



College of Business
Eco 302-01W: CRN 40246 Summer I 2020
Business and Eco Statistics: 6/1/2020-7/2/2020

Professor: Dr. Kishor Kumar Guru-Gharana
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Preferred Form of Communication: email
Communication Response Time: within 48 hours

Course Information

Required Text: D. A. Lind/W. G. Marchal/S. A. Wathen, Statistical Techniques in Business & Economics – McGraw Hill Irwin, 17e Year: 2018, ISBN: 9781259666360 (978-1-259-66636-0).

Software Required: Excel with Analysis Tool Pack (installation of Analysis Tool Pack is free).

Catalog Course Description: A course dealing with statistical concepts including measures of central tendency and dispersion, probability distributions, the Central Limit Theorem, sampling, estimation, hypothesis testing, correlation and regression analysis.

Prerequisites: Lvl U MATH 176 Min Grade C or Lvl U MATH 1325 Min Grade C

Course Objectives: The objective of this course is to provide an understanding for the undergraduate business student on statistical concepts to include measurements of location and dispersion, probability, probability distributions, sampling, estimation, hypothesis testing, regression, and correlation analysis, multiple regression and business/economic forecasting.

Student Learning Outcomes:

By completing this course, the student will able to:

- 1) Calculate and apply measures of location and measures of dispersion.
- 2) Apply discrete and continuous probability distributions to various business problems.
- 3) Understand the meaning of null and alternative hypotheses, type I and type II errors and to perform test of hypothesis including Z and t-tests.
- 4) Calculate confidence interval for a population parameter for mean and proportions.
- 5) Compute and interpret the results of Bivariate Regression and Correlation Analysis.
- 6) Be able to interpret regression results generated by a computer software.

Rubric:

Criteria (Course Objectives)	1 (Unsatisfactory)	2 (Emerging)	3 (Proficient)	4 (Exemplary)
1. How to calculate and apply measures of location and measures of dispersion.	Student cannot calculate and apply any measures of location and measures of dispersion.	Student can calculate and apply some of the measures of location and measures of dispersion.	Student can calculate and apply most of the measures of location and measures of dispersion.	Student can calculate and apply all of the measures of location and measures of dispersion.
2. How to apply discrete and continuous probability distributions to various business problems.	Student cannot apply discrete and continuous probability distributions to any problems.	Student can apply of discrete and continuous probability distributions to some problems.	Student can apply of discrete and continuous probability distributions to most of the problems.	Student can apply discrete and continuous probability distributions to all the problems.
3. Understand Hypothesis Testing: 3.1 Understand the meaning of a null and an alternative hypothesis 3.2 Understand the meaning of type I and type II error. 3.3 Be able to perform test of hypothesis 3.4 Be able to calculate confidence interval for a population parameter for a	3.1 Student doesn't understand the meaning of a null and an alternative hypothesis 3.2 Student doesn't understand the meaning of type I and type II error. 3.3 Student cannot perform test of hypothesis 3.4 Student	3.1 Student understands the meaning of a null and an alternative hypothesis or 3.2 Student understands the meaning of type I and type II error. 3.3 Student is able to perform some test of hypothesis or 3.4 Student is able to calculate confidence	3.1 Student understands the meaning of a null and an alternative hypothesis or 3.2 Student understands the meaning of type I and type II error. 3.3 Student is able to perform some test of hypothesis or 3.4 Student is able to calculate confidence interval for a population parameter for a single mean,	3.1 Student understands the meaning of a null and an alternative hypothesis and 3.2 Student understands the meaning of type I and type II error. and 3.3 Student is able to perform some test of hypothesis and 3.4 Student is able to calculate confidence interval for a population parameter for a

single mean, including use of the t and the z test.	cannot calculate confidence interval for a population parameter for a single mean, including use of the t and the z test	interval for a population parameter for a single mean, including use of the t and the z test (2 out of 4)	including use of the t and the z test (3 out of 4)	single mean, including use of the t and the z test
4. Compute and interpret the results of Bivariate Regression and Correlation Analysis.	Student cannot compute and interpret the results of Bivariate Regression and Correlation Analysis.	Student can compute and interpret some of the results of Bivariate Regression and Correlation Analysis.	Student can compute and interpret most of the results of Bivariate Regression and Correlation Analysis.	Student can compute and interpret all of the results of Bivariate Regression and Correlation Analysis.
5. Be able to interpret regression results generated by computer software.	Student cannot interpret regression results generated by a computer software	Student can fairly interpret regression results generated by a computer software	Student can interpret regression results generated by a computer software well	Student can interpret regression results generated by a computer software excellently

Course Requirements

Minimal Technical skills Needed

High school algebra; using Excel spreadsheet, Excel functions and Excel graphics; and using PowerPoint.

