

Data Visualization

ECB 121 – Block 2	9:30 – 12:30pm	MWF
	9 – 11am & 1-2pm	TuTh
	<i>except where noted</i>	

Instructor:	Santhi Hejeebu
Office Hours:	1:30 - 2:30pm MWF & by appointment
Office Location:	College Hall 218
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Course Overview:

Business and economic data are growing at staggering rates. An essential method for limiting information overload is data visualization. This course introduces ideas and tools for better data comprehension and visual communication. The course introduces visual perception and systematically identifies how data graphics convey information. We then explore how data graphics can be improved using principles of analytical design. Working with business and economic data, students will understand and communicate central tendencies, patterns of dispersions, and temporal change. Student homework and projects will employ MS Excel and Tableau.

What will you learn?

Over the many courses you take at Cornell College, you will strive toward several important educational goals. In ECB121, students will

- *Communicate effectively* through class dialogue, paper assignments, and the final presentation.
- *Reason quantitatively* using graph design and metrics.

Required Readings and Resources:

Readings will be made available to the class via Moodle.

Professional Conduct

A significant portion of your grade depends on your in-class behavior. As part of your preparation for the business world, this class explicitly rewards professional conduct. This covers conduct in three areas: **1)** proper grooming, **2)** time management, and **3)** attention management. For the first, business casual attire is required on days we have guests or presentations. For time management, the following **Attendance Policy** will also prepare you for the world of professional work.

You are to attend class on time, every single day. Lateness or an absence will only be excused in the event of illness, family emergencies, or participation in College-sponsored activities. These events require proper documentation. Unexcused absences will reduce your grade by **20** points with each occurrence.

Beyond full attendance and respectable attire, professional conduct requires attention management. You are expected to be prepared and ready for the day’s agenda: Be mentally present and ready to participate actively in class discussion. “Deep work” or “focused work” can definitely emerge from Cornell’s Block Plan coupled with good study habits and small, engaging classes. The following **Digital Policy** helps you develop strong study habits while in class.

Students are strongly encouraged to discontinue consuming all personal digital content 10 minutes prior to class and during the 3 hours of class time, including during breaks. **10 points will be awarded each day you Flip Off your device prior to and during class, including breaks.**

Professional conduct is always rewarded, as you can see below.

Help is Here:

If Excel or Tableau challenge you, **Ms. Jessica Johanningmeier** (JJohanningmeier@cornellcollege.edu), Quantitative Reasoning Studio Director, would be happy to help you improve your skills.

The Writing Studio staff and tutors can assist you with college-level writing. Just walk in to **Cole 314!**

Peer tutors are also available to assist you with your visualizations! Please contact **Angel Fabila** (afabila21@cornellcollege.edu) or **Amber Frazier** (afrazier20@cornellcollege.edu)

Grading:

<u>Course Components</u>	<u>Points</u>
1) HW assignments (9 x 10 points)	90
2) Group assignments (3 x 50 points)	150
3) Two Individual paper assignments (2 x 100 points)	
a. Visualization (50%)	100
b. Writing (50%)	100
4) Final Individual Project (150 points)	
a. Interactive Viz	50
b. Writing	50
c. Oral Presentation	50
5) Professional Conduct	170
Total Points	760

Typically, the total points will approximate a normal distribution and the class average will be assigned a letter grade of B-/C+.

Equality of Opportunity:

Cornell College is committed to providing equal educational opportunities to all students. If you have a documented learning disability and will need any accommodation in this course, you **must** request the accommodation(s) from me as early as possible and no later than the third day of the term. Additional information about the policies and procedures for accommodation of learning disabilities is available on the Cornell web site at http://www.cornellcollege.edu/academic_affairs/disabilities/.

Academic Honesty:

Cornell College expects all members of the Cornell community to act with academic integrity. An important aspect of academic integrity is respecting the work of others. A student is expected to explicitly acknowledge ideas, claims, observations, or data of others, unless generally known. When a piece of work is submitted for credit, a student is asserting that the submission is her or his work unless there is a citation of a specific source. If there is no appropriate acknowledgement of sources, whether intended or not, this may constitute a violation of the College's requirement for honesty in academic work and may be treated as a case of academic dishonesty. The procedures regarding how the College deals with cases of academic dishonesty appear in *The Compass*, our student handbook, under the heading "Academic Policies – Honesty in Academic Work."

Schedule of topics

Day	Today's Topic	Class Discussion and Activities Based on These References	Today's Assignment Due by 11pm	
1	M	Intro to Data Viz Class preliminaries: syllabus, Excel, Tableau, Flipd, and Moodle	HW1	
2	Tu	Excel essentials	HW2	
3	W	Design practices Visual perception Taxonomy for data graphics	Few (<i>SMTN</i> , ch 9-10); Few (blog selection); Baumer et. al. (<i>MDS</i> selection)	HW3
All-College Convocation King Chapel, 11:15				
4	Th	Analytical design principles	Tufte (BE, ch5); Few (<i>SMTN</i> , ch7)	Group 1
5	F	Workshop group assignment		Paper 1 (due Sun pm)
6	M	Data preparation & integrity	Carnoes (4)	HW4
7	Tu	Describing central tendencies	Camm (2)	HW5
8	W	Visualizing distributions Revealing temporal change	Cairo (7-8)	HW6
9	Th	Seeing relationships	Cairo (9)	Group 2 Paper 2 (due Sun pm)
10	F	Workshop group assignment		
11	M	Tableau essentials		HW7
12	Tu	Interactive graphs in excel	Select videos	HW8
13	W	Dashboards	Few (<i>IDD</i> 5 and 3)	HW9
14	Th	Storyboards	Knaflie (7-8)	Group3 Paper 3 (due Sun pm)
15	F	Workshop group assignment		
16	M	Presentations		Final (9-11, 1-3)
17	Tu	Presentations		Final (9-11, 1-3)
18	W	Presentations		Final (9-11, 1-3)