Jour 405V: Data Journalism

Lemke Digital Media Lab Course, Fall 2018

School of Journalism and Strategic Media

University of Arkansas

<mark>(Ver 8-22-18)</mark>

Class Time and Location: Monday-Wednesday 11 a.m.-12:30 p.m., Kimpel 145

Instructor: Rob Wells, Ph.D.

Office: Kimpel 128

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Office hours: Mondays 12:30 p.m-1:30 p.m., Thursdays, 2 p.m.-3 p.m. or by

appointment

Course Goal: Students will learn best practices and common software tools to gather, visualize and interpret data effectively in daily journalism. With these skills, they will use data to report on a project for publication: examining student loan data for recent University of Arkansas graduates and learning how these debts affect their lives and career choices.

Course Description: The class provides an introduction to the basic data reporting skills, but it is much more than learning software and pressing buttons. This class will describe how to use data to guide and inform your reporting, and how this will change your relationship with sources and the people you cover. At each step, this class describes real-world examples of ethical issues and best practices in data reporting. The end goal is to use data to advance important journalism that helps us tell stories that better serve the public.

Cultural Diversity: This course will advance the broader goal of the Lemke Journalism Department to provide a learning atmosphere that represents a variety of perspectives. Good journalism creates well-rounded, whole pictures that tell stories from multiple points of view. For that reason, this course will examine data sources that describe a diversity of sources and viewpoints, ranging from people of different color to different income levels, different sexual orientation, and different backgrounds. For example, this class will explore datasets that describe veteran's health care outcomes throughout the state of Arkansas. We will examine how veterans of different gender, race and economic circumstances are affected. In the course of this class, students will learn the basic reporting and statistical tools to ask questions about such disparities. We

will explore how a major government agency categorizes race, the pitfalls with this data collection problem and consequences for society. We will be speaking with members of local communities, such as the African American and Hispanic communities, as well as local business leaders, about the data we develop and solicit their perspectives on our findings. These activities will permit an exploration of questions about income inequality among gender and racial lines.

The University of Arkansas, nor Dr. Wells, will not tolerate statements, behavior, tokens or insignias that deride or disparage an individual or group because of race, ethnicity, creed or personal lifestyle, when such actions or statements fulfill no educational goal.

Learning Outcomes:

1   Proficiency with Excel.
         You will be able to gather data and conduct basic and intermediate calculations using Excel. You will be able to import text and .csv files into Excel, format the data properly.

2   Basic proficiency with data visualization.
         You will learn best practices to organize your data and to present it in charts and graphics. You will be able to create a chart using Tableau Public ready for publication from a basic spreadsheet. You will create a basic interactive map from a dataset.

3   Reporting with data.
         You will understand basic ethical issues with data journalism and how data journalism can advance reporting on diverse communities. You will learn basic numeracy and how to avoid common problems with numbers. You will learn best practices for fact checking data. You will learn basic statistical concepts and best practices, and how they apply to data journalism.

4   Introduction to Coding
         You will receive an introduction to the R programming language, which is used widely in newsrooms for data gathering, statistical modeling and data visualization. At the end of the course, you will be able to execute basic R commends and perform simple calculations.

5   Data Presentation
         You will learn to use WordPress to manage and display your multimedia stories. This will include formatting photos, videos and audio and displaying text in a format appropriate for mobile news consumers.

Required Texts:

NICAR CoursePack
https://store.ire.org/products/nicar-courses-rob-wells-jour-405v-database-journalism

NICAR CoursePack is $20 online.

Required Software:
Microsoft Excel for Mac. Free with your university account or provided on School of Journalism computers
Tableau Public / Tableau Desktop. Free one-semester license to Tableau Desktop. Tableau Public is installed on School of Journalism computers.
R / R Studio. Free, open source software. Installed on Digital News Lab computers.
WordPress. Free through university accounts.

Optional Materials:

Cohen, Sarah. *Numbers in the Newsroom: Using Math and Statistics in News*. 2nd ed. Columbia, Mo.: Investigative Reporters & Editors Inc., 2014. http://store.ire.org/collections/books/products/numbers-in-the-newsroom-using-math-and-statistics-in-news-second-edition. $25 online.

Cairo, Alberto. The Truthful Art: Data, Charts, and Maps for Communication. New Riders, 2016. https://www.amazon.com/Truthful-Art-Data-Charts-Communication/dp/0321934075.

