MMC 6429 News & Numbers / spring 2013

Section 14BC / Periods 3-5 Tuesdays, Weimer 1090

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If office hours are inconvenient, make an appointment. Or if my door is open, drop in.

My teaching philosophy is to hold you to high expectations and do everything in my power to enable you to meet them. My office is open to anyone who would like more explanation on any subject relating to this course. I don't give extra credit. But I will gladly give my time and talent if I can do more to help you meet the expectations of this course.

Course Description

The purpose of this course is to equip journalists to correctly interpret and use numbers in a manner that makes sense for listeners, readers and viewers.

This is a course in applied math for journalists. Math, statistics and probability are taught to the extent they can enable journalists to accurately report on numbers and correctly interpret polls and events. This is less a course in math than one in numeracy – literacy about numbers.

This is not a course in statistics suitable for a master's thesis. It is not a course in data visualization or database reporting, though the principles taught in this course are important for both.

Eligible Students

The course is required for students in the professional master's program in the UF College of Journalism and Communications. It is open to graduate students in other programs who believe the course would be beneficial to their studies – with the understanding that this is not a statistics course suitable for a master's thesis and that you already know how to practice journalism.

Journalism Skills Presumed

This course covers math. It presumes you already know how to be a journalist – specifically, that you know the basics of public affairs reporting. The course presumes you value the fourth estate role of journalism: a check on government and public institutions. It presumes you know generally how to gather information from interviews and public documents. And it presumes you know how to convey information succinctly, clearly and neutrally to a lay audience using standard journalism conventions. In other words, this course isn't going to teach you how to write a lede, gather audio/video or follow AP style. It presumes you already know how.

Course Plan

The course will be taught in two parts:

1. First half: Learn numeracy
2. Second half: Apply numeracy to news topics involving numbers

Course Objectives

By the end of the course, students should be able to:

- Use logic and skepticism to evaluate assertions and numbers
- Calculate percentages, averages, area, volume, per-capita figures and basic probabilities
- Place numbers in a context most people can understand
- Distinguish among coincidences, correlations and causal relationships
- Separate a trend worth reporting from a bogus one
- Evaluate and interpret public opinion polls
- Understand statistics sufficiently to evaluate claims and report on research studies
- Employ online analytics to identify trends
- Discern when and how human biases cause us to misinterpret numbers
- Create a news story reporting on a poll
- Create a news story involving the U.S. economy
- Create a news story from a corporate financial report
- Create a news story from a government report such as census figures
- Create a news story from an academic study about education
- Create a news story from an academic study about health or science
- Know how to use numbers to create meaningful sports analysis
- Leap tall buildings in a single bound

Laptop

Bring your laptop to class. It can be either a Mac or PC with a spreadsheet program (I will be teaching Microsoft Excel; Apple's Numbers program is also OK) and a Web browser.

Calculator

Bring a calculator to class – a dedicated calculator, not your cellphone or laptop. That's because you'll want to be accustomed to using this calculator before taking the two exams.

The only type of calculator allowed for the two exams is a nonprogrammable one. Typical examples include solar calculators, $5 calculators and scientific calculators such as the TI-30. Perhaps 95 percent of calculators fit this description. Bottom line: If the calculator is just a calculator and it displays only one row of numbers, it's acceptable.

Unacceptable are any devices that can store data (and thus could be used for cheating) like a programmable calculator with a multi-line display, such as the TI-84. Also prohibited is any type of cellphone or mobile device that can store data or access the Internet, such as an iPod Touch, Kindle or iPad.

Textbooks

Required:

- Joel Best, "Damned Lies and Statistics: Untangling Numbers from the Media, Politicians, and Activists" (updated edition, 2012). ISBN: 978-0-520-27470-9.
- Joel Best, "Stat-Spotting: A Field Guide to Identifying Dubious Data" (2008). ISBN: 978-0-520-25746-7,

Recommended:

- Herbert Asher, "Polling and the Public: What Every Citizen Should Know" (eighth edition, 2012). ISBN: 978-1-60426-606-1. (This book originally was required. It is an excellent book and worth reading. However, I have determined that I can give you the basics of polling in one class, making this book supplemental rather than required.)

