

OFFICIAL SYLLABUS
STAT 107 – CONCEPTS OF STATISTICS
Adopted Summer 2014*

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Catalog Description: Basic concepts of descriptive statistics; probability distribution and inferential statistics (estimating parameters and testing hypotheses); sampling, experimental design, correlation and regression, consumer price index. Credit may not be granted for both STAT 107 and STAT 244.

Textbook: Statistics: Concepts and Controversies, 8th Edition, by David Moore and William I. Notz

Course Outline and Topics

- Chap. 1 – Where Do Data Come from?
- Chap. 2 – Samples, Good and Bad
- Chap. 3 – What Do Samples Tell Us?
- Chap. 4 – Sample Surveys in the Real World*
- Chap. 5 – Experiments, Good and Bad
- Chap. 6 – Experiments in the Real World*
- Chap. 8 – Measuring
- Chap. 9 – Do the Numbers Make Sense?*
- Chap. 10 – Graphs, Good and Bad
- Chap. 11 – Displaying Distributions with Graphs
- Chap. 12 – Describing Distributions with Numbers
- Chap. 13 – Normal Distributions
- Chap. 14 – Describing Relationships: Scatterplots and Correlation
- Chap. 15 – Describing Relationships: Regression, Prediction, and Causation
- Chap. 17 – Thinking About Chance
- Chap. 18 – Probability Models
- Chap. 20 – The House Edge: Expected Values
- Chap. 21 – What is a Confidence Interval?
- Chap. 22 – What is a Test of Significance?

Learning Objectives:

After completion of the course, students will be able to:

- determine methods of sampling and designs of experiments that are most appropriate for the problem on hand
- determine methods and strategies for exploring, organizing, and summarizing data using appropriate graphical and numerical summaries

* Prerequisite courses were removed effective Spring 2016 by Department approval.

- understand the basic concept of probability and use it as a language to describe chance, variation, and risk
- understand the process of statistical inference and be able to draw conclusions about a population based on sample data
- read analytically results of statistical studies such as surveys and experiments
- appreciate statistical ideas and their impact on everyday living and decision-making

Any instructor should cover all of the material specified, except the starred chapters which are optional.