

## Information Visualization

<b>Course Instructor</b> L. Miguel Encarnação, Dr. rer. nat. Professor of Practice Campus Address: <b>S330 PBB</b> Phone: (319) 321-0075 Email: miguel-encarnacao@uiowa.edu Office Hours: by appointment (By Zoom: <a href="https://uiowa.zoom.us/j/91113302546">https://uiowa.zoom.us/j/91113302546</a> )	<b>Class Meeting Times</b> This course is organized within a structure of scheduled course work. Students will progress through the course as a cohort and will complete and/or submit course work online. Recorded lectures will be viewable at choice of time within week. Required (online) class sessions are a part of this course.  Online lectures and meeting by Zoom: Monday 6:00 PM – 9:40 PM; <a href="https://uiowa.zoom.us/j/95681229889">https://uiowa.zoom.us/j/95681229889</a>
<b>Academic Course Home</b> <a href="#">Tippie College of Business</a> DEO: Ann M. Campbell Phone: <b>(319)</b> 335-0918 Email: <a href="mailto:ann-campbell@uiowa.edu">ann-campbell@uiowa.edu</a>	<b>Course Site</b> To access the course site, log into <a href="https://uiowa.instructure.com/courses/160557">https://uiowa.instructure.com/courses/160557</a> using your Hawk ID and password.  <b>Prerequisites</b> None

## Program Goals

The Tippie MSBA has learning goals that drive decisions about curriculum and assignments within courses:

**Program Goal 1:** Graduates will exhibit knowledge and skills relevant to data and its application in business

**Program Goal 2:** Graduates will create and communicate solutions to data-related business problems that impact their organizations and communities

**Program Goal 3:** Graduates will understand and contemplate ethical and privacy issues arising in their own work

**Program Goal 4:** Graduates will demonstrate the ability to be effective team members in a diverse and complex world.

## Course Description and Goals

This course exposes students to the problems and challenges of using interactive visualization to effectively interpret and communicate with ever-increasing amounts of data.

Information Visualization is an application field as well as active area of research focusing on effective presentation of data and information so that observers and analysts can identify trends, make new discoveries, and quantify relationships and changes. Aimed at demystifying data analysis and making it accessible to a broader interdisciplinary audience, this course focuses on the practical application of modern tools and techniques, leading participants from traditional data and information visualization to innovative thinking in terms of visual analytics and digital storytelling. Towards this end, it encourages the development of and experimenting with new approaches and techniques tailored to varying analytic tasks and audiences, informed partly by participants' own experience, data and application interests.

At the same time, Information visualization is a technique that focuses on the use of visualization techniques to help people understand, analyze data, and effectively share data. While fields such as scientific visualization involve the presentation of data that has some physical or geometric correspondence (like the weather over Iowa, an organ in the human body or a mechanical part of a car), information visualization focuses on abstract data without such correspondences such as symbolic, tabular, or textual information sources.

The objectives of the course are

- Comprehend the principles involved in information visualization
- Learn about the variety of existing techniques and systems in information visualization
- Develop skills in analyzing different visualization techniques as applied to particular tasks
- Learn how to evaluate visualization systems
- Gain a background that will aid the design of new, innovative visualizations

## Media/System Requirements

Technical requirements for completing this online course include:

- Student-provided personal computer.
- Computer with reliable Internet access. A wired Ethernet connection to the internet is very strongly suggested. Wireless and cellphone data connections may experience connection problems. Android and iOS operating systems are not fully supported at this time. See specific requirements on the [Distance and Online Education Technical Requirements/Download page](#).
- USB headset with microphone and a web camera capable of conferencing. Most laptops have a built in camera which typically works fine. However, a USB headset with microphone is recommended to minimize audio feedback and room noise and maximize sound quality.
- While tablets, smartphones and other mobile devices may allow for some completion of coursework, they are not guaranteed to work in all areas. Please ensure you have a Windows or Mac based computer available to complete coursework in the event your selected mobile device does not meet the needs of the course.

Students who need assistive technologies will have different computer and technology requirements. Please check with your [Student Disability Services](#) to determine the requirements for the specific technologies needed to support your online classes.

For questions regarding virtual classrooms (i.e. Zoom) or UICapture (Panopto) please contact [Continuing Education Technical Support](#) (319-335-3925).

Need help with ICON or your HawkId? Please contact the [ITS Helpdesk](#) (319-384-HELP).

