

MATH 5343: Concepts and Techniques in Probability and Statistics
Summer 2015

Instructor: Dr. Kathryn Rhoads
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Office Hours: MWF 11:30am – 12:30pm & By appointment

Section Information: MATH 5343-001

Time and Place of Class Meetings:

June 8 – July 2, Monday – Friday, 1:00pm – 2:50pm

Class Meeting Days and Locations (Computer lab meetings are bolded):

Mon, June 8 PKH 103	Tues, June 9 PKH 313	Wed, June 10 PKH 103	Thurs, June 11 PKH 313	Fri, June 12 PKH 313
Mon, June 15 PKH 313	Tues, June 16 PKH 313	Wed, June 17 PKH 103	Thurs, June 18 PKH 313	Fri, June 19 PKH 313
Mon, June 22 PKH 313	Tues, June 23 PKH 313	Wed, June 24 PKH 103	Thurs, June 25 PKH 313	Fri, June 26 PKH 313
Mon, June 29 PKH 313	Tues, June 30 PKH 313	Wed, July 1 PKH 103	Thurs, July 2 PKH 313	

Description of Course Content: This course will focus on the following topics:

- (1) Exploring data: descriptive statistics of situations involving one and two variables;
- (2) Design of experiments and planning a study;
- (3) Anticipating patterns: probability and simulation; and
- (4) Statistical inference: confirming models.

A graphing calculator and other appropriate technology will be used.

Student Learning Outcomes: Upon successful completion of this course, you will be able to:

- Describe and use fundamental techniques for collecting data, analyzing data, modeling data, and drawing conclusions from data.
- Construct convincing statistical arguments and communicate these arguments using appropriate terminology.
- Determine when to use technology in statistical analysis and make choices about the appropriate use of technology in a variety of situations.
- Critically evaluate statistical results with awareness of the ways statistics can be misused.

Required Textbooks and Other Course Materials:

- Starnes, D. S., Yates, D. S., & Moore, D. S. (2012). *The practice of statistics* (for AP, 4th ed.). New York: W. H. Freeman and Company.
ISBN: 9781429245593
- Graphing Calculator: TI-83, TI-84, or TI-89
TI-84 Plus will be used in class, and this model is highly encouraged for students

You will need to bring both of these materials to every class. We will also meet in the computer lab several days per week and use computer software for statistics as well as free, online resources.

Course Format:

Before each class meeting, you are expected to read the relevant sections of the textbook to familiarize yourself with the main terms and concepts. During class, I will spend a short amount of time elaborating on definitions and concepts, and I will answer any questions you have.

The majority of our class time will be spent having class discussions and working in groups to solve statistical problems. By working through activities with others, you will develop a conceptual understanding of the material.

Assignments and Examinations:**1. Quizzes:**

The goal of the quizzes is to assess your understanding of fundamental definitions and concepts. You will complete seven quizzes during this course, and the six highest scores will be counted towards your course grade. Quizzes will include questions that are similar to the textbook exercises. You *MAY* use your textbook to complete the quizzes. Some quizzes will be completed in class, and others will be take-home assignments. The format will be announced the day before the quiz.

2. Problem Sets:

The goal of the problem sets is to assess your ability to explore data, think critically about statistics, and present your results in writing. These skills are essential for using statistics in work, research, and everyday life. You will complete three problem sets during this course. Each problem sets will include data explorations, online applets, and critical thinking questions. You will work in groups to complete these problem sets, but each person should turn in his or her own paper. Electronic and/ or paper copies of your work will be accepted.

3. Final Project:

At the end of the course, you will complete an individual, final project that will demonstrate all the learning goals for the course. You will be provided with a data set, and you will use statistics to analyze this data and write a formal report. A rubric for this project will be provided. After the last class meeting, you will have one week to complete your final project. Final projects can be submitted electronically or brought to the math office. No class will be held on the day that final projects are due.

Participation and Professionalism: You are expected to actively participate in and stay on task during classroom activities and discussions. You are encouraged to offer suggestions and conjectures even if you aren't sure they are correct. In addition, you are expected to work with others, respect others' ideas, and celebrate others' successes. Final course grades will be lowered for a lack of or inappropriate participation.

Attendance: At The University of Texas at Arlington, taking attendance is not required. Rather, each faculty member is free to develop his or her own methods of evaluating students' academic performance, which includes establishing course-specific policies on attendance. As the instructor of this section, I have established the following attendance policy:

Because this course relies heavily on group participation and meets only once per week, more than one absence from our weekly class or excessive tardiness will lower your final grade. If you must be absent from class, please let me know before class and meet with me for makeup materials and assignments.

Grading: Your final course grade will be calculated as follows:

10% Class participation and professionalism

30% Quizzes (6)

30% Problem Sets (3)

30% Final Project

Course Schedule

Topics	Date	Assignments Due
Exploring Data: Descriptive Statistics Designing Experiments and Studies Chapters 1-4	Monday, June 8	
	Tuesday, June 9	Read Chapter 1
	Wednesday, June 10	Read Chapter 2 Quiz
	Thursday, June 11	Read Chapter 3
	Friday, June 12	Read Chapter 4 Quiz
Anticipating Patterns: Probability and Simulation Chapters 5-7	Monday, June 15	Read Chapter 5 Problem Set 1
	Tuesday, June 16	Read Chapter 6
	Wednesday, June 17	Quiz
	Thursday, June 18	Read Chapter 7
	Friday, June 19	Quiz
Statistical Inference: Estimating population parameters and testing hypotheses Chapters 8-12	Monday, June 22	Read Chapter 8 Problem Set 2
	Tuesday, June 23	Read Chapter 9
	Wednesday, June 24	Quiz
	Thursday, June 25	Read Chapter 10
	Friday, June 26	Quiz
	Monday, June 29	Read Chapter 11 Problem Set 3
	Tuesday, June 30	
	Wednesday, July 1	Read Chapter 12 Quiz
	Thursday, July 2	
NO CLASS	Thursday, July 9	Final Projects

As the instructor for this course, I reserve the right to adjust this schedule in any way that serves the educational needs of the students enrolled in this course. –Kathryn E. Rhoads

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Electronic Communication: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at <http://www.uta.edu/oit/cs/email/mavmail.php>.

Student Support Services: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit <http://www.uta.edu/sfs>.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance.** Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (<http://www.uta.edu/aao/fao/>).

Title IX: The University of Texas at Arlington is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located to the right when you exit PKH 103 and to the right and down the stairwell when you exit PKH 313. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist individuals with disabilities.

<p>Emergency Phone Numbers: In case of an on-campus emergency, call the UT Arlington Police Department at 817-272-3003 (non-campus phone), 2-3003 (campus phone). You may also dial 911.</p>
