



## **BUA-2310-30 Business Statistics (Online)**

### **Fall / 2021**

**Instructor:** Dr. Junghoon Song

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**Course modality:** Online

**Meeting Times:** Online

**Office:** AMB 308

**Office Hours:**

**TTH 11:45 AM – 1:30 PM**

**W 10:00 AM – 12:00 PM**

## **Course Introduction**

This course provides an introduction to statistical techniques, analysis, and applications to improve your understanding of quantitative decision-making for management. This course will help one develop an understanding of how quantitative tools and analysis may lead to improved decision making, improve quantitative reasoning ability, and increase facility with spreadsheets. Course description from the catalog: “A review of basic business statistics and application of multivariate techniques for the analysis of survey data. Use of computer programs in data analysis and interpretation of computer-generated analyses.”

## **Course Description**

**Prerequisite:**

- MAT 1302 College Algebra with minimum grade of C.
- Students are expected to know how to use a web browser such as Firefox, Google Chrome or Microsoft Internet Explorer, send and receive e-mail, attach documents in e-mail, and use discussion boards. The technology help desk 817-531-4428 (Option 1) is available 24-7 to help with computer/network/software issues. With your permission, they can access your computer remotely to help. For Blackboard issues, it is recommended to select the option for Blackboard issues, which will connect you with Embanet.

An introduction to statistical techniques, including averages, deviation, simple correlation, time-series analysis, and index numbers.

**NOTE:** Pursuant to the 2017-2019 Undergraduate Catalog, students taking this course to satisfy the prerequisite for any future course (within the School of Business) must earn a grade of “C” or higher. Students should consult with their academic advisor on any questions relating to this catalog requirement.

<b>Course Learning Objectives</b>	<b>BBA Learning Goals</b>	<b>Assessment</b>
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Students will work in teams and learn teamwork skills.	<b>Teamwork skills</b> Each student will display teamwork skills.	<b>Applied Group Projects</b>
Students will use technology to perform statistical analysis and make business decisions.	<b>Use of information technology</b> Each student will be competent in acquiring and using information technology skills in the decision making process.	<b>Excel Assignments</b>
Students will understand how to perform a statistical study, including formulating the research question, collecting data, organizing, describing, and analyzing the data.	<b>Discipline-specific knowledge</b> Students will demonstrate competency in discipline-specific knowledge.	<b>Quizzes</b> <b>Discussion Posts</b>
Students will use appropriate methodology to analyze information to provide meaningful conclusions for managerial decision-making purposes.	<b>Analytical and critical thinking skills</b> Each student will apply analytical and critical thinking skills to business contexts.	<b>Final Individual Project</b> <b>Applied Group Projects</b>

## Required Materials

**CALCULATOR:** A calculator is required. A graphing calculator is recommended. A finance calculator is adequate.

**REQUIRED TEXT/MINDTAP:** Anderson/Sweeney/Williams: Essentials of Modern Business Statistics with Microsoft® Office Excel®, 7<sup>th</sup> edition, + MindTap Business Statistics, 1 term (6 months) Printed Access Card, ISBN: 978133758954.

Students are recommended to obtain access to Cengage **MindTap** to complete extra credit homework assignments. **You have three purchasing options (please contact [cengagebrain.com](http://cengagebrain.com) to discuss your options if you have questions):**

**Option A (Recommended):** Purchase a Cengage **subscription**. Students can subscribe to Cengage Unlimited at CengageBrain.com. A Cengage Unlimited subscription is

\$119.99 per semester no matter how many products a student uses (meaning if you are taking other classes that are using Cengage textbooks, you will pay \$119.99 for access to all Cengage course materials for all disciplines using Cengage textbooks). Included in the subscription, students can rent the hard copy of the text for free (simply pay \$7.99 for shipping and return at the end of semester).

