COURSE CONTENT:

This course is designed to introduce students to statistical thinking. It deals with simple graphical descriptions, various numerical descriptive measures, the notion of probability, discrete and continuous random variables, and sampling distributions. Students will also examine aspects of hypothesis testing involving one or two populations. Throughout the course, students should emphasize the understanding of statistical concepts—what these concepts involve and when they should or should not be used. Finally, students are expected to demonstrate competence in the use of statistical programs.

Competency Statement:

1. Students are expected to produce a variety of graphical and numerically descriptive statistical measures.

2. Students are also expected to exhibit a critical evaluation of statistical presentations.

3. Students should be able to interpret statistical results with an eye toward understanding the nature of statistical samples as well as the meaning of the results.

4. Students must understand the limitations of statistics, when statistical analysis is appropriate, and when it is not.

5. Students should be able to perform elementary statistical analyses, including hypothesis testing, and reach a statistically defensible result.

TEXT:


Statistical Program: This text is accompanied by a statistical program entitled The Data Analyst. This program is simple to use, and students will find it helpful. It may, for example, reduce the time spent working through problems and allow students to concentrate on the nature of the result.

Assignments:

19 Week 1: Introduction to the course, Math Screening Exam, Defining Statistics, Chp 1, 2
Week 2: Descriptive Statistics, Chapter 3, Assigned Problems.

Week 3: Introduction to Probability, Chapter 4, Assigned Problems

Week 4: Chapter 4, Introduction to Probability, Assigned Problems, EXAMINATION.

Week 5: Chapter 5, Discrete Probability Distributions, Assigned Problems.

Week 6: Chapter 6, Continuous Probability Distributions, Assigned Problems.

Week 7: Chapter 7, Sampling and Sampling Distributions, Assigned Problems

Week 8: Chapter 7, Sampling and Sampling Distributions, Assigned Problems

Week 9: Chapter 8, Interval Estimation, Assigned Problems.

Week 10: Chapter 8, Interval Estimation, Assigned Problems, EXAMINATION

Week 11: Chapter 9, Hypothesis Testing, Assigned Problems

Week 12: Chapter 9, Hypothesis Testing, Assigned Problems, EXAMINATION

Week 13: Chapter 10, Inference about Means and Proportions of Two Populations, Assigned Problems.

Week 14: Chapter 11, Inferences About Population Variances, Assigned Problems,

Week 15: EXAMINATION

Evaluation:

The FIVE examinations will be used to assign grades. Each of the six exams carries the same weight in determining the final grade for the course. In addition to the six exams, students may gain up to five bonus points toward their final grade by completing all assigned problems and submitting them when due.

The grade distribution is as follows:

A: 92 - 100
B: 80 - 91
C: 70 - 79
D: 60 - 69
Notes on the Course:

1. There is no secret to the successful completion of this course. It is simple. Do the assigned problems. Experience in previous classes demonstrates that students who do the assigned problems do well in the course. Conversely, students who do not do the assigned problems, do not do well in the course. To encourage you to do the problems, you may earn up to five bonus points for the successful completion of them. There is no penalty for those students who chose not to do the problems.

2. Doing the problems is essential to understanding statistical concepts. But another very important strategy to help you do well in the course is to form study groups with your fellow students. Research on small study groups has shown that the members of such groups tend to score much higher on exams than those who are not members. Further, you will find that the study group will be very important in helping each member complete the assigned problems.

3. The computing center has several statistical programs that you may use to solve the assigned problems. In working through the problems you will find that the computer program is a very efficient device for completing your assigned problems. In working with the program, you will save many, many hours of work and, in addition, improve your array of personal skills.

4. If you develop difficulty as we proceed through the course, the best approach is to ask questions, lots of questions. If you feel the need for additional discussion, see me during office hours or make arrangements to spend time with a statistical tutor who is available, free of charge, to students.

5. While the pace of the course is quite slow in the beginning weeks of the course, things pick up quite rapidly after that. This increased pace, in turn, will require more time and attention by you to the assigned problems.

6. All exams will be completed in the classroom. Students will be required to provide their own paper.

7. A calculator with statistical functions will be a necessity in this course.