Other Books I Recommend If …

- If you want a basic book on math for journalists: Kathleen Woodruff Wickham, "Math Tools for Journalists" (second edition, 2003, Marion Street Press).
- If you want a basic book on math for journalists with some statistics: Charles Livingston and Paul Voakes, "Working with Numbers and Statistics: A Handbook for Journalists" (2005, Lawrence Erlbaum)
- If you want more advanced training on statistics for journalists: Philip Meyer, "Precision Journalism: A Reporter's Introduction to Social Science Methods" (fourth edition, 2002, Rowman & Littlefield).
- If you want an accessible, general interest book about numeracy and probability that was a best-seller in 2012: Nate Silver, "The Signal and the Noise: Why So Many Predictions Fail – But Some Don't" (2012, Penguin Press).

Online Resources

- Numeracy: Carl Bialik, Numbers Guy blog, Wall Street Journal
- Numeracy and Polling: Nate Silver, FiveThirtyEight blog, New York Times
- Polling: Advice for journalists from the American Association for Public Opinion Research
- Polling: Questions journalists should ask, by the National Council on Public Polls
- Statistics: Computing averages and percentages by Robert Niles
- Statistics: A primer for journalists by Leighton Klein

Grade Allocation

"Damned Lies" paper	5%
"Stat-Spotting" paper	5%
Story critiques (3 X 2 points each)	6%
Four highest scores out of six assigned stories	40%
Midterm exam	22%
Final exam	22%
Total	**100%**

Grading Scale

	Percent		Percent		Percent		Percent
		B+	89-87%	C+	79-77%	D+	69-67%
A	100-93%	B	86-83%	C	76-73%	D	66-63%
A-	92-90%	B-	82-80%	C-	72-70%	D-	62-60%

Scores are rounded to the nearest whole point: 89.4 rounds down to 89 (B+) while 89.5 rounds up to 90 (A-). The UF grading policy details how GPA is computed.

Assignments

"Damned Lies" paper (5%). Write a paragraph on each of five ways in which journalists contribute to public misunderstanding of numbers and suggest a solution. As you read the book, mark each time the author refers to the media (which he does often), and pick five themes that interest you. For example, the author documents several ways in which journalists magnify the extreme and thus promote misunderstanding about what's normal. Find five other themes and write about those. Paper should be about two to three pages, double-spaced. To attribute the book, write the page number in parentheses. Due at 9:35 a.m. Jan. 15.

"Stat-Spotting" paper (5%). Write a two-page paper in table form summarizing each of the 32 numerical errors identified by the author and offer your suggestion for how journalists should respond to avoid or fix those errors. I've done the first three for you as a template. Copy and paste the following table into your word processor and complete the rest, C2 through H3. Due at 9:35 a.m. Jan. 22.

No.	Numerical Issue	Journalists Should
	BACKGROUND	
B1	Statistical Benchmarks: Numbers that conflict with benchmarks such as 4 million babies born annually	Know numbers such as 2.5 million deaths per year to question claims such as 4 million spouse-abuse deaths annually
B2	Severity and Frequency: In general, the worse things are, the less common they are	Look for dramatic anecdotes improperly associated with big numbers; an outlier is uncommon
	BLUNDERS	
C1	Slippery Decimal Point: Numbers that seem surprisingly small or large.	Do the math

Story critiques (3 X 2% each; 6% total). Write a paragraph up to a page, double-spaced, about a news story from a professional journalism outlet (not student media) that used numbers either correctly or incorrectly in a meaningful way. If the use was correct, describe why it was correct. If the use was incorrect, identify a solution or alternative wording. Staple a copy of the news story to the critique. If you critique a TV or radio story, attach either a Web version of the story or a transcript. If you learned of the error from a third party (a Twitter post, a blog, etc.) be sure to acknowledge that source in the critique. Note from the schedule that each critiques is to identify a specific type of error: percent (Jan. 29), average (Feb. 5), and probability or statistic (Feb. 12).

Stories (4 best of 6 X 10% each; 40% total). These are publishable (or broadcast-ready) news stories (500 to 750 words if written; 2 to 3 minutes if broadcast) that use numbers in a meaningful way. These stories form the core work product of the class. Thus, you are to produce at least the first five stories so that you learn these concepts – even if you're content with your scores from the first four news stories. We'll discuss more about the specific requirements of these stories as they are due. The first is due at the start of class on Feb. 19. See the tentative schedule below for other due dates.

I presume that most of you will want to produce written stories as if for a website for a professional (not student) news organization, because that's the fastest way to produce the story. If you wish to create a radio or video story that uses numbers in a meaningful way, that's fine, too. Just make sure that the numeracy part is the core of the story, and not just an aside.

