THE OHIO STATE UNIVERSITY

JOHN GLENN COLLEGE OF PUBLIC AFFAIRS

Public Affairs 6510: Skills – Conveying Quantitative Data in Public Affairs

Syllabus

Spring 2016

Instructor Information

John Snedeker
2080 Blankenship Hall
snedeker.5@osu.edu
614-688-4351
Office Hours: By Appointment

Email is the best way to contact me. I check email often, and will attempt to respond to all emails within 24 hours of receiving them.

Course Information

Meeting Day/Time: Monday, 5:45-7:35 (January 11 – February 26)
Class #: 5459
Location: Page 040
Credit Hours: 1[1]

Course Description

Overview

A critical skill in today's public sector environment is the ability to effectively collect, manage, analyze, and **present** the significant amount of data needed to operate any size department or agency. The number of tools available to present data in an efficient and effective manner is large and each has their strengths and weaknesses. By studying different techniques on how best to present information we can make the decision making process more efficient and provide easier means for employees and other stakeholders to grasp critical points. Students who master this class will have very marketable skills, as they will be able to effectively present data in a number of different ways that will effectively illustrate the meaning of the data.

[1] *For each credit, please expect about an hour of in class meeting time, and 2 hours out of class work. So for a one-credit class, you should expect 14 hours of in class instruction (7 meetings at 2 hours each) and about twice that outside of class preparing and doing homework, studying and assignments (approximately 4 hours per week for 7 weeks). If you feel this becomes out of proportion on a regular basis, please let me know.*

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Course Description

This course focuses on concepts of presenting data from initial concepts to final presentation. A variety of methods are presented and discussed covering planning, data gathering, data validation, data analysis, and visual presentation, with an emphasis on presentation.

Student Learning Objectives

Upon successful completion of this course, students will be able to or will have:

- Gained an understanding of the use of data visualization techniques
- Understand what visual qualities are important to conveying data
- Manage and analyze data suing Tableau software
- Manipulate and create visualizations and dashboards in Tableau
- Utilize Tableau to support decision making and communicate with decision makers

Class Structure

Class will primarily consist of two parts:

1. The first half of the class (30 - 45 min) will consist of lecture/discussion on the data presentation techniques. This will include discussion on any additional assigned readings and topics of interest for the class.

2. The second half of the class (60 – 75 min) will be hands - on time with Tableau, and other data visualization tools. This may include some additional instruction time specific to Tableau, working with files, and working directly on the examples.

Course Materials *(Not Required to Purchase)*

1. Nathan Yau. (2011). *Visualize This: The Flowing Data Guide to Design, Visualization, and Statistics.* Indianapolis, Indiana: Wiley Publishing. Inc. (ISBN: 978-0-470-94488-2)
    a. *eBook Available through University Libraries Website (Safari – Books Online) ***Cannot be downloaded – must be viewed in web browser****

1. All other readings and course materials will be supplied by the instructor through https://carmen.osu.edu.

Students can access textbook information via the Barnes & Noble bookstore website: www.shopOhioState.com as well as from their BuckeyeLink Student Center. This information is disseminated by B&N to all area bookstores. You may buy from a store of your choice and/or shop for books (always use ISBN# for searches) online.

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Course Requirements

The following components make up the final course grade:

Class contribution:	10%
Exercise 1:	10%
Case Study 1:	15%
Case Study 2:	10%
Exercise 2:	15%
Final Excel Project:	40%

Transformation of numerical grade to a letter grade will be according to the schedule below:

A	93-100	B-	80-82	D+	68-69
A-	90-92	C+	78-79	D	60-67
B+	88-89	C	73-77	E	<60
B	83-87	C-	70-72		

Class Contribution

Class contribution is critical to making this course as valuable as possible for you and your fellow students. This includes having read assigned readings before class, active participation in conversations regarding those readings, asking questions, clarifying assignments, participating in the lab portion of the class, and sharing personal and professional experiences that can aid the class during discussions. Attendance is considered part of class contribution and lack of attendance or leaving the lab portion of the class early will reduce this portion of your grade. Lack of evidence that class readings were completed will also affect this portion of your grade.

Course Exercises / Projects

Exercise 1: Create Visualization *(Due January 25)*

Select at least one data set (posted to Carmen) and using the techniques you already have, present the data in a more meaningful manner. This can include tables, words, graphs, graphics, etc. Give a brief explanation of what each presentation represents. Additionally, if you wanted to do more, but did not know how, give a brief explanation on what you would have done if you knew the technique. This assignment will be graded by effort and not accuracy, complexity, etc. Turn it in and put forth an effort and you will get the maximum number of points. All Tableau files should be saved as Packaged Workbooks (.twbx).

This exercise will be due to the Carmen Dropbox by 5:30pm on Monday, January 25.