Wong, Donna. The Wall Street Journal Guide to Information Graphics: The Dos and Don'ts of Presenting Data, Facts, and Figures. New York: W. W. Norton & Company, 2013. https://www.amazon.com/Street-Journal-Guide-Information-Graphics/dp/0393347281

Data Journalism Handbook
http://datajournalismhandbook.org/1.0/en/ Free, online.

Meyer, Philip, *The New Precision Journalism*, 1991, University of Indiana Press, Bloomington, Ind.
Available free online:
http://www.unc.edu/~pmeyer/book/Chapter1.htm

Important Note About Class Technology:

All course material is prepared on Apple OSX operating system; we will be conducting exercises in the Kimpel Hall computer labs on Apple computers. Software in this class, such as Excel, also runs on Windows-based operating systems but students will find it difficult to follow the course instructions due to significant differences in the programs' user interfaces. **In other words, <u>you are on your own if you choose to do your work on a Windows-based computer.</u>**

Students will need to download the Microsoft Office for Mac (free at https://techarticles.uark.edu/microsoft/office/) and Tableau Desktop (http://www.tableau.com/tft/activation - free software keys will be provided). They need to prepare personal laptops or desktops to run this software, which means cleaning their hard drives to provide ample space and computer memory to run software such as Tableau Public. In other words, clear out the personal movies and photos to an external hard drive so you can do this class work.

Students will be given an orientation on the key software used in this class, such as WordPress, Google Drive, Excel and Tableau. Operation of these common programs on your personal computer is your responsibility; you will need to use Tableau and Excel a lot for homework and assignments. Seek campus technical support at the university bookstore if necessary.

Prerequisites:
A university statistics course. News Reporting I or equivalent in public relations or communications.
This course is designed for undergraduate journalism, public relations, advertising and communications majors. Non-journalism majors will find these skills and tools of data gathering and analysis useful in their professional fields as they enhance your ability to articulate a narrative and illustrate it with graphics.

Quizzes, memos and homework:
There will be quizzes, memos and homework during the semester worth 40 percent of your grade. These are designed to be lower-stakes assessment to test your proficiency and build your skills for the relevant assignment. The homework and memos flow into the quizzes and they flow into the assignments. The classroom work is iterative and helps students perfect the skills needed for the assignments.

Assignments:
The four assignments are worth 50 percent of your grade. Assignments are due by 11 a.m., emailed or uploaded into Blackboard.
The assignments are:
#1: Data Analysis – Student Loans
#2: Story Memo + Tableau Charts on Student Loan Data
#3: R Studio Coding - Student Loan Data
#4: Final Project on Student Loans

An assignment uploaded late (after 2 p.m., according to Blackboard) will be reduced by one grade, and will be reduced a full grade for every subsequent day.
Students with excused absences should contact me immediately about making up missed assignments.
The final assignment represents the final examination; there is no separate final examination.

Grading:
Quizzes, Memos, Homework: 40 percent
Assignments: 50 percent
Class Participation: 10 percent

Plagiarism or fabrication will result in your dismissal from class with an F for the course and a recommendation you be dismissed from the college.

Your work will be marked on the following scale:

A+: 100 – 98
A: 97 – 93
A-:   92 – 90
B+:   89 – 88
B: 87 – 83
B-:   82 – 80
C+:   79 – 78
C: 77 – 73
C-:   72 – 70
D+:   69 – 68
D: 67 – 63
D-:   62 – 60
F: Below 60

A - The work is of professional quality (for journalism "professional" track students) or high academic quality (for others). It reflects a depth of research, clarity of writing, and a complete grasp of the main concepts presented in the class.
B - The work is good but needs editing or is flawed in one of the categories mentioned above.
C – The work is weak, needs major editing or reflects an average understanding of key concepts presented in class.
D - Work fails to meet requirements and needs a complete rewrite.
F – Unacceptable.

Libel:
Any story that includes libelous material will result in an F (55 percent) Examples would be if you describe someone as a murderer in your story before he or she is convicted, or if you mistype the name of a convicted murder and thereby implicate someone not guilty of the crime.

Attendance:
You are required to attend class and it will figure into your class participation grade. An excused absence requires notification by e-mail before the start of class.
Be prepared to submit documentation to validate your absence, especially if it is for an extended period of time.

Students who miss more than six classes may have their final grade reduced by a full letter grade.