Please note that, per graduate department rules, each story produced for this class must be original for this class. It cannot have been written or aired previously. However, you are welcome to submit what you do for this class to a professional news organization or WUFT.

Each one of these stories must be newsworthy, use numbers correctly and involve one or two interviews. The grading rubric is:

- 50% will be on content (significance of topic, proper use of numbers, range of sources)
- 50% of the grade for each story will be on mechanics (grammar, style and clarity, and audio/video quality if appropriate)

Written stories are due in paper, in person, at the start of each class, 9:35 a.m. If you're going to be late or absent, have a friend bring the story for you to class. Don't email it to me.

If you've produced an audio or video story, bring a paper transcript to the start of class and then email me either the audio/video file or a link (such as in Dropbox) to the audio/video story.

Exams

The midterm exam, on Feb. 26, will be a fill-in-the-blank math test. It will cover the topics from the first seven classes. Here's a sample question: What makes an opinion poll scientific?

The final exam, on April 23, will be comprehensive. It will involve a mix of multiple-choice and short-answer questions about the topics discussed throughout the semester.

You will be able to use a calculator (see section above for details) for each exam.

Deadlines

All assignments are due at the start of class: 9:35 a.m. Journalists must meet deadlines, so late assignments will not be accepted and will count as a zero. If you are ill, have a classmate or friend turn in the assignment for you before it is due. No emails are accepted.

Attendance
Attendance is expected of graduate students. If you miss a class, you are responsible for obtaining notes from a classmate and catching up with that day's lesson. Although attendance is not part of the course grade, missing more than three classes (20 percent) during the semester for reasons other than those allowed by the UF attendance policy will be interpreted as a failure to take your studies seriously and will be reported to the associate dean for graduate studies.

In other words, if you miss class because of illness, religious observation, personal emergency or a one-time chance to gain professional journalism experience: no problem. If you miss often because you'd rather sleep and let a friend take notes for you: problem.

Electronic Devices
Cellphone use in class is verboten. Why? My duty is to create a learning environment in which you have the greatest chance of success. Because the cellphone is a distraction, it hurts your chance of success. Thus, I cannot allow cellphone use in class.

Research has disproven the claim that students today can listen *and* text. The brain can concentrate on one task amid chaos (it's why you can focus on one conversation at a loud party) but it cannot simultaneously do two things well. Multitasking is a myth. It's why people who drive while using a cellphone are four times more likely to get in a serious accident.

Laptop use in class must be confined to appropriate task, such as use of a spreadsheet. Laptop use to check email or Facebook during class is forbidden.

Academic Integrity
University of Florida students live by an honor code that prohibits academic dishonesty such as cheating. Students have an affirmative obligation to know what those policies prohibit. If you are unsure, ask me in advance.

When I discover cheating, I fail all the students involved – not just for that quiz or test, but for the entire course. I also send the details of the case to the Dean of Students Office.

Students with Disabilities
If you would benefit from disability-related accommodations, contact the Disability Resource Center as early in the semester as possible. The center will provide documentation so appropriate accommodations can be made. The center is in Reid Hall, 392-8565.

Help With Coping
The UF Counseling and Wellness Center is a terrific, free resource for any student who could use help managing stress or coping with life. The center, at 3190 Radio Road on campus, is open for appointments and emergency walk-ins from 8 a.m. to 5 p.m. Monday through Friday. To make an appointment or receive after-hours assistance, call 352-392-1575.

Tentative Schedule

	Date	Topic	Exam	Assignments
1	Jan. 8	Accuracy and Logic		
2	Jan. 15	Percentages and Comparisons		Paper on lessons for journalists from Best, Damned Lies
3	Jan. 22	Average		Paper on table listing stat-spotting tips from Best, Stat-Spotting
4	Jan. 29	Probability		Critique 1: percent
5	Feb. 5	Statistics		Critique 2: average
6	Feb. 12	Polling		Critique 3: probability or statistic
7	Feb. 19	Numbers and human biases		Story 1: Opinion poll
8	Feb. 26	Online analytics	Midterm	
	March 5	No class; spring break		
9	March 12	Covering the economy		
10	March 19	Covering business		Story 2: Economy
11	March 26	Covering government		Story 3: Financial report
12	April 2	Covering education		Story 4: Government figures
13	April 9	Covering science & health		Story 5: Education study
14	April 16	Covering sports		Story 6: Health study
15	April 23	Final exam	Final	