelines for effective data visualization, storytelling, and analysis for various audiences
- discuss various tools used by today’s data communicators
- learn relevant aspects of research methods to better evaluate the validity and reliability of data sets
- use SPSS for analyzing and managing data sets; learn basic statistics
- create and understand basic visualizations in Tableau
- enhance visualization in Adobe Illustrator
- learn the legal and ethical issues related to data visualization
- learn how to critique infographics and reimagine them for enhanced communication

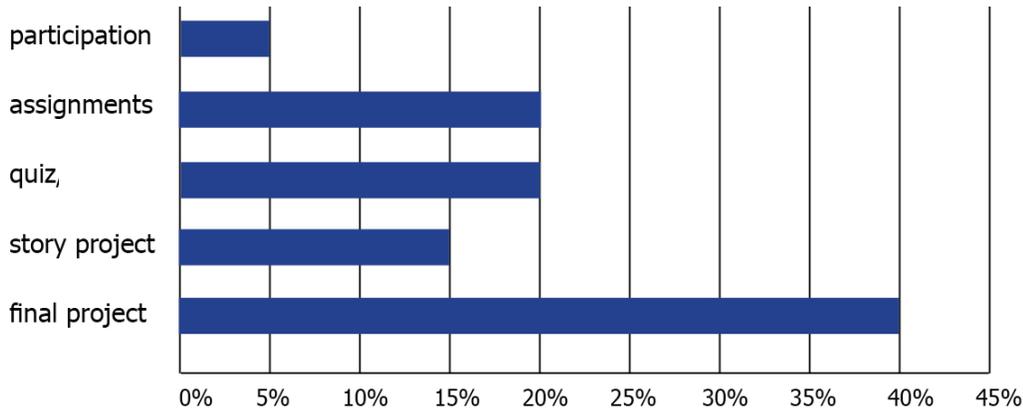
## course textbooks

- *the wall street journal guide to information graphics: the dos and don’ts of presenting data, facts, and figures*
- *adobe illustrator cc 2018 release (or whichever version we’re on)* or some other illustrator reference manual
- strongly suggest a wireless mouse with right and left buttons
- additional course readings found in Canvas or on reserve in the library

## great books for more information

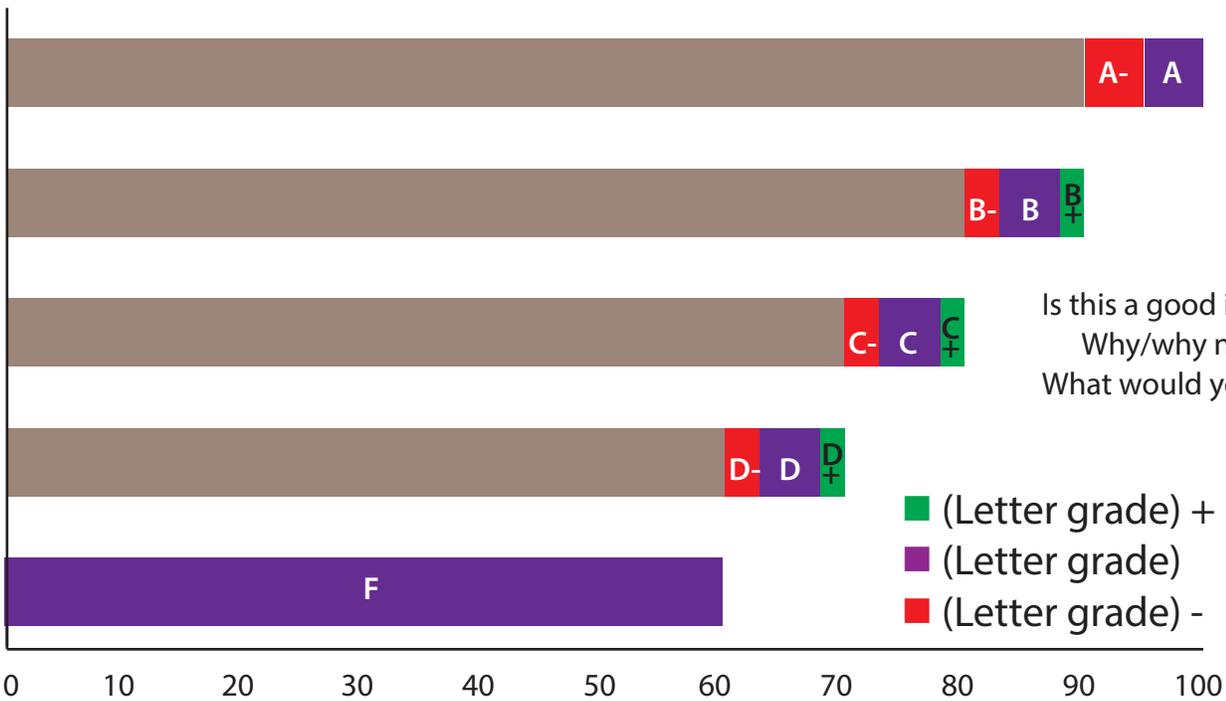
- *cool infographics* by randy kaum
- *storytelling with data* by cole nussbaumer knaflic
- *show me the numbers* by stephen few
- *the functional art* by alberto cairo
- *infographics: the power of visual storytelling* by jason lankow, josh ritche & ross crooks