**Option B:** Purchase the **loose-leaf** version of the text (from the Wesleyan Bookstore or CengageBrain.com) bundled with the **MindTap** access code. **Note that if you purchase the hard copy text, MindTap is not included!**

**Option C:** Purchase the **MindTap access code** from CengageBrain.com and the full **eBook** is included. **Note that if you purchase the eBook alone, it does not include MindTap!**

## Instructional/Learning Methods and Technologies

The learning methods used in this course include the following:

- ☒ Discussion forums and/or wikis
- ☐ Synchronous (real-time) virtual meetings with peers and/or the instructor
- ☒ Streaming video
- ☒ Quizzes
- ☒ Exams
- ☒ Collaborative assignments
- ☒ Independent homework assignments
- ☐ Writing-intensive assignments
- ☐ Clinical or field work
- ☐ Other:

## Student Workload Expectation

In order to succeed in this course, students must actively participate. Active participation consists of logging into our course each week to check announcements, view lectures materials, and submit assignments. How much time students can expect to spend working on class materials is as follows: This course is a 3-credit hour course, which means that students are expected to engage in at least 450 minutes (7.5 hours) of course-related work or activity each week during the semester. These learning activities may include lecture, discussion, as well as time spent completing assigned readings, studying for quizzes and exams, participating in excel/SPSS assignments, preparing written assignments, and other course-related tasks.

## Course Requirements

### Submitting and Returning Assignments

#### [Assignment Submission](#)

- Submit all of your assignments via Blackboard.

- Use the standard Microsoft® Office programs such as Word, PowerPoint, and Excel (available to you through your txwes.edu Office 365 account) to complete your assignments unless assignment directions specify that you should use a different file format.

#### Assignment Feedback

- I will provide feedback on assessments within 3 days after submission.
- My feedback will be provided in the form of writing on Blackboard or individual email.
- Your grades will be posted to the Blackboard Grade Center.

#### Communication with the Instructor

- To contact me with questions and concerns related to this course, please send me an email [song@txwes.edu](mailto:song@txwes.edu) or leave me a message through Microsoft Teams. I will respond within 24 hours.

Deadlines for all assignments are set on the course schedule before the course begins. All assignments are due on or before the scheduled due date by 11:59pm CST. Whereas students may submit completed assignments early, late assignments will not be accepted. All submissions must be submitted via Blackboard. Submissions will NOT be accepted via email. The preferred submission format is in pdf format (you can create the assignment in Microsoft word, for example, and save as pdf (file -> save as -> pdf)). Grades will be posted in the grade book immediately upon completion.

To fulfill the course requirements, students must complete the following assignments:

- 1) **Group contract** – This is a required component of the course. Students will be expected to complete a group contract. Only one member from each group needs to submit the contract for the entire group to receive credit. If a group member does not participate and/or sign the contract then that student will not receive credit for completing the group contract.
- 2) **Individual Assignments** – Students will individually complete the following assignments (details available in Blackboard):
  - a) **Management report** - The submission format preference is pdf.
  - b) **Article review** – An article will be assigned by the instructor and will be accessible from within the course or via Wesleyan University Library access to online journal databases. The submission format preference is pdf.
- 3) **Quizzes** – Students will complete short (10 question) multiple choice and/or true/false quizzes based on the lecture slides and videos. The first quiz, however, is based on the syllabus and introductory course material. The quizzes will not be timed. Once started, you will be required to complete the quiz in one sitting. You only have one attempt to take the quiz. If you do not hit the submit button after completing your quiz then the quiz will not be submitted for grading and assigned a grade of zero. The quiz topics are as follows:
  - Quiz 1: Introduction to the Course
  - Quiz 2: Introduction to Statistics
  - Quiz 3: Organize and Present
  - Data Quiz 4: Contingency Tables
  - Quiz 5: Descriptive Statistics
  - Quiz 6: Data Analysis for Qualitative Variables
  - Quiz 7: Data Analysis for Quantitative
  - Variables Quiz 8: Probability Distributions
- 4) **Knowledge Check Lecture worksheets** – Students are expected to complete worksheets that will help them follow along during the lecture videos. Students can either 1) print the worksheet, complete by hand (pen or pencil), scan, and submit in Blackboard, **OR** 2) complete in Word and submit in

Blackboard.

