



Star of "The Paper" Michael Keaton makes a crucial call to the graphics department. (No, not really.)

**IN**

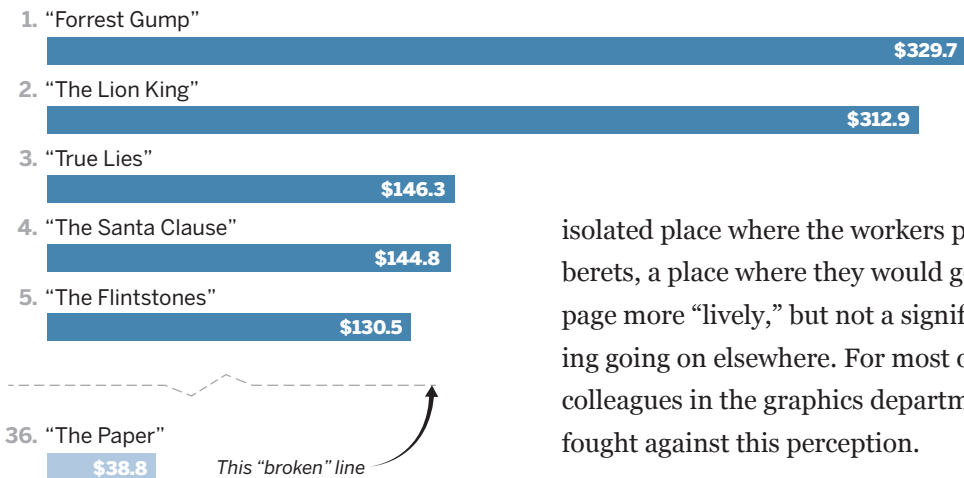
1994, before many if not all members of this class were born, Ron Howard directed a movie called "The Paper," which looked at 24 life-changing hours in the life of a fictional New York City tabloid and the people who worked there.

At the time, I was new to a larger newsroom myself, and was keen to see how accurate the movie was. In many ways, the film is a reasonably realistic and gritty portrayal of life at a major metropolitan daily, starring long hours, a good deal of swearing and the exhilaration of chasing the big story. I was a little disappointed, however, to find that the only mention of graphics throughout The Paper's 112 minutes involved the editor's displeasure at a drawing to accompany a story on a certain kind of surgical implants ("It looks like a map of Florida.")



**Top-grossing movies of 1994**

In millions of 1994 dollars

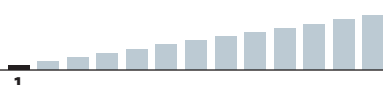


This "broken" line represents the fact that this list is non-consecutive (i.e., it's missing some numbers).

SOURCE: IMDB

Disappointed, perhaps, but not all *that* surprised: To many working reporters and editors in the mid-90s, a newspaper's graphics department was a quiet and

isolated place where the workers played with crayons and toys and wore berets, a place where they would go if they needed a "doodad" to make a page more "lively," but not a significant part of the serious news-gathering going on elsewhere. For most of my career in journalism, I (and my colleagues in the graphics departments in which I've worked) have fought against this perception.