Additional, course-specific software requirements/provisions:

- All students will need to download and install *Tableau*, a modern commercial data visualization software on your their Windows or Mac laptop (<https://www.tableau.com/academic/students>). It will allow students to use the software for one (1) year after entering the information on their university affiliation. (Similarly, students can download and use *Tableau Prep* for data wrangling as an optional tool.)
- In addition, students will need to use *Excel* for some of the homework assignments as well as the web-based *Voyant Tools* for others.

## Required Textbook/Media

The required textbook for this course is:

- Now You See It
- ISBN-13: 978-0970601988
- Author: Stephen Few
- Publisher: Analytics Press
- 2009

All textbooks are available through Iowa Book and Supply unless otherwise noted. Iowa Book and Supply will ship purchases to you. Note the ISBN numbers displayed on the Iowa Book and Supply company website are per Iowa Book and Supply and may not be valid for online vendors.

- [Iowa Book, L.L.C.](#) Phone: 319.337.4188 Orders may be placed online, over the phone or in person.

You are welcome to use the vendor of your choice (Amazon, another online vendor, or from a local bookstore) to purchase textbooks, but please be careful to purchase the correct item and edition, and ensure shipping is managed so the books are in hand prior to the first day of class. **Exact editions are required unless otherwise noted in the course syllabus.**

Students will be notified of how to access **electronic course packets** by the instructor on ICON. Course packets are **not** available elsewhere or through Iowa Book and Supply.

## Grading Criteria

Final course grades will be assessed based on the student's performance in the following activities (subject to change):

<b>Graded Item</b>	<b>Points</b>	<b>% of Final Grade</b>
<i>PARTICIPATION: 4 provisions of appropriate discussion input/data files</i>	20	5%
<i>COMPREHENSION: Participation in 13 Discussion Forums based on reading assignments</i>	26	15%
<i>ANALYSIS: 9 Visualization Critique posts</i>	14	10%
<i>APPLICATION: 5 Application Homework Assignments</i>	125	50%
<i>RECALL: 1 Online Exam</i>	90	20%
<i>Total Points:</i>	<i>~275</i>	<i>100%</i>

Final course grades will be assigned based on points earned and be curved in accordance with the following grade distribution for elective courses. Note, that the curve is specified as a distribution and not as a set of point thresholds.

Thus, at the end of the term when all points awarded are tallied, we will be using the following distributions:

First 60% A, next 40% B, C, D, F as needed for lack of mastery or attendance

(minor adjustments will be made to ensure fairness and to compensate for potential low enrollment, and +/- grades may be awarded at the discretion of the instructor).

Final course grades will be assigned as follows:

A to A- = 100 – 90%

D+ to D- = 69 – 60%

B+ to B- = 89 – 80%

F = below 60%

C+ to C- = 79 – 70%

## Course Structure

This course is being offered over the World Wide Web. Students will **login to the course site** on ICON to access the course materials. For details of the course assignments and activities, see the **“Modules”** and **“Assignments”** section of this syllabus.

Students are expected to visit the course site regularly to:

- **Access assigned course materials (posted on the “Modules” page)** such as pre-recorded lectures and journal articles.
- **Review the course homepage regularly** for any updates related to the course **“Announcements”** and/or **“Calendar.”**
- **Submit** assignments to the course instructor via the **ICON “Assignments.”**
- **Participate** in the **“Discussion”** forums.

# Course Work

## Class Participation:

In addition to mere attendance (before Spring break), the participation grade is composed also of the ungraded provisioning of data files and visualizations required for discussions and exercises, designed to make the content more relevant to students.

It is expected that students will submit input to discussion ahead of time as requested, and be prepared by doing the readings. Accommodations will be made for excusable personal or work-related absences. (see attendance)

## Visualization Critique posts (9):

Before each class, students must submit a visualization critique post through ICON, referencing and briefly commenting on a news article or other online post, where data visualization is used to communicate information. In addition, students need to comment on at least one (1) peer's visualization critique post.

