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Mathematics MAT 112 : Basic Statistics
Spring 2008
MWF 8:30 a.m. - 9:20 a.m., Hubbard 114
MWF 9:30 a.m. - 10:20 a.m., Hubbard 114

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Course Materials

Introductory Statistics, Sixth Edition, Prem S. Mann (required)
A four-function (non-graphing/programmable) calculator

Introduction

The word statistics is commonly used to refer to numerical facts. We are bombarded with numerical facts in the news, the internet or other media on a daily basis. When someone says "30 percent of the U.S. adult population smokes", that person is citing a numerical fact (which might be true or false!), which we often call a *statistic*.

A second interpretation of the word statistics refers to the field of study which we will be exploring in this course. For us *Statistics* is the 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. That is, how did the person come up with the fact "30 percent of U.S. adults smoke"? Is there a meaningful way to display this fact? Is this person lying to us? How can we tell? These are the types of questions we will be exploring in this course.

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 22, the second exam is scheduled for Friday, April 4, and the final exam will be held on Friday, May 9 from 8:00 a.m. to 10:30 a.m. for section A, and on Wednesday, May 14 from 9:00 a.m. to 11:30 a.m. for section B. All exams 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 February 1, 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 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

Friday, February 1 – Quiz I
Friday, February 15 – Quiz II
Friday, February 22 – Exam I
Friday, March 7 – Quiz III
Monday, March 17 - Friday, March 21 – Spring Break
Friday, March 28 – Quiz IV
Friday, April 4 – Exam II
Friday, April 18 – Quiz V
Friday, May 2 – Quiz VI
Friday, May 9, 8:00 - 10:30 – Final Exam, Section A
Wednesday, May 14, 9:00 - 11:30 – Final Exam, Section B

Academic Honesty

Please read the *Utica College Catalog* regarding Intellectual Honesty. Any student caught plagiarizing or cheating in the course will receive an "F for cheating" on their transcript. By submitting work in this course you are asserting that the work and conclusions are your own and not from an outside source. However, I do allow and *encourage* collaboration with other classmates on written assignments in this class.

Special Needs

Any student with a disability requiring special needs should contact both me and Academic Support Services, 315-792-3032 or khenkel@utica.edu. If you will be requiring any accommodations due to your documented learning or physical special need, you should notify me within the first two weeks of class. I will make every effort to accommodate you in a manner which will maintain the integrity of the course and its' content.

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
MAT 112 : Basic Statistics
Spring 2008

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