## CLASS INFO

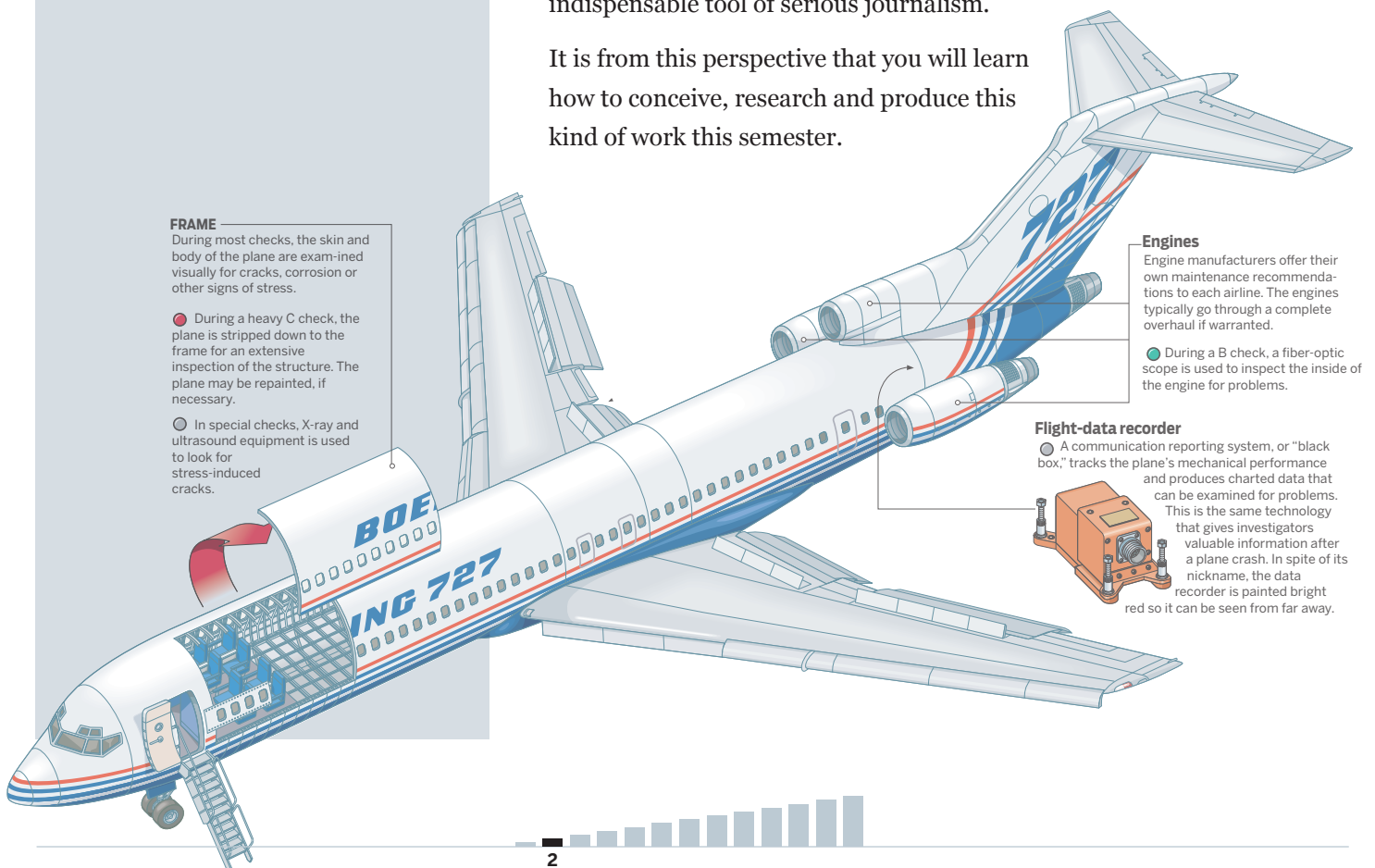
<b>COURSE:</b>	MSCH-J 464
<b>NUMBER:</b>	9621
<b>TIME:</b>	TR 10:45 - 12:45
<b>PLACE:</b>	FF 005
<b>INSTRUCTOR:</b>	Steve Layton
<b>OFFICE:</b>	FF M030E (Stack 2)
<b>OFFICE HRS:</b>	W 10-11* R 1-2*
<b>E-MAIL:</b>	<a href="mailto:stlayton@indiana.edu">stlayton@indiana.edu</a>
<b>PHONE:</b>	(847) 502-7053

\*Or by appointment

TWO DECADES ON, you don't need me to tell you that the media landscape has changed drastically from the time "The Paper" was made. Changes in technology, the habits and desires of the readership and, indeed, the world economy have forced forward-thinking news organizations to rethink every attribute of their business, including how they go about presenting the news. Fortunately for those of us who are advocates for visual journalism, this has presented a greater opportunity for informational graphics to take their rightful place in the still-vital-important world of journalism and to become a more prominent part of the presentation of news in almost every format.

What's more, the buzz phrase "data visualization" is heard frequently, not just in newsrooms but in many other industries as well. As the amount of available data has exploded, so too has the craft of using visual means to make sense of this data. Well beyond supplying a small piece of background in a one-column space, detailed, expansive and visually complex infographics are presented in a variety of ways, from large posters and books to animations to interactive online presentations. Whereas graphics in 1994 might have been used to add a little "eye candy" to serious pieces of journalism, they are now a meaningful and often indispensable tool of serious journalism.

It is from this perspective that you will learn how to conceive, research and produce this kind of work this semester.



### FRAME

During most checks, the skin and body of the plane are examined visually for cracks, corrosion or other signs of stress.

● During a heavy C check, the plane is stripped down to the frame for an extensive inspection of the structure. The plane may be repainted, if necessary.

○ In special checks, X-ray and ultrasound equipment is used to look for stress-induced cracks.

### Engines

Engine manufacturers offer their own maintenance recommendations to each airline. The engines typically go through a complete overhaul if warranted.

● During a B check, a fiber-optic scope is used to inspect the inside of the engine for problems.

### Flight-data recorder

● A communication reporting system, or "black box," tracks the plane's mechanical performance and produces charted data that can be examined for problems. This is the same technology that gives investigators valuable information after a plane crash. In spite of its nickname, the data recorder is painted bright red so it can be seen from far away.

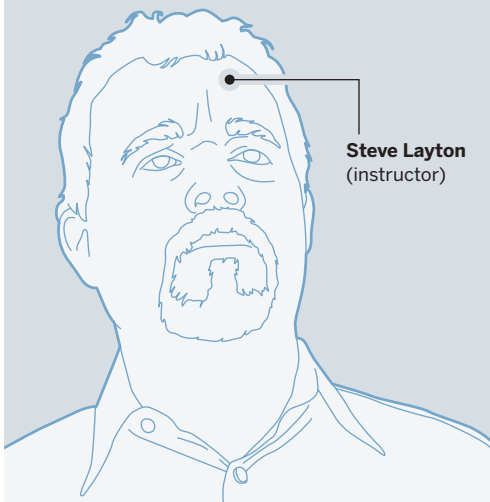
## CLASS INFO

I am an Englishman who has lived most of his life as an American. Before coming to IU in 2010, I worked for almost 20 years in newspaper graphics departments, including the last 16 years at the Chicago Tribune, where I was Graphics Editor and later Senior Artist.

I have won numerous awards for my graphics and design work, which I keep in a drawer somewhere, and in 2004 I was a small part of a large project on airline gridlock that was awarded that year's Pulitzer Prize for Explanatory Journalism.