Requirements for visualization critique post:

- Must be short, concise and constructive:
  - "I hate this Viz" is not acceptable.
  - "Great use of a pie chart to show parts-of-a-whole relationship" is acceptable
  - "Biased data representation skewing the Y-dimension with a y-axis not starting at 0" is acceptable.
- Must be recent and not older than 1 year.
- Must be appropriate and not contain content that might clearly offend someone, like e.g. sexually explicit language, racial slurs, or graphical depictions of extreme violence. If you are in doubt, you might want to consult with corresponding Facebook community standards ([https://www.facebook.com/communitystandards/objectionable\\_content](https://www.facebook.com/communitystandards/objectionable_content)) as well as the UI Policy on Acceptable Use of Information Technology (<https://opsmanual.uiowa.edu/community-policies/acceptable-use-information-technology-resources>).
- Examples for sourcing depictions of information visualizations are:
  - A reference to a publicly available online article.
  - A photo or short video of something you see on TV. (must include origin)
  - A photo you took of a paper medium or billboard. (must include origin)

Initially, each visualization critique post is worth one (1) point. Once a certain body of knowledge has been established, students are expected to apply it to their visualization critique posts critique in order to earn one (1) additional point per post. Due dates are listed in the course calendar on ICON. There is no grace period for visualization critique posts, i.e. late submissions will not receive any points.

## Online Discussions based on Reading Assignments (13):

Students will participate in 13 online discussion activities. Discussions will be based on a chapter from the textbook. Students comment on the chapter and discuss it with classmates. We are grading all students equally based on how we perceive their level of understanding of the topic is. Participation in each online discussion is worth 2 points toward the final grade.

The criteria we are applying to student discussion contributions are:

1 point = shows that they read it

2 points = shows that they understood it

To be clear:

- Merely providing a synopsis of the readings does not demonstrate understanding.
- Contributing several times in a discussion reinforces 2 points only if it also depicts some level of understanding.

Due dates are listed in the syllabus and course calendar on ICON. There is no grace period for contributing to online discussions, i.e. late submissions will not receive any points.

## Application Homework Assignments (5):

Students are required to complete and submit 5 application homework assignments, some of which might be group assignments. These are intended to apply the theoretical knowledge they gained through lectures and readings and require students to collect, prepare, visualize, manipulate, and report on data and document the reasoning and process that went into it. Assignments vary in points based on complexity and should be submitted electronically via the ICON "Assignments" page. Due dates are listed in the course calendar on ICON.

*Please note, that while the rubrics to the homework assignments is a good checklist for how we will grade an assignment, it is equally important to consider the assignments' descriptions on tasks and expectations.*

## Final Online Exam (1):

Another requirement of this course is the completion of a 90-minute in-class online final examinations (on ICON) covering select lectures. The final online exam consists of 20 multiple choice, multiple select, write-in, sorting and true/false questions. A practice exam will be made available two (2) weeks before the final.

## Course-Specific Policies and Guidelines

**Online delivery of class sessions:** Classes will be held online through Zoom and live attendance is encouraged whenever possible. In addition, class session will be recorded and posted on ICON under UICapture within 24 hours. Students are encouraged to ask questions through Zoom's chat feature during live participation as well as through the corresponding Lecture Q&A discussion forums on ICON.

**Communications:** Students can expect to receive regular communications from the instructor (via course "Announcements" in ICON). Students are also responsible for all official correspondence sent through their University of Iowa email address. Students can expect to receive responses to email inquiries within 24-48 hours. Privacy considerations, such as federal law, may apply when using an address other than the standard University e-mail address.

**Exams:** There will only be one final exam, which will be online on ICON. Students are asked to take the exam at the regularly scheduled times unless permission has been granted by the instructor at least 2 weeks in advance in writing. The final exam is INDIVIDUAL WORK and collaboration on the exam is not permitted under any circumstance.

**Attendance:** Attendance in all class sessions is expected and obligatory. This class depends on a lot of in-class group work, which is another reason why attendance is strongly requested. However, unforeseen conflicts due occasionally arise, especially in the current environment impacted by the COVID-19 pandemic. Students are expected to give adequate advance notice of an excused absence, make up the missed work and make every effort to avoid a class conflict. To ensure legitimacy, students may be asked to provide documentation upon request. Short-term illnesses will also be considered as excused absences, however, students are asked to let me know prior to or even the day of the absence why they are not in class. A plan for managing longer term absences should be discussed with the instructor to determine whether successful completion of the course is possible.

**Late Work:** Because we regard this class as we would any job responsibility, students are being held to strict standards of timeliness and ethics. In this regard, late work is unprofessional and will be penalized. Homework Assignments that are late will receive an automatic 25% grade reduction. Each following day late will result in another 25% reduction in the grade. Assignments on reading/discussion group and visualization critique posts will not be covered by such grace period: Late submissions will automatically result in zero points.

**Software Applications:** Software applications like Excel, Tableau, Voyant, or others used in the course will not be taught in detail. These applications are only being used at an entry-level of proficiency and so students will be expected to acquire the skills necessary for this course on their own. Students will be given sufficient time and online resources to familiarize themselves with those applications.