- 5) **Excel/SPSS Assignments** – Students will complete Individual Excel/SPSS assignments. Students are expected to have access to a Windows compatible computer.
- 6) **Applied Group Projects** – Students will complete group projects that will require the student to apply the material in the lectures to real-life problems. Students will be randomly assigned into groups. A project manager needs to be designated for each assignment (similar to the show, **The Apprentice**). The project manager must be different for each project. Consistent with courses offered in the School of Business Administration and Professional Programs with regards to group work, this course will: (1) Include evaluation of group members, (2) Enable group members to “fire” one another”, and (3) Include Participation/Involvement of the Instructor. The group projects will enable students to work with one another, learn from one another, and prepare each student with the skills needed to be equipped to be successful in the individual final.
- 7) **Discussions** - Students will be required to respond to discussion topics by posting an original thread and replying to at least two other student’s threads. The original thread is due by **midnight on the third day after the week begins** (for example, if the week begins on a Monday, then the original thread is due by midnight on Wednesday; if the week begins on a Wednesday, then the original thread is due by midnight on Friday, etc.). Participants must create a thread to view other threads in this forum. Students are expected to post on at least two different days. Discussion posts must be thorough, reflective, and **include references**. The discussion posts do not close and are open all semester to encourage continuation of the discussion.
- 8) **Final Exam** – to be completed individually. The final will not be timed. You are not required to complete the exam in one sitting. You only have one attempt to take the exam.
- 9) **EXTRA CREDIT – MindTap Homework** – There will be 7 homework assignments, one for each lecture in the course, and the homework will be based on the text. The homework will use Cengage Learning’s MindTap, which is an online applet provided by the text. Students can complete the homework assignments more than once, it is not timed, and students do not have to complete the homework assignments in one sitting. Instructions to utilize MindTap will be provided in Blackboard. Note that, like the quizzes, if you do not hit the submit button in MindTap after completing your homework then the homework will not be submitted for extra credit, and you will not receive credit for the completion of the homework assignment.
  - Homework 1: Chapter 1
  - Homework 2: Chapter 2 (only sections 2.1 and 2.2)
  - Homework 3: Chapter 2 (only sections 2.3, 2.4, and 2.5)
  - Homework 4: Chapter 3
  - Homework 5: Chapter 9 (only sections 9.1 and 9.2) and Chapter 12
  - Homework 6: Chapter 14 and Chapter 15
  - Homework 7: Chapter 5 and Chapter 6
- 9) **EXTRA CREDIT – Application Assignments** – There are Additional extra credit assignment opportunities include the following topics:
  1. How is your blood pressure?
  2. Are you going to curve grades?
  3. The Law of Large Numbers
  4. The Monty Hall Problem
  5. Binomial and Hypergeometric Probability Distributions
  6. Blackjack Simulation

7. The Capture-Recapture Method
8. The Central Limit Theorem
9. Comparing Hypothesis Testing and Confidence Intervals
10. The Vitruvian Man
11. Kidney Stone Treatment, Confounding Variables, and Simpson's Paradox
12. Is There a Home Field Advantage?
13. Validate a Probability Distribution
14. The Standard Normal Distribution
15. Do the Smartest Students Always Prefer to Sit in the Front of the Room?
16. Review an Article
17. Performing a Statistical Study

11) **EXTRA CREDIT – End of Course Survey completion** – There are two end of course surveys (Qualtrics and IDEA). Each survey is worth 5 points. For the Qualtrics survey, students will need to submit their "thank you for completing the survey" to receive 5 bonus points. For the IDEA survey, if 90% or more of the class completes the IDEA evaluation, then everyone will receive 5 points. Do NOT submit a screenshot. The instructor will send out emails to let you know the progress.

