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Office Hours:  9:00 – 10:00 a.m. Mondays - Thursdays and by appointment.

Prerequisites:  Completion of 67-108 or 67-171 with a grade of "C" or higher; or, for freshman students, qualification for enrollment in 67-171 at the time of their admission to the University is required.

Excel Software w/ data analysis add-in. If you use a Mac, data analysis is not part of Excel, you will need to either download a version for the web or use one of the PCs in a campus computer lab.

Course Goals

The purpose of this course is to introduce you to basic business and economic statistics. People are inundated with statistics every day and it is important that you are able to understand how they can be used and misused. While you may not go on to be a statistician or even calculate statistics, you will need to interpret what they mean and whether they are providing the information you need. In this class you will become familiar with how to use and interpret basic descriptive statistics, probability distributions, inferential statistics, and regression analysis. While we will be learning how to calculate statistics, in practice computers do the calculations for use. It is therefore, important for you to know the appropriate notation used to represent statistical concepts and be able to interpret what the numbers say, simply.

Course Objectives

1.  Students need to understand relevance of statistics as it relates not only to their daily lives, but also to their major area of study.
   •  Determine which statistic will best meet the needs of decision makers: descriptive and inferential
   •  Know underlying assumptions and how they limit the usefulness of various statistics
   •  Evaluate the assumptions and figure out what should be done if the assumptions are violated
   •  Relate each statistic to its formal representation: notation, formulas, graphs, and tables
   •  Calculate relevant statistics based on formulas using only a calculator
   •  Interpret the results of calculations and the present them to people who do not have an understanding of statistics
2.  Students need to be familiar with how EXCEL© can be to in statistical analysis
   •  To compute relevant statistics using large data sets.
   •  Relate the results to the assigned task of data analysis
   •  Present the results in a report format designed for the intended audience
3.  Students need ample practice in order to understand how statistics is used in business.
   •  Work classroom examples, homework exercises, and textbook problems to master formulas, notation, and computational aspects of analyzing data
   •  Look beyond the statistical analysis of data to the interpretation of results in a decision making context.

Statistics is about decision making and problem solving. It requires an understanding of proper notation and the use of appropriate formulas. As such, I require that ALL WORK MUST BE SHOWN, including the FORMULAS with proper NOTATION, and a VERBAL INTERPRETATION of the problem's results. Credit will NOT be given for mere numerical answers, even if they are correct, I need to know the process you used to arrive at your answer. A computer can give me the numerical answer; humans are needed to translate problems into statistical language, to evaluate the computer’s answer, and to explain how it applies to solving the initial problem.
Statistical Thinking will one day be as necessary for efficient citizenship as the ability to read and write. 

-H.G. Wells

One must learn by doing the thing; For though you think you know it; You have no certainty until you try. 

-Sophocles

The only place where success comes before work is in the dictionary. 

-V. Lombardi

**Grading Policies**

My grading incorporates my belief that there are three main components for solving statistical problems. 

**First**, a person needs to be able to take a problem and determine the proper statistical tools required to solve it. This includes being able to provide the correct formulas with the proper notation (taken from your text or from class presentations). 

**Second**, a person needs to be able to take the data and the statistical formulas and compute numerical answers. 

**Third**, a person must be able to present and explain the results in such a way that someone unfamiliar with statistics will understand it, and if needed, make a decision based on that information.

In other words, you will need to translate a given problem into statistics, work the problem, and then translate the answer back into understandable language.

**Grading Components**

Grades are based on the accumulation of points in the weighted categories: 

- **Exams** (equally weighted) 75% 
- **Assignments** 20% (75%, problems and 25% computer reports) 
- **Participation and Pre/Post Assessments** 5%

Grade determination: based on the percentage of total points (weighted) you have earned. Pluses and minuses will be determined at the end of the course. There is no D-

A = min 90%  
B = min 80%  
C = min 66%  
D = min 51%  
F = 50% or below

Grade Interpretation: A student receiving an:

- A -- Demonstrates a level of knowledge relevant to the course that is well beyond expectations and has the ability to competently apply this knowledge in unfamiliar situations.
- B -- Demonstrated a level of knowledge relevant to the course that is above expectations and will be able to use and extend this knowledge in other situations.
- C -- Demonstrates an acceptable level of knowledge relevant to the course and should be able to continue learning in this field of study.
- D -- Demonstrates a barely adequate level of knowledge relevant to the course and is unlikely to be able to apply knowledge on any level, nor continue studies in this direction.
- F -- Demonstrates insufficient knowledge to be given credit for this course.

CHEATING WILL RESULT IN AN AUTOMATIC "0" FOR ALL INVOLVED PARTIES, AND MAY RESULT IN AN "F" FOR THE COURSE.

**Exams:** There will be three equally weighted exams given in this course. The first exam covers basic descriptive statistics and how probability can be used to make generalizations about the data. The second exam covers sampling, statistical inference - confidence intervals and one-parameter hypothesis testing. The last exam extends the material covered in the second unit to two parameter hypothesis testing and regression analysis. Make-up exams will be allowed only for extenuating purposes. All make-up exams will be given during the last week of the semester and may be comprehensive in nature; consult with me as to the time (probably the last day), form, and content of the make-up exam. No headsets, ear buds, cell phones, etc. can be used during exams.

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Assignments: There will be various types of assignments given in this course ranging from problems, to quizzes, to computer based reports.