Class Communications:
Email: I will email individual students on occasion about important issues. I expect a timely reply, which is in the same day. It is your responsibility to check your email account.

I respond to email quickly, usually within an hour. I stop responding to student email at 9 p.m.

I use e-mail, WordPress and Blackboard to communicate with students.
WordPress: I will post readings, announcements and grades on the class WordPress site. You will post some homework and project materials on WordPress.
Blackboard: Grades will be posted on Blackboard. You will post some assignments on Blackboard.
It is your responsibility to check your email and Blackboard announcements.

Classroom Etiquette:
We will be working in a computer lab. Show respect for your colleagues and instructor by refraining from personal computer use during class. You are being rude to your instructor and distracting to your classmates when you engage in computer activities unrelated to class. Anyone misusing classroom computers for personal matters will receive a zero for class participation that day and may be asked to leave the class if the behavior persists.

Academic Honesty:
Please refer to http://provost.uark.edu/245.php for the academic integrity policy.

Class Weather Policy:
If the university is closed, there will be no class. If I need to cancel class, for whatever reason, I will do my best to notify you by e-mail and notify the journalism office: 479-575-3601.

CEA, Center for Education Access:
If you are a student with special needs, contact me personally. The CEA is at 479-575-3104. I will accommodate students who require assistance.

Emergency Preparedness Plan:
The university has a new emergency plan; review it at http://emergency.uark.edu/

About the Instructor:
Rob Wells is an assistant professor of journalism and has been teaching at the University of Arkansas since the Fall 2017 semester. He earned his doctorate in philosophy in Journalism Studies at the University of Maryland's Philip Merrill College

of Journalism. As an adjunct instructor, he taught reporting classes at the Merrill College between 2010-2016. He was a 2012 Reynolds Visiting Professor at the University of South Carolina, Columbia, a program sponsored by the Donald W. Reynolds National Center for Business Journalism.

Wells is the former deputy bureau chief for Dow Jones Newswires/Wall Street Journal in Washington, D.C., where he oversaw 22 reporters who covered real-time business, economics and financial news in the nation's capital. Prior to this, he was a business reporter for Dow Jones, Bloomberg News and The Associated Press. He holds a master's degree in liberal studies from St. John's College in Annapolis, where he studied philosophy, literature, history and political science. His academic research is in business journalism and history, along with data journalism and technology. He is writing a book on the future of business journalism, under contract with the University of Illinois Press, scheduled for Fall 2019.

Rubric: Assessment of Student Class Participation

In this class, students must take responsibility for their own learning. Class participation/discussion represents 10 percent of your grade in Jour405V. This rubric is designed to give students a roadmap on how they will be assessed and graded on their participation and discussion.

1) Class Discussions
Content. Students who excel will display some or all of the following qualities, such as relating the discussion to current affairs; speaking up when they do not understand; making relevant points; asking topical questions; displaying curiosity.
In addition, these students advance class discussion by offering alternative perspectives with supporting data/   evidence. They also can challenge the instructor's ideas, ideas of other students, or those presented in readings   or other course materials.
Frequency. Students who excel display these qualities in every class session.
Preparation. Students who excel have questions or observations prepared and they bring assigned readings to class. This class will closely examine texts we read for language, structure and argument. Students who fail to bring the text aren't prepared for class, even if they have read the assignment. Students also will view assigned videos and bring questions or observations to class.

Behavior That Impedes Class Discussion includes using Facebook/Twitter/WhatsApp (any social networking site), web surfing or texting in class. If you are absent or late to class, you miss the opportunity to participate, and this will be reflected in your grade.

Student Self-Assessment. Students also will assess their own contributions in a one-page essay:
      1.   Propose what grade you deserve for class participation thus far, and
      2.   Defend your proposed grade with evidence from the classroom.

3.   Students who can't find enough evidence to make a case for an excellent grade can spell out specific   steps they will take to improve.

2) Group Work

Active participation means assisting your fellow students to help solve problems in the workshops.

Student Peer Assessment for Group Work. Students may be asked to anonymously rate each other's work in group settings.

3) Preliminary Assessment

By March 7, the professor will post a provisional grade for class discussions/participation on Blackboard.

