Dillard College of Business Administration

Syllabus: Advanced Applied Business Statistics
BUAD 5603, Section 280
Tuesday 7:00 pm until 9:50 pm
Dillard Building Room 324
Spring 2025

CONTACT INFORMATION:

Instructor:	Dr. John E. Martinez
Office Building:	Dillard College, Second Floor, Room 255
Office Phone:	(940) 397-4722
E-mail:	john.martinez@msutexas.edu
Office Hours:	10:00 am to 11:15 am Monday -- Thursday or by appointment.

BUAD 5603, Section 180, Advanced Applied Business Statistics,
Course Number 10194 uses supplemental Desire2Learn.
Attributes: Course Exempt from 3-peat rule, Course Fee – Business Administration, COBA, Instructional Enhance Fee
Main Campus Lecture Schedule Type
Traditional Face to Face Instructional Method 3.000 Credit Hours
Scheduled Meeting Times – August, 2024 through December, 2024

SYLLABUS CHANGE POLICY:
This syllabus is a guide for the course and is subject to change. All changes will be announced in class and students will be responsible for incorporating the changes into the syllabus. If, at some point, the university switches to an online format, then there will be significant changes in the manner in which exams are administered. Any exam taken online will be monitored through RESPONDUS, which will require students to have access to a webcam video.

COURSE MATERIALS:

Access to SAS OnDEMAND for Academics and to EXCEL

SAS University Edition was a free version of SAS, but you had to download software to create a virtual computer on your real computer, then download the SAS software, and finally, set up a way to read and write files from your "real" computer to the "virtual computer." This caused many people massive headaches (including this author).

The great news about SAS OnDemand for Academics (hence forth called **ODA – OnDemand for Academics**) is that you don't have to download anything! You access SAS on a cloud platform. Also, reading data from your real computer is quite simple. **ODA uses SAS Studio as the interface.** SAS Studio provides an environment that includes a point-and-click facility for performing many common tasks, such as producing reports, graphs, data summaries, and statistical tests. SAS Studio enables you to write and run your own programs.

Registering for ODA

To gain access to ODA, you need to register with SAS Institute. Part of the registration process is to create a SAS profile. If you already have a SAS profile, skip that portion of the instructions. To start, point your browser to: https://welcome.oda.sas.com

Recommended, but not required, Text:
A Gentle Introduction to Statistics Using SAS® Studio in the Cloud

978-1-954844-49-0 (Hardcover)
978-1-954844-45-2 (Paperback)
978-1-954844-46-9 (Web PDF)
978-1-954844-47-6 (EPUB)
978-1-954844-48-3 (Kindle)

Introductory Business Statistics: This text is Free online:

https://openstax.org/details/books/introductory-business-statistics

Publish Date: Nov 29, 2017 Web Version Last Updated: Jun 23, 2022
Hardcover: ISBN-10: 1-947172-46-8 ISBN-13: 978-1-947172-46-3
Paperback: ISBN-13: 978-1-50669-984-4
Digital: ISBN-10: 1-947172-47-6 ISBN-13: 978-1-947172-47-0

The text is designed to meet the scope and sequence requirements of the one-semester statistics course for business, economics, and related majors. Core statistical concepts and skills have been augmented with practical business examples, scenarios, and exercises. The result is a meaningful understanding of the discipline, which will serve students in their business careers and real-world experiences.

Anderson, Sweeney, and Williams: Statistics for Business and Economics, 5e 2009, Thomson South-Western ISBN 13: 978-0-324-65421-9 ISBN 10: 0-324-65422-7

This text is designed to help students fully understand descriptive and inferential statistical analysis, its components, and its uses. Taking into consideration current statistical technology, its focuses demonstrating the logic, reasoning, and calculations that lie behind any statistical analysis. Furthermore, the text emphasizes the application of statistical tools to real-life business concerns.

