DV Syllabus Spring 2022

Data Visualization

EGMGT 587-01 and 587-02

Daniel Egger

Spring 2022

Syllabus

Wednesdays, 5:15-8:00 pm

Note: No class Wednesday January 5

First class will be held Wednesday January 12 on Zoom

When class is held on Zoom, link is

https://duke.zoom.us/j/95288520051?pwd=MDRkY0REUDdVbFg3MjRyZi96WkRSZz09

Meeting ID: 952 8852 0051

Passcode: 884202

Required Text

You must buy:

Storytelling with Data: a data visualization guide for business professionals

Cole Nussbaumer Knaflic (Wiley 2015)

ISBN10: 1119002257

ISBN13: 9781119002253

(See also www.storytellingwithdata.com)

Introduction

This course focuses on delivering excellent presentations for business communication using common data visualization tools.

Everyone who completes the course will be able to make beautiful and effective data visualizations. *Students are not required, or expected, to have any prior software experience*. The course has no pre-requisites. All software tools used in the course are available without cost to Duke students.

Students will learn best-practices for making visualizations using the following tools: Excel, Powerpoint, the Business Model Canvas, Tableau, Seaborn (Python library), Gephi, and Voyant.

Students will have frequent opportunities to practice delivering short presentations, receiving peer and faculty critique of their storytelling, design work, and overall effort.

Office Hours and Teaching Assistants

Egger "drop-in" office hours will be in person, on Wednesdays 11 am to noon, at my office in 3575 CIEMAS, If you wish to meet online, or need to meet at a different time, or both, please email me at: Daniel.egger@duke.edu to make an appointment.

Office Hours for TAs will be arranged after the semester begins. Feel free to contact them by email at any time with questions.

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Aravinth Ramesh aravinth.ramesh@duke.edu

Homework, Live Presentations, and Peer Review

There are three non-presentation Homework Assignments:

1 – Making Knaflic-style Charts

2 – Fixing Excel Designs

3 – Seaborn exercise

Live Presentations.

There will be seven (7) peer-reviewed student presentations:

1 - Powerpoint/Excel

2 - Business Model Canvas

3 - Tableau Maps

4 - Tableau Dashboards

5 - Network Analysis with Gephi

6 - Text Analysis with Voyant

7 - Final Capstone Project

Depending on how Covid-19 rules develop, I hope to have some student presentations presented to the class live and in person. But in any case, all student presentations should *also be recorded as mp4 files* and *posted to each student's individual thread* within the Sakai Forum for that Assignment.

An important part of developing design thinking for data visualization is having the opportunity to provide constructive feedback ("peer review" or "critique") on classmates' work.

This year, because we have a very large number of students (usual maximum is 18), we will divide students into "pods" and only require students to provide critique to the other students in their pod.

However, completion of feedback for 50% or more of your own pod is required, and contribution to peer feedback (graded on completeness and usefulness) will be 15% the overall course grade.

Schedule

Wednesday, Jan 12 Course Overview

Wednesday, Jan 19 Lecture: Knaflic Design Rules: Best Practices for using Excel & Powerpoint

Read Before Class: Knaflic, Introduction and

Chapters 1-2, pp. 1-69.

Homework 1- Knaflic Line, Slope, and Waterfall Charts and upload as an Excel Workbook with 4 separate worksheets (1 line graph, 2 slope graphs, 1 waterfall chart) to *Sakai Dropbox* by Midnight on Jan 18

Wednesday, Jan 26 Lecture: More on Excel & Powerpoint

Read Before Class: Knaflic, Chapters 3-4, pp. 71-126

Homework 2 – Excel Fixes for the four visualizations shown in class and upload as an Excel Workbook with 4 separate worksheets to *Sakai Dropbox* by Midnight on Jan 25

Wednesday, Feb 2 Lecture: The Business Model Canvas

Read Before Class: Knaflic, Chapters 7-8, pp. 165-205

Presentation 1 - Three-minute Powerpoint Presentation 4-5 Powerpoint Slides and including 2-3 of Knaflic's basic Excel chart types. Record your presentation as an mp4 files and post to your own thread in *Sakai Forums*.

Wednesday, Feb 9 Lecture: Introduction to Tableau

Presentation 2 – Business Model Canvas.

Post to Sakai Forums.

You must also complete the 4 hour 30-minute Tableau training at LinkedIn Learning (free to Duke students).

https://www.linkedin.com/learning/tableau-essential-training-2/build-powerful-and-interactive-data-with-tableau?autoAdvance=true&autoSkip=false&autoplay=true&resume=true&u=77842946

Wednesday, Feb 16 Lecture: Tableau Dashboards

Presentation 3 - First Student Tableau Assignment Due. These are three-minute presentations including the Tableau Mapping functions. *Post to Sakai Forums.*

Wednesday, Feb 23 Lecture TBD

Also recommended (not required) is the 3.5 hour LinkedIn Learning video on Tableau Dashboards: https://www.linkedin.com/learning/creating-interactive-tableau-dashboards/what-you-should-know?autoAdvance=true&autoSkip=true&autoplay=true&resume=false&u=77842946

Wednesday, March 2 Lecture: Introducing the Seaborn Library in Python

Presentation 4 - Second Student Tableau Presentations.

Post to Sakai Forums.

Wednesday, March 9 Spring Break

Wednesday, March 16 Lecture: Introducing Network Analysis and Gephi

Homework 3 – Seaborn Exercise.

Post to Sakai Forums.

Wednesday, March 23 Lecture: Introducing Text Analysis and Voyant

Presentation 5 – Network Analysis with Gephi Due.

Post to Sakai Forums.

Wednesday, March 30 Lecture: Review of Course Concepts, and

Introduction to the Final Project Assignment

Presentation 6 – Text-analysis with Voyant.

Post to Sakai Forums.

Wednesday, April 6

Presentation 7 - Final Projects.

Post to Sakai Forums.

Wednesday, April 13 Final Projects continued

Course Grades

No late assignments accepted without prior permission. Contact the TA if you have a valid reason – illness, family, or work emergency – for needing an extension. Preparing for job interviews is not sufficient excuse.

Homework 1-3 15%

Presentations 1-6 50%

We will drop the weakest presentation

Presentation 7 20%

Peer Reviews 15%