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Cuyamaca College
Math 160

Instructor: Bryan Elliott
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ELEMENTARY STATISTICS

Section 5500

M 10:30 am – 12:20 pm H134

W 10:30 am – 11:20 pm H119

W 11:30 am – 12:20 pm H134

TEXTBOOK: *Elementary Statistics: Picturing the World*, Fifth Edition, Larson, Farber

REQUIRED MATERIALS:

- Lecture note packet
- Graphing Calculator** **I HIGHLY recommend the TI NSpire(non CAS) or TI84
- AN INQUISITIVE MIND (No apathy allowed)

CLASS POLICIES:

- Students are expected to come to class on time and to do the assigned work.
- Students will be in their seat with pencils sharpened, notes out, ready to go and brains thinking about statistics before the start of class each day

GRAPHING CALCULATOR:

- Our Department highly recommends and supports the use of TI Graphing Calculators in our Mathematics classes. For this class in particular, I would recommend that you use a TI-84 calculator.

INTRODUCTION: The course is a study of statistics using projects and data. We will examine statistics by looking at data, with the analysis being done by calculator or computer rather than manually calculating and analyzing.

COURSE OBJECTIVES: This is an introductory course and as a consequence there is emphasis on terminology as well as basic concepts. Common sense and intuition will be nearly as useful as experience and background. The material presented relies on concepts already completed in Intermediate Algebra, so a thorough understanding is expected. A grade of C or better in Intermediate Algebra is prerequisite. Formula use and formula manipulation play a large part in the course. Statistics used to describe (descriptive), statistics used to predict (inferential), and probability are three major themes in this course.

MATERIAL COVERED: Chapters 1-9 will form the core of the course.

Any information given here may change at the discretion of the instructor at any time.

This course adheres to the policies outlined in the Cuyamaca College catalogue.

For further information, see Academic Policies stated in the catalogue.

OFFICE HOURS: My office hours are MW 6:45-7:30am and 12:30pm-1pm; W-1pm-1:30pm. I am also available by appointment. Please be sure to email or call me (**EMAIL IS BEST**) if you are going to miss class to get the homework assignment so you can be prepared for the next class.

STUDENT LEARNING OUTCOMES

Students will be able to:

1. Construct and interpret frequency distributions, histograms, cumulative frequency tables and ogives; stem leaf plots, and box and whisker plots; draw simple conclusions by comparing, these ways of organizing numerical data.
2. Calculate and interpret measures of central tendency including mean, mode, and median; and weighted mean, distinguish when each measure is appropriate to use.
3. Calculate and interpret quartiles and deciles and measures of variability including range, interquartile range, variance and standard deviation use these measures with different distributions.
4. Calculate standard scores and apply Chebyshev inequality to distributions.
5. Apply the rules of counting to calculate the number of possible outcomes, number of permutations and number of combinations, deciding under what conditions these rules apply.
6. Define sample spaces and events for experiments; distinguish between mutually exclusive, independent and dependent events, calculate probabilities of simple, compound, and conditional events using postulates, additive and multiplicative rules and Bayes Theorem.
7. Define random variables and the probability distributions they generate; describe characteristics, expected values, variance and methods for calculating probabilities for these probability distributions emphasizing the binomial, hypergeometric, and normal probability distributions.
8. Describe the sampling distribution of sample means for both finite and infinite populations; apply the Central Limit Theorem; describe the sampling distribution of sample proportions.
9. Create and interpret confidence intervals for population means including when σ is unknown and samples are small; determine necessary sample size to estimate means within prescribed error bounds.
10. Create and interpret confidence intervals for population proportions, determine necessary number of independent trials to estimate proportions within prescribed error bounds.
11. Carry out formal tests of hypotheses concerning single population means and single population proportions, including formulating hypotheses, choosing appropriate test statistics, calculating critical values for rejection regions, calculating p-values, reaching decisions about the hypotheses, and recognizing possible Type I or Type II errors.
12. Describe the linear relationships between two variable using the correlation coefficient; derive the least squares regression equation and make predictions using the regression model; predicted Y-Values, Slopes of Regression Lines and Y-Intercepts of Regression Lines.

