

Mathematics MAT 112 : Basic Statistics
Spring 2006
MWF 8:30 a.m. - 9:20 a.m., Room 208
MWF 9:30 a.m. - 10:20 a.m., Room 114

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Course Materials

Introductory Statistics, Fifth Edition, Prem S. Mann (required)

Introduction

Statistics is a side-branch of mathematics devoted to the study of collecting, organizing and interpreting data. 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 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 17 and will count for 20 percent of your final grade. The second exam is scheduled for Friday, March 31 and will count for 20 percent of your final grade. The final exam will be held on Tuesday, May 9 from 9:00 a.m. to 11:30 a.m. for Section A, and on Friday, May 5 from 9:30 a.m. to 12:00 p.m. for Section B. The final will count for 20 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. Homework will be assigned at the end of each class period and collected the following class period. I will choose 4 or 5 problems to grade in each assignment. To earn full credit for a problem, a complete solution to the problem must be submitted. Just writing down the answer will not earn full credit. In addition to points for each graded problem, 5 points on each assignment will count for completeness and neatness of the graded assignment. Late assignments will not be graded, but they will be eligible for the 5 completion points. If you are not in class the day an assignment is collected, you may turn in your assignment into my office later that day. However, your assignment will be considered late. The homework is designed to help you identify where you might have difficulties. If you encounter any trouble with an assignment or a concept, seek help! The homework will count for 20% of your final grade.

Quizzes

Every other Friday, starting with January 27th, 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 consist 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 20% of your final grade.

Attendance

Attendance in MAT 112 is extremely important. Although there is no official attendance policy, note that if you are not in class on a particular day, your homework will not be graded for a score. I will also require that you be in class at 8:30 am (or 9:30 for section B) and no later. If you are late to class, you may stay to enjoy the wonderful learning experience. However, your homework assignment for the day will be considered late.

Grading

Your grade in this course will be based on three main factors: homework, quizzes and exams. The homework will be worth 20% of your final grade, the quizzes 20%, and the exams 60%. 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

Tuesday, January 24 – Last Day to Drop/Add
Friday, February 17 – Exam I
Monday, March 13 - Friday, March 17 – Spring Break (no class)
Friday, March 31 – Exam II
Friday, March 31 – Deadline for WD or P/F
Monday, May 1 – Last Day of Classes
Wednesday, May 4, Sunday, May 8 – Study Days
Friday, May 5, 9:30 a.m. - 12:00 p.m. – Final Exam, Section B
Tuesday, May 9, 9:00 a.m. - 11:30 a.m. – Final Exam, Section A

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 homework and concepts. I am here to help!

Syllabus

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Spring 2006

Week 1	January 18	Course Policies, Syllabus, Basic Terms
	January 20	Section 1.8 – Summation Notation
Week 2	January 23	Section 2.2 – Qualitative Data
	January 25	Section 2.3 – Quantitative Data
Week 3	January 27	Section 2.4 – Histograms, Quiz I
	January 30	Section 3.1 – Measures of Central Tendency
	February 1	Section 3.2 – Measures of Dispersion
Week 4	February 3	Section 3.3 – Mean, Variance for Grouped Data
	February 6	Section 3.4 – Standard Deviation
	February 8	Section 4.1 – Experiments, Outcomes, and Sample Space
Week 5	February 10	Section 4.2 – Calculating Probability, Quiz II
	February 13	Section 4.3 – Counting Rule
	February 15	Review
Week 6	February 17	Exam I
	February 20	Section 4.4 – Marginal and Conditional Probability
	February 22	Sections 4.5 - 4.7 – Types of Events
Week 7	February 24	Sections 4.8, 4.9 – Intersections and Unions
	February 27	Sections 5.2 – Probability Distribution of a DRV
	March 1	Sections 5.3, 5.4 – Mean and Standard Deviation of a DRV
Week 8	March 3	Section 5.5 – Factorials and Combinations, Quiz III
	March 6	Section 5.6 – Binomial Distribution
	March 8	Section 5.7 – Hypergeometric Distribution
Week 9	March 10	Sections 6.1 - 6.3 – The Normal Distribution
	March 13	NO CLASS
	March 15	NO CLASS
Week 10	March 17	NO CLASS
	March 20	Section 6.4 – Standardizing a Normal Distribution
	March 22	Section 6.6 – Determining z and x Values
Week 11	March 24	Section 6.7 – Normal Approximation to Binomial Distribution, Quiz IV
	March 27	Sections 7.1, 7.2 – Population and Sampling Distributions
	March 29	Review
Week 12	March 31	Exam II
	April 3	Sections 7.3, 7.4 – The Sampling Distribution of \bar{x} .
	April 5	Section 7.5 – Applications of the Sampling Distribution of \bar{x} .
Week 13	April 7	Sections 7.6, 7.7 – The Sampling Distribution of \hat{p} .
	April 10	Section 7.8 – Applications of the Sampling Distribution of \hat{p} .
	April 12	Section 8.3 – Int. Est. of μ : Large Samples
Week 14	April 14	Section 8.4 – Int. Est. of μ : Small Samples, Quiz V
	April 17	Section 8.5 – Int. Est. of p : Large Samples
	April 19	Sections 8.6 - 8.7 – Determining Sample Size for Estimation of Proportion
Week 15	April 21	Sections 9.1, 9.2 – Hyp. Tests About μ for Large Samples using p -Value
	April 24	Section 9.3 – Hyp. Tests About μ : Large Samples
	April 26	Section 9.4 – Hyp. Tests About μ : Small Samples
Week 16	April 28	Section 9.5 – Hyp. Tests About p : Large Samples, Quiz VI
	May 1	Review