OTHER ANCILLARY MATERIAL:

In addition to the two texts, students need to have access to the following:

- WebCam video
- Thumb drive:

Each student should have a thumb drive (USB) on which to keep various data sets and assignments that will be a part of each class. Projects and assignments may include the requirement that electronic versions of your work be submitted. If students have access to MSU-DCOBA labs, then downloading the SAS software is not necessary. SAS software is installed in most DCOBA labs.

Course Description

Taking into consideration current statistical technology, the course focuses on the use and interpretation of software, while also demonstrating the logic, reasoning, and calculations that lie behind any statistical analysis. Furthermore, the course emphasizes the application of statistical tools to real-life business concerns.
The course is structured around the most commonly used SAS statistical procedures. You will also learn how to test the assumptions for all relevant statistical tests. Major topics featured include descriptive statistics, one-and two-sample tests, ANOVA, correlation, linear and multiple regression, and analysis of categorical data.

Course Pre-requisites - BUAD 3033 or equivalent and consent of Graduate Coordinator.

LEARNING GOALS

A. General Learning Goals (GLC):

- The general objective of this course is to review and solidify the knowledge gained in undergraduate statistics course and enhance the ability to use statistical analysis in decision-making process.
- Problem solving and decision making abilities through critical analysis, evaluation and interpretation of business information. Problem solving skills and interpretation of results will be assessed exams and quizzes.

- Ability to use statistical Software **(with emphasis on SAS).**
- Ability to comprehend statistical discussions and comment on them.

General Learning Goals (GLC) associated with Assessment of Learning (AOL)

GLG3: Students will produce creative responses to business situations.
Objective: Our graduates will demonstrate the capability to critically analyze business situations and develop creative solutions to opportunities and problems.

GLG4: Our students will integrate knowledge across business disciplines.
Objective: Graduates will demonstrate the capability to integrate knowledge across business disciplines.

GLG5: Our students will communicate (in written form) at a professional level.

Objective: Graduates will be able to communicate in a professional business manner.

B. Course Specific Learning Goals:

- Summarize data using descriptive statistics.
- Understand the appropriate methodology for computing all statistical measures covered in this course.
- Apply basic statistical measure to the solution of structured business problems and interpret results.
- Understand the Ordinary Least Squares (OLS) model and its applications.
- Apply hypothesis testing to business problems and estimates of coefficients.

COURSE POLICIES:

A. Attendance Policy:

Students are expected to access all videos and taped lectures for this course. Many important announcements are provided for this course. You are expected to log into D2L a minimum of once daily to check for updates and announcements via postings and email. See the MSU university catalog for the University Class Attendance Policy.

B. Other Related Policies

Electronic Communication Devices

Use of personal electronic communication devices, other than through D2L, is discouraged during exams and students are required to disable any other electronic instruments during exams. Individuals holding devices that disrupt class may be asked to leave the class for the remainder of the session.

Expectation

Answers you provide in exams and case studies are expected to reflect logical reasoning, to be well articulated, including correct grammar and punctuation and to be clearly legible, in a manner and format that would be acceptable for a business report in a commercial setting.

Students will be expected to develop a base knowledge in using SAS. Each student is expected to become sufficiently familiar with the Desire-2-Learn (D2L), as it will be a primary communication instrument for this class.

GRADING and EVALUATIONS:

A student's grade will be based on a weighted average of the following:

MAJOR EXAMS		40%
Exam I	20%	
Exam II	20%	
FINAL EXAM		30%
MANAGERIAL CASES		30%
Case Set I – Written Presentation	10%	
Case Set II – Written Presentation	10%	
Case Set III – Written Presentation	10%	

GRADE EVALUATION:

As a **percent** of total points (1000pts):
A (Above 90%), B (80-89%), C (70-79%), D (60-69%), F (below 60%)
Total Points:
[Exam Avg. X 4.0] + [Final X 3.0] + [Case Avg. X 3.0] + [bonus Pts]

Major exams:
Two major exams will be given. Each exam will involve calculation and derivation of answers as well as their interpretation and meaning. Each major exam, including the final, consists of two equal parts: 1) statistical conceptual and problems and 2) managerial cases. Questions will come from the text, lecture notes, and managerial cases. **A significant portion of each exam involves interpreting output derived from SAS and EXCEL as well as from Managerial Cases.** All exams will involve objective-type questions [TF or MC] monitored through RESPONDUS. See the attachment below: **RESPONDUS MONITOR REQUIREMENTS FOR ONLINE EXAMS.**

