

Mathematics MAT 112 : Basic Statistics
Spring 2009
MWF 8:30 a.m. - 9:20 a.m., Hubbard 210
MWF 9:30 a.m. - 10:20 a.m., Hubbard 210
MWF 10:30 a.m. - 11:20 a.m., Hubbard 210

Instructor: Dr. Brad Emmons
Office: Faculty Center Room 209
Telephone: 792-3413 (Don't leave voicemail!)
Office Hours: Tuesday, 9:30 - 10:30, Thursday 10:30 - 11:30, or by appointment
Email: bemmons@utica.edu
Homepage: http://www.utica.edu/faculty_staff/bemmons

Course Materials

Introductory Statistics, Sixth 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. 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 20, the second exam is scheduled for Friday, April 3. The final exam will be held on Wednesday, May 13 from 9:00 a.m. to 11:30 a.m. for section A, on Saturday, May 9 from 1:00 p.m. to 3:30 p.m. for section B, and on Monday, May 11 from 1:00 - 3:30 for section C. 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 January 30, 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 2 weeks 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, 10:30 for section C) 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, January 30 – Quiz I
Friday, February 13 – Quiz II
Friday, February 20 – Exam I
Friday, March 3 – Quiz III
Monday, March 16 - Friday, March 20 – Spring Break
Friday, March 27 – Quiz IV
Friday, April 3 – Exam II
Friday, April 17 – Quiz V
Friday, May 1 – Quiz VI
Wednesday, May 6 – Last Day of Classes
Saturday, May 9, 1:00 - 3:30 – Final Exam, Section B
Monday, May 11, 1:00 - 3:30 – Final Exam, Section C
Wednesday, May 13, 9:00 - 11:30 – 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

Spring 2009

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