

Data Visualization

ECB 121 – Block 5

10:00-11:00 and 1:00-3:00 M-F
except where noted

Instructor: Santhi Hejeebu
Office Hours: 10:00 - 11:00pm TuTh & by appointment
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Course Overview:

Business and economic data are growing at staggering rates. Small and large, organizations today can easily capture information touching every aspect of the enterprise. One approach for avoiding information overload is data visualization. This course introduces methods for representing data for better comprehension and communication. It introduces visual perception and visual design principles. We will train our eyes to identify effective visual representations. We also explore a range of chart types, identifying the types of quantitative ideas that can be represented by each. Working with business and economic data, students will locate central tendencies, patterns of dispersions, and anomalies. Student projects will involve designing and presenting interactive visualizations for better decision-making.

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.
- *Evaluate* graph metrics and visualizations in order to answer the question you raised.

Required Readings:

Readings will be made available to the class.

Attendance Policy:

While attending classes is your choice, your choices have consequences. First and most importantly, you will miss course content. Absences degrade your ability to master the material and risks lowering your test performance. Secondly, I will deduct 30 points from your final numeric score for each and every unexcused absence. ***Serious advice: don't miss class.*** Absences for health, family-emergencies and college-sponsored events are approved only with written documentation.

Electronic device policy:

Your concentration is priceless. Turn all personal screens off and keep them off.

Help is Here:

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

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

Austin Green (agreen20@cornellcollege.edu) and Taylor Axelson (taxelson19@cornellcollege.edu), honors students in Economics and Business are tutors for this course. Reach out to them to set up mutually agreeable times.

Grading:

Course Components	Points
1) Daily assignments (8 x 10 points)	80
2) Group assignments (3 x 50 points)	150
3) Individual assignments (2 x 100 points)	
a. Visualization	100
b. Writing	100
4) Individual Final Project	
a. Interactive Viz	50
b. Writing	50
c. Oral Presentation	<u>50</u>
Total Points	580

Typically 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.”

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Schedule of topics

Day		Topic	Required Reading	Assignment Due
1	M	Introduction to Data Viz In-class Moodle survey	Cairo (1)	HW1
2	Tu	Visual Perception Excel Essentials, part 1	Carmoes (2); Cairo (5, 121-129); Camm (3.2, 85-102)	HW2
3	W	Excel Essentials, part 2 Social Context of Data Viz.	Cairo (2); Carmoes (3)	HW3
4	Th	Chart Design	Cairo (5); Few (<i>SMTN</i> 9-10)	
5	F	Workshop Group Assignment		Group1
6	M	Data preparation	Carmoes (4); Camm (2.2-2.3);	Paper1
7	Tu	Describing Central Tendencies	Carmoes (6); Camm (2)	HW4
8	W	Visualizing Distributions	Cairo (7)	HW5
9	Th	Revealing Temporal Change	Cairo (8); Carmoes (11)	
10	F	Workshop Group Assignment		Group2
11	M	Seeing Relationships	Cairo (9)	Paper2 HW6
12	Tu	Interactive Graphs in Excel	Select videos	HW7
13	W	Building and Designing Dashboards	Few (<i>IDD</i> 5 and 3)	HW8
14	Th	Storyboards	Knaflitz (7-8)	
15	F	Workshop Group Assignment		Group3
16	M	Presentations		Final (9-11, 1-3)
17	Tu	Presentations		Final (9-11, 1-3)
18	W	Presentations		Final (9-11, 1-3)