BANA 2372.03: Business Analysis

Spring 2018

Instructor:	Dr. Kevin Henning	**Time/Place:**	Online
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Prerequisites: MATH 1324 (Mathematics for Managerial Decision Making I)

Office Hours: Monday/Wednesday 10:00-11:30 a.m. (Huntsville) and Tuesday 4:30-6:30 p.m. (TWC), and by appointment.

Textbook: *Modern Business Statistics* (Custom Instant Access MindTap), 6th edition, by Anderson, Sweeney, Williams, Camm, and Cochran. This is a custom online textbook (or e-book) that will be the source of some background reading, graded homework assignments, and practice problems that will help prepare you for exams.

- You can purchase access to the e-book either through the campus bookstore (ISBN: 9781285149028) or through a link in Blackboard that will be available on the first day of class. **Purchasing through the Blackboard link will likely be cheaper, and has the added benefit of giving you a two-week free trial.**
- If you would like a printed copy of the text, you can purchase the custom loose-leaf printed version of the book through the campus bookstore or online at Cengage.com (ISBN: 9781337702263), but **the loose-leaf version of the book is NOT required.**
- You can choose to purchase access for one or two semesters. In most cases, you will save money with the two-semester option, since BANA 3363 (the next required BANA course) is taught using these same materials. You **DO NOT** have to take BANA 2372 and 3363 back-to-back to take advantage of the two-semester price option.

Other Materials:

- This course will require you to use ProctorFree, a free, on-demand, fully automated online proctoring service that deters cheating in an online testing environment. This measure is necessary to ensure that students completing the course have done so through their own efforts, which in turn helps make your Sam Houston State University degree valuable to potential employers.

  Prior to taking the first exam, you must set up a ProctorFree profile through Blackboard. Instructions for doing this will be posted in Blackboard and are also available here: http://bit.ly/2mjIKrv

  In addition to basic requirement of an online class that you have access to a **reliable computer**, you will need:

  - keyboard
  - a mouse
  - a microphone and webcam (most external webcams have microphones built in)

  - an appropriate browser (you can check your browser by first logging into Blackboard and then going to this link: http://bit.ly/2CY23Ro.
  - An active broadband internet connection with an upload speed of **at least 1 Mbps** and a download speed of **at least 2 Mbps**

  In general, individual computer problems are **your responsibility to resolve.** In an online class, it is a necessity to have reliable access to a computer and the internet. If your computer is old and on its last legs (e.g., the battery doesnt work, or it tends to overheat), I suggest you have a backup available, e.g., a friends computer or computer from work. Contact SHSU Online at 936-294-2780 or blakboard@shsu.edu if you are having difficulty accessing course materials with your computer.

- A **stand-alone** calculator for exams that can compute exponents, natural logarithms, and factorials By "stand alone," I mean **not connected in any way to a cell phone, computer, tablet, or any other device capable of wireless communication or accessing the internet.** Any device in the Texas Instruments TI-30 series will work, but there are several other brands that are also acceptable. Graphing calculators, such as the Texas Instruments TI-83 and TI-86 models, are acceptable as well **but *not* necessary**.

  If you have any questions about whether your calculator will be suitable for this course, please let me know **before you attempt to take the exam.**

Optional Text:

- Peter H. Westfall and Kevin S. S. Henning, *Understanding Advanced Statistical Methods*, Chapman Hall/CRC Press, ISBN: 978-1466512108. In this book, my coauthor and I discuss the nature of statistics as the science of modeling the natural world using concepts of randomness and probability. We demonstrate how and why statistical models are the ideal tool for making sense of the "real-world," in the sense that they are able to provide trustworthy estimations and predictions about the world. In addition, we cast a critical light on many commonly accepted statistical practices and highlight some myths and half-truths that have been perpetuated over the years. We go into detail on the behind-the-scenes theory that makes statistics "work" mathematically. **This book is completely optional; no assignments or any other course work will come from this text.**

Course Description and Objectives: This course will give you an introduction to the use of quantitative techniques in a business setting. The course is broadly divided into a mathematics section and a statistics section. In the mathematics section, we will review important concepts from college algebra such as exponents and logarithms, addition ("sigma") notation, and functions. We will also review rates of change and derivative calculus, which are used in optimization problems such as dynamic pricing and inventory management. In the statistics part of the course, we will learn about organizing and presenting data, describing patterns in data using numerical measures and graphs, and modeling business processes using probability distributions.

Over the course of the semester, attentive students will:

1. Learn to use algebra and derivative calculus to solve business problems.
2. Understand and apply the concepts of numerical descriptive statistical methods, including measures of center (mean, median, mode) and variability (standard deviation, range, variance).
3. Understand and apply the concepts of graphical descriptive statistical methods, including histograms, box plots, pie charts, and bar charts.
4. Understand and apply the the concepts of probability and random variables.

Organization and Delivery of Course Content: The following information tells you a little bit about what you can expect from the course so that you can start out in the best possible way.

