MA 105 Schedule

31 August

In-class:

* Introduce course and ideas about active learning
  + answer vs solution
  + what is active learning?
  + Partial flip (students responsible for learning some material on their own)
* Review syllabus
  + writing assignments
  + group work
  + effort hw
    - all problems on paper
    - discuss some problems on Canvas
* Ch 1
  + be skeptical!
  + Intro terminology from 1-1
  + 1-3
    - parameter vs statistic
    - quantitative vs categorical
    - discrete vs continuous

HW:

* read Taking Notes study from NPR and be prepared to discuss what the study examined and concluded
  + look for:
    - what were the goals of the study
    - what were the pluses/minuses of the 2 different methods
    - what did they do to collect data
    - what type of data did they collect
    - what conclusion did they make
* read section 1-2
* answer 1-2 # 1-4, 6-16 even, 17-20
  + choose one of these to present your solution on Canvas discussion
    - if someone already presented their solution, add to their discussion (if agree, state why in your own words, if disagree, state which statement you disagree with and why)
    - if you are having trouble with a question, explain what you do understand and ask a specific question that will help you understand better

2 September

In-class:

* questions on hw?
* Review terminology from last class and from 1-2
* discuss NPR article
  + see suggested questions from hw
  + do you believe their conclusions and why?
* read methods section from journal article
  + what did they do well
  + what could they do better/what common mistakes did they make
  + does knowing more about the methods change your belief in their conclusions
* Levels of measurement
* 1-4
  + observational study, experiment, lurking variable
  + Sampling methods

HW:

* read Michigan Dem Primary link
* read Problems with Food Studies
* post at least one discussion comment for each article on Canvas (provide list of suggested topics; can/should respond to other student comments)
  + Michigan Dem Primary
    - what were some of the issues with the polling methods
    - do you think these problems are common across all polls, or were they just a problem with these polls
    - do you think that poll results might change voting outcomes? why
  + Problems with Food Studies
    - what are some of the unique challenges present in food/exercise studies
    - what is meant by “signal to noise”
    - can you think of any possible ways to eliminate or reduce some of these problems
* read 1.4 Part 2 (starts on page 27)
* 1.4 #1-4, 5-15 odd, 21, 23
* Ch 1 Project due 9 Sep (TYPED, PRINTED FOR START OF CLASS)
* [POST Pew Survey Methodology and AAPOR Methods for Political Polling; not required reading]

5 September

In-class:

* questions on hw?
* Review terminology from last class and from hw (1-4, Part 2)
* discuss hw articles briefly (see above for topics/questions)
* look at methods section from “Mediterranean Dietary Pattern”
  + how do they address the issues mentioned in the Problems with Food Studies article
  + how believable are the results
* Characteristics of Data (CVDOT)
* have students record height (in inches) on side board
  + make frequency distribution using this data (record for later use)
  + freq dist and labels definitions
  + discuss how freq distribution is constructed
  + discuss reported results
  + does it follow a normal distribution?

HW:

* read Chocolate Diabetes Study (only Abstract and Subject and Methods: Study population, Experimental protocol are required reading) and post a discussion comment
  + how do the methods compare to the Mediterranean Dietary Pattern study?
  + Which results are more believable
* read examples 3, 4, 5 in 2-2
* 2-2 #1, 4-7, 19, 21
  + choose one problem to discuss on Canvas
* Ch 1 Quick Quiz (p35)

7 September

In-class:

* questions on hw?
* Discuss Chocolate Diabetes Study
* convert height freq dist to relative frequency distribution
* convert to cumulative frequency distribution
* convert to histogram
  + define histogram
  + can we convert every freq dist into a histogram?
  + Convert to rel freq histogram
* discuss common distribution shapes (normal, uniform, skew right, skew left)
  + brainstorm ways to remember them in groups

HW:

* 2-2 # 2, 3, 11, 12, 15, 18, 23, 31
* 2-3 #1-8, 13, 19
* discuss at least one problem on Canvas

9 September

In-class:

* questions on hw?
* Collect Ch 1 Project and redistribute; describe new assignment (posted on Canvas; to be adapted from Peer Feedback Form at http://www.colorado.edu/csl/par/calculus1/problems/par01.pdf)
* Review of freq distributions and histograms
* review types of distributions
* use book powerpoint to cover 2-4
* “bad graphs” discussion

HW:

* Ch 1 Project Review due 14 September
* 2-4 #1-5, 10, 13, 15, 21-23
* EC opportunity (open all semester): find a “bad” graph in a current news article. Post a link to the article on the discussion thread in Canvas and describe the problem with the graph

12 September

In-class:

* questions on hw?
* Review types of graphs
* activity on picking appropriate graph for the data?
* Descriptive vs inferential stats
* review CVDOT
* measures of center:
  + mean
  + median
  + mode
  + midrange

HW:

* 3-2 #1-10, 33, 37
* discuss at least one on Canvas
* Ch 2 Quick Quiz p74

14 September

In-class:

* questions on hw?
* Collect Ch 1 Project feedback and return to original author
* Review measures of center
* weighted GPA
* measures of variation
  + range
  + standard deviation
    - why square the difference?
  + variance
* when can you compare stddev from 2 different samples directly?
* coefficient of variation
* practice calculating (data\_calc\_practice.pdf)

HW:

* Ch 1 Project final version due 21 September
* 3-3 #1-10, 23, 24
* complete data\_calc\_practice.pdf

16 September

In-class:

* questions on hw?
* Review measures of variation
* Why do we calculate both stddev and var?
  + Biased vs unbiased
* range rule of thumb
* Empirical rule
* Chebyshev's Thm

HW:

* 3-3 #33, 34, 41, 42, 45 (discussion is available, but not required)
* start reviewing for test; post one way you plan to study/are studying on Canvas discussion

19 September

In-class:

* questions on hw?
* Review range rule of thumb, Empirical rule
* z-scores
  + unusual values
* percentiles
* quartiles
* 5-number summary; boxplot
  + outliers
  + modified boxplots
* work on Jeopardy questions; due by 1600 on 20 September

HW:

* Jeopardy questions
* 3-4 #1-10, 13, 14, 22, 23, 25-27, 29
* discuss one on Canvas

21 September

In-class:

* Review day (Jeopardy?)

HW:

* prepare for Test 1

23 September

In-class:

* Test 1

HW:

* none