BUS 215/NRS 215 Applied Statistics

Instructor: Dr. Mary Sue "Suzy" Carter
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Credits: 3

Course Description:
An introductory course in statistical procedures with applications to business and health care. Topics include statistics, the binomial and normal distributions, sampling, hypothesis testing, estimation, correlations, contingency tables, one-way analysis of variance and linear regressions. Upon completing this class, students will be able to: 1) collect a data set, identify the sampling method used, and recognize potential bias, 2) describe a dataset with tabular, graphical, and numerical methods, 3) test various hypothesis and construct confidence intervals, 4) scrutinize and interpret results and draw meaningful conclusions, and 5) present your data and results in a way that is concise, visually appealing, and provides information to the reader.

Intended Audience: Students completing an undergraduate degree.

Required Text and Readings:
1. *Even You Can Learn Statistics* David M. Levine and David F. Stephan, Pearson Prentice Hall Publishers, 2005. **ISBN 0-13-701059-1**

Course Objectives:
At the conclusion of this course, students will be able to:
1. collect a data set, analyze the sampling method used for appropriateness and reliability, and recognize potential bias.
2. describe a dataset with tabular, graphical, and numerical methods.
3. test various hypothesis and construct confidence intervals.
4. Analyze, evaluate, and interpret results and draw meaningful conclusions.
5. present data and results in a way that is concise, visually appealing, and provides information to the reader.

Student learning of each objective will be assessed using homework, exams and a final project.

Policies:
Attendance:
This is a labor intensive course in terms of reading, assignments, in-class activities including exams. There is an exam each week starting the second week. To do well in understanding the concepts and processes of applied statistics students need to attend each class.

Grading:
Homework (7) ………..70 points
Exams (7) ……………130 points
Project …………………50 points
Total points…………....250 points
Exams and homework consists of problems and essay assignments.

Grading Scale:

A+ 97%	B+87%	C+77%
A 93%	B 83%	C 73%
A- 90%	B- 80%	C- 70%

Academic Integrity:

The instructor will follow the Doane College policy on Academic Integrity which states:

The Doane College Academic Integrity Policy will be adhered to in this class. All projects and tests will represent your own work. Any use of others' ideas and words without proper citation of sources is plagiarism and will result in penalties to be determined by the instructor and/or the dean of graduate studies.

The penalty for violation of this policy is an "F" in the course.

Late Work:

The dates provided in this syllabus are designed to reach the completion of all work within the eight week time frame. Material is cumulative in nature and failure to meet any deadline will jeopardize the completion of the course within the allotted time frame. Assignments received one week late will be docked 25% of the total points possible. Assignments two weeks late will be docked 50% of the total. Assignments will not be accepted more than two weeks late. This policy may be waived in extreme cases.

Special Notes:
All course communication between the instructor and students must be through the use of your Doane email address. If you send the instructor anything via another email address, it will not be accepted.

Course Schedule

Date	Exam	Topic	Date
10/20	None	Introduction / Sampling	
10/27	Exam 1	Measures of center	
11/3	Exam 2	Measures of dispersion	
11/10	Exam 3	Probability	
11/17	Exam 4	Confidence	
11/24	Exam 5	Tests	
12/1	Exam 6	Bivariate Analysis	
12/8	Exam 7	Grades/evaluations*	
	retakes		

Project Requirements:

Project DUE Class 8

Each student will
1. Collect ten observations
2. Describe
   a. what the data is
   b. how data was collected
3. Do exploratory analysis using a stem plot
4. Find the mean, median and mode
5. Find the standard deviation
6. Find 68% and 99.7% confidence intervals
7. Find 80% and 99% confidence intervals using t tables
8. Conduct hypothesis test
9. Presentation and analysis of results.