## Other Class Information:

This is similar to a science course which contains both mathematics and theory/terminology. REMEMBER THAT EFFORT IS NOT GOOD ENOUGH. THE EFFORT MUST LEAD TO RESULTS. Computer tutorials will utilize Excel and SPSS. If you plan to use lab AMB217, please call first to check availability of the lab hours at 817-531-4293. SPSS is installed on all computers on campus, including the library.

## Evaluation & Grading

All grades will be made available to students in Blackboard.

Requirements		# of items	Points per item	Total Possible Points	% of total grade
1	Group Contract	1	30	30	3%
2	Individual Assignments	2	75	150	15%
3	Quizzes	8	20	160	16%
4	Knowledge Check Lecture Worksheets	7	20	140	14%
5	Excel/SPSS Assignments	8	10	80	8%
6	Group Projects	2	50	100	10%
7	Discussion posts	7	20	140	14%
8	Final	1	200	200	20%
<b>Total</b>				<b>1000</b>	<b>100%</b>
9	Extra Credit: MindTap homework	7	5	35	
10	Extra Credit: Application assignments	17	15	255	
11	Extra Credit: End of semester surveys	2	5	10	

Point Range	Grading Scale	Grade
900 - 1000	90-100	A
800 - 899	80-89	B
700 - 799	70-79	C
600 - 699	60-69	D
0 - 599	59 & below	F

## Tentative Schedule of Topics/Lectures to Be Covered:

All content for the lectures and assignments will be in the “Course Content” link on the left hand side of the screen when you log into Blackboard. The course is organized by week. Each week will have its own folder. Some weeks will be combined into one folder. All assignments and material for each week will be in it associated folder. If a quiz is due, for example, it will be in that week's folder.

**\*All assignments are due at midnight on the last day of the week in which they are assigned. This semester each week starts on a **Monday** and ends on a **Sunday**; therefore, all assignments for a particular week are due at midnight on **Sunday** of each week.**

Week	Dates	Assignmen
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1	8/23 - 8/29	<b>TOPIC: COURSE EXPECTATIONS</b> <ol style="list-style-type: none"> <li>1. Discussion post – Introduce yourself to others in the course</li> <li>2. Watch week 1 videos</li> <li>3. Quiz – Course Expectations</li> <li>4. Conduct your first virtual group meeting using Blackboard Collaborate</li> <li>5. Group Contract Due</li> <li>6. Upload your picture (optional)</li> </ol>
2	8/30 - 9/5	<b>TOPIC: INTRODUCTION TO STATISTICS</b> <ol style="list-style-type: none"> <li>1. Watch the lecture videos</li> <li>2. Complete the knowledge check worksheet</li> <li>3. Excel/SPSS Assignment 1</li> <li>4. Quiz – Introduction to Statistics</li> <li>5. Read Chapter 1 in the text (optional)</li> <li>6. MindTap Homework Chapter 1 (optional extra credit opportunity)</li> </ol>
3	9/6 - 9/12	<b>TOPIC: ORGANIZE AND PRESENT DATA</b> <ol style="list-style-type: none"> <li>1. Watch the lecture videos</li> <li>2. Complete the knowledge check worksheet</li> <li>3. Quiz – Organize and present data</li> <li>4. Discussion Post 1: When Will I Ever Use This?</li> <li>5. Excel/SPSS Assignment 2</li> <li>6. Read Chapter 2 (only sections 2.1 and 2.2) in the text (optional)</li> <li>7. MindTap Homework Chapter 2 (only sections 2.1 and 2.2) (optional extra credit opportunity)</li> </ol>
4	9/13 – 9/19	<b>TOPIC: CONTINGENCY TABLES</b> <ol style="list-style-type: none"> <li>1. Watch the lecture videos</li> <li>2. Complete the lecture worksheet</li> <li>3. Quiz – Contingency Tables</li> </ol>