Instructional Methods: This is an online course. The professor/instructor will post chapter lectures/notes and power points with solved examples and explanations in the online (eCollege) system and answer questions from students through virtual office forum or emails.

Student Responsibilities/Tips for Success in the Course

1. Students are expected to:
 - a. Read text assignments as scheduled.
 - b. Read the chapter Instructions provided by the Professor.
 - c. Work the assigned homework problems independently. Submit the homework problems

due as indicated in the appropriate submission box of D2L Brightspace.

d. Read the regular announcements in the Announcement section of the e-college and download the posted materials with download links.

2. This syllabus is tentative for the semester. It is meant to be a guide. Certain topics may be stressed more or less than indicated in the text books and, depending on class progress, and certain topics may be omitted.

3. Homework problems are assigned and graded bi-weekly. Solution to Assignment problems will be provided after the deadline for submission.

5. I provide detailed Instructions with examples for each Chapter. I post the links to the Chapter Instructions in the Doc sharing Section.

6. Feel free to ask questions through email or other online tools, especially the virtual office. I am accessible 24/7 through these channels even during weekends or holidays. You can ask any question related to the course topics in the virtual office and I try to answer them within few hours (maximum 24 hours). In the virtual office or students' forum you can also try to answer others' questions. But you are expected to maintain etiquette and decency in your responses.

7. Demeanor: "All students enrolled at the university shall follow tenets of common decency and acceptable behavior conducive to a positive learning environment". See Students Guide Book.

8. Attendance Policy: In the online course there is no class attendance. But assignments and tests have corresponding due dates.

Grading

Grade Component	Points
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Two Assignments (2*50)	100
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Final grade in the course is the average from the student's total score from the two Assignments.

Average Range	Grade
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90%-100%	A
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80%-89%	B
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70%-79%	C
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60%-69%	D
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Below 60%	F
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TECHNOLOGY REQUIREMENTS

Browser support

D2L is committed to performing key application testing when new browser versions are released. New and updated functionality is also tested against the latest version of supported browsers. However, due to the frequency of some browser releases, D2L cannot guarantee that each browser version will perform as expected. If you encounter any issues with any of the browser versions listed in the tables below, contact D2L Support, who will determine the best course of action for resolution. Reported issues are prioritized by supported browsers and then maintenance browsers.

Supported browsers are the latest or most recent browser versions that are tested against new versions of D2L products. Customers can report problems and receive support for issues. For an optimal experience, D2L recommends using supported browsers with D2L products.

Maintenance browsers are older browser versions that are not tested extensively against new versions of D2L products. Customers can still report problems and receive support for critical issues; however, D2L does not guarantee all issues will be addressed. A maintenance browser becomes officially unsupported after one year.

Note the following:

- Ensure that your browser has JavaScript and Cookies enabled.
- For desktop systems, you must have Adobe Flash Player 10.1 or greater.
- The Brightspace Support features are now optimized for production environments when using the Google Chrome browser, Apple Safari browser, Microsoft Edge browser, Microsoft Internet Explorer browser, and Mozilla Firefox browsers.

Desktop Support

Browser	Supported Browser Version(s)	Maintenance Browser Version(s)
Microsoft® Edge	Latest	N/A
Microsoft® Internet Explorer®	N/A	11
Mozilla® Firefox®	Latest, ESR	N/A
Google® Chrome™	Latest	N/A
Apple® Safari®	Latest	N/A

Tablet and Mobile Support

Device	Operating	Browser	Supported Browser Version(s)
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	System		
Android™	Android 4.4+	Chrome	Latest
Apple	iOS®	Safari, Chrome	The current major version of iOS (the latest minor or point release of that major version) and the previous major version of iOS (the latest minor or point release of that major version). For example, as of June 7, 2017, D2L supports iOS 10.3.2 and iOS 9.3.5, but not iOS 10.2.1, 9.0.2, or any other version. Chrome: Latest version for the iOS browser.
Windows	Windows 10	Edge, Chrome, Firefox	Latest of all browsers, and Firefox ESR.

