

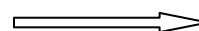
## ELEMENTARY STATISTICS

### **COURSE DESCRIPTION:**

Math 11 is an introduction to statistical methods for business, behavioral, and social science majors. Topics include descriptive measures of central tendency and variability, probability, binomial and normal distributions, random variables, sampling, estimating, hypothesis testing, correlation and regression.

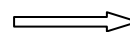
**PREREQUISITE:** Successful completion (grade of **C** or better) of Math 103

**TEXT:** Mario Triola, Essentials of Statistics, 4<sup>th</sup> Edition



### **MATERIALS NEEDED:**

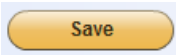
- ❑ **Two spiral gridpaper notebooks, Cambridge brand in the bookstore. No other notebooks accepted!**
- ❑ 3-ring binder
- ❑ Pencil(s)
- ❑ Scientific Calculator (No TI-89 or cellphones)
- ❑ **Access Code to My Math Lab (Pearson)**
- ❑ Internet Connection: Cable/DSL, T1 or other high-speed connection. Dial-up will **greatly limit** the resources you will be able to access from the online courseware.



### **HOMEWORK:**

- Homework is assigned on a regular basis at [www.mymathlab.com](http://www.mymathlab.com) as well as in class. You may work ahead if you like. ***It is important to stay current to be successful in the course!*** Each assignment has a due date. **Homework that is submitted late will be penalized by 25% of the points possible.**
- Any written problems and exercises assigned in class must be worked out thoroughly, completely and neatly **in pencil**; otherwise the work will not receive full credit.

*Note:*

- *When working on homework, you do not have to complete an entire assignment during one session. If you need to stop while in the middle of an assignment, simply hit the  icon and the program will save your work. You can then come back to the assignment at another time and continue from where you left off.*
- ***Being absent on the day homework is due does not excuse you from the late submission penalty.***

**Homework Notebook:** All homework problems are to be worked out completely, with all work shown in a **single-subject spiral notebook**. This notebook is to be used exclusively for this class. Each assignment and the problems of the assignment are to be clearly labeled and answers are to be boxed. The **Homework Notebook** will be collected on test day and will be worth **two homework** assignments.

**QUIZZES:** There will be in-class **homework quizzes** given on a random basis. These quizzes will be worth 10 points each and will be given either during the first ten minutes of class or during the last ten minutes of class. Any students who are not in their seats when the quiz is handed out **will not** be allowed to take the quiz and will receive a grade of zero for that quiz. There will be no makeup quizzes for missed quizzes.

**ATTENDANCE:** Attendance is **not optional**. Students are expected to attend all class meetings, be on time, and be in class the entire class session. **Two tardies can be counted as an absence.** **Eight (8) absences** may result in a drop from the course. However, if you decide to drop the course, it is **your** responsibility to make the drop official in the Admissions and Records office or else possibly receive a grade of F.

**Exams:**

- Four or five unit exams, worth 100 points each, will be given.
- There are **NO MAKEUPS** for missed tests. **NO EXCEPTIONS!!**
- *If you absolutely must be absent on the day a test is scheduled, you may discuss with me the possibility of taking the test early.*

**FINAL EXAM:**

A two hour comprehensive final exam worth 100 points will be given at the end of the semester during final exams week. This final exam is ***mandatory and will count as a regular exam.*** The final **may** be used to replace a low test score or a missed test. The final **may not** be used to replace the homework grade or quiz grade.

**GRADING:**

- **Homework** will represent 25% of the final course grade.
- **Quizzes** will represent 15% of the final course grade.
- The **six unit exams and the final exam** will represent 60% of the final course grade.

*Example:* If your homework average is 90, the average of your quizzes is 75 and the average of your chapter exams and final is 78, then you would compute your grade as follows:

$$(.25)(85) + (.15)(75) + (.60)(78) = 21.25 + 11.25 + 46.8 = 79.3$$

- Your grade will then be determined by the following **grading scale**:

<b>% Earned</b>	<b>Grade</b>
<b>90 – 100</b>	<b>A</b>
<b>80 – 89</b>	<b>B</b>
<b>67 – 79</b>	<b>C</b>
<b>55 – 66</b>	<b>D</b>
<b>0 – 54</b>	<b>F</b>

**Academic Dishonesty:** Academic dishonesty in any form is a very serious offense and will incur serious consequences, including but not limited to receiving a grade of F in the course. For the college policy on cheating and plagiarism, see the college catalog.

**Important Dates:**

- August 31, 2012 – Last day to add***
- September 3, 2012 – Labor Day Holiday***
- September 14, 2012 – Last day to file for Pass/No-Pass grading basis***
- October 12, 2012 – Last day to drop***
- November 12, 2012 – Veteran’s Day Holiday***
- November 22-23, 2012 – Thanksgiving Holiday***
- FINAL EXAM DATE:***

**Wednesday, December 12, 2012: 1:00 – 1:50**  
**(CCI-206)**

**NOTE:** *If you have a verified need for an academic accommodation or materials in alternate media per the Americans with Disabilities Act or Section 504 of the Rehabilitation Act, please contact me as soon as possible.*

➤ **COURSE OBJECTIVES:**

In the process of completing the course, the student will:

- A. Summarize and describe given data sets
- B. Apply the methods of descriptive statistics to determine the measures of central tendency and variability to a variety of problems.
- C. Apply basic principles of probability to determine probabilities of a variety of events.
- D. Analyze discrete and continuous probability distributions.
- E. Explore the basics of sampling theory.
- F. Estimate population parameters through studying confidence intervals.
- G. Examine hypothesis testing for small and large samples and multiple populations.
- H. Determine if a relationship exists between quantitative variables.

**COURSE CONTENT OUTLINE:**

- A. Introduction to Statistics
  - 1. Statistical data
  - 2. Frequency distributions
  - 3. Graphs
- B. Population Parameters and Sample Statistics
  - 1. Measures of central tendency.
    - a. Mean
    - b. Median
    - c. Mode
  - 2. Measures of Variability
    - a. Standard deviation
    - b. Quartiles
    - c. Range
- C. Probability
  - 1. Rules of probability, random variables, and expected value.
  - 2. Discrete and continuous probability distributions.
    - a. Binomial Distribution
    - b. Hypergeometric Distribution
    - c. Poisson Distribution
- D. Sampling Theory
  - 1. Simple random sample
  - 2. Central Limit Theorem
- E. Estimating Population Parameters
  - 1. Estimating from a small or large sample.
  - 2. Sample size.
- F. Hypothesis Testing (Parametric/Nonparametric)
  - 1. One population, one and two sided tests.
    - $z$ -test for means and proportions.
    - $t$ -test for means (independent and dependent samples)
  - 2. Two populations, sampling distributions
  - 3. Chi-squared (Goodness of Fit and Contingency Tables)
  - 4. Analysis of Variance (ANOVA) (*as time permits*)
- G. Correlation and Simple Linear Regression (*as time permits*)
  - 1. Correlation coefficient
  - 2. Regression coefficient
  - 3. Test of hypothesis about the value of correlation/regression coefficient.