



## Elementary Statistics: Pennsylvania State University

For a list of materials used in the course, please see [http://www.theNCAT.org/R2R/AcadPrac/CM/PSU\\_ElemStat\\_Mat.pdf](http://www.theNCAT.org/R2R/AcadPrac/CM/PSU_ElemStat_Mat.pdf).)

Elementary Statistics is a one-semester, four-credit course that covers the following topics:

Sampling

Experimentation

Measurement: Reliability, bias and validity

Displaying Data Distributions

Center, Relative Standing and Spread

Normal Distribution

Examining Relationships: Correlation and two-way tables

Regression, prediction and causation

Probability

Sampling Distribution

Estimation

Significance Test Concepts

- Hypotheses

- Test statistic

- P-value

- Conclusions

- Types of errors

- Sample size

- Power

Significance Test Methods

- Z-test for the population proportion

- Z-test for the population mean

- T- tests (population mean, 2 samples, paired)

- Chi-square tests for independence

- Chi-square tests for goodness of fit

- ANOVA

- Inference on regression

- Nonparametric methods