IE 1070 Probability And Statistics For Engineers 1

Course Syllabus: Spring 2017

Lecture: Wednesday; 8:15-11:00 or 13:50-16:25; 104, Zone 3 of Liberal

Art Building

Instructor: Dr. Shiquan Zhang   shiquanzhang@scu.edu.cn

Cell phone number: 18782054234

Office Hours: Mondays 16:00 -17:30

Text: Walpole, Myers, Myers and Ye, "Probability and Statistics for Engineers and Scientists", Ninth Edition

Teaching Assistant: Tianjin Wang, wangtianjin@foxmail.com

Course Description:

This course is designed for students majoring in engineering. Topics include: data analysis, probability, random variables, discrete and continuous probability distributions, estimation and hypothesis testing, introduction to linear regression and analysis of variance. Prerequisite: MATH 0230. 3 credit hours.

Objectives include:

· To provide an understanding of why good statistics are critical to effective decision making.

· To acquaint the students with the fundamental concepts of probability and statistics.

· To provide an understanding of the processes by which real-life statistical problems are analyzed.

· To develop an understanding of the role of statistics in engineering.

· To familiarize students with computer-based statistical analysis through available software packages.

Applicable ABET Outcomes:

· An ability to apply knowledge of mathematics, science and engineering

· An ability to design and conduct experiments, as well as to analyze and interpret data

· An ability to identify, formulate and solve engineering problems

· An ability to function on multi-disciplinary teams

· An ability to use the techniques, skills, and modern engineering tools necessary for engineering

Lectures: This course will be taught in the regular mode. The regular classroom approach will be discussed during the first lecture in detail.

Homework: Homework problems will be assigned each week and are due in recitation the following week. Late homework is not accepted and homework not turned in will receive a score of 0. All work (computer and manual) should be shown for each problem so that partial credit may be given.

Class Conduct: Please turn off your phones prior to the beginning of class. If you feel the need to text or check your email during class, kindly

leave the room.

Re-Grades: If you feel there has been an error in grading an assignment, you have **one week** from the day it was returned in class to submit it for a re-grade. When you resubmit the assignment, it must be accompanied by a written explanation of the potential grading mistake.

In Class Work /Class Exercises: There will be in class exercises assigned; if you are not in class you will be given a score of 0. These exercises will count as extra quiz credit. It will be possible to have quiz average over 100%.

Quizzes: Several random quizzes will be assigned in class. If you miss a quiz, you will be given a score of 0.

Exams: There will be a final exam after the whole course. Everybody should take this exam except under extenuating circumstances.

Cheating of any form on quizzes or exams will result in a grade of 0 for that quiz or exam.

Grading: Continuous assessment: 40%

         Final exam: 60%

Final letter grades will be assigned as follows:

A 93-100%   C+ 77-79.9%   D- 60-62.9%

A- 90-92.9%   C 73-76.9%   F Below 60%

B+ 87-89.9%   C- 70-72.9%

B 83-86.9%   D+ 67-69.9%

B- 80-82.9%   D 63-66.9%

TENTATIVE SCHEDULE

Lecture Topics   Homework

Week 1   Ch. 1 Introduction and Descriptive Statistics

Week 2   Ch. 1 Introduction and Descriptive Statistics / Ch. 2 Probability

Week 3   Ch. 2 Probability /Ch. 3 Random Variables and Probability D.

Week 4   Ch. 3 Random Variables and Probability Distributions/ Ch. 4

Mathematical Expectation

Week 5   Ch. 4 /Ch. 5 Some Discrete Probability Distributions

Week 6   Ch. 5 / Ch. 6

Week 7   Ch. 6 Some Continuous Probability Distributions

Week 8   Ch.7 Functions of Random Variable / Ch. 8 Sampling

Week 9   Ch. 9 One and Two Sample Estimation

Week 10   Ch. 9 One and Two Sample Estimation

Week 11   Ch. 10 One and Two Sample Tests of Hypothesis

Week 12   Ch. 10 One and Two Sample Tests of Hypothesis

Week 13   Ch. 11 Regression

Week 14   Ch. 11 Regression /Ch. 13 ANOVA

Week 15   Ch. 13 ANOVA / Ch. 14 Two-Factor ANOVA

 Week 16   Ch. 14 Two-Factor ANOVA

Week 17   **Final Exam**