

OFFICIAL SYLLABUS
STAT 410 – STATISTICAL ANALYSIS

(Adopted Fall 2003)

Catalog Description: Design of surveys and experiments. Inferential statistics, including confidence intervals and hypothesis testing. Simple and multiple regression. May not be used to satisfy requirements of a mathematics or statistics concentration or minor.

Prerequisite: MATH 130 or 150 or consent of instructor.

Textbook: Introduction to the Practice of Statistics, 4th Edition, by David Moore and George McCabe

Course Outline and Topics

Chapter 1 – Looking at Data – Distributions

1.1 Displaying Distributions with Graphs; 1.2 Describing Distributions with Numbers; 1.3 The Normal Distributions

Chapter 2 – Looking at Data – Relationships

2.1 Scatterplots; 2.2 Correlation; 2.3 Least-Squares Regression; 2.4 Cautions about Regression and Correlation; 2.5 The Question of Causation

Chapter 3 – Producing Data

3.1 First Steps; 3.2 Design of Experiments; 3.3 Sampling Design; 3.4 Toward Statistical Inference

Chapter 4 – Probability – The Study of Randomness

4.1 Randomness; 4.2 Probability Models; 4.3 Random Variables; 4.4 Means and Variances of Random Variables

Chapter 5 – Sampling Distributions

5.1 Sampling Distributions for Counts and Proportions; 5.2 The Sampling Distribution of a Sample Mean

Chapter 6 – Introduction to Inference

6.1 Estimating with Confidence; 6.2 Tests of Significance; 6.3 Use and Abuse of Tests

Chapter 7 – Inference for Distributions

7.1 Inference for the Mean of a Population; 7.2 Comparing Two Means

Chapter 8 – Inference for Proportions

8.1 Inference for a Single Proportion; 8.2 Comparing Two Proportions

Chapter 9 – Analysis of Two-Way Tables

9.1 Data Analysis for Two-Way Tables; 9.2 Inference for Two-Way Tables

Any instructor should cover all of the material specified, additional sections are optional.