SDS 136 - Communicating with Data

Course Number	SDS 136
Semester	Fall 2016
Hours	TH 9:00-10:20
Schedule	G Block
***New* Location**	**Ford 240**

Instructor	R. Jordan Crouser
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Office Hours	W 10am - noon
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Teaching Assistants	Subashini Sridhar & Grace Zhan '18
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Office Hours	Th 4pm - 8pm Burton 209

Discussion: Piazza

Course Description

The world is growing increasingly reliant on collecting and analyzing information to help people make decisions. Because of this, the ability to communicate effectively about data is an important component of future job prospects across nearly all disciplines. In this course, students will learn the foundations of information visualization and sharpen their skills in communicating using data. Throughout the semester, we will explore concepts in decision-making, human perception, color theory, and storytelling as they apply to data-driven communication. Whether you're an aspiring data scientist or you just want to learn new ways of presenting information, this course will help you build a strong foundation in how to talk to people about data.

Prerequisite: None.

Assignments and Deliverables

The first half of this course will be focused on building up intuitions around the foundations of information visualization, as well as the relationships between perception and sensemaking. Several (short) assignments will help you get comfortable using the various techniques we discuss in class. In the second half of the course, we'll shift our focus to using these techniques to tell stories with and about data. We'll look at some ways to map the techniques we learned in the first half of the course to real world data. We'll also explore the role of animation and interaction. For the semester's final deliverable, students will apply what they've learned about visualization to a dataset of their choosing. This project will have several (graded) milestones along the way, and we will hold a demonstration session on the final day of class.

In-Class Labs

To help students gain hands-on experience in communicating with data, this course will include 10 in-class lab sessions. The labs will be conducted primarily in Tableau, with some supplemental exercises in other platforms at the instructor's discretion. Students are encouraged to work in pairs during these labs.

Schedule

Date	Topic	Lab	Guest	Assignments	
09-08	Introduction to Data Visualization				
09-13	Visualization Fundamentals pt. 1				
09-15		Lab 1: Getting Started w/ Tableau			
09-20	Visualization Fundamentals pt. 2	Activity		A1 out	
09-22		SCMA SPECIAL SESSION - "Critical Looking: Deconstructing Visual Images"			
09-27		Lab 2: Bar Charts and Line Charts			
09-29		Lab 3: Scatterplots		A2 out	A1 due
10-04	Perception and Color	Mini-lab: Good/Bad Visualizations			
10-06	Design Principles	Mini-lab: What's Wrong with this Picture?		A3 out	A2 due
10-11		NO CLASSES - FALL BREAK			
10-13	Visualizing Multiple Variables	Lab 4: SPLOMs and Parallel Coordinates		A4 out	A3 due
10-18	Interactive Visualizations	Lab 5: Coordinated Multiple Views			
10-20	Geographic Data	Lab 6: Maps		FP1 out	A4 due
10-25		SCMA SPECIAL SESSION - Curating A Collection of Visual Media			
10-27		SCMA SPECIAL SESSION - The Guerrilla Girls: Artists Mining Data			
11-01	Storytelling with Data	Lab 7: Tableau Stories			FP1 due
11-03	Visualizing Change	Lab 8: Animation and Movement			
11-08	The Right Tool for the Job	Mini-Lab: Developing User Personas		FP2 out	
11-10	Details	Mini Lab: Icons, Images, and Filters in Tableau			
11-15		Final Project Workshop 1		FP3 out	FP2 due
11-17		Visualization in the Wild Presentations			
11-22					
11-24		NO CLASSES - THANKSGIVING			
11-29	Text as Data	Lab 9: Text Visualization			FP3 due
12-01		SCMA SPECIAL SESSION - Text/Image: Mining Museum Labels			
12-06	Visual Analytics				
12-08		Final Project Workshop 2			
12-13	Ongoing research				
12-15		Final Project Demonstrations			

Resources

There are no required textbooks for the course. However, there are several on reserve that you may find helpful.

Recommended Reading

R1	Visualization Design and Analysis (Tamara Munzner)	(Amazon)
R2	Visual Thinking for Design (Colin Ware)	(Amazon)
R3	Tableau Your Data (Dan Murray)	(Amazon)

Grading

Assignments	40%
Labs	30%
Final Project	20%
Class Participation	10%
Total	100%

Note that the final grade is based on my judgment of your work. Although the grade will be largely based on the percentages shown to the left, I will be giving out extra credit for excellent work and out-of-the-box thinking. Similarly, while "class participation" is somewhat subjective and is not one-size-fits-all, I will take note of contributions in class which demonstrate intellectual curiosity or clear understanding of a topic, as well as comments which help others in class to learn a difficult concept.

Late policy: -10% for each day the assignment or final project deliverable is late. Submissions more than 10 days late will not be eligible for credit without notification from the student's dean. Students may request a no-penalty/no-questions-asked extension of 48 hours on any assignment or deliverable. Such requests must be made in writing at least 24 hours in advance of the due date; retroactive requests to extend due dates must be made through the dean.

Accommodation

Smith is committed to providing support services and reasonable accommodations to all students with disabilities. To request an accommodation, please register with the Disability Services Office at the beginning of the semester. To do so, call (413) 585-2071 to arrange an appointment with Laura Rauscher, Director of Disability Services.

Acknowledgement

Some of the materials used in this course are derived from lectures, notes, or similar courses taught elsewhere. Appropriate references will be included on all such material.