



## Course Syllabus

**Course:** MAT206 (Elements of Statistics) **Semester:** Spring 2012  
**Section:** 36038  
**Day(s):** TTh **Time:** 1:30PM-2:45PM **Location:** CM-472  
**Meeting Dates:** January 17 – May 11

### INSTRUCTOR

**Name:** Christopher P. Benton, Ph.D. **Office Location:** CM-422  
**Phone:** (480) 423-6248 **Email:** docbenton@docbenton.com  
**Office Hours:** TTh 10:30 am - 1:00 pm **Web:** [www.docbenton.com](http://www.docbenton.com)  
**Special Notes:** Information in this syllabus is subject to change at the discretion of the instructor in order to meet the particular needs of this class.

### TEXT & SUPPLIES

**Title:** Elementary Statistics Using the TI-83/84 Plus Calculator, 3<sup>rd</sup> edition **Author:** Mario F. Triola

**Publisher:** Addison Wesley

**Other materials required:** TI-83/84 Calculator (no calculators with computer algebra systems allowed)

Textbooks can be purchased at the Campus Bookstore or online at [www.foollett.com](http://www.foollett.com)

### COURSE DESCRIPTION

Basic concepts and applications of statistics, including data description, estimation and hypothesis tests. Prerequisites: (A grade of "C" or better in MAT140, or MAT141, or MAT142), or (a grade of "C" or better in MAT150, or MAT151, or MAT152), or equivalent, or satisfactory score on district placement exam.

PLEASE NOTE: A TI-83 or TI-84 graphing calculator is required for homework and exams.

## **COURSE OUTLINE**

The following chapters and sections will be covered in this course:

1. Introduction to Statistics  
1.1, 1.2, 1.3, 1.4, 1.5, 1.6
2. Summarizing and Graphing Data  
2.1, 2.2, 2.3, 2.4, 2.5
3. Statistics for Describing, Exploring, and Comparing Data  
3.1, 3.2, 3.3, 3.4
4. Probability  
4.1, 4.2, 4.3, 4.4, 4.5, 4.7
5. Discrete Probability Distributions  
5.1, 5.2, 5.3, 5.4
6. Normal Probability Distributions  
6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7
7. Estimates and Sample Sizes  
7.1, 7.2, 7.3, 7.4
8. Hypothesis Testing  
8.1, 8.2, 8.3, 8.4, 8.5
9. Inferences from Two Samples  
9.3
10. Correlation and Regression  
10.1, 10.2, 10.3
11. Goodness-of-Fit and Contingency Tables  
11.1, 11.2, 11.3
12. Analysis of Variance  
12.1, 12.2

## **COURSE COMPETENCIES/OBJECTIVES**

1. Identify the difference between descriptive and inferential statistics.
2. Distinguish between a population and a sample.
3. Group a set of data and present the grouping in graphical form.
4. Determine the mean, median, mode and standard deviation of data set and find the z-score for a data piece.
5. Define random variable and the probability distribution of a random variable.
6. Find probabilities for normal random variables by using the standard normal distribution.
7. Construct random samples.
8. Graph the sampling distribution of the mean for all sample sizes and all populations.
9. Find point and interval estimates of population means and proportions.
10. Describe the logic of hypothesis testing emphasizing the role of probability distributions and types of error.
11. Perform inferences about one mean or proportion in the case of normal populations or large sample size.
12. Perform inferences about two means or proportions in the case of normal populations or large sample size.
13. Use the Chi-square goodness-of-fit test to determine if two populations have the same shape.
14. Use the Chi-square independence test to determine whether two characteristics of a population are associated (dependent).
15. Identify the best-fitting regression line for a set of data points.
16. Partition the total sum of squares for a set of data points to find measures of regression line fit and linear relationship.

## **COURSE REQUIREMENTS**

- Attendance – Excessive absences can result in withdrawal from the course.
- Preparation – Students are expected to read each section prior to its being covered in class.
- Participation – Active participation is essential. Students should participate in class and ask questions over problems and material they do not understand.
- Homework – Students should complete assignments before the next class.
- Exams – In general, exam problems will come from the homework.

## ATTENDANCE

- Attendance is required and essential to achieve course objectives. Active participation in class is an important component of your grade.
- You may accumulate **four absences** without penalty. After that, each absence will result in one point being deducted from your final average even if this results in attendance counting more than 10%. After **four more absences** you may be **withdrawn** from the course. However, if you want to withdraw from this or any other course, do not quit coming to class and assume that you will be withdrawn automatically. That may not happen. It is your responsibility to submit a formal drop form if you want to withdraw.
- Official absences (field trips, tournaments) and religious holidays shall not count among the total number of absences allowed. However, students shall obtain an official absence verification from the appropriate dean, and present it to the instructor **before** the absence. Prior arrangements must be made with the instructor for make-up work. If arrangements have been made, the student shall not be penalized.
- Tardiness – **Arriving late or leaving early will count as 1/2 absence**. Students are expected to remain in class until dismissed by the instructor. Leaving during class to go to the restroom, get a drink of water, or to make cell phone calls can be disruptive to other students, and will count as 1/2 absence. If you arrive late, let me know at the end of class.