**Netiquette:** The term "netiquette" refers to the do's and don'ts of online communication. As it applies to this online course, it is my expectation that students will communicate effectively and respectfully with each other, the instructor, and our guest speakers (if applicable). [Follow this link to learn more about The Core Rules of Netiquette.](http://www.albion.com/netiquette/corerules.html) <http://www.albion.com/netiquette/corerules.html>

**Inclement Weather/Class Cancellation:** Although it is our intent to offer every class at its assigned time, on rare occasion there are weather or other emergency events that require that alternative arrangements are made for class delivery. If that happens, please stay alert for an email from me indicating how the class will be handled. This may include: 1) Cancelling the class completely – all reading and work that was due is expected to be completed and turned in on time through ICON; 2) Holding an online version of the class (i.e., via Zoom)– you will receive an email invitation to join the session remotely from a computer with an internet connection – headphones are recommended; 3) using recorded videos and presenting other materials to you through ICON so we can cover the course materials asynchronously.

## Collegiate Policies and Guidelines

**Commitment to Diversity, Equity, and Inclusion (DEI):** Tippie recognizes the centrality of diversity to the pursuit of excellence. We strive to create a working and learning environment with diversity of thought, which fosters innovation and is a critically important factor for attracting, retaining, and developing people who can succeed in today's turbulent economy. Diversity, for our purposes, refers to all aspects of human difference, social identities, and social group differences, including, but not limited to race, ethnicity, creed, color, sex, gender, gender identity, sexual identity, socioeconomic status, language, culture, national origin, geographic origin (urban or rural), religion/spirituality, age, (dis)ability, military/veteran status, first generation status, political perspective, and associational preferences. To live up to this commitment, Tippie has adopted an action plan intended to increase diversity and inclusion, and foster equity in outcomes. Accountability for the plan is the responsibility of the Deans, the Associate Director of DEI (Gabriela Rivera), and the college DEI Committee. Details are available on the college website.

**Administrative Home of the Course:** The administrative home of this course is the Tippie College of Business, which governs academic matters relating to the course such as the add/drop deadlines, the second-grade-only option, issues concerning academic misconduct, and how credits are applied for various graduation requirements. Different colleges might have different policies. See the [MBA Student Policies and Procedures Handbook](#) for more information on college policies. As a registered student in a course in the Tippie College of Business, you are responsible for the collegiate policies posted below.

**Tippie Honor Code:** The Tippie College of Business has an Honor Code, and you must abide by it in completion of all assignments. Integrity is a reflection of your character and is critical for creating meaningful and lasting relationships. One part of integrity is abstaining from acts like cheating, so cheating on any assignment in this class will result in an appropriate consequence, usually a zero for the grade in question and, if that penalty does not reduce the grade, a penalty of a full letter grade reduction. In addition, all incidents of cheating will be reported to the appropriate academic offices, and the student may be placed on disciplinary probation, be suspended, or even permanently expelled, depending on the severity of the offense.

If a student has been found in violation of this policy, they will first be notified directly, then I will report to the appropriate program office. Faculty and students can report Academic Misconduct via the college website. ([https://cm.maxient.com/reportingform.php?Univoflowa&layout\\_id=6](https://cm.maxient.com/reportingform.php?Univoflowa&layout_id=6))

It is my sincere hope that no student in this class will engage in academic dishonesty. Consistent with the TCOB Honor Code (<https://tippie.uiowa.edu/sites/tippie.uiowa.edu/files/documents/tippie-honor-code.pdf>), the following activities will be considered academic misconduct:

1. **Cheating:** Except as authorized by the instructor, no communication, notes, or devices are allowed on exams. Students are prohibited from copying the answers of other students, allowing other students to copy their exams, or sharing exam materials.
2. **Unauthorized Collaboration:** With the exception of the group projects, each student should complete his/her homework independently. Shared files and/or identical submissions will be considered clear evidence of academic misconduct. Please contact me if you are unsure what constitutes acceptable collaboration.
3. **Forgery:** Students are prohibited from signing another student's name to the attendance sheet and from having another student sign their name.
4. **Facilitating Academic Dishonesty:** Assisting other students in acts of academic misconduct is treated the same as directly engaging in misconduct.



