
BSTAT 3321: Introduction to Business Statistics

Fall 2016

Instructor: Ms. Fereshteh Ghahramani

Office Number: COBA 511

Office Telephone Number: 817-272-3502

Email Address: fereshteh.ghahramani@uta.edu

Faculty Profile: <https://www.uta.edu/profiles/fereshteh%20-ghahramani>

Office Hours: Monday/Wednesday/Friday 2:00 – 2:30, **by appointment**

Section Information: BSTAT 3321 - 002, MoWeFr 1:00PM - 1:50PM, COBA241

Description of Course Content: This course introduces the student to statistical methods for managerial decision making with special emphasis on the role and value statistics can play in solving problems in business and industry. The student will come to know and apply the descriptive and inferential aspects of statistics in real-life situations. See the Undergraduate Catalog for a more detail description.

Student Learning Outcomes:

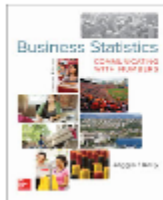
1. The student will be able to *evaluate verbal, numeric, and graphic descriptions of a data set.
2. The student will be able to select a simple random sample and to evaluate the role of randomness in data collection (both sampling and experimentation). The student will restrict causal inferences to data collected from experiments.
3. The student will be able to analyze probability problems by choosing and applying basic laws of probability, computing and interpreting results.
4. The student will be able to distinguish between discrete and continuous random variables, find binomial and normal probabilities using tables, and compute expected value and variance for a binomial distribution. The student will be able to analyze binomial and normal probabilities.
5. The student will be able to analyze scenarios appropriate for the Central Limit Theorem and choose the sampling distributions to find and interpret probabilities for the sample mean and sample proportion.
6. The student will be able to set up, calculate, and interpret confidence intervals for a population mean and a population proportion and to determine sample sizes for given levels of confidence and margins of error.
7. The student will be able to set up and test hypotheses about a population mean and a population proportion and to interpret the results.
8. The student will be able to fit and interpret simple linear regression models along with the usual inferences.
9. The student will be able to use a software package in order to perform appropriate statistical analyses.
10. The student will be able to select and justify appropriate statistical techniques for a given scenario.

*For all topics, the student will be able to demonstrate knowledge and comprehension, for example by defining the new terms in the topic and describing and restating the concepts covered in each topic. The abilities to apply, analyze, synthesize and evaluate are assumed to be hierarchal. In other words, the ability to evaluate and synthesize presumes an ability to analyze and apply. Likewise the ability to analyze presumes an ability to apply.

Required Textbooks and Other Course Materials:

1. Business Statistics – Communication with Numbers, Jaggia/Kelly, Second Edition: You can purchase an E-Book which will come with access to the "Connect Software". Connect will be used for on-line homework and quizzes (automatically graded and recorded). YOU MUST PURCHASE THIS TEXT WITH CONNECT.

BSTAT 3321



Business Statistics: Communicating with Numbers

Jaggia, 2nd

• LearnSmart

2. Connect Software (part of E-Book package) – YOU MUST HAVE CONNECT, OTHERWISE YOU MOST LIKELY WILL FAIL THIS COURSE. NO OTHER OPTIONS FOR COMPLETING HOMEWORK AND QUIZZES WILL BE AVAILABLE.

Note: Students can buy the e-book with connect access from the UTA bookstore for \$120. The e-book with connect access + Loose-leaf is \$138.75. If students go through the McGraw-Hill website the prices are higher at \$130 for e-book with connect access.

Descriptions of major assignments and examinations:

1. 3 major in-class exams (15% each) and 1 in-class final (25%)
2. Multiple online homework assignments (15%) – Using Connect – Your own work.
3. Multiple online quizzes (15%) – Using Connect – Your own work.

Note 1: Online Connect constraints for homework/quizzes will be provided in class.

Note 2: No late work past the specified deadline for that assignment will be accepted.

Note 3: No make-up major tests will be given (you will receive a grade of 0 on that test).