During my time at the Tribune, I took part in three major redesigns and witnessed firsthand and on a day-by-day basis the accelerating pace of change that continues to transform the world's media companies.

I am a graduate of the University of Florida.



**Steve Layton**  
(instructor)

## OBJECTIVES + OUTCOMES

Welcome to J464!

My goal is that you will leave this class with a solid understanding of what constitutes an effective informational graphic as well as the ability to render a variety of different types of graphics, from serious news stories to light-hearted features, from the clear and direct to the complex and engrossing.

You will learn the history of graphics, their prominence in today's media and their promise for the future. You will develop and refine your visual skills, enhancing your ability to illustrate and design so that your graphics have maximum impact and help readers/users better comprehend important events, draw in the curious with essential and arresting visual information and lead them skillfully through complex data in a logical and appealing way.

We will focus on building skills to report and write for graphics, using programs like Excel to create valuable data sets that we can turn into charts. We'll isolate key information and focus on how best to convey that information in a visual way.

In this class, we will concentrate on developing your fundamental knowledge of reporting and producing infographics. Our primary tool for the former will be Adobe Illustrator. Don't be concerned if this class is your first exposure to this program: we will undertake a series of exercises that will allow you to master its basic functions, from creating shapes to drawing diagrams with the pen tool to using and manipulating its charting functions. After the Thanksgiving break, we will explore a few online applications, like Highcharts, Tableau and Timeline.js, to provide you with some experience creating interactive graphics.

If this sounds scary today, worry not: Learning any skill, from playing an instrument to speaking a language, requires practice. Sometimes a lot of practice. To truly incorporate a skill means you must practice it to the point that it can be performed without your thinking about it. Mastering computer skills removes the barrier of your being concerned with making a program behave the way you want it to, so you can devote your full intellectual capacity to creativity. As you are undertaking new tools in this class, please remember: everything can be learned, and in a class like this, learning new skills will open up worlds of possibilities.

## CLASS WEBSITE

You will be posting images of your work, reflections on your process and other information on the class' website, [j464.net/f17](http://j464.net/f17).



This is a simple WordPress-based site, and does not require any coding or other skill to create your posts. We'll go over this procedure early in the semester, well before your first graded project.

After each project, you will post a reflection on this site that details your learning and your analysis of the final submission, as well as any explanation of either the content of your work or its style. The post will link to a PDF of your project so it can be viewed in detail.

A brief word of caution, however, about these magnificent machines: learning computer skills is *not* the primary goal of this course. Virtually nothing I learned a quarter of a century ago about software is of great value to me now — except that mastering Micrografx Designer in 1990 taught me *how* to learn software. While we will spend a good deal of our time learning how to use programs, it is learning the principles of graphic journalism — the ability to identify and represent information in a compelling visual way — that will prove more valuable. This is a “hands-on” course, and we will make much use of the Macs here in FF 005. But the computers are only a part of the equation. This class will stress the importance of responsible and intelligent journalism along with the importance of developing your ability to produce high-quality visuals.

## VALUES + COMPETENCIES

IU's Department of Journalism is accredited by the Accrediting Council on Education in Journalism and Mass Communications. ACEJMC has articulated a list of core values and competencies which it expects all journalism majors to learn by the time they graduate.

You can see the complete list at

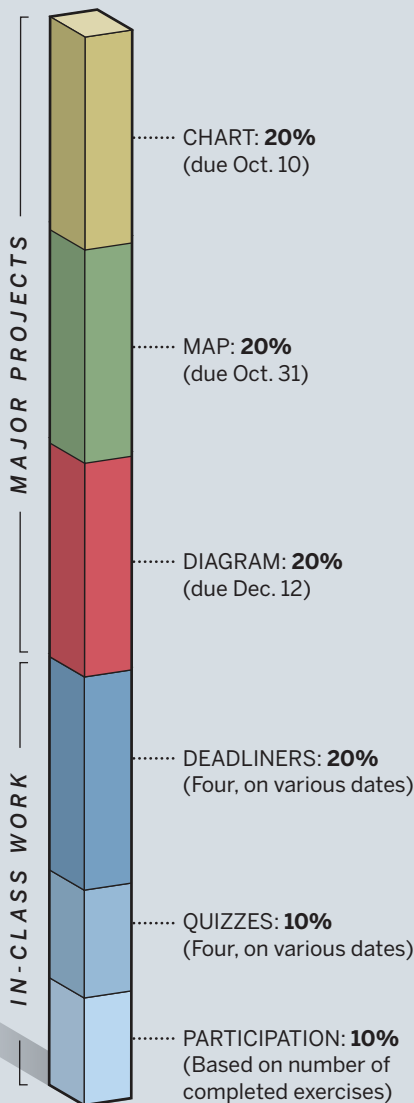
<http://journalism.ku.edu/acejmc-professional-values-competencies>

but in this class, we will particularly emphasize the following values:

- understand concepts and apply theories in the use and presentation of images and information;
- think critically, creatively and independently;
- conduct research and evaluate information by methods appropriate to the communications professions in which they work;
- critically evaluate their own work and that of others for accuracy and fairness, clarity, appropriate style and grammatical correctness;
- apply basic numerical and statistical concepts;
- apply current tools and technologies appropriate for the communications professions in which they work, and to understand the digital world.

