

## **Statistics 402 Section B Spring 2008**

**Instructor:** Dr. Bob Stephenson

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**Course website:** [www.public.iastate.edu/~wrstephe/stat402.html](http://www.public.iastate.edu/~wrstephe/stat402.html)

**Office Hours:** MWF 10:00 to 10:50 am, 12:10 to 1:00 pm, in 1127 HNSB  
and by appointment, in 1407 Wilson

**Lecture:** MWF 11:00 am to 11:50 am, 1420 Molecular Biology

**Required Text:** **Introduction to Design and Analysis of Experiments**, George W. Cobb, Springer, New York, 1997.

**References:** **Statistics for Experimenters**, George E.P. Box, William G. Hunter, and J. Stuart Hunter, John Wiley & Sons, New York, 1978.  
**Experimental Design**, 2nd edition, William Cochran and Gertrude Cox, John Wiley & Sons, New York, 1957.  
**Design and Analysis of Experiments**, 4th edition, Douglas C. Montgomery, John Wiley & Sons, New York, 1997.

**Objectives:** By the end of the course, students should have an appreciation for the advantages and limitations of experimentation. They should be able to design experiments to generate appropriate data efficiently. They should be able to analyze data from designed experiments and reach justifiable conclusions based on those data and analyses.

**Exams:** There will be two in-class exams and a final. You will be allowed to use formula sheets and a calculator. Parts of the exams may be “take home.” If you need to miss an exam because of circumstances beyond your control, please contact me before the exam.

**Homework:** Individual practice is an important part of learning. For this reason homework problems will be assigned regularly. No late homework will be accepted.

**Project:** A project involving design, collection of data, analysis of data and, interpretation of results will be assigned. This will be a group project. More details will be given later in the semester.

Iowa State University complies with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. If you have a disability and anticipate needing accommodations in this course, please contact me during the first two weeks of the semester. Retroactive requests for accommodations will not be honored. Before meeting with me, you will need to obtain a SAAR form with recommendations for accommodations from the Disability Resources/Learning Disabilities Office located in Room 1076 of the Student Services Building. Their telephone number is 515-294-6624.

## Statistics 402 Section B Spring 2008

<b>Point distribution</b>		
Exam 1	Friday, February 27	100
Exam 2	Friday, April 10	100
Final Exam	Monday, May 4	125
Homework		100
Project	Due Monday, April 27	75
		500

<b>Week</b>	<b>of</b>	<b>Material Covered</b>	<b>Text</b>
Jan.	12	Introduction: variability, principles, factor structure.	Chapter 1
Jan.	19	ANOVA: assumptions, informal analysis, basic ideas	Chapter 2
Jan.	26	ANOVA: tests and confidence intervals	Chapter 3
Feb.	2	Content of an experiment One-factor experiments: randomization	Chapter 4 Chapter 5
Feb.	9	One factor experiments: sample size, formal analysis	Handouts, Chapter 5
Feb.	16	Factorial crossing: general ideas	Chapter 6
Feb.	23	Factorial crossing: analysis	Chapter 6
		<b>Exam 1 - Friday, February 27</b>	
Mar.	2	Blocking: general idea	Chapter 7
Mar.	9	Latin square design	Chapter 7
Mar.	16	***** <b>SPRING BREAK</b> *****	
Mar.	23	Split plot design	Chapter 7
Mar.	30	Working with the basic design structures	Chapter 8
Apr.	6	Extending the basics: three factors	Chapter 9
		<b>Exam 2 - Friday, April 10</b>	
Apr.	13	Extending the basics: two factors in blocks	Chapter 9
Apr.	20	Experiments with a single replicate	Handouts
Apr.	27	Experiments with fractional replication	Handouts
May	4	<b>Final Exam - Monday, May 4</b>	