### course evaluation breakdown



Is this a good infographic?  
 Why/why not?  
 What would you change?

### grade scale



Is this a good infographic?  
 Why/why not?  
 What would you change?

■ (Letter grade) +  
 ■ (Letter grade)  
 ■ (Letter grade) -

#### Grade scale

A = 95-100; A- = 90-94.9; B+ = 88-89.9; B = 83-87.9; B- = 80-82.9; C+ = 78-79.9; C = 73-77.9; C- = 70-72.9; D+ = 68-69.9; D = 63-67.9; D- = 60-62.9; BELOW 60 = E

attitude, effort, being late, etc. can either increase or decrease your grade.

additional information of the UF grading policy may be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

## **attendance/participation 5%**

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 another excusable type of absence (court appearance, medical emergency, religious holiday), you need to notify me, preferably before class. Documentation will be needed to be excused. Things that aren't excused are holiday travel, meetings for other classes, sporting events (assuming you are not an athlete for UF), social engagements and the like. I will allow you two (and only 2) excused absences for job-related needs, leadership roles, or conference presentations, and I need these in writing prior to the absence to be excused. More than one unexcused absences will result in the loss of a half letter grade from your final grade for each unexcused absence. Being late to class more than three times results in 1/2 a letter grade loss. Disruptive or rude behavior including talking while others are talking, texting, trolling Instagram/Snap Chat, etc. also may result in up to a 1/2 a letter grade from your final course grade.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

## **assignments/homework 20%**

You will have homework assignments in SPSS along with assignments related to data visualization. You also will be doing a final presentation of your major project in which both myself and your classmates will grade you.

## **quizzes 20%**

This class is a lot of information and much of it builds on previous weeks. After reading a great book about how students are most successful and remember material the best, I will be giving you smaller-scale quizzes throughout the semester to test your understanding of the course information. These will be combinations of multiple choice and short answer OR mini-homework to find examples. The amount of time and number of questions for the in-class quiz will be posted on Canvas. You will be able to use your notes for a small amount of time for this quiz, but you must study and know the information. The notes portion will only be long enough to look up an answer or two. What will be covered on each quiz will be listed on Canvas. Not everything we talk about in class will be tested. In some cases, your quiz may be take-home and be a different format than mentioned here.

You will also have some at-home "quiz" checks on the reading to make sure you're doing it.

## **storytelling project 15%**

This project is your first foray into visual storytelling. Can you tell a "how to" story on hurricane preparedness? This assignment tests your ability to communicate a complex "story" with visuals. You will work with 2-3 partners (so 3-4 person teams). See Canvas for additional information.

## **final project 40%**

This project is the culmination of this course. You will come up with an infographic that tells a compelling data story. You will find a database(s) online, discover the stories within the data, analyze the data, and design a data visualization to tell your data's story keeping in mind the principles you have learned throughout the semester. Examples were shown throughout the semester. You will work with 2-3 partners. You will turn in your data as well as the visualization. I will be checking for plagiarism, both visual (copying or largely copying a previous infographic) and verbal (stealing others words). You will evaluate your teammates at 2 places (midway and final). The midway serves as a warning point if you need to step it up. You will evaluate and list exactly what you contributed. Your **final** peer evaluations will negatively influence your final course grade as follows:

93.1-100 Final grade is unaffected

90.1-93 Minus 4% on your final grade

88.1-90 Minus 10% points on your final grade

80-88 Minus 15% points on your final grade

These will continue to increase in 5% increments. So those whose evaluations are in the C+ range will have minus 20% and so on.

Also, you will lose 10 points for each peer evaluation you do not turn in ON TIME.