Failure to take an exam on the scheduled date without prior permission from the instructor will result in a zero for that exam. Failure to take any exam without prior approval will result either in an 'F' or 'I' (incomplete) for the course. If, because of a truly unavoidable situation, you are absolutely not able to take an exam at the scheduled time/date, it is your responsibility to contact your instructor well in advance to ask to take the exam early. If a real, legitimate, last minute emergency occurs, it is your responsibility to contact me before the exam begins.

Final Exam (or Ex-III):
A comprehensive final exam will be given with greater emphasis on later material. This exam will be an objective-type exam [TF or MC].

Managerial Cases – Written Assignments:
Three Managerial Cases are required. The goal of each case is to correctly understand a business situation, solve a real problem, and make a good business decision. Designated cases with specific formatting guidelines are attached at the end of this syllabus. Statistical output for these cases will be generated using SAS. More detailed information about this requirement can be found in the attachment below:
Format for Managerial Case Writing Assignments

Lower Grades:
The instructor reserves the right to lower any student's final grade by a letter grade (i.e., A to B, D to F) for:
(A) A negative, rude, unreasonably argumentative or inattentive attitude in class, or,
(B) Repeatedly disrupting the class for any reason (tardiness), or,
(D) **NOT** showing respect for fellow classmates' questions, opinions, or class presentations.
(E) Collaboration with other individuals when it is exclusively prohibited.
(F) Using outside material for exams that has been exclusively prohibited.

Campus Carry:
Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the University's webpage at Campus Carry Polices Link.

Academic Integrity:
With regard to academic honesty, students are referred to the "Student Honor Creed" of Midwestern State University Undergraduate Catalog, which may be found using the following MSU link: Link to Student Honor Creed.

Americans with Disabilities Act:
This class follows the guidelines suggested by the Center for Counseling and Disabilities Services for those students who qualify for disability services. See Midwestern State University Undergraduate Catalog which may be found at: Link to Suggested Guidelines Center for Counseling and Disabilities Services.

D2L:
The Midwestern State University D2L program will be incorporated into this class and will provide the primary default means of communication. Each student is expected to master the use of D2L. Assistance to achieve comfort using this program will be available as needed. Grades will be posted using D2L.

OTHER RELEVANT INFORMATION:

Midwestern State University Student Handbook:

See the most recent MSU Student Handbook for a statement of the university's policy on academic dishonesty. Any other questions not specifically addressed by this syllabus are governed by the student handbook. Make sure you have a copy and are familiar with all the information from the Office of Student Rights and responsibilities: https://msutexas.edu/student-life/conduct/

Medical or Other Serious Problems:

Please take time and make the effort to advise me if you have difficulties that require my attention to properly evaluate your classroom participation and activities.

Tape Recordings and Cell Phones:

Tape recording of lectures is permitted. You may not tape record any information or class discussion when a graded test is being reviewed. Cell phones and pagers are prohibited unless the instructor has granted permission to have them in class.

Return of Exams:

Never download or take a photo of any exam or graded answer sheet. This will result in an automatic zero (0) on that particular exam.

Plagiarism Statement:

"By enrolling in this course, the student expressly grants MSU a "limited right" in all intellectual property created by the student for the purpose of this course. The "limited right" shall include but shall not be limited to the right to reproduce the student's work product in order to verify originality and authenticity, and educational purposes."

Correspondence

All correspondence regarding grades or class issues must be conducted through email primarily **Midwestern State University (MSU) email or through D2L when email is not available**. I will not return answers to questions to other email accounts and will not discuss grades or class standing over the phone. Since email or D2L messages are the most convenient means of communication, it is recommended that students use and regularly monitor their MSU email and D2L account. You must adhere to the following subject line of any message sent to instructor via text message or email: **BUAD 5603 First, Last Name.**

Netiquette: Communication Courtesy Code

Students are expected to follow rules of common courtesy in all email messages, class discussions, lecture hall posts, chats, etc. Failure to do so will result in my forwarding the message to the Chair of the department and the online administrators.