## GRADE STUFF

For grading purposes, the major projects make up three-fifths of your final grade; the rest will be based on your quizzes, deadline assignments and your participation in class, measured by your compiling a collection of your in-class exercises.



## THE WORK WE'LL DO

Five sections comprise J464, beginning with graphic foundations, proceeding with each of the three major “food groups” of informational graphics — charts, maps and diagrams — and ending with a brief exploration of interactive graphics using online tools. As we study each of these, we will learn new skills and incorporate them into three major graphics projects: a chart-based infographic, an infographic that includes a significant geographic component, and an explanatory diagram. Each will be uniquely researched and produced as “print” versions, and must be printed in color and turned in.

You will have the opportunity to create your project graphics based on subject matter that is of particular interest to you. I will be available to help guide your choices, help you identify viable sources and provide feedback and suggestions as your work progresses.

We have 30 class sessions between our first day and the deadline for your final project. Most sessions will include a short lecture, some instruction in how to use the programs (primarily Excel, Illustrator and Photoshop, but also incorporating some online resources), and exercises in creating a variety of informational graphics. For these, you will at times work in two-person teams. We will have four brief quizzes, and four graded “deadline” assignments, in which you will produce a finished graphic within the two-hour class session. “Deadliners” are designed to allow you to practice your skills in graphic journalism and to replicate real-world situations in the classroom. Quizzes will reinforce points from lectures and computer skills. They are short and a relatively small part of your grade — just 10 percent — but they do count.

Class sessions will regularly feature how-to tutorials as well as skills-building creative exercises, where you must produce a graphic based on information you will either be given or that you will have to go and find. (These will not be graded, but their completion determines your “participation” score, which is another 10 percent of your grade).

You can see the dates for project submissions, Deadliners and quizzes in the calendar section of this syllabus, but bear in mind that these dates are subject to change depending on our progress. (They will only ever change to a later date, never an earlier one, and I will give you advance warning if and when this occurs.)



**CREATIVE CLOUD**



As an IU student, you have access to Adobe Creative Cloud and the latest versions of the Adobe software. We will use these programs extensively during class sessions, and you can download the software (in either Mac and Windows) at no charge on your own computer. There are more than a dozen software packages available through CC, and you can install as many or as few as you like.

To download your applications, go to [iuware.iu.edu](http://iuware.iu.edu)

... and follow the instructions there. We will be staying up to date with any updates throughout the semester. Through IUWare, you can also obtain Microsoft's Office software, which includes Excel, as well as a few other applications. It's all free, so take advantage!

**PROCEDURES + MATERIALS**

I will use Canvas to provide you with materials for in-class exercises and tutorials, and will post handouts and lecture PDFs there.



Two-Step Login (Duo) will be required for all students beginning Nov. 2. Be sure to bring your primary device (like a cellphone or tablet) to labs,

so you can log in to secure IU systems. Make sure you have a backup device, like a hardware token or Google Voice. If you get stuck without a working device, the UITS Support Center can give you a bypass code, but it takes up to 20 minutes (not great for time-sensitive class activities).

If you still need to set up Duo, get started at: [twostep.iu.edu](http://twostep.iu.edu)

Learn more about recommended devices at: <https://kb.iu.edu/d/anfl>

For help resources, see: <https://kb.iu.edu/d/aluu>

On the first day of our class, you will create a folder inside our IU Box folder so that you can easily save and access all your in-class work. Much of our in-class work will stretch across two or more class sessions, and you will also need to get to your work outside of class on occasion.

