Mathematics MAT 112 : Basic Statistics
Spring 2011
MWF 8:30 a.m. - 9:20 a.m., Hubbard 209A
MWF 9:30 a.m. - 10:20 a.m., Hubbard 209A

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Course Materials

Introductory Statistics, Seventh Edition, Prem S. Mann (required)
A four-function calculator (required)

Introduction

Statistics is the branch of mathematics devoted to the study of collecting, organizing and interpreting data. Increasingly it is recognized that any educated person, regardless of the field of study, shall be acquainted with statistical reasoning. It is a goal of this class to make you more familiar with how statistical reasoning plays a roll in our lives. We will be studying both descriptive and inferential statistics throughout the course. We will find out how to organize data in a meaningful way, and how to make decisions based on data.

Exams

There will be two in-class exams as well as a final cumulative exam. The exams will test your understanding of statistical concepts, your ability to work through some of the computations, as well as your ability to apply the techniques to certain applications. The first exam is scheduled for Friday, February 18, the second exam is scheduled for Friday, April 1. The final exam will be held on Monday, May 9 from 1:00 - 3:30 p.m. for section A, and on Wednesday, May 11 from 1:00 - 3:30 p.m. for section B. All exams will count for 25 percent of your final grade. There will be NO make-ups for missed exams. Please look over your schedule as soon as possible. If you see a potential conflict, inform me immediately.

Homework

The best way to learn Mathematics is to solve problems. I will be offering suggested problems to look at for the next class, but these problems will not be turned in for a grade. The homework problems will range in difficulty and include both computational problems as well as conceptual problems. The purpose of this is to help you identify where you might have difficulties. If you encounter any trouble with an assignment or a concept, seek help!

Quizzes

Every other Friday, starting with January 28th, we will have an in-class quiz. There will be a total of 6 quizzes throughout the semester. You should treat the quizzes as mini-exams, covering material from approximately 6 days worth of course work. The quizzes will consists of 4 or 5 problems similar to problems from your graded homework, and they are to make sure that you are keeping up with the concepts presented in class, and to identify where you are having problems before you take the exams. The quizzes will count for 25% of your final grade.

Attendance

Attendance in MAT 112 is extremely important. There is no official attendance policy for my courses. Although I *highly recommend* that you make an effort to be in class each day, on time, and willing to learn.

Grading
Your grade in this course will be based on two main factors: quizzes and exams. The quizzes will be worth 25% of your final grade, and the exams 75%. In addition to these factors, minor ethereal factors such attendance, class participation, attitude, and improvement over the course of the semester can also affect your grade. To determine your final grade, 90–100% = A, 80–89% = B, 70–79% = C, 60–69% = D, 59 and below = F, with the top two percents receiving a + and the bottom two percents receiving a −.

Calculators

Because we will be dealing with a reasonable amount of data in this course, the use of calculators will be allowed on homework, quizzes, and exams. However, the only type of calculator that you can use during the exams are the basic four-function calculators. That is, programmable calculators or cell phone calculators will not be allowed.

Important Dates

Friday, January 28 – Quiz I
Friday, February 11 – Quiz II
Friday, February 18 – Exam I
Friday, March 4 – Quiz III
Monday, March 14 - Friday, March 18 – Spring Break
Friday, March 25 – Quiz IV
Friday, April 1 – Exam II
Friday, April 15 – Quiz V
Friday, April 29 – Quiz VI
Wednesday, May 4 – Last Day of Classes
Monday, May 9, 1:00 - 3:30 – Final Exam, Section A
Wednesday, May 11, 1:00 - 3:30 – Final Exam, Section B

Suggestions

Come to class with your homework assignment completed every day
Study for at least 30 minutes each day in addition to completing your homework assignment
Read the section we will be covering in class *before* arriving to class
Do not fall behind!
Come to office hours to discuss concepts. I am here to help!

Syllabus
MAT 112 : Basic Statistics
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Week 1	January 21	Course Policies, Syllabus, Basic Terms
Week 2	January 24	Section 1.8 – Summation Notation
	January 26	Section 2.2 – Qualitative Data
	January 28	Section 2.3, 2.4 – Quantitative Data , **Quiz I**
Week 3	January 31	Section 3.1 – Measures of Central Tendency
	February 2	Section 3.2 – Measures of Dispersion
	February 4	Section 3.3 – Mean, Variance for Grouped Data
Week 4	February 7	Section 3.4 – Standard Deviation
	February 9	Section 4.1 – Experiments, Outcomes, and Sample Space
	February 11	Section 4.2 – Calculating Probability, **Quiz II**
Week 5	February 14	Section 4.3, 4.4 – Marginal and Conditional Probability
	February 16	Review
	February 18	**Exam I**
Week 6	February 21	Sections 4.5 - 4.7 – Types of Events
	February 23	Sections 4.8, 4.9 – Intersections and Unions
	February 25	Sections 5.2 – Probability Distribution of a DRV
Week 7	February 28	Sections 5.3, 5.4 – Mean and Standard Deviation of a DRV
	March 2	Section 5.5 – Factorials and Combinations
	March 4	Section 5.6 – Binomial Distribution, **Quiz III**
Week 8	March 7	Section 5.7 – Hypergeometric Distribution
	March 9	Section 5.7 – Hypergeometric Distribution
	March 11	Sections 6.1 - 6.3 – The Normal Distribution
Week 9	March 14	`NO CLASS`
	March 16	`NO CLASS`
	March 18	`NO CLASS`
Week 10	March 21	Section 6.4 – Standardizing a Normal Distribution
	March 23	Section 6.4 – Standardizing a Normal Distribution
	March 25	Section 6.6 – Determining z and x Values, **Quiz IV**
Week 11	March 28	Sections 7.1, 7.2 – Population and Sampling Distributions
	March 30	Review
	April 1	**Exam II**
Week 12	April 4	Sections 7.3, 7.4 – The Sampling Distribution of $\overline{x}$
	April 6	Section 7.5 – Applications of the Sampling Distribution of $\overline{x}$
	April 8	Sections 7.6, 7.7 – The Sampling Distribution of $\widehat{p}$
Week 13	April 11	Section 7.8 – Applications of the Sampling Distribution of $\widehat{p}$
	April 13	Section 8.3 – Est. of μ : σ known
	April 15	Section 8.3 – Est. of μ : σ known, **Quiz V**
Week 14	April 18	Section 8.5 – Est. of p : Large Samples
	April 20	Sections 8.6 - 8.7 – Determining Sample Size for Estimation of Proportion
	April 22	Section 9.1 – Hypothesis Testing : Introduction
Week 15	April 25	Section 9.2 – Hyp. Tests about μ : σ known
	April 27	Section 9.3 – Hyp. Tests about μ : σ unknown
	April 29	Section 9.4 – Hyp. Tests About p : Large Samples, **Quiz VI**
Week 16	May 2	Review
	May 4	Review