Deadlines

Do not wait for the last minute to do any assignment. Check D2L for all assignments and the deadlines. Reply and check for replies on every email sent and received. The student is responsible for getting the work to me on time.

Spring Semester 2025 Schedule
https://msutexas.edu/registrar/_assets/files/pdfs/232425webcalendar.pdf
Classes begin.....January 21
ML King Birthdate…… January 20
Spring break begins 5:00 pm..... March 9-15
Classes resume.....March 17
Holiday break begins 10:00pm ……April 17-20
Last day of classes .....May 09
Final examinations begin ..... May 12

Course Schedule – Schedule is subject to change

Week	Class Coverage	Class Day
Week01	Class Expectations and Requirements Descriptive and Inferential Statistics	Jan 21
Week02	**Introduction to SAS OnDemand** **Mgr. Cases discussion and Guidelines**	Jan 28
Week-3	**Review Amtech Mgr. Case** **Review Plastics Mgr. Case**	Feb 04
Week-4	**Review Keels Mgr. Case** **Review Glenco Mgr. Case**	Feb 11
Week-5	Continuous Probability Distributions Sampling Distributions and Interval Estimation	Feb 18
Week-6	Review for MGR Cases for Exam I	Feb 25
Week-6	**Exam I [8:00 am Feb 28 – 11:59 pm Mar 01]**	
Week-7	One-Sample Tests and Two-Sample Tests Tests of Independence	Mar 04
Week-8	Spring break Mar 09-Mar 15	
Week-9	**Review Datastore Mgr. Case** **Review Circuit Mgr. Case**	Mar 18
Week-10	**Review Devon Mgr. Case** **Review ServePro Mgr. Case**	Mar 25
Week-10	**Exam II [8:00 am Mar 28 – 11:59 pm Mar 29]**	
Week-11	Hypothesis Tests Analysis of Variance	Apr 01
Week-12	Correlation and Simple Regression	Apr 08
Week13	Multiple Regression	Apr 15
Week14	**Review Pronto Mgr. Case** **Review Easton Mgr. Case**	Apr 22
Week15	**Review Ryder Mgr. Case** **Review Westmore Mgr. Case**	Apr 29
Week16	**Mgr. cases due by Midnight May 06** Review for FINAL Exam III	May 06
Finals Week	**Final Exam [5:45-07:45 pm] Thursday, May 15**	

*All Dates are Tentative. Final Exam schedule can be found in the **Spring Schedule of Classes**. Please check the following link:
https://msutexas.edu/registrar/schedule/finalexamschedule.php

Format for Managerial Case Writing Assignments

- Each student is responsible for completing **three** designated Managerial Case Reports (see list below). However, only one case per section (or exam) is required.
- Each case should include the following components:
  1. Statement of the problem
  2. Statistical Results
  3. Policy conclusions

  Append the following to each case:

  1. **SAS Program code used**
  2. **SAS Output with tables referenced**

- Use Microsoft's **WORD** processor to complete this assignment.
- At the end of each case is an Assignment that students are to complete.
- Students are required to identify relevant variables, choose the appropriate analysis plan, produce correct results, interpret their findings and make recommendations regarding the managerial issues presented.
- Data sets for the various cases will be provided in the Contents section of D2L. Each case assignment should be based on the information provided in the case itself.
- Consult the following case study for clarification about writing proper statistics reports: ***Kilgore Mfg. - Managerial Case Analysis*** by Instructor for this course.
- Use one-inch margins throughout and either 10 or 12 character font.
- In addition to the three General Learning Goals (GLC) stated above, this assignment is graded on the basis of accuracy, relevancy, neatness, style, thoroughness, and punctuality, as well as on the professionalism of your WORD and SAS output.
- Significant penalties are assessed for late work.
- A drop box folder will be set up in D2L for you to submit all three cases.
- Missing even one case will entail severe penalties.
- Provide the following information at the beginning of each case:
  First, Last Name
  Case title (i.e., Circuit, etc,)
  Semester, Year
  Screenshop of your SAS OnDemand Registration Profile