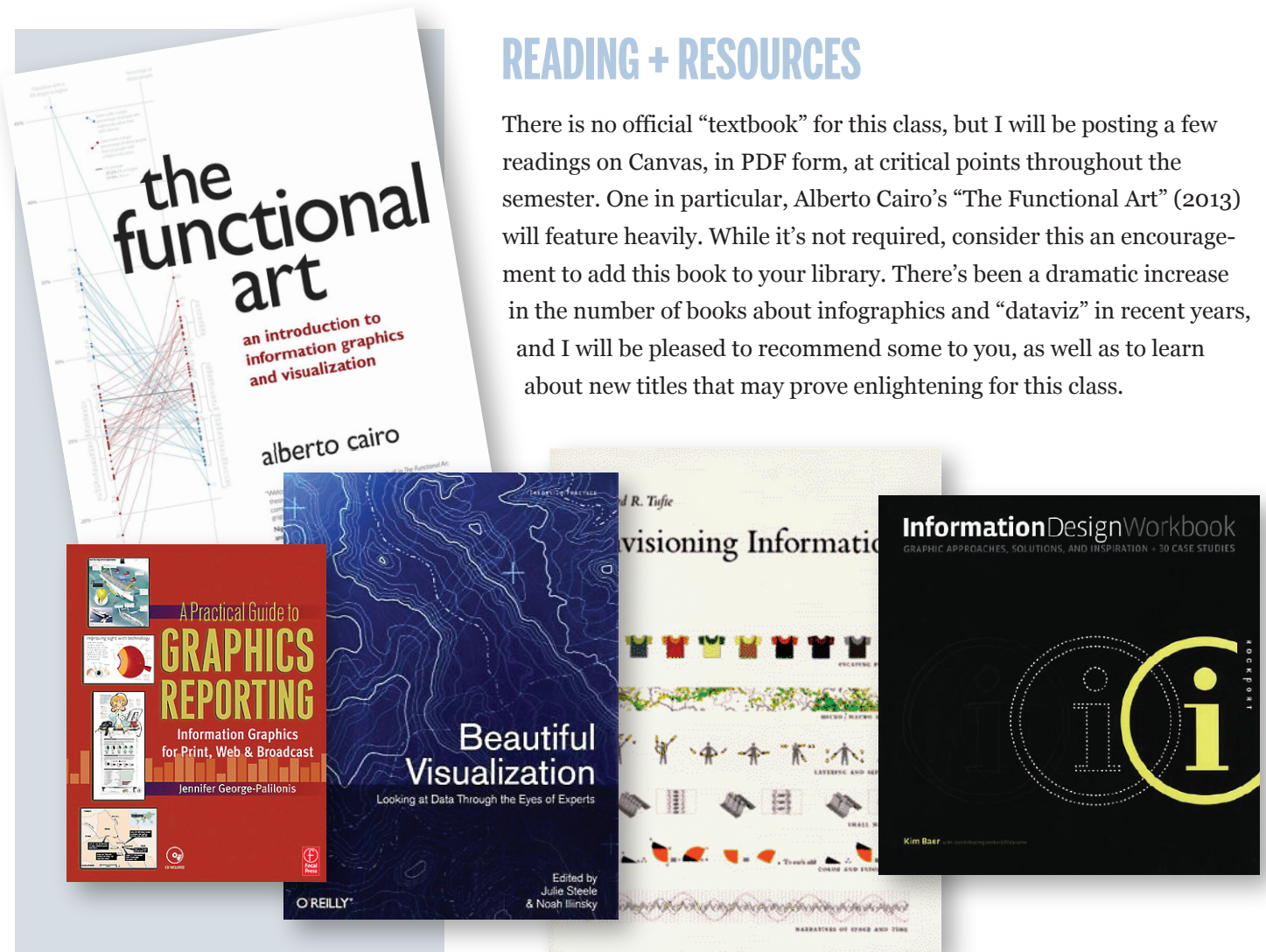
You will submit the three projects as color printouts and as online files. Color printing is available through several printers in Franklin Hall; be sure, however, you are not printing too many versions of your work. The in-class deadline assignments (A.K.A. the "Deadliners") will also be submitted on Canvas, and you will be asked to print a version of your finished work. Finally, you will be submitting in-class work to Canvas as part of your "participation" grade. You can submit this work even if you have to miss a class class — and there is no late penalty for participation!

There are no required materials In J464, but you will want materials handy to sketch ideas while you are in class. A sketchbook you like and a few drawing pencils, therefore, are strongly recommended.



## READING + RESOURCES

There is no official “textbook” for this class, but I will be posting a few readings on Canvas, in PDF form, at critical points throughout the semester. One in particular, Alberto Cairo’s “The Functional Art” (2013) will feature heavily. While it’s not required, consider this an encouragement to add this book to your library. There’s been a dramatic increase in the number of books about infographics and “dataviz” in recent years, and I will be pleased to recommend some to you, as well as to learn about new titles that may prove enlightening for this class.



### SUGGESTED READINGS

- “The Functional Art” by Alberto Cairo (2013)
- “A Practical Guide to Graphics Reporting” by Jennifer George-Palilonis (2006)
- “Beautiful Visualization” by Julie Steele (2010)
- “Envisioning Information” by Edward Tufte (1990)
- “Information Design Workbook” by Kim Baer (2010)



For building computer skills, we will be doing a series of step-by-step handouts at various times to help you work toward mastering the necessary software. Additionally, I wholeheartedly recommend you take advantage of Lynda.com’s on-line tutorials, which will help bring you up to speed on hundreds of software packages and allow you to learn at your own pace. Lynda is no longer directly available through IU, but you can get full access through the Monroe County Public Library: [mcpl.monroe.lib.in.us](http://mcpl.monroe.lib.in.us) (you must have a library card to do this).

If you’re more of a “book person” when it comes to learning applications, I prefer Adobe’s “Classroom in a Book” series (and there are numerous similar ones available in any large bookstore).

## RULES ETC.

**ATTENDANCE:** Every class is important to your learning, and your attendance is mandatory. You are here to learn, and I trust you will find a way to make it to class. I do not, however, take attendance.

**MAKE-UPS:** You can make up a missed Deadline or quiz with an excused absence — a religious holiday, a serious illness, a death in the family or your attendance of an IU-sanctioned event. In each instance, you will need written documentation.

**FOOD AND DRINK IN CLASS:** You can't have them, unfortunately. This is to keep you from spilling something on the computers, and eating or drinking in class can be disruptive.

**DEADLINES:** Deadlines are the lifeblood of journalism, and blowing deadlines in this business is simply not tolerated. I am, however, aware that university life sometimes places additional pressures on students and that it is not inconceivable that some assignments, once in a great while, may have to be handed in late. If this should happen to you, and I hope it doesn't, I will accept late assignments for the first five calendar days after deadline. I will take off 10 percent per calendar day, though, so it's in your interest to be on time. If you are having problems meeting a deadline, please let me know ahead of time.