Note 4: Your grade on the Final will replace the lowest major exam grade.

Homework Instructions:

- All homework are online through "Connect" and should be you own work.
- Homework for each chapter will be opened in the day instructor finished teaching that chapter in the class, and remain **open for two weeks**.
- You are allowed to attempt each homework **three times**. However, there will be a **10% deduction** in your score in the **second attempt** and **another 10% deduction** for the **third attempt**. There will be **no exception** under any circumstances. There is no time limit in each attempt.
- **Instructor will not grade any homework manually in any circumstances.**
- **NO make-up homework will be given (you will receive a grade of 0 on that homework).**
- Detailed feedback on each homework will be available online one hour after due date and time.
- One lowest grade of homework will be dropped at the end of the semester.

Quiz Instructions:

- All quizzes are online through "Connect" and should be you own work.
- Quiz for each chapter will be opened in the day instructor finished teaching that chapter in the class, and remain **open for two weeks**.

- You are allowed to attempt each quiz **only one time**. There will be **no exception** under any circumstances. There **is a time limit** for each online quiz.
- Instructor will not grade any homework manually in any circumstances.**
- NO make-up quiz will be given (you will receive a grade of 0 on that quiz).**
- One lowest grade of quiz will be dropped at the end of the semester.

Bonus Points:

- Bonus points are available for this course through LearnSmart assignment in "Connect".
- LearnSmart assignment for each chapter will be opened in the day instructor finished teaching that chapter in the class, and remain **open for two weeks**.
- Instructor will not grade any LearnSmart assignment manually in any circumstances.

Attendance: While attendance will not be used for your grade, **you should be aware that "Connect" will capture the time you spend working on homework and quizzes online. You will be responsible for all material covered in class and for knowledge of any announcements or changes to the schedule made in class, even if you are unable to attend class.**

Laptops and other electronic devices: There are instances in which learning is enhanced by the use of laptops or tablet computers during class. Use of these devices in the classroom is acceptable as long as the use of these devices does not distract students or the instructor in any way. The instructor reserves the right to designate the classroom as an electronic device-free zone at any time.

Grading:

Assignment	Value	Grades: A = ≥90% B = 80% - 89% C = 70% - 79% D = 60% - 69% F = 0% - 59%
Exam 1	15%	
Exam 2	15%	
Exam 3	15%	
Online Homework	15%	
Online Quizzes	15%	
Final Exam	25%	
Total	100%	

Students are expected to keep track of their performance throughout the semester and seek guidance from available sources (including the instructor) if their performance drops below satisfactory levels; see "Student Support Services," below.

Make-up Exams: **No make-up exams, homework, or quizzes will be allowed.**

Exam Policy: All tests will be closed book. A scantron will be required for each exam. Cell phones, smart watches and laptops are not allowed during exams. Instructor reserve the right to assign seating for test periods. Students are required to take tests at the scheduled time.

Expectations for Out-of-Class Study: Beyond the time required to attend each class meeting, students enrolled in this course should expect to spend at least an additional 9 hours per week of their own time in course-related activities, including reading required materials, completing assignments, preparing for exams, completing various Connect assignments, etc.

Grade Grievances: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog. <http://catalog.uta.edu/academicregulations/grades/#undergraduatetext>; For student complaints, see <http://www.uta.edu/deanofstudents/student-complaints/index.php>.

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/>).

Disability Accommodations: UT 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)*, *The Americans with Disabilities Amendments Act (ADAAA)*, and *Section 504 of the Rehabilitation Act*. 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 disability. Students are responsible for providing the instructor with official notification in the form of a **letter certified** by the Office for Students with Disabilities (OSD). Only those students who have officially documented a need for an accommodation will have their request honored. Students experiencing a range of conditions (Physical, Learning, Chronic Health, Mental Health, and Sensory) that may cause diminished academic performance or other barriers to learning may seek services and/or accommodations by contacting:

The Office for Students with Disabilities, (OSD) www.uta.edu/disability or calling 817-272-3364. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability.

