

POLITICS AND POLICIES: WHAT CAN STATISTICS TELL US?**Teaching Fellow:** Alfonso de la Torre**Course Assistants:** Ranjavati Banerji, Kenyi Cansino, Sheila Kyarisiima, Vinay Nagaraju

Week 1

Mon Aug 29 "Let the Numbers Speak": Goals of API-205

Wed Aug 31 Distributions: Normal and Skewed Distributions; Normalization; Probability

Fri Sept 2 Sampling and Data Gathering: Random, Stratified, and Cluster Samples. Sampling frame; Internal and External Validity.

Week 2 [Mon Sept 5 Labor Day: Holiday]

Wed Sept 7 Observational Studies vs. Experiments. Experimental Design: Placebos, Controls, Hawthorne Effect, Confounding. Randomization and Natural Experiments. Ethical Issues in Experimentation.

Week 3

Mon Sept 12 Sampling Distribution of Proportions, Central Limit Theorem. Data types.

Wed Sept 14 Sampling Distribution of Means, Central Limit Theorem. Data types.

Week 4

Mon Sept 19 Probability, Conditional Probability, and Equity

Wed Sept 21 Independence, p -values and Significance Levels

Week 5

Mon Sept 26 Confidence Intervals: Means. Margin of Error and Sample Size

Wed Sept 28 Confidence Intervals: Proportions. Margin of Error and Sample Size.

Week 6

Mon Oct 3 Hypothesis Testing: Means: One Sample. Practical and Statistical Significance

Wed Oct 5

Week 7 [Mon Oct 10 Columbus Day: Holiday]

Wed Oct 12 Hypothesis Testing: Means: Two samples

Week 8

Mon Oct 1 Hypothesis Testing: Proportions: One Sample

Wed Oct 19 Hypothesis Testing: Proportions: Two samples

Week 9

Mon Oct 24 The Search for Causation: Correlation and Causation; Confounding.

Wed Oct 26 Least Squares Bivariate Regression, Prediction, and Hypothesis Testing

Week 10 [Wed Nov 2 Progress Check]

Mon Oct 31 Multiple Regression and Hypothesis Testing

Week 11

Mon Nov 7 Multiple Regression and Hypothesis Testing: Dummy Variables. Reading a Regression Table; Interpreting Coefficients

Wed Nov 9 Program Evaluation: Regression Coefficients and Significance

Week 12

Mon Nov 14 Reading a Regression Table: Interpretation of Coefficients; Dummy Variables

Wed Nov 16 Reading a Regression Table: Interpretation of Coefficients: Log & Dummy Variables

Week 13 [Wed Nov 23 [Thanksgiving Holiday]

Mon Nov 21 Reading a Regression Table: Interpretation of Coefficients; Log & Dummy Variables

Week 14

Mon Nov 28 Reading a Regression Table: Interpretation of Coefficients; Logarithmic Variables

Wed Nov 30 Reading a Regression Table: Interpretation of Coefficients; Logarithmic Variables

Source for full syllabus: <http://www.hks.harvard.edu/syllabus/API-205.pdf>