

## Math 333A Mathematical Statistics

Spring 2005

Hobbs 317

MWF 1:00-1:50pm

**Instructor:** Dr. Mike Coco

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**Office Hours:** MWF 9:00-11:00am or by appointment

**Textbook:** Mathematical Statistics with Applications by *John E. Freund* (Miller & Miller) Seventh Edition.

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### Course Description

This course provides a theoretical background and introduction to statistics by examining the topics of graphical displays and statistical measures, random samples, sampling distributions, expected value, the Central Limit Theorem, properties of the methods to determine point estimates, probability distributions (e.g. normal,  $t$ ,  $F$ , Chi-squared), confidence intervals, hypothesis testing, Type I and II errors, the power of tests, determining sample sizes, correlation, simple and multiple linear regression and analysis of variance.

### Course Objectives

Upon completion of this course the student will be able to:

1. Recognize important sampling distributions.
2. Apply the theories and tool of Point Estimation, Interval Estimation, and hypothesis Testing.
3. Demonstrate an understanding of Regression and Correlation.

### Course Outline

We will cover most sections from Chapters 8-14.

### **Attendance**

Attendance will not be taken. However since a lot of material will be covered each day, some of you may find it difficult to pass this course if you do not attend class.

### **Homework**

Homework will be assigned periodically. Some problems will be collected and graded. These should be written up as neatly and as detailed as possible. Your homework average will make up  $\frac{1}{5}$  of your course grade. The remaining problems are for extra practice and are certainly fair game for tests. I suggest you take advantage of these assignments and do as many exercises as possible.

### **Tests**

There will be three semester tests. Each test will be worth  $\frac{1}{5}$  of your final grade. Their tentative dates are:

Test 1 Friday February 4

Test 2 Friday March 25

Test 3 Friday April 1

Test make-ups will be given only under unusual circumstances and only if you notify me **BEFORE** the scheduled test date.

### **Final Exam**

The final exam will be comprehensive, covering the entire content of the course, and will make up  $\frac{1}{5}$  of your final grade. Under no circumstances will the final exam be given early. *Make travel plans accordingly.* The scheduled date, time and place of the final are:

**Tuesday May 3, 2005 2:00pm Hobbs 317**

### **Grading**

Course grades will be assigned using a 10-point scale. That is,

A 90-100

B 80-89

C 70-79

D 60-69

F 0-59

Your grade will be calculated using the following formula:

$$\frac{\text{Test 1} + \text{Test 2} + \text{Test 3} + \text{Homework Avg} + \text{Final Exam}}{5}$$

### **Important Dates**

1/10 First Day of Classes

1/17 End of Add Period

1/28 End of 3-week withdrawal Period

2/4 Pass/Fail Deadline  
2/25 Mid-semester  
2/26-3/6 Midterm Vacation  
3/25 End of 10-week Withdrawal Period  
4/15 Academic Awards Banquet  
4/26 Last Day of Classes  
4/27-5/3 Examination Period  
5/7 Commencement Day

**Quality of work**

In general, it is difficult to do Math neatly in pen since it is not possible to erase mistakes. I strongly suggest doing most of your work in pencil, or that you, at least, always have a pencil with you in class. Any work turned in to me (i.e. homework, tests, etc.) must be done neatly.

**Special Needs**

The college will make reasonable accommodations for persons with documented disabilities. Students should notify the Learning Resources Coordinator, Academic Advising Office, and their instructors of any special needs. Instructors should be notified by the third week of classes. All such discussions are confidential.