**INTEGRITY:** Graphic design is almost always a collaborative process, and I encourage you to seek the input of others along the way. But in this class, ALL graphic design — anything drawn or rendered, any piece of design — must be 100 percent your own. You can use photographic images as resources to draw from, but please understand that stealing is wrong, it will get you fired in the real world and will not be accepted in this class. If you have any questions on this point, please see me.

## FEEDBACK + CRITIQUES

To be successful in any medium, especially a visual one, you must be able to separate yourself from your work, consider it objectively, determine ways in which it is “not working” and ways in which you can improve it. In this class, understanding the process a graphic goes through is as important as your finished piece. And in my experience, it is rare that a graphic is successful without the benefit of the input from others.

My goal here is to create an environment where you feel comfortable giving and receiving feedback during the creative process and immediately after handing in an assignment. We'll look more closely at developing techniques for giving and receiving criticism later in the semester, and learn ways to escape the three pitfalls mentioned above. But for now, I want to stress the importance of your remaining forever open to ways you can improve your work.

Your grade on each assignment will be a numerical score based on your ability to identify critical and interesting information, your visual creativity, the technical execution and effectiveness of your design and the overall aesthetic quality of your finished work. Writing is as important in graphics as illustration, and writing for graphics is a unique skill. Your grade will also reflect your ability to write clearly and concisely for each of your graphics, and to emphasize the key points. All your projects require your research into your chosen topic; you must, for each one, submit your source material so I can check the veracity of your work.

Before each assignment is handed in, we will spend class time looking at your works in progress, which will give you an opportunity to incorporate suggestions from me and your classmates into your submitted work.

## THIS SYLLABUS

I have mapped out what I hope and believe to be an achievable schedule for this course that will keep everybody working at a steady pace. Because there are wide variations in your experiences coming in, and because each class is always different, I reserve the right to amend this syllabus to reflect any shifting realities we may encounter. I ask for your help in this endeavor, and I will be certain to let you know in advance if and when there will be changes to deadlines or schedule.





# CALENDAR INTRO UNIT

Our class is divided into five units, with projects due as we conclude the big three (charts, maps and diagrams).

The first five classes will lay the groundwork for what is to follow. We will learn to collect information from reliable sources, analyze data and begin to make spreadsheet calculations. We will begin to explore the potential for visuals to enlighten and enliven our information.

We will conclude this short unit with two days focusing on how to use Adobe Illustrator, which will be our primary software for creating infographics over the ensuing weeks.

Numbers in **RED** indicate deadline classes, for projects and in-class assignments

 **Scheduled quiz dates**

CLASS	DAY / DATE	TOPIC
01	TUE. <b>AUG. 22</b>	Introductions
02	THU. <b>AUG. 24</b>	Foundations
03	TUE. <b>AUG. 29</b>	Form and function
04	THU. <b>AUG. 31</b>	Illustrator Boot Camp
05	TUE. <b>SEPT. 5</b>	Nuts and bolts

Net Gross	Unadjusted Gross	Release
\$392,070,600	\$260,044,825	11/17/00
\$324,840,500	\$173,837,933	6/30/95
\$270,674,800	\$217,536,138	5/19/06
\$250,685,200	\$136,492,681	11/8/96
\$239,730,000	\$170,742,341	12/21/01
\$204,799,200	\$100,047,830	8/2/89
\$174,738,600	\$76,113,124	6/21/85
\$169,358,300	\$69,821,334	3/9/84
\$151,394,600	\$133,375,846	5/15/09
\$150,743,200	\$77,868,585	5/24/91
\$115,639,300	\$58,883,840	5/22/92
\$113,564,300	\$57,269,863	5/20/88
\$80,427,100	\$36,611,610	3/14/86
\$78,384,900	\$61,649,911	6/3/05
\$75,698,200	\$38,824,341	3/18/94
\$58,479,400	\$21,095,638	7/30/82
\$49,322,500	\$48,475,290	1/14/11
\$36,459,000	\$27,011,180	11/26/03
\$35,988,200	\$22,431,897	3/26/99
\$26,318,800	\$26,947,624	9/20/13
\$21,137,800	\$18,622,031	12/5/08



# B

# CALENDAR CHARTS UNIT

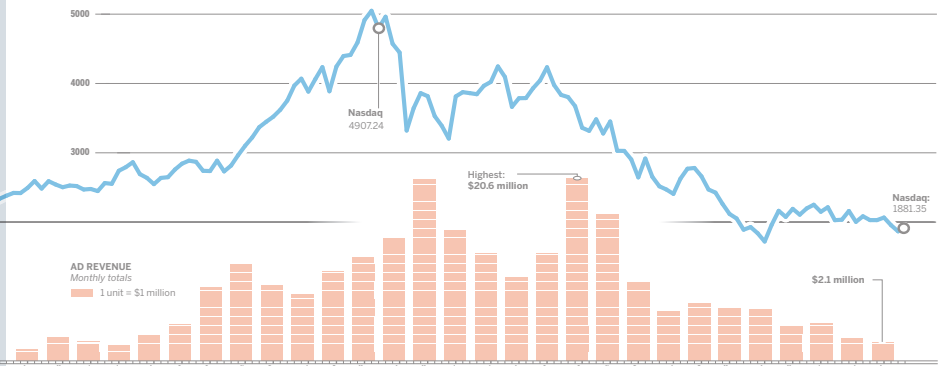
The visual representation of quantifiable data remains the crux of informational graphics, and represent the bread and butter of most modern graphics departments.