Case Study 1 *(Due February 1)*

Read ***Transparency in Texas: Beyond Raw Data*** (page 1-24) and select one of the case studies (*Texas School District Finance Data, Legislative Budget Board Website, City of Kyle, or City of Manor: Transparency on a Budget*). Select a government entity in

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the State of Ohio and determine their strength and weaknesses related to their presentation of data. Write a short outline (1-3 pages) highlighting what they are doing right (if anything) and what they can improve regarding how they visually present information. Includes examples (as appendices) of their good and bad visual representation.

This exercise will be due to the Carmen Dropbox by 5:30pm on Monday, February 1.

Case Study 2 *(Due February 8)*

After reading ***The MTA in the Age of Big Data: Transforming the Wealth of MTA Data into Accessible, Meaningful, Visual, Interactive Information*** and reviewing information provided by the NYC MTA to the public currently, use data provided in Carmen or data you have obtained to create two visualizations related to the MTA. Explain what the visualization is and why it is meaningful. Additionally, review the current MTA website and provide some brief critiques on positives and negatives about the visualizations they use (keep to less than 1 page)

This exercise will be due to the Carmen Dropbox by 5:30PM on Monday, February 8.

Create Visualization (Advanced) Exercise *(Due February 22)*

Using Excel and/or Tableau and the dataset provided on Carmen, create two visual representations of the data and provide brief explanations of what those representations are trying to demonstrate. All Tableau files should be saved as Packaged Workbooks (.twbx).

This exercise will be due to the Carmen Dropbox by 5:30pm on Monday, February 22.

Final Project *(Due February 29)*

With a dataset of your choice, create at least 4 visual representations that make a point or tell story about your data. Provide brief explanations about each, include your target audience. Also include the source of your dataset, as well as any important information about your dataset. Copies of the Excel, Tableau, or other file types used to create the visualization. All Tableau files should be saved as Packaged Workbooks (.twbx).

- Final Project Grading
  - The final project is worth 40 points. Points will be distributed as follows:
    - Overview and data preparation sections (5 points)
    - Analysis (15 points)
    - Executive Summary (15 points)
    - Visual appeal and overall look and flow (5 points)

Final Project due to the Carmen Dropbox by 8pm on Monday, February 29

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Course Policies

Assignment Submission

All assignments should be submitted through Carmen by the day they are due. Informing the instructor of your intention to be absent does not waive your obligation to submit assigned work. **Late work will be accepted with a one-third-letter grade penalty each day that it is late (A- to B+), unless prior approval is granted by the instructor.**

Grade Appeals

Grades on assignments are intended to reflect the overall quality of performance of the student. You may appeal your grade on an assignment if you think the grade does not reflect the quality of your performance on the assignment. To appeal a grade, submit a clear written explanation via email describing why you believe the assigned grade is inappropriate within one week after your work is returned. I will carefully consider all such appeals.

Academic Integrity

The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University's *Code of Student Conduct*, and that all students will complete all academic and scholarly assignments with fairness and honesty. Failure to follow the rules and guidelines established in the University's *Code of Student Conduct* may constitute "Academic Misconduct." Sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the University.

In the Ohio State University's *Code of Student Conduct*, Section 3335-23-04 defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and excessive quotation and paraphrasing of other's work with or without citation. Ignorance of the University's *Code of Student Conduct* is never considered an "excuse" for academic misconduct.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact the instructor.

Disability Services

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; http://www.ods.ohio-state.edu/.

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Course Schedule

Week 1: January 11

Topics:

- Welcome and Introduction to the course
- Overview of syllabus and course requirements
- Framing final project
- Introduction to Data Visualization
- Introduction to Tableau
- Explain Exercise 1 (Due January 25 @ 5:30pm)
- Read for Next Class: The Use of Data Visualization in Government (Pg. 1-17)

Week 2: January 18 (No Class)

Week 3: January 25

Topics:

- Exercise 1 Due at 5:30 PM
- Good Visualizations
- Excel Graphs
- Tableau Graphs
- Explain Case Study 1 (Due February 1 @ 5:30pm)

Week 4: February 1

Topics:

- Case Study 1 Due at 5:30pm
- Design Matters
- Hands on with Tableau
- Explain Case Study 2 (Due February 8 @ 5:30pm)

Week 5: February 8

Topics:

- Case Study 2 Due at 5:30pm
- Use of Color in Visualizations
- Additional Hands on with Tableau
- Explain Exercise 2: Create Advanced Visualizations (Due February 22 @ 5:30pm)

Week 6: February 15

- Exercise 2 Due at 5:30pm
- Advanced Tableau Techniques

Week 7: February 22

Topics:

- Exercise 2 Due at 5:30pm
- Advanced Tableau Techniques Cont.

Finals Week: February 29

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Topics:

- Final Project – Due by February 29 @ 8PM

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