

**IE 3301-001 Spring 2013**  
**Engineering Probability**  
MWF 10:00-10:50am Room 404 Woolf Hall

**Instructor:** Li Zeng, Ph.D.

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**Office Hours:** Mon/Wed 10:50-11:50am

**Teaching Assistant:** Aera Leboulluec; Email: [aera.leboulluec@mavs.uta.edu](mailto:aera.leboulluec@mavs.uta.edu)

**WebCT help:** Ann Hoang; Email: [hoanga@uta.edu](mailto:hoanga@uta.edu).

**Required Text:** *Probability and Statistics for Engineers and Scientists*, 9<sup>th</sup> Edition, by Walpole, Myers, Myers and Ye.

**Course Prerequisites:** Math 2326 or concurrent enrollment.

**Course Description:** Topics in Industrial Engineering that involve random processes and data. Applications and background for topics in reliability, inventory systems, and queuing problems, including absolute and conditional probabilities, discrete and continuous random variables, confidence intervals, hypothesis testing, and other topics included in the text book through Chapter 13.

**Student Learning Objectives:** At the end of this course students should be able to  
(1) understand the basic concepts of probability theory and hypothesis testing,  
(2) apply those concepts to solving numerical problems especially those relating to probability distributions, and  
(3) perform descriptive and inferential statistical analyses of data.

**Topics Covered:**

1. Descriptive statistics
2. Probability theory
3. Random variables and probability distributions
4. Mathematical expectation
5. Discrete probability distributions
6. Continuous probability distributions
7. Linear combinations of random variables
8. Sampling distributions
9. Estimation and confidence Intervals
10. Hypothesis testing
11. Introduction to Simple Linear Regression analysis
12. Introduction to ANOVA and Experimental Designs

**Key Assignments:** During the semester one or more assignments will be designated as key assignments. To pass this class you must successfully complete all key assignment requirements. Key assignments and their respective grading criteria will be announced in each particular course.

The key assignments are as follows:

- Certain problems on the first two tests will be designated as key assignments. If a student makes less than two-thirds of full credit on any such problem, he/she must rework the problem correctly and submit it to complete this key assignment. This reworking will not result in a change of the test score.
- Two projects. If a student makes a major mistake, he/she must rework the problems correctly and submit it to complete this key assignment. This reworking will not result in a change of the project score.

**Grading (tentative):**

(25%) Test #1 on Chapters 1-4; Monday, February 18th.

(25%) Test #2 on Chapters 5, 6, and 8; Monday, April 1st.

(25%) Test #3 on Chapters 9-11, and 13; Monday, May 6th. (Not Comprehensive)

(10%) Homework

(15%) Project (key)

Letter grades correspond to the following score system:

A = 90-100; B = 80-89; C = 70-79; D = 60-69; F = below 60.

**Project:** For the project, additional handouts will be given with detailed instructions. Each student must submit a typewritten report, written in his/her own words. Any form of copying will be severely penalized.

**Homework:** Homework will be announced during class. Late homework will not be accepted. Only stapled homework is accepted. Each homework assignment will be scored as 0, 1, or 2. To receive full credit for your homework, show all of your work.

**Test Policy:** For each exam, you may bring in two letter size sheets of paper written on both sides. Please bring your UTA ID card to all tests.

**Makeup Policy:** There will be no make-up test, unless the student provides *legitimate written documentation* proving an illness or emergency. If necessary, I may request additional information to verify the validity of your documentation. Any make-up exam may be given on the second to last or last week of class and may be comprehensive. If an exam is missed without reason, the student will get 0 for the exam.

**Attendance and Drop Policy:** Regular and punctual attendance are expected in accordance with UTA's policies (see undergraduate catalog).

**Inclement Weather Policy:** If the University is closed this class will not meet. Any scheduled assignments or examinations will be rescheduled to the next class period that the class meets. You can get information by dialing 972-601-2049 or checking the main website at [www.uta.edu](http://www.uta.edu).

**UTA Student Support:** The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. They include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.

**Americans with Disabilities Act:** The University of Texas at Arlington is on record as being committed to both the spirit and letter of federal equal opportunity legislation; reference Public Law 93112 The Rehabilitation Act of 1973 as amended. With the passage of new federal legislation entitled Americans with Disabilities Act (ADA), pursuant to section 504 of The Rehabilitation Act, there is renewed focus on providing this population with the same opportunities enjoyed by all citizens. As a faculty member, I am required by law to provide reasonable accommodation to students with disabilities, so as not to discriminate on the basis of that disability. Student responsibility primarily rests with informing faculty at the beginning of the semester and in providing authorized documentation through designated administrative channels.

**Academic Dishonesty:** It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts. (Regents Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22).

**Final Review Week:** A period of five class days prior to the first day of final examinations will be designated as FINAL REVIEW WEEK. The purpose of this week is to allow UT Arlington students sufficient time to prepare for final exams. During this week, there will be no schedule or required activities such as field trips, seminars, or performances; and no instructor shall assign any themes, research problems or exercises of similar scope that have a completion date during or following this week unless specified in the class syllabus. During Final Review Week, an instructor will not give any exams constituting 10% or more of the final grade, except make-up tests and laboratory examinations. In addition, no instructor will give any portion of the final exam during Final Review Week.

The instructor reserves the right to modify this syllabus as needed during the semester, either in class or on the website. Students are responsible for such changes.