**TEAM FAILURE TO TURN IN ANY COMPONENTS TO PROJECTS AT CHECKPOINTS LOSE 1/2 LETTER GRADE FOR EACH TIME THIS OCCURS.**

**late policy: You will lose one letter grade for each day it is late. (Note: if you don't turn it in at the time it's due, you are considered a full day late).**

### **students with disabilities**

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. If your disability requires special testing arrangements (e.g., extra time, quiet environment), you will be taking your exams at the disability office and not in the building. You will also need to keep track of the appropriate paperwork for this.

### **student honor code**

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. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-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 appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class."

**students with complaints.** UF policy for dealing with complaints is available at: [https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf).

date	to do (note all assignments are due on CANVAS unless otherwise noted. Make sure to read directions online)
Jan. 8/10	Class introduction. What is wrong with the syllabus visualizations. What is data visualization? Good and bad data visualization. What makes it work. What are its objectives and steps. <i>Reading: Storytelling Data Viz for next week (in reading folder on CANVAS).</i>
Jan. 15/17	Data storytelling; Attention & Memory <i>Readings on Intellectual Property and Copyright for next week (reading folder).</i>
Jan. 22/24 spss trial is 14 days	Attention and memory; Data visualization ethics; Design principles <i>Reading for Tuesday: Wall Street Journal book pgs 30-48.</i> <b>Quiz #1--Data storytelling 1/22 at beginning of class.</b> <b>Start work on story project; tell me teams by 1/24</b> <b>HW: SPSS 1 &amp; 2 (10 pts each) due 1/24 at beginning of class*</b>
Jan. 29/31	Design principles; Illustrator refresher <b>WSJ Online "Quiz" due 1/29 at beginning of class *</b> <b>Quiz #2--Attention &amp; Memory, Gestalt 1/31 at beginning of class.</b>
Feb. 5/7	Illustrator refresher; Data visualization types and formats <b>HW: SPSS 3 &amp; 4 (10 pts each) due 2/7 at beginning of class*</b>
Feb. 12/14	Data visualization types and formats; Tableau <b>CHECKPOINT: Story project draft due 2/12. See Canvas.</b>
Feb. 19/21	Finish Tableau <b>At Home Quiz #3--Design principles, Color, Typography due 2/21 at beginning of class. Hand in hard copy.</b>
Feb. 26/28	Work on project week. <i>Read: Chp 2-4 in Wall Street Journal book and Data chapter from Stephen Few for after spring break. There is a "quiz" so I'd do it this week since no class.</i> <b>NO CLASS 2/28. GOODMAN OUT OF TOWN.</b> <b>Story project (100 pts) due 2/28 and Team evaluation due 2/28 (both beginning of class). -10 on project if no eval submitted on time.</b>

<b>date</b>	<b>to do (note all assignments are due on CANVAS unless otherwise noted. Make sure to read directions online)</b>
March 5/7	<b>NO CLASSES. SPRING BREAK.</b> <i>If you haven't done it before break, read Chp 2-4 in Wall Street Journal book and Data chapter from Stephen Few for next week</i>
March 12/14	Evaluating data: Sampling, reliability, validity, operational definitions <b>WSJ &amp; Data chapter "quiz" due 3/12 at beginning of class*</b> <b>HW: Bad infographic (5 pts) due 3/14 at beginning of class</b> <b>CHECKPOINT Due 3/14 Story idea(s) for final project and team beginning of class</b>
March 19/21	Evaluating data continued <b>CHECKPOINT Due 3/19 Data and write up for final project due</b> <b>HW: Tableau exercises 6-8 &amp; 12 (20 pts) due 3/21 beginning of class*</b> <b>Meet with Goodman about your data story this week. (May be able to do in class).</b>
March 26/28 no class march 28	Evaluating data cont. <b>GOODMAN AT CONFERENCE ON Thursday. NO CLASS but HW due.</b> <b>HW: Bad infographic to good infographic (20 pts) due 3/28 at beginning of class.</b> <b>Strongly recommend that you sketch out your project idea.</b>
April 2/4 no class april 2	Finish evaluating data cont./Tableau if needed. <b>GOODMAN AT CONFERENCE ON TUESDAY. NO CLASS.</b>
April 9/11	<b>Checkpoint: Complete draft is due 4/8 which is MONDAY AT NOON</b> <b>Midpoint team evaluation due 4/9 at beginning of class (-10 if not turned in on time)</b> <b>Teams meet with Goodman (SCHEDULE)</b> <b>In class Quiz #4 on 4/11--Evaluating data &amp; numeracy</b>
April 16/18	<b>Work week on project.</b>
April 23	<b>Presentation of final projects (50 points) due 4/23.</b> Class provides feedback. Top 2 teams earn extra credit based on class vote.
April 25 by Noon	<b>Final project (100 pts) due. Final team evaluations due.</b>