If a student is determined to have engaged in any of these acts of academic misconduct, they will receive a 0 for that grade item if it is the first offense. A second offense of academic misconduct during the semester will result in a grade of F for the entire course. All incidents of academic misconduct will be reported to the Department Chair and the TCOB Associate Dean for the Undergraduate Program, and the student may be placed on disciplinary probation for the remainder of their undergraduate work at the University of Iowa. Decisions may be appealed to the TCOB Judicial Board and then to the Associate Dean for the Undergraduate Program. The TCOB Honor Code will determine the appropriate appeal process.

**Live Session Recording:** As a service to students, on-line Tippie Graduate courses provide a Lecture Capture capability for all live sessions. This allows students to access video and audio recordings of the live session, after the class has been recorded. Unless otherwise noted, live sessions are being recorded, and will be available to all enrolled members of the class under a password protected website (the ICON course site). The instructor may choose at various points (i.e. during exams or guest speakers) to not record the class.

**Complaint Procedures:** If at any time you have concerns about this class or your performance in it, please do not hesitate to contact me directly. If you do not feel that your concern has been resolved satisfactorily, you should contact the Department Executive Officer (DEO) (contact information provided at the top of page one of this syllabus). If that does not resolve the complaint, you may contact the Associate Dean of Graduate Management Programs, Jennifer Blackhurst, [jennifer-blackhurst@uiowa.edu](mailto:jennifer-blackhurst@uiowa.edu).

**Privacy:** As part of this course, your name will be revealed to other students in the class. If you have concerns, please contact the instructor immediately.

**Fairness and Freedom of Expression:** Every student is entitled to the same intellectual freedom I have. I will respect that freedom, and I am obliged to protect your freedom to learn, regardless of your religion, race, sex, sexual orientation, gender identity, or political views, or on your agreement or disagreement with my positions pertaining to matters of controversy within the discipline. I will do my best to provide you with a fair and impartial evaluation of your work, consistent with articulated standards for this course.

## University Policies

As a registered student the following University policies apply to you.

**Non-discrimination:** The University of Iowa is committed to making the classroom a respectful and inclusive space for people of all gender, sexual, racial, religious, and other identities. Toward this goal, students are invited in MyUI to optionally share the names and pronouns they would like their instructors and advisors to use to address them. The University of Iowa prohibits discrimination and harassment against individuals on the basis of race, class, gender, sexual orientation, national origin, and other identity categories set forth in the University's Human Rights policy. For more information, contact the Office of Equal Opportunity and Diversity (<https://diversity.uiowa.edu/eod>; 335-0705 or [diversity.uiowa.edu](mailto:diversity.uiowa.edu)).

**Accommodations for Disabilities:** The University is committed to provide an educational experience that is accessible to all students. If you have a diagnosed disability or any other condition that would impair your ability to complete the course requirements as stated above, please inform me as early in the semester as possible, but no later than two weeks prior to the scheduled activity. Students needing accommodations must register with [Student Disability Services](#), (SDS): <https://sds.studentlife.uiowa.edu/students/apply> to obtain a Letter of Accommodation (LOA). The letter will specify what course accommodations are reasonable for that student. The office is located at 3015 Burge Hall, (319) 335.1462.

**Understanding Sexual Harassment:** Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. The University will not tolerate sexual harassment, nor will it tolerate unwelcomed behavior of a sexual nature toward members of the University community when that behavior creates an intimidating or hostile environment for employment, education, on-campus living, or participation in a University activity. As a member of the university community you have a responsibility to report concerns of sexual harassment immediately at the [Office of the Sexual Misconduct Response Coordinator](#).

**Multicultural Holidays:** Students compelled by their religious convictions to refrain from attending class on specific days must request instructor permission during the first few days of the session. If this request is denied, a student may address concerns according to [University Procedures](#).

**Sustainability:** The University is committed to demonstrating sustainability practices within all facets of the institution. Student support is critical to our campus wide efforts to reduce waste by consuming as few natural resources as possible and purchasing recycled materials when feasible. Recycling and reuse of all materials is encouraged. Together, let's ensure a better world for us and future generations. Learn more at the Office of Sustainability <https://sustainability.uiowa.edu/>.

## Course Calendar (subject to change)

This online course is organized within a structure of scheduled course work (see weekly calendar below). Although you are not required to meet in a classroom, we will progress through the course materials as a class. For this reason, you must manage your time effectively in order to complete the assigned course work according to the firm due dates listed in the calendar below.

The most current calendar and due dates are always available on ICON and accessible through “Syllabus”, “Calendar” and “Modules”.