- You will need regular access to a computer with a broadband Internet connection. The minimum computer requirements are:
 - 512 MB of RAM, 1 GB or more preferred
 - Broadband connection required courses are heavily video intensive
 - Video display capable of high-color 16-bit display 1024 x 768 or higher resolution
- You must have a:
 - Sound card, which is usually integrated into your desktop or laptop computer
 - Speakers or headphones.
 - *For courses utilizing video-conferencing tools and/or an online proctoring solution, a webcam and microphone are required.
- Both versions of Java (32 bit and 64 bit) must be installed and up to date on your machine. At a minimum Java 7, update 51, is required to support the learning management system. The most current version of Java can be downloaded at: [JAVA web site http://www.java.com/en/download/manual.jsp](http://www.java.com/en/download/manual.jsp)
- Current anti-virus software must be installed and kept up to date.

Running the browser check will ensure your internet browser is supported.

Pop-ups are allowed.

JavaScript is enabled.

Cookies are enabled.

- You will need some additional free software (plug-ins) for enhanced web browsing. Ensure that you download the free versions of the following software:
 - [Adobe Reader](https://get.adobe.com/reader/) <https://get.adobe.com/reader/>
 - [Adobe Flash Player](https://get.adobe.com/flashplayer/) (version 17 or later) <https://get.adobe.com/flashplayer/>
 - [Adobe Shockwave Player](https://get.adobe.com/shockwave/) <https://get.adobe.com/shockwave/>
 - [Apple Quick Time](http://www.apple.com/quicktime/download/) <http://www.apple.com/quicktime/download/>
- At a minimum, you must have Microsoft Office 2013, 2010, 2007 or Open Office. Microsoft Office is the standard office productivity software utilized by faculty, students, and staff. Microsoft Word is the standard word processing software, Microsoft Excel is the standard spreadsheet software, and Microsoft PowerPoint is the standard presentation software. Copying and pasting, along with attaching/uploading documents for assignment submission, will also be required. If you do not have Microsoft Office, you can check with the bookstore to see if they have any student copies.

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@tamuc.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

COMMUNICATION AND SUPPORT

Brightspace Support
Need Help?
Student Support

If you have any questions or are having difficulties with the course material, please contact your Instructor.

Technical Support



If you are having technical difficulty with any part of Brightspace, please

contact Brightspace Technical Support at 1-877-325-7778 or click on the **Live Chat** or click on the words “[click here](#)” to submit an issue via email.

System Maintenance

Please note that on the 4th Sunday of each month there will be System Maintenance which means the system will not be available 12 pm-6 am CST.

Interaction with Instructor Statement

All communications with the Instructor done through email. The usual response time is within 24 hours.

COURSE AND UNIVERSITY PROCEDURES/POLICIES

Course Specific Procedures/Policies

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

University Specific Procedures

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx).
<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: [Netiquette](http://www.albion.com/netiquette/corerules.html)
<http://www.albion.com/netiquette/corerules.html>

TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx) webpage and [Procedure 13.99.99.R0.01](http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx).
<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>
<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

ADA Statement

Students with Disabilities

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

Texas A&M University-Commerce

Gee Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@tamuc.edu

Website: [Office of Student Disability Resources and Services](#)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

Nondiscrimination Notice

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a

concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

COURSE OUTLINE / CALENDAR

Text Chapter	Topic	Assignment/ Test	Due Date
Chapter 1	What is Statistics?		Class starts on June 1, 2020
Chapter 2	Describing Data- Frequency Distribution and Graphs		
Chapter 3	Describing Data-Measures of Central Tendency		
Chapter 5	A Survey of Probability Concepts		
Chapter 6	Discrete Probability Distributions		
Chapter 7	The Normal Probability Distribution	Assignment 1 Chs 1-7	11:59 pm Wednesday, June 17, 2020
Chapter 8	Sampling Methods and the Central Limit Theorem		
Chapter 9	Estimation and Confidence Intervals		
Chapter 10	One-Sample Tests of Hypothesis		
Chapter 13	Linear Regression and Correlation	Assignment 2 Chs 8-13	11:59 pm Wednesday, July 1, 2020

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HOME WORK PROBLEMS TO BE TURNED IN-

The Home Assignments are to be turned in by the Midnight of the due date also indicated on top of each Assignment. NO LATE SUBMISSION WILL BE ACCEPTED. **Submit only through D2L Brightspace.**

Chapters	Problem(s)	Due by
Chs. 1, 2, 3, 5, 6 &7	Assignment 1 (posted in D2L Brightspace)	11:59 pm, Wednesday, June 17 th , 2020
Chs. 8, 9, 10 &13	Assignment 2 (posted in D2L Brightspace)	11:59 pm, Wednesday, July 1 st , 2020

Submit your Answers in the respective box of D2L Brightspace

The syllabus/schedule are subject to change