

Location: Curtiss 13 (lecture and lab)

Time: Lectures from 8:00-8:50 a.m. MWF and lab from 2:10-4:00 p.m. on Monday

Instructor: Dan Nettleton

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Hours: 9:00-10:30 a.m. Monday, Wednesday, and Friday or by appointment

Text: *The Statistical Sleuth: A Course in Methods of Data Analysis*, 2nd Edition,
F.L. Ramsey and D.W. Schafer, Duxbury Press

Purpose:

This section of Statistics 401 is designed primarily for graduate students in agriculture and biological sciences. The main goal of the course is to help students understand basic statistical reasoning and learn methods of data analysis that will be helpful as students plan to conduct and analyze their own experiments.

Prerequisites:

A one-semester undergraduate statistics course is a prerequisite for Statistics 401.

Grading:

- Homework 25%
- Exam 1 25% Monday, September 29, 2:10-4:00 p.m.
- Exam 2 25% Monday, November 3, 2:10-4:00 p.m.
- Final Exam 25% Monday, December 15, 7:30-9:30 a.m.

On exam days, be sure to arrive early with a calculator and pen or pencil. No make-up exams will be given unless circumstances are exceptional. Your final course percentage will be determined by the formula

$$\text{Course Percentage} = 0.25HW + 0.25E_1 + 0.25E_2 + 0.25F$$

where HW , E_1 , E_2 , and F represent the percentage correct on Homework, Exam 1, Exam 2, and the Final Exam, respectively. Below is a rough grading scale that may be made more lenient to compensate for difficult homework and/or exams.

Course %	100-93	92-90	89-87	86-83	82-80	79-77	76-73	72-70	69-67	66-63	62-60	59-0
Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F

All students have the opportunity to earn good grades in Statistics 401 by learning the course material well. Please let your instructor know of any difficulties as soon as possible.

If a student has a disability that qualifies under the Americans with Disabilities Act and Section 504 of the Rehabilitation Act and requires accommodations, he/she should contact the Disability Resources (DR) office for information on appropriate policies and procedures. DR is located on the main floor of the Student Services Building, Room 1076. Their phone number is 515-294-6624.

Course Topics*

Chapter	Topic
1	Drawing Statistical Conclusions
2	Inference Using t -Distributions
3	A Closer Look at Assumptions
4	Alternatives to the t -Tools
5	Comparisons Among Several Samples
6	Linear Combinations and Multiple Comparisons of Means
13	Two-factor analysis of variance and analysis of randomized complete block designs
7	Simple Linear Regression: A Model for the Mean
8	A Closer Look at Assumptions for Simple Linear Regression
9	Multiple Regression
10	Inferential Tools for Multiple Regression
11	Model Checking and Refinement
12	Strategies for Variable Selection
18	Comparisons of Proportions or Odds
19	Chi-Squared Tests
20	Logistic Regression for Binary Response Variables
21	Logistic Regression for Binomial Counts

*The first 13 chapters form the core of the course. Chapters 18 through 21 will be considered as time permits.

A Comment about the Text

The Statistical Sleuth is among the best statistics texts available for a course like Stat 401. The case studies at the beginning of each chapter involve real scientific problems. Many of them interesting. Sometimes, however, these problems are more complicated than is optimal for introducing statistical concepts or methods. Please try not to be discouraged by this. Initially you are not expected to understand the results presented for case studies at the beginning of the chapter. You should expect to understand the results presented in the case studies only after reading the whole chapter, perhaps multiple times. Reading assignments are provided on the course Web site. You should read through each assignment once quickly to get a general idea of the concepts covered. Don't worry about the details the first time through. Take the time to understand the details on second or third reading.

Some Homework Guidelines

- The purpose of all homework assignments in Stat 401 is to help you learn the course material.
- All homework assignments are posted at <http://www.public.iastate.edu/~dnett/S401/hw.shtml>.
- Homework is usually due each Wednesday at the beginning of class. Due dates are posted on the Web site and written on the homework documents.
- No late homework is accepted, but your lowest homework score will not be used to compute your grade.
- Answers to homework assignments should be neatly written or typed and well organized with no extraneous information and no attached computer output.
- You are encouraged to work with other students on homework problems. You must, however, write your own answers to the questions. Copying another's work is prohibited.