## TESTING & MAKEUP POLICY

| Exam       | Percentage |
|------------|------------|
| Test 1     | 18%        |
| Test 2     | 18%        |
| Test 3     | 18%        |
| Test 4     | 18%        |
| Final Exam | 18%        |
| Attendance | 10%        |

**The final exam grade can replace your lowest grade on any of the other tests (Test 1 Through Test 4). However, nothing can replace the final exam grade. The final exam is mandatory. Also, if you miss a test, then that automatically becomes the grade replaced by the final. If you miss a second test, then you will need a good, verifiable excuse in order to receive a makeup exam. No leaving the room until you have turned in your test.**

## ASSIGNMENTS – Subject to Change at Instructor’s Discretion

Assignments and other pertinent information are posted at [www.docbenton.com](http://www.docbenton.com). Exam problems will generally be taken from the homework. Also, additional credit may be earned by turning in a homework portfolio at the end of the semester.

## GRADING SCALE

| Grade | Range     |
|-------|-----------|
| A     | 90-100%   |
| B     | 80-89%    |
| C     | 70-79%    |
| D     | 60-69%    |
| F     | Below 60% |

## ELECTRONIC DEVICE POLICY

Cell phones, mp3 players, computers, and similar electronic devices are not to be used during class.

## ACCOMMODATIONS

It is a college policy to provide reasonable accommodations to students with disabilities. If you would like to request accommodations due to a physical, mental, or learning disability, please contact the Disability Resources & Services office, SC-144, 480-423-6517.

## ACADEMIC HONESTY

- Every student in this class is expected to produce his/her own original work.
- Cheating/dishonesty is unacceptable and will not be tolerated.
- Cheating/dishonesty will result in being dropped from the course with a failing grade.
- Cheating/dishonesty will result in a letter to the Dean of Students for further action.

## CODE OF CIVILITY

As your instructor, I will strive to be professional, courteous, respectful and empathetic to your needs and concerns. I will:

- Begin and end class on time
- Be prepared for each class session
- Provide academic feedback and grade assignments in a timely manner
- Be available for individual consultation
- Clarify assignments and inform you of any adjustments to the class schedule or policies

As a student, you are expected to be reflective, courteous, respectful and empathetic to your classmates, instructor and other college staff assisting in your learning. You are expected to arrive on time for class and remain until class has ended. Your instructor should be notified in advance if there is a need to leave early. You will be expected to:

- Turn off cell phones and pagers before entering classroom.
- Be in class and be on time
- Be prepared for class sessions
- Participate in class activities
- Follow instructions and complete assignments.
- Put forth your best effort
- Be quiet and attentive during lectures
- Raise your hand if you have a question
- Maintain knowledge of your grade status
- Contact your instructor right away about concerns or situations that interfere with your success in class
- Comply with policies found in the SCC Catalog and SCC Student Handbook
- Be responsible for all information contained in this syllabus

**Students may be dismissed from class for disruptive behavior.**

SCC General Education Statement:

General Education enhances students' abilities in critically analyzing and effectively communicating in Written, Oral, Visual, and Numerical form. General Education is WOVeN through the curriculum and co-curricular experiences at Scottsdale Community College.

## DAY & EVENING FINAL EXAM SCHEDULE

Classes listed as **MWF** below include day classes which meet regularly on Monday/Wednesday, Monday/Tuesday/Wednesday, Monday/Wednesday/Friday, Monday/Wednesday/Thursday, four times a week, or daily. **TuTh** indicates classes which meet on Tuesday and Thursday. Final exams for classes meeting only on **Friday, Saturday or Sunday** will be held on the last class meeting of the semester.

**Nonstandard Class Meeting Times\*:**

- Classes scheduled to begin before 7:30 a.m.
- Classes scheduled to begin between 3:30 p.m. and 3:55 p.m.
- Classes scheduled to begin before 4:00 p.m. that meet on Monday only, Tuesday only, Wednesday only or Thursday only.