DATE	TOPICS AND ACTIVITIES	READINGS AND ASSIGNMENTS  (THESE ARE NOT THE DUE DATES BUT WHEN THOSE ASSIGNMENTS WILL BE GIVEN)
Monday, August 24	Introduction to the course organization and motivation to the course	<ul style="list-style-type: none"> <li>Familiarize yourself with Tableau through online sources for the next 2 weeks</li> <li>Homework assignment 1 “Bring your own data”</li> </ul>
	<ul style="list-style-type: none"> <li>Overview on Information Visualization</li> <li>Post your first Visualization Critique Post &amp; peer comment</li> </ul>	<ul style="list-style-type: none"> <li>Write a Visualization Critique Post &amp; peer comment</li> <li>Chapter 1 &amp; 2 reading &amp; online discussion</li> </ul>
Monday, August 31	<ul style="list-style-type: none"> <li>Multi-variate data table and graph design</li> <li>Excel Introduction &amp; Application</li> </ul>	<ul style="list-style-type: none"> <li>Write a Visualization Critique Post &amp; peer comment</li> <li>Homework assignment 2 “Table &amp; Graph Design”</li> </ul>
	<ul style="list-style-type: none"> <li>Tableau Introduction</li> </ul>	<ul style="list-style-type: none"> <li>Chapter 3 reading &amp; online discussion</li> </ul>
Monday, September 14	<ul style="list-style-type: none"> <li>Visual Perception</li> <li>Cognitive Issues</li> </ul>	<ul style="list-style-type: none"> <li>Write a Visualization Critique Post &amp; peer comment</li> </ul>
	<ul style="list-style-type: none"> <li>Tableau Application</li> </ul>	<ul style="list-style-type: none"> <li>Homework assignment 3 “Visual Design with Tableau”</li> <li>Chapter 4 reading &amp; online discussion</li> </ul>
Monday, September 21	<ul style="list-style-type: none"> <li>Tufte’s Principles</li> </ul>	<ul style="list-style-type: none"> <li>Write a Visualization Critique Post &amp; peer comment</li> <li>Chapter 5 reading &amp; online discussion</li> </ul>
	<ul style="list-style-type: none"> <li>Creating Bad Visualizations</li> <li>Excel Improvements</li> </ul>	<ul style="list-style-type: none"> <li>Chapter 6 reading &amp; online discussion</li> <li>Homework assignment 4 “Data Analysis &amp; Visual Design Mock-up”</li> </ul>
Monday, September 28	<ul style="list-style-type: none"> <li>Time-series data visualization</li> </ul>	<ul style="list-style-type: none"> <li>Write a Visualization Critique Post &amp; peer comment</li> <li>Chapter 7 reading &amp; online discussion</li> </ul>

	<ul style="list-style-type: none"> <li>• <i>Time Series in Tableau</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Chapter 12 reading &amp; online discussion</i></li> <li>• <i>Homework assignment 4 “Data Analysis &amp; Visual Design Mock-up”</i></li> </ul>
Monday, October 5	<ul style="list-style-type: none"> <li>• <i>Multivariate visual representations, Parallel coordinates &amp; more</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Write a Visualization Critique Post &amp; peer comment</i></li> <li>• <i>Alternative Reflections on the Present and Future of Information Visualization reading &amp; online discussion</i></li> </ul>
	<ul style="list-style-type: none"> <li>• <i>Animation in InfoViz</i></li> <li>• <i>Tableau Motion Charts</i></li> <li>• <i>Tableau Maps</i></li> </ul>	
Monday, October 12	<ul style="list-style-type: none"> <li>• <i>Text Visualization</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Write a Visualization Critique Post &amp; peer comment</i></li> <li>• <i>Chapter 8 &amp; 9 reading &amp; online discussion</i></li> </ul>
Monday, October 19	<ul style="list-style-type: none"> <li>• <i>Voyant Introduction &amp; Application</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Chapter 10 reading &amp; online discussion</i></li> <li>• <i>Homework assignment 5 “Exploring Text and Document Visual Analysis”</i></li> </ul>
Monday, October 26	<ul style="list-style-type: none"> <li>• <i>Final Exam review</i></li> <li>• <i>Voyant Practice &amp; Application</i></li> </ul>	<ul style="list-style-type: none"> <li>• <i>Write a Visualization Critique Post &amp; peer comment</i></li> <li>• <i>Chapter 11 reading &amp; online discussion</i></li> </ul>
Monday, November 2	<ul style="list-style-type: none"> <li>• <i>Biases in Visual Analytics</i></li> </ul>	
Monday, November 9	FINAL	
Monday, November 16	Final Grades available	