

Panel 1

Welcome to Math 1203 - Intro to Stats
for Social Sciences

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Dyknow

HW: Download + install

for Comm. Setups: vision.dyknow.com/shu.edu

user: 8-letters

pwd: -same-

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Syllabus:

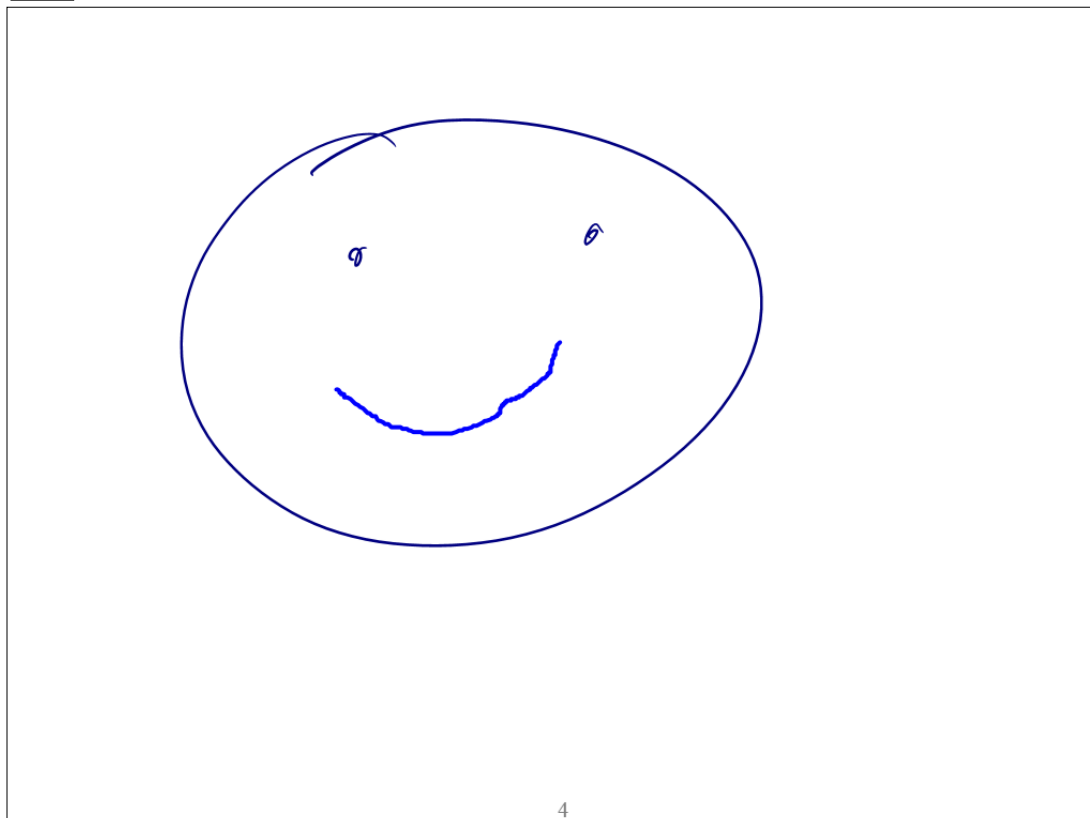
Need: Textbook ✓
StatCrunch access ✓
Dyknow ✓

Grading:

3 exams:	300 p
1 final:	100 p
Quizzes:	100 p
Computer:	100 p

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Course Overview:

1. Overview: Population, Sample, types of variables
2. Sample and Measurement:
randomization, sampling methods
3. Descriptive Stats: distribution, descriptive stats,
central tendency, variability
4. Probability Distributions: normal distribution,
Central Limit Theorem

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5. Statistical Inference: Estimation
Confidence intervals
6. Statistical Inference: Significance Tests
Tests for means, proportion, independence
8. Associations between Categorical Vars
Contingency Tables, Chi-Square
9. Linear Regression + Correlation
Scatter Plot
7. Comparing two Groups: Test for means

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Panel 7

What is Statistics?

use of #'s to explain stuff

prob. of something to occur

data representation as charts,

predictions

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What is Statistics?

Statistics is the science of making sense of data

Statistics consists of a body of methods for obtaining and analyzing data

- collect data	↔	Design Phase
- summarize data	→	Descriptive Phase
- analyse	}	
- report		

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Example: Use a small group of numbers to make inferences about large group.

GSS - General Social Survey - asks 2000 adults questions such as: "do you believe in life after death?"

Suppose 1250 say "yes"

Design - get data

Description: 1250 out of 2000 said "yes"

Inference 62.5% of US adults believe in life...
 $\pm 5\%$ hard part!

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Population: Set of all measurements under consideration

Sample: Subset of measurements from population

Descriptive Statistics: summarize info into data points

Inferential Statistics: predictions about population based on sample data.

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Parameter: # to summarise population

Statistics: # to summarise sample data

Ex: 1850 randomly selected US adults were asked "do you believe in heaven"? 1000 answered "yes", 800 "no", and 50 did not answer. We compute, somehow, that $55.5\% \pm 3\%$ of US adults believe in heaven.

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Ex: 1850 randomly selected US adults were asked "do you believe in heaven"? 1000 answered "yes", 800 "no", and 50 did not answer. We compute, somehow, that $55.5\% \pm 3\%$ of US adults believe in heaven. Identify:

population: US adults

sample: 1850

descr. stats: 1000 out of 1850

inf stats $55.5\% \pm 3\%$

statistics

50 said nothing

800 no's

parameter:

% of all US adults
(unknown)

yes
no
none

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Ex: Find avg. exam score in this class

No sample necessary, compute parameters directly
w/o estimation

Ex: Tax auditor has 25 000 accounts. How many
are in error?

Pick 200, check those, estimate parameters
based on the stats

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StatCrunch + GSS Data

login to www.statcrunch.com,

load GSS 2008 data

play around with it

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Panel 15

Want to categorize variables:

categorical

quantitative

~~QX + QNS~~

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