



MNGT 550 Visualizing and Presenting Data
Spring Semester 2023
3.0 Credits

Dr. Ryan E. Miller
Office Location: Remote
Office Hours: TEAMS by appointment
Email: MillerRE@gcc.edu
Phone: 724-584-7571

Required Course Materials (included in tuition)

[**Storytelling with Data: A Data Visualization Guide for Business Professionals**](#), Cole Nussbaumer Knaflic, Wiley (2015)

[**Storytelling with Data: Let's Practice!**](#) Cole Nussbaumer Knaflic, Wiley (2020)

Useful links

[Class Tableau Online Site](#)

[Tableau Public](#)

[Tableau for Students](#)

Optional Reading (not required)

Storytelling with Data, Cole Nussbaumer, Wiley (2015)

The Functional Art, Alberto Cairo, New Riders (2012)

The Truthful Art, Alberto Cairo, New Riders (2016)

How Charts Lie, Alberto Cairo, W.W. Norton & Company (2019)

Visual Data Storytelling with Tableau, Lindy Ryan (2018)

The Visual Imperative: Creating A Visual Culture of Data Discovery, Lindy Ryan (2016)

Mobile Data Visualization, Bongshin Lee, Raimund Dachsel, Petra Isenberg and Eun Kyoung Choe (2021)

Better Data Visualizations: A Guide for Scholars, Researchers, and Wonks, Jonathan Schwabish (2021)

Information Dashboard Design: The Effective Visual Communication of Data, Stephen Few (2006)

Suggested Feeds/Blog Subscriptions

[Back 2 Viz Basics](#) by Maria Brock and Eric Balash

[Workout Wednesday](#) by Luke Stanke, Lorna Brown, Sean Miller, Kyle Yetter, & Erica Hughes

[Makeover Monday Project](#) by Andy Kriebel and Eva Murray

[Dear-Data.com](#) by Giorgia Lupi and Stefanie Posavec

[Dear-Data-Two.com](#) by Jeffrey Shaffer and Andy Kriebel

[Viz of the Day](#) by Tableau Software

[The Functional Art](#) by Alberto Cairo

[Perceptual Edge](#) by Stephen Few

[Storytelling with Data](#) by Cole Nussbaumer

[VizWiz](#) by Andy Kriebel

[DataPlusScience](#) by Jeffrey Shaffer
[Data Revelations](#) by Steve Wexler

Summary

This tool-agnostic course provides in-depth and hands-on experience in business storytelling with data visualization. This course takes a practical approach by introducing students to design principles for creating meaningful displays of quantitative and qualitative data to facilitate managerial decision-making.

Course Objectives and Learning Objectives

	MNGT 550 Course Learning Outcomes <i>Students who successfully complete this course will:</i>	Link to Business Program Learning Outcomes
CLO1	An understanding the importance of situational context, including the audience, communication mechanism, and desired tone.	1, 2, 3, 4
CLO2	The ability to choose the most effective visual to best communicate data in a business setting.	1, 2
CLO3	Be able to identify and eliminate clutter in your data visualization.	1, 2
CLO4	An understanding how the preattentive attributes can be used strategically to help direct your audience's attention to where you want them to focus and to create a visual hierarchy of components to help direct your audience through the information you want to communicate in the way you want them to process it.	1, 2
CLO5	How to leverage traditional design concepts in communicating with data.	1, 2
CLO6	How to utilize the concept of storytelling in communicating with data.	1, 2

GCC BUSINESS PROGRAMS
VISION, MISSION, AND LEARNING OUTCOMES

Vision

To be one of America's premier undergraduate business programs where scholarship and application combine with Christian principles.

Mission

The mission of the business programs at Grove City College is to prepare our students to become effective and ethical leaders in business as well as in society as a whole.

Learning Outcomes

1. *General Business Knowledge and Analytical Skills*
Our students will demonstrate the entry level knowledge, analytical skills, and information literacy generally necessary in business.
2. *Communication Skills*
Our students will demonstrate the written and verbal skills needed to communicate effectively within the business environment.
3. *Ethics*
Our students will demonstrate a Christian understanding of business which reflects their moral and ethical responsibilities to all potential stakeholders.
4. *Global Perspective*
Our students will demonstrate an understanding of the global and multi-cultural issues in the current business environment.

Course Format

Students will read class material, study best practices, compare real-world examples, engage in problem-solving, and participate in discussions related to the course material. Students will also practice applying the techniques and best practices discussed to real-world problems.

Required Software

While this course takes a tool agnostic approach. Graduate students may use any tool they are already proficient using, such as Tableau, Excel, Power BI, Qlick, or Microstrategy; however it is the student's responsibility to ensure that the tool can effectively export data visualizations to fulfill assignments.

A fully licensed version of Tableau Desktop is made available to each student for the duration of the class. Tableau Online is also made available to each student for the duration of the class. Additionally, access to Tableau Desktop is also available to full-time students for free for a year after the conclusion of this class. Tableau Desktop Professional is available for both Apple Macintosh and Windows operating systems

Students will be able to learn the basic features of Tableau through training videos that are available from [Tableau online](#), self-directed studies, or by using other available resources online. The instructor is also willing to help with specific questions or techniques as needed.

Students may use any technology platform to present their projects, such as PowerPoint, Keynote, or Prezi, if the work is presentable for a recorded presentation and accessible for review by the course instructor. If there is any question about whether work can be accessed for review, you must check with the instructor prior to submitting your work.

Expectations of Students

Graduate students are expected to complete all assignments on time, prepare and participate by:

1. Reading scheduled assignments each week
2. Participating in class discussions posted on [D2L](#), and projects
3. Completing the assigned homework projects by the due date
4. Actively participate in Group Projects
5. Actively participate in synchronous class discussions

Students must complete assignments independently. The student's submissions must represent his or her work, and **citations must be provided where content from other sources is referenced**. Also, you may not re-use a data set from one project to another; you must start with a new data set each time.

