

# STA 225 Statistics

## Term II 2003-2004

**Instructor:** Dr. Mantzopoulos

Briggs 243

Phone: 313-993-1056 Fax 313-993-1166 e-mail [armstrov@udmercy.edu](mailto:armstrov@udmercy.edu)

Office Hours: 9:00-9:50 Mon, Wed, and Fri, also Friday 1:00-1:50pm,

Tues 10-11 and by appointment

### **Course Description:**

The course is designed to introduce students to some of the statistical methods available for the examination and analysis of the data relevant to the social, behavioral, and health sciences. It is neither a "how to" course nor a course in math: rather, it is aimed at an intermediate level of understanding, which should make statistics and the reasoning behind their use understandable to the student.

### **Math Prerequisite:**

To ensure full understanding of the concepts and applications, it is important that students possess the basic fundamental skills in math. Math 101, or its equivalent, is a prerequisite for the course. The required mathematics for statistics is not difficult but time consuming. Little class time will be allotted to explain basic arithmetic. It is almost impossible to learn the math and have time for the problem solving.

### **Text and materials:**

Victoria Mantzopoulos, *Foundations in Statistics*. 2002 UDMP 0-911550-98-4

A calculator is required. A simple calculator is best. The only required functions on the calculator are addition, subtraction, multiplication, division, and square-root. Be sure the square root function exists. A scientific calculator is not necessary. Do not spend more time learning the use of the calculator than learning the statistics.

### **Requirements:**

There will be three exams and homework assignments. Grades will be based on the total score on the exam and assignments, weighted as follows: Exam I 25%, Exam II 25%, Exam III 25%, and homework assignments 25%.

There are absolutely no make-up exams at any time for any reason. All exams are open-book and open-notes.

Assignments are the **evened-numbered problems** from the textbook. All calculations must be shown or points will be deducted (even if the answer is correct). Assignments are due at the beginning of the scheduled class period. Assignments submitted after the beginning of class will be considered late. There is a 5-point penalty per day (excluding weekends) for every

assignment turned in late. Homework will not be accepted after one-week past the original due date. A zero will be assigned to late homework in which the penalties are more than the total possible points. Homework must be organized and legible on **8 ½ x 11 paper**. Write only on **one-side** of the paper. Answers to calculations and specified parts of calculations must be **circled**. Circling is specified in class for each procedure or technique. Points will be deducted for misuse of circles. **Do not write or circle answers with red ink**. Students who do not pick up their graded work on the day that it is distributed in class must make arrangements to retrieve the work from the faculty's office.

**Attendance:**

Points will be deducted from the final grade based on the following absences: 0-1 0%, 2-3, 5%, 4-5 10%, 6 or more 20%. This is not a class you can miss and expect to pass. The instructor reserves the right to deny an exam or participation in class to a student who has missed 5 or more class sessions.

The instructor knows that this course generates anxiety in many students. Please feel free to make an appointment with the instructor at any time. Limited tutoring is available from the instructor and free tutoring services are available at University Advising and Academic Services (UAAS). Walk-ins and appointments are welcomed in the UAAS offices.

**Study Groups:**

Some students may want to establish a study group. Study groups tend to be advantageous in statistics courses. The instructor may be available for scheduled study group sessions.

**Grading:**

The following grading scale is used: 92-100% A, 90-91% A-, 88-89% B+, 82-87% B, 80-81% B-, 78-79% C+, 72-77% C, 70-71% C-, 68-69% D+, 62-67% D, 60-61 D-, and 0-59% F. Incomplete grades are not given.

**Notes:**

The instructor reserves the right to make changes to the requirements.

Students arriving late or leaving early will be considered absent from class. Please attempt to

Use the restroom or other facilities prior to the class or during the break.

The instructor reserves the right to establish a seating arrangement at any time.

Plagiarism, fraud, or academic misconduct will result in an F and a report to the Dean's office.

**STA 225 Reading and Homework Schedule Mon, Wed, and Fri, 11-11:50**

Jan	5	Introduction, Chapter 1
	7	Basic Terminology
	9	Graphs, Chapter 2
	12	Measures of Central Tendency, Chapter 3 ( <b>Chapter 1 homework due</b> )
	14	Measures of Central Tendency
	16	Measures of Dispersion ( <b>Chapter 2 homework due</b> )
	21	Measures of Dispersion/Measures of Position
	23	Correlation, Chapter 4 ( <b>Chapter 3 homework due</b> )
	26	Correlation
	28	Regression
30	Regression	
Feb	2	Review, ( <b>Chapter 4 homework due</b> )
	4	<b>EXAM I Descriptives</b>
	6	Probabilities, Sample Space Chapter 5
	9	Probability Addition Rule, Chapter 6 ( <b>Chapter 5 homework due</b> )
	11	Conditional Rule/ Multiplication Rule
	13	Combining Probability Theorems
	16	Binomials, Chapter 7, ( <b>Chapter 6 homework due</b> )
	18	Binomials
	20	Normal Probability Distributions, Chapter 8
	23	Normal Probability Distributions, ( <b>Chapter 7 homework due</b> )
25	Sampling Distributions, Chapter 9, ( <b>Chapter 8 homework due</b> )	
27	Review	
March	8	<b>EXAM II Probabilities, (Chapter 9 homework due)</b>
	10	Hypothesis Testing, Chapter 10
	12	Hypothesis Testing,
	15	One Pop: $z$ test
	17	One Pop: $t$ -test, Chapter 11 ( <b>Chapter 10 work due</b> )
	19	One Pop: $t$ -test
	22	One Pop: Chi-square, Chapter 12, ( <b>Chapter 11 work due</b> )
	24	Two Pop: Independent Means $z$ , Chapter 13 ( <b>Chapter 12 work due</b> )
	26	Two Pop: $z$
	29	Two Pop: Independent Means $t$
31	Two Pop: Dependent Means $t$	
April	2	Two Pop: $F$
	5	Two Pop: $F$
	7	ANOVA, Chapter 14 ( <b>Chapter 13 homework due</b> )
	12	ANOVA
	14	Multinomials/Contingency Tables
	16	REVIEW

**FINAL EXAM Wednesday, 21 April 2003 11:00-12:50**