

# Course Syllabus: IT 7113 Data Visualization

## Kennesaw State University

---

Jack Zheng, **Spring 2018** - Last updated: **Jan 8, 2018**

### **Note**

This syllabus provides a general guideline for the conduct of this course. However, deviations may be necessary and will be notified during the semester.

## Course Description

This course introduces data visualization theories, techniques, and tools particularly for analyzing and presenting business data. Students will design, develop, and evaluate effective visualizations and dashboards, using various development tools.

The course is an elective in our new certificate on data management and analytics.

### Course objectives/learning outcomes

1. Discuss concepts and principles of data visualization particularly related to decision making.
2. Investigate technologies and practices for visualizing data as part of a data management and analytics system.
3. Apply user interface design principles and practices to develop interactive data visualizations.
4. Design effective dashboard for decision making at various levels.
5. Conduct research on relevant data visualization topics.

### Course features (**spring 2018**)

- Intensive hands-on experience with Tableau 10.

### Prerequisites

- Official requirement: IT 5433 Database Systems and IT 5443 Web Technologies and Application Development
- Recommended: IT 6713 Business Intelligence

### Class meet time and location

15191 Online Section W01

### Instructor

**Dr. Jack G. Zheng**, Associate Professor, IT Department

Office: J-383

Email: [gzheng@kennesaw.edu](mailto:gzheng@kennesaw.edu) (**preferred**) Phone: 470-578-5036

Office hours: online or by appointment

### **Email Policy**

1. Email is a great way of communication if you write the email subject like this:

**IT7113 – [put your real subject here]**

Emails will be responded within the next business day if the subject line conforms to the format above, and directly sent to my KSU email account above.

2. Per FERPA regulation, please use your university email to communicate with instructors. This can verify your identity and protect privacy. I reserve the right not to reply any email that I cannot verify sender's identity.

***Emails without proper subject line or unverified sender address are likely to be categorized as spam, and are NOT guaranteed to be replied.***

### Teaching style and belief

Generally I follow the principles of active learning, which emphasizes on learners' active participation and exploration. Please get more details here:

- <http://jackzheng.net/teaching/teaching-belief.aspx>

- <http://jackzheng.net/teaching/student-comments.aspx>

## Course Conduct

### Course content/topics

The course content is basically organized by learning modules. The following table is only a tentative overview of the course content and schedule. The more detailed and most updated schedule will be provided in a separate file in D2L.

Week	Learning Module #	Module	Topics/Activities	Work Due and Other Reminders
1		Orientation	Getting started	
2	1	Overview	Business data visual and the bigger context	
3	2	Foundation	Concepts and theories of data visualization	
4	3	Solutions and Tools	Solution types, tools, the industry, and Tableau	Tableau Lab 1
5	4	Charting	Use and creation of charts	Tableau Lab 2
6	5	Tableau	Tableau process, data, more charts	Tableau Lab 3
7			<i>Project/research orientation</i>	Quiz 1
8	6	Location based visual	Location based visualizations	Tableau Lab 4
9	7	Dashboard	Overview and design principles	Tableau Lab 5
10	8	Interactivity	Variables, user input/selection, extra on demand	Tableau Lab 6
11			<i>Research/project advising; progress check/feedback</i>	
12	9	Best practices	Best practices; examples; case studies	Quiz 2
13			<i>Spring break</i>	
14	10	Web/mobile solutions	SVG, Google Charts	Web Visual Lab
15			<i>Research/project advising; progress check/feedback</i>	
16			<i>Work on project and research</i>	

Each module provides a study guide which detailed learning objectives, readings, and tasks. It's critical to follow these study guides. The time to complete each module varies. Generally, modules are designed on an average of 8 to 12 hours to complete (for most of the people who have met the prerequisites), depending on individual background and prior experiences. Generally all module tasks should be completed within one week from the corresponding class date, however, some **required readings/research tasks** must be completed **by the planned class date**. Please follow the study guides closely.

### Grading

Item	Points
Quiz (2)	20
Labs/assignments (7)	40
Development Project	20
Topic Research	20
<i>Total</i>	<i>100</i>

Total Points	Grade
=>90	A
=>80	B
=>70	C
=>60	D
<60	F

More details about each item will be provided in separate documents (guides) in "**Student Works**" content sections in the D2L Brightspace.

## Course Materials and Resources

Course websites: D2L Brightspace <https://kennesaw.view.usg.edu/d2l/home/1441191>

- It's important to know how to use this learning management system for: following learning modules, submitting assignments, checking grades and feedback, downloading files, participating discussion boards, etc.
- Please check the course site regularly for important announcements and other issues.

### Learning materials

- Required textbook: none. There is no textbook assigned. All readings are assigned in each learning module. Knowledge of the readings will reduce the time it takes you to finish lab assignments.
- Recommended books (for additional reading and references):
  - Stephen Few, Show Me the Numbers, <https://www.amazon.com/dp/0970601972/>
  - Stephen Few, Information Dashboard Design: Displaying Data for At-a-Glance Monitoring, 2013, <https://www.amazon.com/dp/1938377001>
  - Tableau 10 Business Intelligence Cookbook: <https://www.packtpub.com/big-data-and-business-intelligence/tableau-10-business-intelligence-cookbook>

### Required software/hardware

- Tableau 10, free for students <http://www.tableau.com/academic/students>
- Text/code editor and web browser (for some HTML/JavaScript coding).
- Other software: software that can open PDF files and ZIP files.

### Other readings and resources

- Other readings and resources will be suggested and posted for each week (module). Check D2L regularly.

## General Class Policies for all of Dr. Jack Zheng's Courses

!! Please view the separate document online at <https://goo.gl/G0Qd83> or request a copy by email.

## University Policies

!! Please view the separate document online at <https://goo.gl/G0Qd83> or request a copy by email.