Counseling and Psychological Services, (CAPS) www.uta.edu/caps/ or calling 817-272-3671 is also available to all students to help increase their understanding of personal issues, address mental and behavioral health problems and make positive changes in their lives.

Non-Discrimination Policy: *The University of Texas at Arlington does not discriminate on the basis of race, color, national origin, religion, age, gender, sexual orientation, disabilities, genetic information, and/or veteran status in its educational programs or activities it operates. For more information, visit uta.edu/eos.*

Title IX Policy: The University of Texas at Arlington (“University”) is committed to maintaining a learning and working environment that is free from discrimination based on sex in accordance with Title IX of the Higher Education Amendments of 1972 (Title IX), which prohibits discrimination on the basis of sex in educational programs or activities; Title VII of the Civil Rights Act of 1964 (Title VII), which prohibits sex discrimination in employment; and the Campus Sexual Violence Elimination Act (SaVE Act). Sexual misconduct is a form of sex discrimination and will not be tolerated. *For information regarding Title IX, visit www.uta.edu/titleIX or contact Ms. Jean Hood, Vice President and Title IX Coordinator at (817) 272-7091 or jmhood@uta.edu.*

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 in their courses by 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. Additional information is available at <https://www.uta.edu/conduct/>.

Lab Safety Training: N/A

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>.

Campus Carry: Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes as prohibited. Under the new law, openly carrying handguns is not allowed on college campuses. For more information, visit <http://www.uta.edu/news/info/campus-carry/>

Student Feedback Survey: At the end of each term, students enrolled in face-to-face and online classes categorized as "lecture," "seminar," or "laboratory" are 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 via the SFS database is aggregated with that of other students enrolled in the course. Students' anonymity will be protected to the extent that the law allows. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law and aggregate results are posted online. Data from SFS is also used for faculty and program evaluations. For more information, visit <http://www.uta.edu/sfs>.

Final Review Week: for semester-long courses, a period of five class days prior to the first day of final examinations in the long sessions shall be designated as Final Review Week. The purpose of this week is to allow students sufficient time to prepare for final examinations. During this week, there shall be no scheduled activities such as required field trips 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 shall not give any examinations constituting 10% or more of the final grade, except makeup tests and laboratory examinations. In addition, no instructor shall give any portion of the final examination during Final Review Week. During this week, classes are held as scheduled. In addition, instructors are not required to limit content to topics that have been previously covered; they may introduce new concepts as appropriate.

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 at the South or North end of the Business building. 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.

Students are encouraged to subscribe to the MavAlert system that will send information in case of an emergency to their cell phones or email accounts. Anyone can subscribe at <https://mavalert.uta.edu/> or <https://mavalert.uta.edu/register.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 <http://www.uta.edu/universitycollege/resources/index.php>.

The IDEAS Center (2nd Floor of Central Library) offers **free** tutoring to all students with a focus on transfer students, sophomores, veterans and others undergoing a transition to UT Arlington. To schedule an appointment with a peer tutor or mentor email IDEAS@uta.edu or call (817) 272-6593.

The English Writing Center (411LIBR): The Writing Center Offers free tutoring in 20-, 40-, or 60-minute face-to-face and online sessions to all UTA students on any phase of their UTA coursework. Our hours are 9 am to 8 pm Mon.-Thurs., 9 am-3 pm Fri. and Noon-6 pm Sat. and Sun. Register and make appointments online at <http://uta.mywconline.com>. Classroom Visits, workshops, and specialized services for graduate students are also available. Please see www.uta.edu/owl for detailed information on all our programs and services.

The Library's 2nd floor Academic Plaza offers students a central hub of support services, including IDEAS Center, University Advising Services, Transfer UTA and various college/school advising hours. Services are available during the library's hours of operation. <http://library.uta.edu/academic-plaza>

Librarian to Contact: In the event you wish to contact a Librarian, one can be found in the Business Building and the Main Library.