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HOMEWORK: Homework assignments are listed IN YOUR LECTURE NOTES. You are expected to work homework assignments from each section that we cover by the **NEXT** class period. Homework will be assigned for each section covered in the text and will be given in your lecture notes as we progress through the course. Keep current on your homework and I encourage you to ask questions about the homework in class. Attached is a listing of exercises assigned for home study. Homework problems are similar to the problems which will appear on course examinations and the final exam. **Regular practice is essential for success in mathematics; you should be prepared to spend at least two hours studying outside of class for each hour of in-class time.** Homework will be collected on each test day.

HOMEWORK QUIZZES: The instructor reserves the right to administer homework quizzes. These quizzes will entail the student being provided a section number and a problem number. The student may use their homework and will write down the original problem along with the solution which will include any necessary steps to arrive at said solution. No book or other materials will be allowed.

EXTRA HELP: Statistics is a challenging subject, but the methods for success are simple: read the text, participate in class, and keep up on assignments. Many students find that forming study groups with other students is a very effective way for them to master mathematics. To support your efforts to succeed in this class, I refer you to Supervised Tutoring services that are available. Please refer to the schedule listings. All supervised tutoring sections are FREE to you. You need only enroll to receive services- no units or grades are given. The STEM Center is just outside!! The hours last semester were Monday – Thursday from 9am – 5 pm and Friday 9am – 12 noon. Please check with me or out in the STEM center for the current hours. **You may also come to me for help at any time.**

GRADING: There will be **4 exams** and a final exam. **NO EXAMS WILL BE DROPPED**

- Each exam will cover 1-2 chapters and will be worth 100 points
- Quizzes may be given frequently. Sometimes announced and sometimes a surprise.
- There will be some special projects, such as computer assignments, given and will be worth between 4 to 6 points each
- HW is collected with each exam and graded for completeness 0 – 4 points each.
- The final exam will be worth about 130 points. (Final exam will be comprehensive)

The following grading scale is used:

90-100%	A	Excellent Achievement of Course Objectives
80-89%	B	High Achievement of Course Objectives
70-79%	C	Satisfactory Achievement of Course Objectives
60-69%	D	Minimal Achievement of Course Objectives
below 60%	F	Failure

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MAKEUP TESTS: THERE WILL BE NO MAKEUP TESTS!!! QUIZZES CANNOT BE MADE UP!!

REDO EXAMS: After each of the exams are handed back, you have the opportunity to redo any of the problems in which you missed points. This must be done on separate paper and turned in with your original exam. Based on the correctness of your revisions you can get a maximum of 10 extra points added to your exam score.

MAKING THE GRADE: In order to pass this class with a grade of C or higher, the student must:

- **Earn a D or better on the final exam**, and
- Have an overall grade in the class of at least 70%.

For example, if a student has an overall grade of 92% before taking the final exam, and earns an F on the final exam which drops the overall grade down to 84%, the highest grade the student could earn for the class would be a D.

A student with a verified disability may be entitled to appropriate academic accommodations. Please contact the instructor and/or the Disabled Students Program and Services Office for further information.

CELL PHONES WILL BE TURNED TO SILENT MODE (NOT VIBRATE) OR PREFERABLY OFF INSIDE MY CLASSROOM.

A student may be dropped for:

1. Lack of Prerequisite
2. Disruptive behavior
3. Excessive Absence(4 or more) or excessive tardiness

ACADEMIC INTEGRITY: Any student found to be cheating on an assignment will receive a zero for that assignment and be suspended from class for 3 Three days.

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MATH 160 TENTATIVE SCHEDULE (subject to change)

Week 1	Intro, Chap 1 Section 2.1
Week 2	Sections 2.2, 2.3
Week 3	Sections 2.3, 2.4, 2.5, review
Week 4	Test1(C 1 & 2), Sections 3.1, 3.2
Week 5	Sections 3.2, 3.3
Week 6	Sections 3.4, 4.1, 4.2
Week 7	Section 5.1, review
Week 8	Test 2(C 3 & 4), Section 5.2
Week 9	Sections 5.3, 5.4
Week 10	Sections 5.5, 6.1
Week 11	Sections 6.2, 6.3
Week 12	review, Section 7.1, Test 3(C 5 & 6)
Week 13	Sections 7.2, 7.3
Week 14	Sections 9.1, 9.2
Week 15	Test 4(C7 & 9), review
Week 16	Instructors choice, review
Week 17	FINAL EXAMS

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