- The following cases can be found in the CONTENT section of D2L. Only one case presentation per set is required:

  Managerial Case Set I
  Select 1 of the following cases: Amtech, Plastiks, Glenco, and Keels.
  Managerial Case Set I
  Select 1 of the following cases: Datastor, Circuit, Devon, and ServePro.
  Managerial Case Set III
  Select 1 of the following cases: Easton, Pronto, Westmore, and Ryder.
  All three Cases are due by midnight on ____, _____.

Specific Guidelines for Written Case Presentations

- First and foremost - remember that this is a managerial case presentation. Therefore, do not write it in an academic format, but rather in an easily readable and understandable format for a manager.
- Be sure to include **your name, case title, semester-year, and registration profile** at the top of the first page of your report. No cover sheet is required.
- Be sure to include an **introductory paragraph** as to what the case all about, or what problems need to be addressed.
- A second section presenting your **key statistical results** should follow your introductory paragraph. Tables should be clearly numbered and titled. All tables should be referenced by their table number. This section should include all important statistical results on which your policy recommendations are based.
- **Following the statistical results section, a** well-defined **summary and conclusions,** should be included along with clearly stated policy recommendations.
- If you happen to use descriptive statistics with EXCEL or SAS, you should exclude information that is not relevant for the case. For example: Would a manager actually care about kurtosis, or whether certain measures are carried to the fourth decimal place?
- Be **sure** to provide an appropriate title and number for each chart, graph, or table you use. Also, make sure that each chart, graph, or table is referenced in the body of the text. Chart, graphs, or tables should be in sequential order.
- Write in paragraph form with complete sentences and correct grammar.
- For most histograms, use class intervals that are easy to read, such as in intervals of 10, 100, or 1000.
- Except where fractional values are relevant, use whole numbers. For instance, is it necessary to know that the average age is 28.4621, or is 28 years sufficient?
- Do not include output from **Proc Contents** or **Proc Print**.
- APPENDIX I – Include **only** SAS code used.
- APPENDIX II – Include **only** SAS statistical results used. At the very top of the first page of this appendix, be sure to **screenshot** your ODA SAS registration profile. Do not type the registration name or number.
- Submit your cases in D2L under ASSESSMENTS-ASSIGNMENTS in appropriate submission folder for MGR cases. All submissions should be in **WORD** format.
- Late work will be penalized.

RESPONDUS MONITOR REQUIREMENTS FOR ONLINE EXAMS

For any online exam, failure to adhere to anyone of the following requirements will result in a grade of 0 for that exam.

Startup Sequence

The startup sequence is the set of required events that occur before your Monitor webcam session can begin.

Webcam Check

Do you see your image in the window?

Yes No

Additional Instructions

During this exam, you shouldn't access other resources (a calculator, phone, tablet, notes, books, etc.) or communicate with other people. Please stay in your seat and focus on the computer screen until the exam is complete. If an interruption occurs, briefly explain what happened by speaking directly to your webcam. And, finally, remember that you cannot exit the exam until all questions are completed and submitted it for grading.

Guidelines

Select a quiet location where you won't be interrupted or distracted...

Avoid rooms where children or other people are present

Turn off televisions, radio, music, etc.

Student Photo

Position your face so it fills most of the picture window below.

Look into the camera and click "Take Picture."

Show Identification

Hold your identification to the camera and select "Take Picture."

(Only use the type of identification indicated by your instructor).

Environment Check

Make sure the area around your computer is clear of calculators, papers, books, phones, etc.

Click "Start Recording" and slowly tilt/pan your webcam so a brief video can be made of the area around your computer. (If the webcam is built into the monitor, just do your best to show the surrounding area.)

Click "Stop Recording" when finished.

Face Detection

Your face needs to be well positioned in the video window and clearly visible during the exam.