Pre-Class Check List

- ❒ Purchase the textbook for the course.
- ❒ Construct a "Name Placard" to display on the first day of class. It should highlight 3 of your strengths and 3 areas for improvement
- ❒ Craft an instruction manual describing your personal "operating instructions" (See https://www.youtube.com/watch?v=--n_1I06jWA&feature=youtu.be).
- ❒ Memorize the class theme, "Thriving at the intersection of big data and information display challenges"

Advanced Information Problems
Info Sci 410

Instructor: **Laleah Fernandez, Ph.D.**
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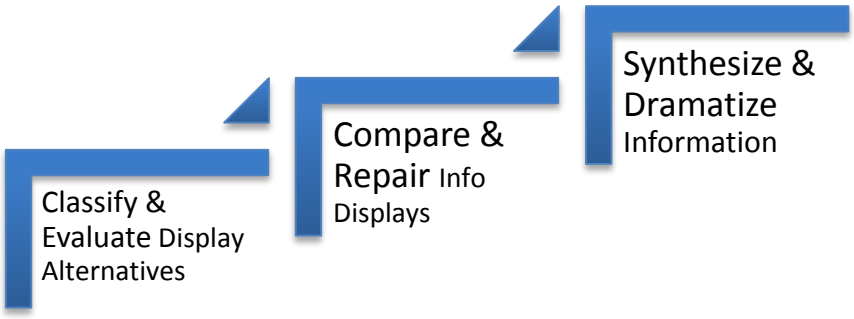
Course Overview: This course provides an overview of information problems and big data techniques to resolve those problems. It will focus on: 1) critiquing information presentation schemes, 2) analyzing helpful and misleading infographics and 3) creating proper and improper data presentations. Particular emphasis is placed on evaluating and creating social strategies for various objectives.

The course revolves around three major projects: For project 1, your team will be asked to classify and evaluate existing information display techniques. For project 2, the team will select two related information displays and compare them. Then your team will repair the display deemed least effective. For project 3, you and your team will synthesize information and dramatize the information in two infographics (one helpful, one misleading). Each project is designed to bring you one step closer to becoming an expert and ethical infographic creator.



Textbooks:

- *Big Data: A Revolution That Will Transform How We Live, Work, & Think* by Mayer & Cukier (MC)
- Current articles on big data and information management

Note: We use the textbook as a launching pad for deeper discussions of critical concepts. Our lectures, discussions, and projects are designed to build on this conceptual foundation. Therefore, we will not lecture per se on the books but we will expect students to understand the basic concepts from the readings.

Course Objectives: Students will learn about big data methods and information display options. As a result, students will be able to:

- Identify and use basic big data methods
- Recognize the characteristics of effective and ineffective information displays
- Assess the utility and ethics of information displays
- Construct useful and ethical information displays
- Identify the characteristics of an expert and ethical "infographist"

Course Policies:

Attendance - the very nature of this class requires attendance. Inevitably, unforeseen emergencies arise that necessitate missing a scheduled class. In order to avoid penalizing any student who must, for some reason, be absent, the following policy exists:

> *Students are held responsible for information covered in the session missed. Notes should be obtained from fellow classmates, **not the professor**. Excessive absences (more than 3) will result in a course grade reduction. If your involvement in university-sponsored activities requires that you miss certain class periods, then you must provide the professor with a written calendar of the days you will miss.*

Plagiarism - all work should be the product of the student's individual effort.

Written work - all daily work and major papers should be typed and conform to the UWGB writing policy guidelines. This is one mark of professionalism.

Extra credit - we do not assign and will not grade extra credit.

Grading: Your class grade is based on the following components*:*

Item	%	Description
● Case 1	15%	Oral presentation and written report
● Case 2	20%	Oral presentation and written report
● Case 3	35%	Oral presentation and written report
● Test 1	15%	Multiple choice over textbooks
● Final Exam	15%	Take home written Final

Grading Scale: All grading will be done on a "0 - 100%" scale which translates into the following letter grades:

A: 92% +	**C:** 72 -78%
AB: 89 - 91%	**CD:** 69 - 71%
B: 82 - 88%	**D:** 60 - 69%
BC: 79 -81%	**F:** Below 59%

Communication: One of the most important skills students learn at the university is how to effectively communicate with busy people. One key communication principle is to "select your communication channels based on your purpose and the attributes of the message." Therefore, we will use a variety of methods to communicate during the semester including:

Email: I check my email (Fernandl@uwgb.edu) on a regular basis and should respond within 24 hours of your question. If not, then assume the message was lost in cyber heaven and re-send. This is our preferred method of communication for most "lean" items.

Walk-and-Talks (aka elevator talks but I don't use elevators)**:** Some issues can be discussed or resolved in short bursts of conversations during a walk between classes. Feel free to catch me at those times.

Phone: If we need to have a richer communication forum, then a phone call would be advisable. Please email us the times you are available and we'll give you call.

Office Visits: I will always be available to discuss the right issues (e.g. rich issues involving confidential concerns, complex issues, personal advice, etc.) in the face-to-face channel. Please use email to set up a time.

Tentative Schedule

Week	Major Activities*
	• Read *Big Data* • Select Groups
	• Read *Big Data*
	• Read *Big Data*
	• Group Project Presentations (Assignment 1)
	• Exam 1: MC exam over Big Data
	• Group Project Presentations (Assignment 2)
	• Group Project Presentations (Assignment 3)
	• Group Project Presentations (Assignment 3)
	• Final Take Home Exam Due

*Note: Lectures and exercises will be conducted on all class days other than those designated for exams and group presentations.

Assignment 1
"Classify and Evaluate" Infographics

Purpose: Classify and evaluate existing information display conventions used in infographics.