Problems: Problems designed to give you some practical experience with the presentation of statistical analyses, the use and misuse of statistics, and to prepare you for exams. Many will be done during class in work groups, which allows you to help each other figure out the problems and work on clear verbal responses. These assignments will be graded on your ability not only to solve the problem, but to use proper formulas, notation, and verbal interpretations. Details of each assignment will be given at the time they are handed out. All students are expected to write out their own answers, even when working in groups, although not all work will be individually graded. Make sure your group answers are comparable. It is always frustrating when person whose paper is graded does not have the same response as the other people in the group. Some assignments may have only one or two problems or portions of problems graded, and others may be completely graded. I reserve the right to decide how to assess each assignment.

Quizzes: Periodically, I may have you work previously assigned problems in class as a check for understanding and completeness of responses. Time will be limited since you will already have worked out the answers prior to class. You may also receive more traditional quizzes covering terminology and concepts not readily tested in working out problems.

Computer assignments: There is a class data set based on survey responses from several years of econ and business stat students. You will use EXCEL® for your statistical analysis and learn how to report the results of your analysis in a manner consistent with your “audience”. You may work in teams of 2 on these assignments. For each assignment you will need to calculate the necessary statistics using EXCEL® and write a report, including any relevant tables or charts, verbally explaining and interpreting your results and answering any questions that may have been posed. A computer assignment can be uploaded to your e-portfolio.

All homework assignments are expected to be completed at the beginning of class. Any turned in after they have been collected are subject to late penalties.

Late Assignments and Make-ups: You are responsible for keeping track of when assignments are due, completing them and turning them in on time. Turning in LATE assignments can place those who respected the deadline at a grade disadvantage because they had less time to do their work. Late assignments will be penalized regardless of reason. Penalties will be up to 10 percent for each day it is late. For example, if you have an assignment due for class on Wednesday and you turn it in after class on that day it may be subject to a 5 percent penalty; if it is turned in on Thursday (one day after it is due), it is subject to 10 percent; if it is turned in after the beginning of class on Friday, it may be penalized up to 20 percent, etc. There will be no additional penalty for weekend days. No assignments will be accepted after the answers have been posted.

Excused absences and in-class assignments: ABSENCES ARE NOT AN EXCUSE FOR LATE ASSIGNMENTS. Assignments can always be E-mailed, if you are unable to make it to class (please note in subject line stat assignment). If you know you will be missing class, please let me know in writing (e-mail is best with stat absence in the subject line) with the date and the reason. If it is an excused absence, you will be given an opportunity to turn in the assignment with the first day penalty waived, but each additional day late will still be penalized. I will decide whether an absence is excused or not. Please feel free, though, to come to my office to discuss any absences; we may be able to work out a mutually acceptable agreement with regards to your assignment grade.

If you fail to take an exam, or turn in a computer assignment or a majority of assigned problems, you will not pass this course. The only exception is for serious and compelling reasons, which are limited to documented and serious illness, death in the family, or equally important reasons. If this occurs, you must notify me as soon as possible, so I can offer you an alternative to receiving a zero.

Course Pre-Post Tests: The department has a policy that every statistics student takes both a pre and a post test. It will count as part of your participation grade. You will receive your post score and an additional point for taking the pretest. If your post-test score is at least 10% higher than your pretest score (given that you took the pretest) you will receive a bonus point; if it is 10% or more lower than your pre-test score you will lose a point.
You will find the assessments on D2L under the Statistics (210) Assessment. The pretest will be available the first two weeks of the semester and the posttest will be the last two weeks. The end times for the assessments are not negotiable. If you have not completed the assessment by 5 p.m. on the last day of the 2nd week, you will not be able to take it, NO EXCEPTIONS.

**Participation:** Participation is not the same as attendance. It includes whether you are prepared for class, positively contribute to working on class problems, and participate in class discussions.

**Cell phones, ipads, computers and other electronic devices must be used for classroom purposes only.** If texting, random surfing of the web, e-mail, etc. during class is distracting to me or the class, the electronic device may be confiscated until the end of class.

**Course Preparation**

Please bring your textbook and calculator to class for every class period.

Working problems is essential to understanding and mastering this material. Students in statistics usually fall in one of two groups: those who find it easy and those who find it difficult. Regular study and preparation for class should include at a minimum the exercises in class and a sampling of problems in the text. The more problems you can work, the more comfortable you will feel with the material and the easier it becomes. For exam preparation it is recommended that you also work as many of the supplementary exercises at the end of the chapter as possible. The answers for many of the problems are in the back of your textbook. To earn the grade you are capable of, you will need to use all the resources available to you on a regular basis.

If at any time you are experiencing difficulty with the subject material, please feel free to ask questions. I will be available during office hours and whenever I am in my office (open door policy). If you would like to set up regular help sessions outside of class, I am willing to do so. Please let me know, so we can set up a time and place to meet.

**Attendance**

There is no formal attendance policy for this course. HOWEVER, attendance is strongly recommended, and you are responsible for all lecture material and class assignments. Course Grades are highly correlated with class attendance. In the case of borderline grades, class attendance, behavior, and participation will be taken into Consideration, this includes the non-course related use of cell phones, tablets, etc.

**Tentative Course Outline an Exam Schedule**

Exam 1 (October 9th)
Covers Chapters 3 – 6: Numerical descriptive statistics and probabilities
(Chapters 1 and 2 will be part of the 1st computer assignment)

Exam 2 (November 6th)
Covers Chapters 7 – 9.5: Statistical inference, Confidence intervals, Hypothesis testing

Exam 3 (December 11th)
Covers Chapters 9.5 - 11: Hypothesis testing and Regression analysis