Course Schedule

Session	Date	Event	Topic
1	26-Aug	Syllabus /Course Intro	Chapter 1
2	29-Aug	McGraw Hill Support Session	
3	31-Aug		
4	2-Sep		Chapter 2
	5-Sep	Labor Day holiday	
5	7-Sep		
6	9-Sep		Chapter 3
7	12-Sep		
8	14-Sep		
9	16-Sep	Exam Review	Chapters 1, 2 & 3
10	19-Sep	Exam 1	
11	21-Sep		Chapter 4
12	23-Sep		
13	26-Sep		
14	28-Sep		Chapter 5
15	30-Sep		
16	3-Oct		
17	5-Oct		Chapter 6
18	7-Oct		
19	10-Oct		

Session	Date	Event	Topic
20	12-Oct		Chapter 7
21	14-Oct		
22	17-Oct		
23	19-Oct	Exam Review	Chapters 4, 5, 6 & 7
24	21-Oct	Exam 2	
25	24-Oct		Chapter 8
26	26-Oct		
27	28-Oct		
28	31-Oct		
29	2-Nov		
30	4-Nov		Chapter 9
31	7-Nov		
32	9-Nov		
33	11-Nov		
34	14-Nov		
35	16-Nov		
36	18-Nov	Exam Review	Chapters 8 & 9
37	21-Nov	Exam 3	
38	23-Nov		Chapter 14
	25-Nov	Thanksgiving holiday	
39	28-Nov		
40	30-Nov		
41	2-Dec		Chapter 15
42	5-Dec		
43	7-Dec	Exam Review	All Chapters Covered
44	12-Dec	Final Exam (11 - 1:30 p.m.)	

“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. –F. Ghahramani”

Other Important Days:

Sep 12: Census date

Nov 02: Last day to drop classes; submit requests to advisor prior to 4:00 pm

Chapter	Section	Topic	Key Subsections
<i>Statistics and Data</i>	1.1	The Relevance of Statistics	
	1.2	What is Statistics?	The Need for Sampling
			Types of Data
			Getting Started on the Web
	1.3	Variables and Scales of Measurement	The Nominal Scale
			The Ordinal Scale
			The Interval Scale
			The Ratio Scale
<i>Tabular and Graphical Methods</i>	2.1	Summarizing Qualitative Data	Frequency Distributions
			Pie Chart
			Bar Chart
	2.2	Summarizing Quantitative Data	Frequency Distributions
			Using Excel to Construct a Histogram
	2.4	Scatterplots	Construct a Scatterplot
<i>Numerical Descriptive Measures</i>	3.1	Measures of Central Location	The Mean
			The Median
			The Mode
	3.2	Percentiles and Box Plots	Percentiles
			Box Plots
	3.4	Measures of Dispersion	Range
			The Mean Absolute Deviation
			The Variance and the Standard Deviation
			The Coefficient of Variation
	3.6	Analysis of Relative Location	Chebyshev's Theorem
			The Empirical Rule
			z-Scores
	3.8	Covariance and Correlation	Correlation Coefficient
Exam 1: Chapters 1, 2 & 3 (One Formula Sheet Allowed)			
<i>Introduction to Probability</i>	4.1	Fundamental Probability Concepts	Definition, Terminology and Concepts
	4.2	Rules of Probability	The complement Rule
			The Addition Rule
			Conditional Probability
			Independent and Dependent Events
			The multiplication Rule
	4.3	Contingency Tables and Probabilities	