Rationale: Most consumers of infographics have little understanding of the underlying dynamics at work when they view an infographic. An expert "infographist" should understand these dynamics and help others weigh the relative costs/benefits of their choices.

Major Activities:

1. Collect at least 50 infographics.

2. Develop a system to categorize infographics into 3 – 5 groups base on methods, purpose and/or visual conventions. Note: the category system cannot be based on the content (e.g., travel, sports, politics etc.). Why? The course focuses on information management.

3. Describe the rationale for selecting your category system. Remember the objective is that by the end of the class you will become an expert infographic creator.

4. For each category, develop an illustrated list of the upside and downside of displaying information in this way. Provide the rationale for your lists.

Requirements:

- Professional group presentation (15 -20 minutes) and cross examination (5 – 10 minutes)
- Written report (due 1 week after oral presentation)

Evaluation:

- Synthesis of key ideas – Does the report synthesize key insights from personal experience, research, and class principles?
- Utility of insights – Can the ideas in the report be applied to real-world problems?
- Depth of analysis – Does the report indicate the team has thought deeply about the issues? Have certain ideas been eliminated or honed through discussion?
- Quality of insights and rationale – Does the report go beyond the standard recommendations advocated by self-ordained "infographic gurus"?
- Professional style - Does the report and presentation adhere to professional standards (e.g., well organized, one voice, proper design, well written, proper citations & appendices)?

Assignment 2
"Compare and Repair"

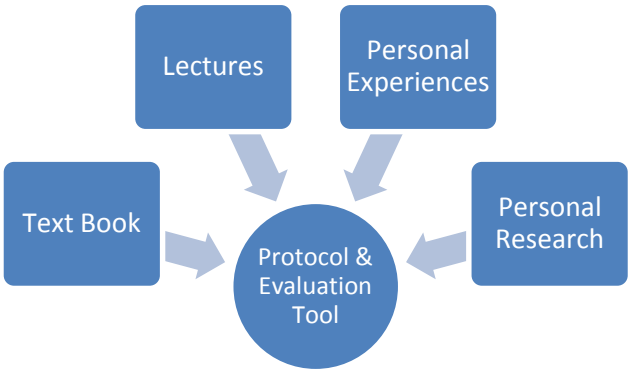
Purpose: Compare two infographics on a related topic (e.g. voting records of candidates, social media usage patterns, skills of computer scientists, etc.). Repair the infographic that you deemed least effective.

Rationale: An infographic expert should have a clear understanding of how to evaluate infographics and know how to take corrective action. Developing your own protocol and evaluation tool to assess the utility and ethics of infographics can help you establish a solid reputation as an infographic "guru."

Major Activities:

1. Select two infographics in a related field. (e.g. voting records of candidates, social media usage patterns, skills of computer scientists, etc.).

2. Gather information about how each infographic made use of data and information. At a minimum, answer the following questions:
    a. What data and information did the graphic use?
    b. What methods were used to gather the data and information?
    c. What are the goals of the creators of infographic? (You may have to make reasonable inferences)
    d. What messages are highlighted by the infographic? Why?
    e. How do you think the creators evaluate the effectiveness of their infographics?



3. Craft a protocol/evaluation tool to assess the utility and ethics of any infographic.

4. Use your protocol/evaluation tool to assess the effectiveness of the two infographics.

5. Provide a "repair" or correction plan for the organization with the least effective infographic. Assume you would present the plan and rationale to the senior leadership team of the organization. (Note: Most leadership teams would not be satisfied with merely matching the "competitors'" strategy.)

Requirements:

- Professional group presentation (20 -25 minutes) and cross examination (5 – 10 minutes)

- Written report (due 1 week after oral presentation)

Evaluation: I will be looking for the following:

- Synthesis of key ideas – Does the report synthesize key insights from personal experience, research, and class principles?
- Utility of insights – Can the ideas in the report be applied to real-world problems?
- Depth of analysis – Does the report indicate the team has thought deeply about the issues? Have certain ideas been eliminated or honed through discussion?
- Quality of insights and rationale – Does the report go beyond the standard recommendations advocated by self-ordained "infographic gurus"?
- Professional style - Does the report and presentation adhere to professional standards (e.g., well organized, one voice, proper design, well written, proper citations & appendices)?

Assignment 3
"Synthesize and Dramatize"

Purpose: Learn how to synthesize information and dramatize information.

Rationale: The final project brings together your learnings about big data and information display. Developing your own infographics can help you establish a solid reputation as an infographic "guru."

Major Activities:

1. Select a domain or area of interest to your group (e.g. voting records of candidates, social media usage patterns, skills of computer scientists, etc.).

2. Find big data (e.g. numbers, words, and/or images) and information related to the domain. (This will be Appendix 1 in your final project paper).

3. Use your expertise to analyze the data and information.

4. Prepare two "infographics" (one helpful, one misleading) based on the data and information.

5. Provide a rationale for deeming one infographic useful and the other misleading. (Hint: activity #4 in assignment 1 and activity 3 in assignment 2 should be of great benefit for this step.)

Requirements:

- Professional group presentation (20 -25 minutes) and cross examination (5 – 10 minutes)
- Written report (due 1 week after oral presentation)

Evaluation: I will be looking for the following:

- Synthesis of key ideas – Does the report synthesize key insights from personal experience, research, and class principles?
- Utility of insights – Can the ideas in the report be applied to real-world problems?
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Professor Fernandez's Instruction Manual

Almost every new product you buy has an instruction manual. Why doesn't someone issue a similar manual for the people we work with most frequently? In an attempt to bridge the gap, I've constructed a manual of tips for working with me.