		<ol style="list-style-type: none"> <li>Excel/SPSS Assignment 3</li> <li>Read Chapter 2 (sections 2.3, 2.4, and 2.5) in the text (optional)</li> <li>MindTap Homework Chapter 2 (sections 2.3, 2.4, and 2.5) (optional extra credit opportunity)</li> </ol>
5	9/20 - 9/26	<b>TOPIC: DESCRIPTIVE STATISTICS</b> <ol style="list-style-type: none"> <li>Watch the lecture videos</li> <li>Complete the lecture worksheet</li> <li>Quiz: Descriptive Statistics</li> <li>Discussion Post 2: Do Not Be Fooled By Statistics</li> <li>Excel/SPSS Assignment 4</li> <li>Read Chapter 3 in the text (optional)</li> <li>MindTap Homework Chapter 3 (optional extra credit opportunity)</li> </ol>
6	9/27 – 10/3	<ul style="list-style-type: none"> <li>Individual Assignment 1 Due</li> </ul>
7	10/4 – 10/10	<ol style="list-style-type: none"> <li><b>TOPIC: DATA ANALYSIS FOR QUALITATIVE VARIABLES</b></li> <li>Watch the lecture 5 videos</li> <li>Complete the lecture 5 worksheet</li> <li>Quiz Lecture 5</li> <li>Excel/SPSS Assignment 5</li> <li>Discussion Post 3</li> <li>Read Chapter 9 (sections 9.1, 9.2, 9.6) and Chapter 12 in the text (optional)</li> <li>MindTap Homework Chapter 9 (sections 9.1, 9.2, 9.6) and Chapter 12 (optional extra credit opportunity)</li> </ol>
8	10/11 – 10/17	<ul style="list-style-type: none"> <li>Discussion post 3</li> <li>Work on Applied Group Project 1</li> </ul>
9	10/18 – 10/24	<ol style="list-style-type: none"> <li>Applied Group Project 1 Due</li> <li>Discussion Post 4</li> </ol>
10	10/25 – 10/31	<b>TOPIC: DATA ANALYSIS FOR QUANTITATIVE VARIABLES</b> <ol style="list-style-type: none"> <li>Watch the lecture 6 videos</li> <li>Complete knowledge check worksheet</li> <li>Quiz Lecture 6</li> <li>Excel/SPSS Assignment 6</li> <li>Read Chapter 14 and Chapter 15 in the text (optional)</li> <li>MindTap Homework Chapter 14 and Chapter 15 (optional extra credit opportunity)</li> </ol>
11	11/1 – 11/7	<ol style="list-style-type: none"> <li>Individual Assignment 2 Due</li> <li>Discussion post 5</li> </ol>
12	11/8 – 11/14	<b>TOPIC: PROBABILITY DISTRIBUTIONS</b> <ol style="list-style-type: none"> <li>Watch the lecture 7 videos</li> <li>Complete the lecture 7 worksheet</li> <li>Quiz Lecture 7</li> <li>Excel Assignment 7</li> </ol>

		5. Excel Assignment 8 6. Read Chapter 5 and Chapter 6 in the text (optional) 7. MindTap Homework Chapter 5 and Chapter 6 (optional extra credit opportunity)
13	11/15 - 11/21	1. Work on Applied Group Project 2 2. Discussion post 6
	11/22 - 11/28	Thanksgiving Break: 11/22 – 11/26
14	11/29 – 12/5	• Applied Group Project 2 Due  <b>TOPIC: ADDITIONAL OPTIONAL EXTRA CREDIT OPPORTUNITIES AND COURSE WRAP-UP</b> 1. Work on Final 2. Discussion post 7 3. Surveys (optional extra credit opportunity) 4. Extra credit assignments (optional extra credit opportunity)
15	12/6 – 12/10	<b>TOPIC: FINAL</b> 1. Final