We'll take a close look at how various chart formats can be used to best effect, how these formats can be combined to convey complex data and how to design effective graphics based on creating a strong and appropriate visual focus.

CLASS	DAY / DATE	TOPIC
06	THU. SEPT. 7	Introduction to charts <b>Q1</b>
07	TUE. SEPT. 12	Graphics style
08	THU. SEPT. 14	Deadliner 1
09	TUE. SEPT. 19	Pie charts
10	THU. SEPT. 21	Line charts
11	TUE. SEPT. 26	Comparing data
12	THU. SEPT. 28	Other charts <b>Q2</b>
13	TUE. OCT. 3	Packages
14	THU. OCT. 5	Deadliner 2




Source: Publishers Information Bureau, Magazine Publishers of America, Bridge

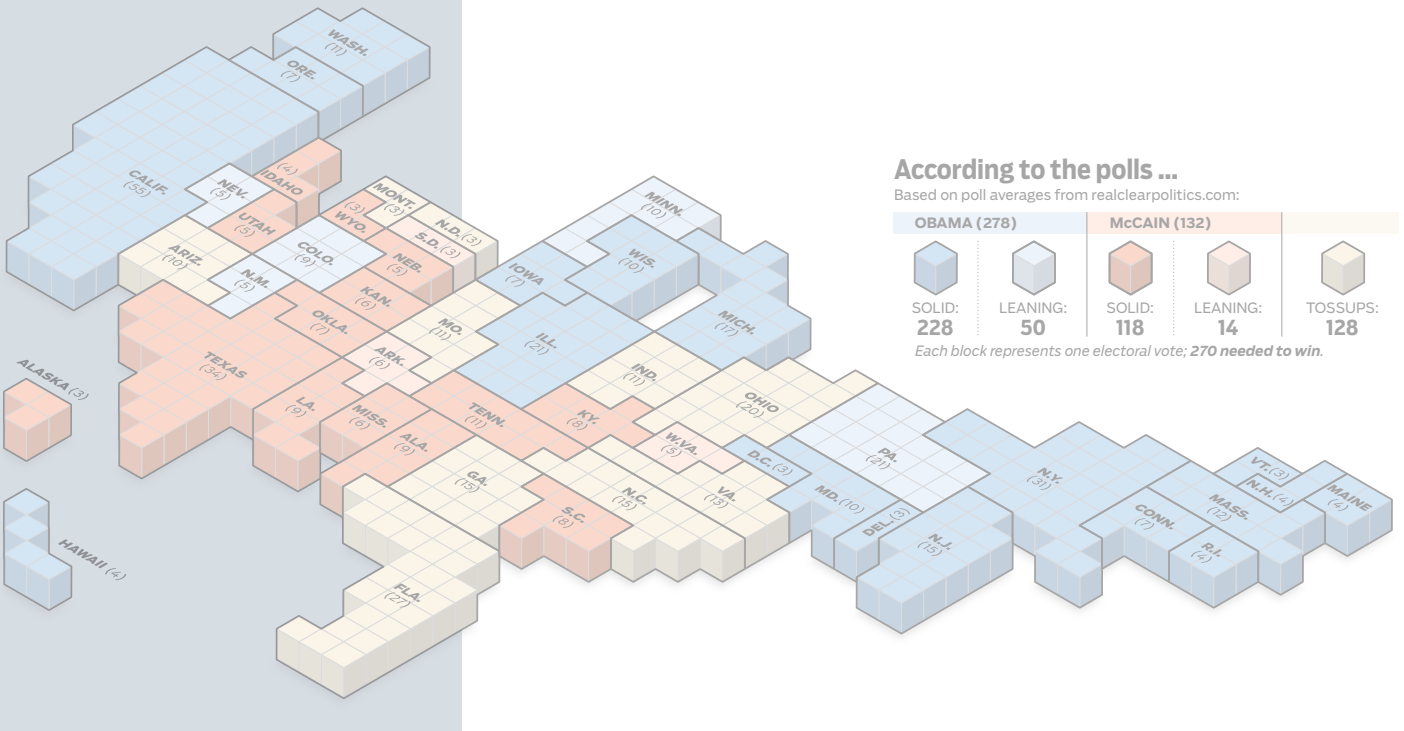




# CALENDAR MAPS UNIT

Our second area of study in this course concerns cartography — the graphical representation of where things are. There are a number of different kinds of maps, ranging from simple locators to complex data maps.

CLASS	DAY / DATE	TOPIC
15	TUE. <b>OCT. 10</b> <b>CHART PROJECT DUE</b>	Introduction to maps
16	THU. <b>OCT. 12</b>	Map styles
17	TUE. <b>OCT. 17</b>	Choropleths
18	THU. <b>OCT. 19</b>	Proportional symbol maps
19	TUE. <b>OCT. 24</b>	QGIS 
20	THU. <b>OCT. 26</b>	Deadline 3



