Introduction

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.

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, September 26, the second exam is scheduled for Friday, October 31. The final exam will be held on Saturday, December 13 from 8:00 to 10:30 for section A, and on Wednesday, December 10 from 9:00 to 11:30 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 September 5th, 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 as 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, September 5 – Quiz I
Friday, September 19 – Quiz II
Friday, September 26 – Exam I
Friday, October 10 – Quiz III
Monday, October 13 – Fall Break
Friday, October 24 – Quiz IV
Friday, October 31 – Exam II
Friday, November 14 – Quiz V
Wednesday, November 26 - Sunday, November 30 – Fall Break
Friday, December 5 – Quiz VI
Monday, December 8 – Last Day of Classes
Wednesday, December 10, 9:00 - 11:30 – Final Exam, Section B
Saturday, December 13, 8:00 - 10:30 – 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 concepts. I am here to help!
Syllabus
MAT 112 : Basic Statistics
Fall 2008

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