MSA 8020 Data Visualization

Class Information:

Instructor: Yichen Cheng
Instructor Office Hour: Monday 4 - 5 PM or by appointment
TA Office hour: Wednesday 2:00 - 3:00 pm
Friday 10:30 – 11:30 am
Location: This course will be taught online at https://zoom.us/j/9837544147
iCollege Website: https://icollege.gsu.edu/
Discussion Website: piazza.com/gsu/fall2020/msa8020
Software: R, Tableau
Email: ycheng11@gsu.edu

TA Information:

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Course Description:

This course introduces students to basic visualization tools as well as data exploration and data presentation skills. This course mainly covers 3 parts: visualization in R using ggplot2; visualization in Tableau; and advanced visualization tools including interactive visualization and spatial visualization.

Textbooks:

[C] Chang W., Cookbook for R. Springer. http://www.cookbook-r.com/ (reference)

[W] Wickham, H., ggplot2: Elegant Graphics for Data Analysis. Springer, 2nd ed. – Intro to ggplot2 by Hadley Wickham, the creator of the package. (reference)

[P] Class notes will be posted on iCollege.

Course Learning Outcomes:

At the end of this course students will be able to:

1. Use different types of graphs for illustrating different data type.
2. Feel comfortable with using different types of software (including R and Tableau) for data pre-processing and data visualization.
3. Use informative visualization to present business insights.
4. Utilize advanced visualization functions such as interactive visualization.

Attendance Policy:

Lecture attendance is mandatory and will count towards your grade.

Homework:

Both the homework and final project are group based. Students will form group in first week and work on the tasks as a team. There will be three homework assignments. Homework assignments will be posted on iCollege. Homework is due on iCollege by 6 PM on the due date. One submission per team, or per student as relevant. No late submission will be accepted.

Final Project:

This course is a project-based class. You need to select a data set and convey business insights via visualization techniques learned in this class.

Grading:

10% Class participation (assessed by faculty)
40 % Homework (assessed by faculty and weighted by group member evaluation)
50 % Final presentation and report (assessed by faculty and weighted by group member evaluation)

The anticipated grading scales for this class is as follows:

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	F
98	95	90	85	80	75	70	65	60	55	50	<50

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As members of the academic community, students are expected to recognize and uphold standards of intellectual and academic integrity. See the University's policy on Academic Honesty (Section 409, http://www2.gsu.edu/~wwwfhb/sec409.html) for details.
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of the instructor's intellectual property and the privacy rights of students attending the class, and is prohibited.

Detailed Outline of the class:

Date	Topics	Readings (Textbook)	Due
Week 1	Introduction Different types of graph	https://rkabacoff.github.io/datavis/DataPrep.html	
Week 2	Data visualization with Tableau	https://www.datacamp.com/community/tutorials/data-visualisation-tableau	
Week 3	R graphics -- Basics	http://www.cookbook-r.com/Graphs/	**Homework 1 Due**
Week 4	R graphics – ggplot2	https://rkabacoff.github.io/datavis/	
Week 5	Working with spatial data	https://journal.r-project.org/archive/2013-1/kahle-wickham.pdf	**Homework 2 Due**
Week 6	Interactive visualization	http://www.rebeccabarter.com/blog/2017-04-20-interactive/	**Homework 3 Due**
Week 7	Final Presentation		**Final report Due by Sunday of Week 7**

Note that this course syllabus provides a general plan for the course; deviations may be necessary.