Students will be assigned to groups to complete specific assignments. It is important that you participate as necessary in the groups to complete assignments. Low participation in your group may affect your final grade for group assignments.

Performance Evaluation

Course grades will be determined as follows:

	<u>%</u>
1) Homework	50%
2) Presentation	15%
3) Collaboration & Participation	10%
4) Group Case Study	<u>25%</u>
Total:	100%

Grading Scale

93% - 100%	A
90% - 92.9%	A-
87% - 89.9%	B+
83% - 86.9%	B
80% - 82.9%	B -
77% - 79.9%	C+
73% - 76.9%	C
70% - 72.9%	C-
67% - 69.9%	D+
63% - 66.9%	D
60% - 62.9%	D-
Below 60%	F

All students have the same opportunity to earn points in the course. Any questions regarding grading must be addressed within one week of return of the graded assignment, quiz or project to the student.

Homework

Weekly, practical homework assignments represent the core of this course. Students will complete the weekly reading and corresponding “Let’s Practice” Practice with Cole (PWC), Practice on Your Own (POYO), and Practice at Work (PAW) assignments. Homework assignments are due by the date and time indicated in the syllabus, in [D2L](#), or as indicated by the instructor. Note: you will only submit the POYO assignments in D2L for credit. Submission should be in PDF format.

Presentation

Students will analyze, summarize, and present in class one academic journal article of their choosing from the group of articles provided. Work will be evaluated based on its completeness, grasp of the subject, and the student’s ability to draw practical conclusions based on the article. Presentations will span the entire semester. Students are highly encouraged to read each of the twelve articles assigned for the presentations; however, students will only be responsible to present one article.

Collaboration & Participation

Students will present their POYO homework assignments in class each week. A collaboration and participation equal to 10% of your total grade will be given based on the quality of your work presented and the feedback/participation in class.

Group Case Study

There will be one group case study project assigned at the end of the semester. Students will be assigned to a team of 2-3 individuals. Students will evaluate the problem, develop and run appropriate data visualizations, perform relevant analyses, summarize their results and present them to the class.

Late Assignments

Late assignments are not accepted. Assignments not submitted on time will receive a zero.

Adjustments to Assignments, Schedule, and Syllabus

The scope, timing, and due date/time of any assignments, projects, homework, exams, or any other required work may be adjusted by the instructor as needed to maximize learning opportunities for students and/or better serve the goals of the course. The syllabus may likewise be modified at the discretion of the instructor.

Any adjustments will be communicated to students in class and on [D2L](#) with as much advance notice as possible. Resubmissions of assignments are not permitted.

Course Policies

Attendance – There are no direct penalties for missing class.

Homework – Regular homework will be assigned. Every student is expected to do all of the homework problems, although only a few from each assigned set will be collected and graded. Assignments are to be submitted through the D2L learning management system.

Test Policy – Life is an open book and so are your quizzes and all other graded assignments unless otherwise announced, however time will be limited.

Christian Focus - We will utilize the discussion board to add a Christian focus to this course. We will discuss what the Bible has to say about various aspects of working with data (accuracy, integrity, honesty, for example). We can use these insights from the Bible to guide our actions when working with data visualizations and storytelling.

Disability Services - Grove City College is committed to abiding by the Americans with Disabilities Act of 1990 and the Americans with Disabilities Amendment Act of 2008. If you believe you have a disability that requires accommodations in this course, please let me know as soon as possible so that we can work together to implement needed accommodations. Any information you relay to me will remain confidential. You may contact Grove City College's Disability Services for assistance. You can contact Disability Services by phone at (724) 264 - 4673 or by e-mail at DisabilityServices@gcc.edu.

Academic Integrity - All students are expected to adhere to the standards of academic honesty and academic integrity as detailed in the Grove City Bulletin and in the student handbook, The Crimson. Please take a few moments to read through the Academic Integrity pledge, policy, and process as documented in the Grove City Bulletin (p. 56) and in The Crimson (p. 4).

Academic Complaints - If you believe the grade awarded for the course is unfair, there is a grade appeal procedure outlined in The Crimson. It begins by notifying the instructor within 30 days of the end of the course and discussing the grievance with the instructor. If resolution is not obtained, the appeals process is detailed in The Crimson.

Tentative Course Schedule

Module	Topic	Storytelling with Data Reading	Let's Practice!	Assignments (PWC, POYO, PAW)
1	Context	Ch 1: The Importance of Context	Ch 1: Understand the Context	Due 2/2
2	Effective Visuals	Ch 2: Choosing an Effective Visual	Ch 2: Choose an Effective Visual	Due 2/9
3	Clutter	Ch 3: Clutter is Your Enemy!	Ch 3: Identify and Eliminate Clutter	Due 2/16
4	Preattentive Attributes	Ch 4: Focus Your Audience's Attention	Ch 4: Focus Attention	Due 2/23
5	Design Concepts	Ch 5: Think Like a Designer	Ch 5: Think Like a Designer	Due 3/2
6	Best Practices	Ch 6: Dissecting Model Visuals	Ch 7: Practice More with Cole	Due 3/9
7	Business Storytelling	Ch 7: Lessons in Storytelling	Ch 6: Tell A Story	Due 3/16
8	Review	Chapter 8: Pulling It All Together Chapter 9: Case Studies Chapter 10: Final Thoughts	Ch 8: Practice More on Your Own	Due 3/23

9	Group Case Study			Group Case Study due 3/30
---	------------------------	--	--	---------------------------------