\*Classes meeting at nonstandard class meeting times may experience location and/or student schedule conflicts. When a student's class schedule results in a time conflict between two or more final exams, the instructors, in consultation with the Department Chair(s), will work together to establish an alternative final exam schedule for the student.

| Day of Week     | Classes Starting Between  | Day/Date of Exam | Exam Time (Start/End)   |
|-----------------|---------------------------|------------------|-------------------------|
| MWF             | 7:30 a.m. and 8:25 a.m.   | Monday, May 7    | 7:30 a.m. to 9:20 a.m.  |
| MWF             | 8:30 a.m. and 9:25 a.m.   | Wednesday, May 9 | 7:30 a.m. to 9:20 a.m.  |
| MWF             | 9:30 a.m. and 10:25 a.m.  | Monday, May 7    | 9:30 a.m. to 11:20 a.m. |
| MWF             | 10:30 a.m. and 11:25 a.m. | Wednesday, May 9 | 9:30 a.m. to 11:20 a.m. |
| MWF             | 11:30 a.m. and 12:25 p.m. | Monday, May 7    | 11:30 a.m. to 1:20 p.m. |
| MWF             | 12:30 p.m. and 1:25 p.m.  | Wednesday, May 9 | 11:30 a.m. to 1:20 p.m. |
| MWF             | 1:30 p.m. and 2:25 p.m.   | Monday, May 7    | 1:30 p.m. to 3:20 p.m.  |
| MWF             | 2:30 p.m. and 3:25 p.m.   | Wednesday, May 9 | 1:30 p.m. to 3:20 p.m.  |
| MWF             | 3:30 p.m. and 3:55 p.m.   | Monday, May 7    | 3:30 p.m. to 5:20 p.m.* |
| MW or M Only    | 4:00 p.m. and 5:25 p.m.   | Monday, May 7    | 4:00 p.m. to 5:50 p.m.  |
| MW or M Only    | 5:30 p.m. and 6:55 p.m.   | Monday, May 7    | 6:00 p.m. to 7:50 p.m.  |
| MW or M Only    | 7:00 p.m. and 8:30 p.m.   | Monday, May 7    | 8:00 p.m. to 9:50 p.m.  |
| W Only          | 4:00 p.m. and 5:25 p.m.   | Wednesday, May 9 | 4:00 p.m. to 5:50 p.m.  |
| W Only          | 5:30 p.m. and 6:55 p.m.   | Wednesday, May 9 | 6:00 p.m. to 7:50 p.m.  |
| W Only          | 7:00 p.m. and 8:30 p.m.   | Wednesday, May 9 | 8:00 p.m. to 9:50 p.m.  |
| TuTh            | 7:30 a.m. and 8:25 a.m.   | Tuesday, May 8   | 7:30 a.m. to 9:20 a.m.  |
| TuTh            | 8:30 a.m. and 9:25 a.m.   | Thursday, May 10 | 7:30 a.m. to 9:20 a.m.  |
| TuTh            | 9:30 a.m. and 10:25 a.m.  | Tuesday, May 8   | 9:30 a.m. to 11:20 a.m. |
| TuTh            | 10:30 a.m. and 11:25 a.m. | Thursday, May 10 | 9:30 a.m. to 11:20 a.m. |
| TuTh            | 11:30 a.m. and 12:25 p.m. | Tuesday, May 8   | 11:30 a.m. to 1:20 p.m. |
| TuTh            | 12:30 p.m. and 1:25 p.m.  | Thursday, May 10 | 11:30 a.m. to 1:20 p.m. |
| TuTh            | 1:30 p.m. and 2:25 p.m.   | Tuesday, May 8   | 1:30 p.m. to 3:20 p.m.  |
| TuTh            | 2:30 p.m. and 3:25 p.m.   | Thursday, May 10 | 1:30 p.m. to 3:20 p.m.  |
| TuTh            | 3:30 p.m. and 3:55 p.m.   | Tuesday, May 8   | 3:30 p.m. to 5:20 p.m.* |
| TuTh or Tu Only | 4:00 p.m. and 5:25 p.m.   | Tuesday, May 8   | 4:00 p.m. to 5:50 p.m.  |
| TuTh or Tu Only | 5:30 p.m. and 6:55 p.m.   | Tuesday, May 8   | 6:00 p.m. to 7:50 p.m.  |
| TuTh or Tu Only | 7:00 p.m. and 8:30 p.m.   | Tuesday, May 8   | 8:00 p.m. to 9:50 p.m.  |
| Th Only         | 4:00 p.m. and 5:25 p.m.   | Thursday, May 10 | 4:00 p.m. to 5:50 p.m.  |
| Th Only         | 5:30 p.m. and 6:55 p.m.   | Thursday, May 10 | 6:00 p.m. to 7:50 p.m.  |
| Th Only         | 7:00 p.m. and 8:30 p.m.   | Thursday, May 10 | 8:00 p.m. to 9:50 p.m.  |

Any variance from this schedule due to an exam schedule conflict should be discussed with the instructors involved.