**By the end of the course the student should have demonstrated the ability to:**

- 1) Understand the research process, including how to frame a research question, the research design, how to collect data, organize, present, describe, and analyze data, interpret results, and provide conclusions.
- 2) Identify differences between the four classifications of variables.
- 3) Identify independent and dependent variables.
- 4) Understand the misuse of statistics and misleading statistics.
- 5) Understand the methods to collect data
- 6) Understand how to properly construct frequency tables for each type of variable.
- 7) Identify different kinds of graphs (histograms, bar, pie, scatterplot, simple boxplot, comparative boxplot, stacked bar graph, clustered bar graph, etc.) and know proper uses (and misuses) of each kind of graph.
- 8) Properly construct each kind of graph when given a set of data.
- 9) Interpret graphic and tabular representations of data, recognizing important differences among them.
- 10) Recognize and identify differences between various descriptive statistics, such as the mean, median, interquartile range, variance, standard deviation, skewness, and kurtosis.
- 11) Compute the above statistics and identify applications of descriptive statistics. Students must differentiate between samples and populations and between parameters and statistic variables, and know when each is calculated and used.
- 12) Describe distributions of different types in terms of shape, location and variability, and match the values of descriptive statistics to corresponding graphic representations of data.
- 13) Perform a test of statistical significance to assess the relationship between two qualitative variables and interpret the results, that is, perform a test of independence (“homogeneity”), interpret the results in terms of the hypothesis being tested.
- 14) Perform a test of goodness-of-fit, interpret results in terms of the hypothesis being tested.
- 15) Perform a test of statistical significance to assess the relationship between two quantitative variables and interpret the results, that is, construct a prediction model using simple

linear regression and interpret the resulting values.

- 16) Compute and interpret the effect size for each type of statistical test.
- 18) Understand the limitations and assumptions of each type of statistical test.
- 19) Know the definition and properties of sampling distributions including Type I and Type II errors.
- 20) Examine the internal and external validity of research.
- 21) Understand discrete and continuous probability distribution calculations and interpretations.

## Course Policies

### Academic Integrity

- Cheating, plagiarism (submitting another person's material as one's own), or completing assignments for another person who will receive academic credit are not permitted. This includes the use of unauthorized books, notebooks, or other sources in order to secure or give help during an examination, the unauthorized copying of examinations, assignments, reports, or term papers, or the presentation of unacknowledged material as if it were the student's own work. Disciplinary action may be taken beyond the academic discipline administered by the course instructor. [Read the University's Academic Integrity Policy.](#)

### Online and Hybrid Class Attendance and/or Participation

Students enrolled in distance education courses must demonstrate academic engagement throughout the course to be counted present.

**Academic engagement means actively engaging with course content.** Examples of academic engagement include attending a synchronous session, interacting with your instructor, participating in an online discussion, completing interactive tutorials or web-based assignments, and completing assignments or exams.

Academic engagement **does not include** the act of logging into Blackboard, nor does it include participating in academic counseling or advising.

Students must demonstrate academic engagement a minimum of once each week in order to be marked present for that week.

### Faculty-Initiated Student Withdrawal from a Course

When a student accumulates **consecutive unauthorized absences** equal to the number of days the class meets per week (1, 2, or 3) AND has not communicated with the instructor about the absences, the instructor must drop the student from the class using the Faculty Initiated Student Withdrawal process within 10 calendar days from the last date of attendance.

The Registrar will record a grade of "DP" for the course on the student's transcript. The Registrar will record a grade of "WF" (failure) on the student's transcript if the instructor drops the student after the date for receiving a grade of "DP" as specified in the University catalog. *Note: Per the Office of Financial Aid, students who withdraw from a course **cannot** be re-enrolled in that course during the same semester.*

### Other University Policies

- Links to selected University policies are available in [Blackboard under the Student Resources tab](#). The current Texas Wesleyan University [Catalog](#) and [Student Handbook](#) contain all University policies.

*Note: Course syllabi are intended to provide students with basic information concerning the course. The syllabus can be viewed as a “blueprint” for the course. Instructors will inform students of any changes concerning examinations, the grading or attendance policies, or changes in project assignments.*