# D

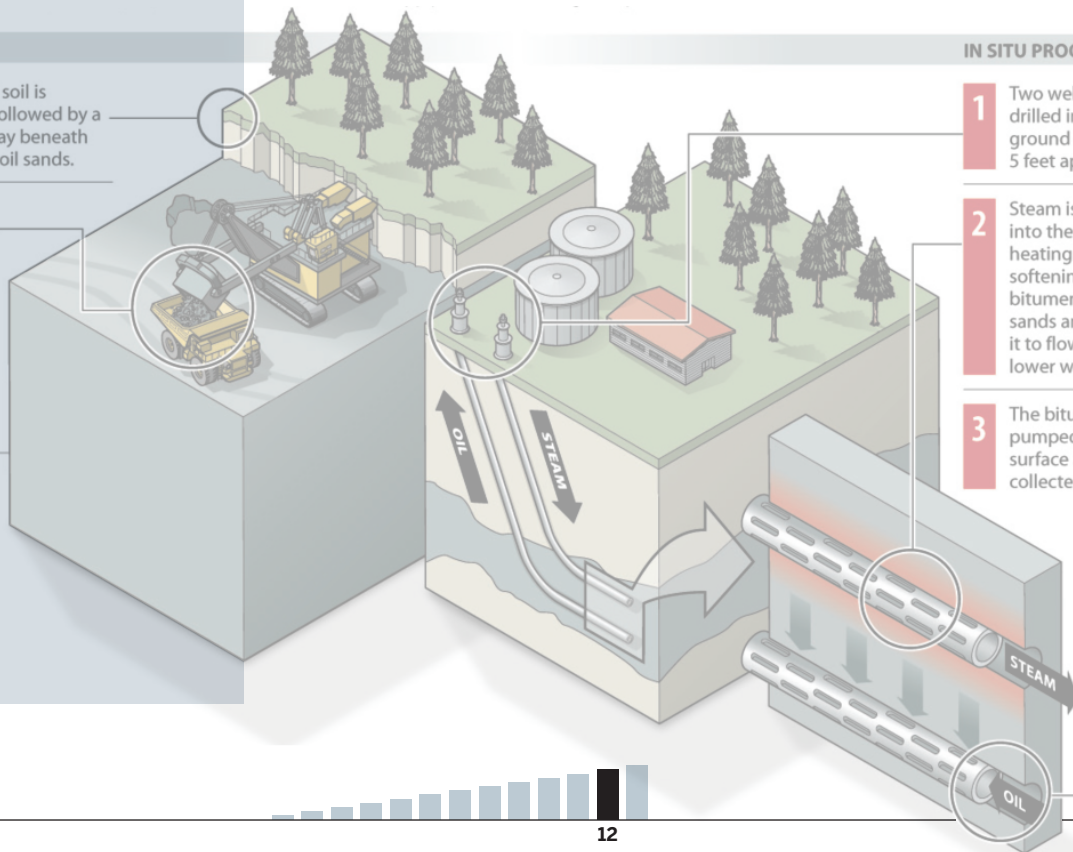
# CALENDAR DIAGRAMS UNIT

Much of the power of informational graphics lies in their ability to describe in great visual detail how something works or how an event occurred, taking readers to places they wouldn't otherwise be able to go. Here, the ability to illustrate clearly and effectively becomes paramount.

CLASS	DAY / DATE	TOPIC
21	TUE. <b>OCT. 31</b> <i>MAP PROJECT DUE</i>	Icons
22	THU. <b>NOV. 2</b>	Timelines and Chronologies
23	TUE. <b>NOV. 7</b>	Diagrams Intro
24	THU. <b>NOV. 9</b>	Perspective
25	TUE. <b>NOV. 14</b>	Case Studies <span style="float: right;">Q4</span>
26	THU. <b>NOV. 16</b>	Deadline 4

### STRIP MINING

- 1 The top layer of soil is stripped away, followed by a layer of rocky clay beneath it, exposing the oil sands.
- 2 Mechanical shovels scoop up to 100 tons of oil sands at a time and deposit them into giant dump trucks that hold up to 400 tons.
- 3 The trucks carry the oil sands to facilities that crush them and extract bitumen, a thick form of crude oil.



### IN SITU PROCESS

- 1 Two wells are drilled into the ground about 5 feet apart.
- 2 Steam is injected into the top well, heating and softening the bitumen in the oil sands and allowing it to flow into the lower well.
- 3 The bitumen is pumped to the surface and collected.



# CALENDAR INTERACTIVE UNIT

The state of interactive graphics is in flux. The industry has shifted away from GUI software, like Adobe Flash, toward more code-based interactive graphics, using JavaScript libraries like D3 and jQuery. This requires a good deal of programming knowledge, and is beyond the scope of this class.

A second-level Infographics class, one that focuses exclusively on developing interactive, online content, has been offered as a J460 topics class the last two spring semesters. That class, Interactive Data Visualization, covers online tools similar to the ones we will introduce after Thanksgiving Break, and how to use HTML, CSS and especially Javascript (and JS libraries) to create interactive content.

In J464, it is most important for you to understand how to think in terms of creating a graphic that takes advantage of the online medium — motion, sound, user interaction — than it is for you become skilled in specific software packages.

CLASS	DAY / DATE	TOPIC
	TUE. NOV. 21	(THANKSGIVING, no class)
	THU. NOV. 23	(THANKSGIVING, no class)
27	TUE. NOV. 28	Interactive charts
28	THU. NOV. 30	Interactive maps
29	TUE. DEC. 5	Open Lab (work on Diagram)
30	THU. DEC. 7	Open Lab (work on Diagram)
	TUE. DEC. 12	<b>PROJECT THREE DUE</b>