	4.4	The Total Probability Rule and Bayes Theorem	Bayes Theorem
Discrete Probability Distributions	5.1	Random Variables and Discrete Probability Distributions	The Discrete Probability Distribution
	5.2	Expected Value, Variance, and Standard Deviation	Expected Value
			Variance and Standard Deviation
	5.4	The Binomial Distribution	
	5.5	The Poisson Distribution	
Continuous Probability Distributions	6.1	Continuous Random Variables and the Uniform Distribution	
	6.2	The Normal Distribution	Characteristics of Normal Distribution
			The Standard Normal Variable
			Finding a Probability for a Given z Value
			Finding a z Value for a Given Probability
			Revisiting the Empirical Rule
	6.3	Solving Problems with Normal Distributions	The Transformation of Normal Random Variables
			The Inverse Transformation
			Using Excel for the Normal Distribution
Sampling and Sampling Distributions	7.1	Sampling	Sampling Concepts
			Sampling Methods
	7.2	The Sampling Distribution of the Sample Mean	The Expected Value and the Standard Error of the Sample Mean
			Sampling from a Normal Population
			The Central Limit Theorem
	7.3	The Sampling Distribution of the Sample Proportion	The Expected Value and the Standard Error of the Sample Proportion
Exam 2: Chapters 4, 5, 6 & 7 (Two Formula Sheets Allowed)			
Interval Estimation	8.1	Confidence Interval for the Population Mean when σ is Known	Constructing a Confidence Interval for μ when σ is Known
			The Width of a Confidence Interval
			Using Excel to Construct a Confidence Interval for μ when σ is Known
	8.2	Confidence Interval for the Population Mean when σ is Unknown	The t Distribution

			Constructing a Confidence Interval for μ when σ is Unknown
			Using Excel to Construct a Confidence Interval for μ when σ is Unknown
	8.3	Confidence Interval for the Population Proportion	
	8.4	Selecting the Required Sample Size	Selecting n to Estimate μ Selecting n to Estimate p
<i>Hypothesis Testing</i>	9.1	Introduction to Hypothesis Testing	The Decision to "Reject" or "Not Reject" the Null Hypothesis
			Defining the Null and the Alternative Hypotheses
			Type I and Type II Errors
	9.2	Hypothesis Test for the Population Mean when σ is Known	The p-value Approach
			The Critical Value Approach
			Confidence Intervals and Two-Tailed Hypothesis Tests
			Using Excel to Test μ when σ is Known
	9.3	Hypothesis Test for the Population Mean when σ is Unknown	Using Excel to Test μ when σ is Unknown
	9.4	Hypothesis Test for the Population Proportion	
<i>Exam 3: Chapters 8 & 9 (Two Formula Sheets Allowed)</i>			
<i>Regression Analysis</i>	14.1	The Covariance and the Correlation Coefficient	Using Excel to Calculate the Covariance and the Correlation Coefficient
			Testing the Correlation Coefficient
			Limitations of Correlation Analysis
	14.2	The Simple Linear Regression Model	Determining the Sample Regression Equation
			Using Excel to Construct a Scatterplot and a Trendline
			Using Excel to Find the Sample Regression Equation
	14.3	The Multiple Linear Regression Model	Determining the Sample Regression Equation
	14.4	Goodness-of-Fit Measures	The Standard Error of the Estimate
			The Coefficient of Determination
			The Adjusted R-Square

<i>Inference with Regression Models</i>	15.1	Test of Significance	Tests of Individual Significance
			Test of Joint Significance
			Reporting Regression Results
	15.3	Interval Estimate for Response Variable	
	15.4	Model Assumptions and Common Violations	
<i>Final Exam: All Chapters Covered (Five Formula Sheets Allowed)</i>			

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. Non-emergency number 817-272-3381

Resources for Students

Library Home Page: library.uta.edu

Academic Plaza Consultation Services: library.uta.edu/academic-plaza

Ask us: ask.uta.edu/

Library Tutorials library.uta.edu/how-to

Subject and Course Research Guides: libguides.uta.edu

Subject Librarians: library.uta.edu/subject-librarians

A to Z List of Library Databases: libguides.uta.edu/az.php

Course Reserves: pulse.uta.edu/vwebv/enterCourseReserve.do

FabLab: fablab.uta.edu/

Special Collections: library.uta.edu/special-collections

Study Room Reservations: openroom.uta.edu/