Jour 405v Fall 2018 Schedule

Week	Day	Topic	Reading	In-Class Exercise	Test/Assignment/Homework
#1:	20-Aug	Basic Excel	NICAR Coursepack	Email to students; Intro Excel w Exercise #2, WordPress	**Homework:** Profile, data background
	22-Aug	Basic Excel	Data Journalism Handbook	Data Dictionary, Part 1. Intro Excel; WordPress; Exercise 2, tuition	**Homework:** Finish Exercise 2, tuition
#2:	27-Aug	Basic Excel	Cohen, "Numbers in the Newsroom"	Analyzing Change; WordPress; Exercise 4 Rates and Ratios, Student Loan Data. Class practice: Chicago Transit	
	29-Aug	Basic Excel	Cohen, "Numbers in the Newsroom"	Exercise 5: Crime Rates and Ratios. FBI data for Arkansas	**Quiz:** Basic Excel. Topics entering data, cursors, formatting, sum, average, median, change, percent change. Practice using change, percent change and sorting
#3:	3-Sep	Rates and Ratios	Meyer, "New Precision Journalism"	Exercise Filtering: Crime Rates and Ratios. FBI data for Arkansas	**Homework:** Exercise 5 Crime Rates, Numbers in the Newsroom
	5-Sep	Rates and Ratios	Exploratory Data Analysis	Student Loan Data; Data Dictionary Part 2	
#4:	10-Sep	Data Analysis	VA Data; Reading data dictionary	Student Loan Data; Pivot Tables	**Homework:** Pivot Tables
	12-Sep	Data Analysis	Reading data dictionary	Pivot Tables; Exercise 8 Univ. Incidents	
#5:	17-Sep	Data Analysis	NICAR coursepack: Pivot Tables	Pivot Tables - Exercise 9 - Salary data	**Assignment #1: Student Loan Data - Debt / Student Ratio**
	19-Sep	Data Analysis	NICAR coursepack: Pivot Tables	Student Loan Data / Tableau	
#6:	24-Sep	DataViz	Tableau Basics	Student Loan Data / Tableau	**Homework:** Tableau
	26-Sep	DataViz	Importing Data into Tableau; Charts	Student Loan Data / Tableau	
#7	1-Oct	DataViz	Exploratory data analysis with Tableau: Importing, continue with charts	Student Loan Data / Tableau	**Quiz:** Tableau / Pivot Tables
	3-Oct	DataViz	Exploratory data analysis with Tableau	Student Loan Data / Tableau	
#8	8-Oct	DataViz	Mapping in Tableau	Student Loan Data - Tableau	**Assign #2: Story memo + Charts - Student Loan** Data in Tableau
	10-Oct	DataViz	Mapping in Tableau	Student Loan Data - Tableau	

#9	15-Oct	Fall Break!			
	17-Oct	DataViz	Data Cleaning / R Studio Introduction	Data cleaning	**Homework: R Studio**
#10	22-Oct	DataViz	R Studio coding introduction: What does R stand for?	R Studio	**Homework: R Studio**
	24-Oct	Data Analysis	R Studio - creating a database	R Studiocoding: Importing Data, Creating a Database	**Quiz: Basic R Studio commands**
#11	29-Oct	Data Analysis	R Studio - Joining tables	Joining tables. Using the Fl_nativity and FL_poverty tables	
	31-Oct	Data Analysis	R Studio joining tables - data cleaning	Calculations in R Studio: Student Loan Data	**Assign #3: Using R Studio for analysis of Student Loan Data**
#12	5-Nov	Data Analysis	R Studio creating database #2: Student Loan	Analyzing Student Loan data	
	7-Nov	Data Analysis	R Studio creating database #2: Student Loan	Analyzing Student Loan data	**Memo:** Final Project
#13	12-Nov	Data Analysis	Tableau - R Studio- Excel	Final Project: Clean data.	
	14-Nov	Data Analysis	Multimedia Production - WordPress	Final Project: Build database in R Studio	
#14	19-Nov	DataViz	Multimedia Production - WordPress	Final Project: Visualize in Tableau	
	21-Nov	DataViz	Multimedia Production - WordPress	Online Class	
	22-Nov	Thanksgiving Break			
#15	26-Nov	DataViz	Multimedia Production - WordPress	Final Project: Visualize in Tableau	
	28-Nov	DataViz	Multimedia Production - WordPress	Final Project	
#16	3-Dec	DataViz	Multimedia Production - WordPress	Final Project	
	5-Dec	DataViz	Multimedia Production - WordPress	Final Project: write	**Final Project due Friday, Dec. 8**