- This course uses the usual Blackboard learning management system to deliver content. The material for the course is organized into content folders by topic rather than book chapter. Each content folder contains supplemental reading material (PowerPoint slides, handouts, links to relevant websites, etc.), lecture videos, and one or two graded assignments.
- **This course is not completely self-paced.** Exams and assignments will open and close at certain times (more details are given below).
- I devote a large amount of time toward being actively involved in the course and accessible through email, discussion board postings, detailed grading feedback on exams, and frequent announcements. **I am not a "set it and forget it" instructor.**
- There is a lot of information about statistics on the internet; no big surprise there. However, **this is not a "Google Your Way to an A" course. A significant amount of material is of my own creation.**
- Through analyzing student feedback over the years, I have come up with the following list of suggestions:
  - In online sections of the course, lecture videos are meant to give you the same course material as you would get in a regular weekly face-to-face setting. Try setting aside a specific time and/or place to watch the videos each week so that you get into a routine.
  - Because you have several attempts for each Blackboard assignment, I suggest first opening each assignment when it becomes available and printing it out so that you can identify key parts of the lectures. Working out the calculations on paper and then inputting them into Blackboard is more effective for some students.
  - Take breaks. Most videos are broken up into three or more segments. If you are feeling overwhelmed, don't watch the videos all at once. Watch one segment, go do something else, and then come back and watch another.
  - Ask questions early and often through the discussion board (see below). By its nature, mathematics builds upon itself. **If you are unsure of the concepts discussed early on and do not seek help, you will have trouble understanding later material.** Conversely, if you have a solid understanding of the basic concepts, you will likely find the later material to be easier.

Technical Support Information: As with any online resource, Blackboard doesn't work perfectly all the time. But the problems are usually minor, temporary, and easy to work around. If you encounter any **technical** problems with submitting an assignment or with any other aspect of course functionality, please **do not contact me until you have contacted the SHSU Online Support Desk** at 936-294-2780, or blackboard@shsu.edu (otherwise, I will always just tell you to contact them first anyway, so save the time and do so). Hours of operation and other information can be found at online.shsu.edu/campus/support-desk/index.html. Note that SHSU Online does not provide tutoring services and is not responsible for course policies, due dates, organization, or content. Questions regarding these items should be directed to the instructor.

If you are unable to solve the problem with the support technicians, ask them to give you a case/incident number and **then** contact me so that I can verify your issue and, if needed, discuss it with SHSU Online.

Grading: Your grade will be a weighted average of the items in the following table. **I do not use Blackboard's point system!** Information about each item appears after the table.

Component	Weight
Three (3) exams	45%
Comprehensive final exam	30%
Blackboard homework assignments	12.5%
Excel online exercises	12.5%

The cutoffs for letter grades will be the standard ones: 90-100–A; 80-89–B; 70-79–C; 60-69–D, 59 and below: F

Exams: There will be three (3) regular exams in addition to a comprehensive final exam. Here are some details:

- Exams will consist of a mixture of multiple choice questions and problems similar to the assigned homework problems, Blackboard assignment questions, and lecture notes. Mathematics, by nature, builds upon itself, so you should expect to use all of the concepts and methods we have discussed previously up to the day of the exam.
- A written review of the topics to be covered on each exam will be sent to you through Blackboard email a few days prior to the exam. **It is your responsibility to go through the review and ask me questions about any topics that are unclear, either in person, email, or Blackboard discussion board post.**
- I will weight each exam according to your performance on it. The highest exam will be weighted 20%, the second highest will be weighted 15%, and the lowest exam will be weighted 10%.
- Each exam must be taken using the proctoring software ProctorFree furnished by SHSU Online. ProctorFree is an on-demand, automated online proctoring service that deters cheating in an online testing environment. Using biometric and machine learning technologies, ProctorFree has eliminated the need for a human proctor during testing. Specific procedures and a practice exam will be furnished in the course.
- Exams must be taken within the window of time listed in the syllabus, unless a legitimate medical, employment, or family emergency occurs that prevents you from doing so. Acceptable documentation for a medical emergency is a letter from a licensed medical professional on his or her practice or group letterhead explaining why you are unable to take the exam as scheduled. For other emergencies, please speak with me about what forms of documentation I require.

  If you miss a scheduled exam, it is your responsibility to contact me **within two (2) calendar days** of the original exam date to explain the reason for the missed exam. If I determine that the reason you missed the exam is legitimate, your grade on the final exam will count for the missing exam as well. **Additional missed exams will result in zeros, regardless of your reason for missing them! No exams will be dropped for any reason.** Failure to contact me within the two-day window will result in a grade of zero (0) on the exam, with no possibility for makeup.

Blackboard Assignments: I will assign problems using Blackboard's "Test" feature that are intended to give you practice with the key concepts. Here are some details:

- **These assignments are not actual tests.** Feel free to consult me, your classmates, tutors, and study partners for help. Be aware, though, that on many problems, the numbers or answer choices will be different for each student. Therefore, **simply copying off of another student's assignment will lead to a bad grade.** In addition, you will encounter problems like those in the assignments on exams, so you will need to understand how to work all of the problems.
- You will have three (3) opportunities to complete each homework assignment, and I will take the highest grade earned at the end of the semester for each one. For example, if you take Assignment 1 three times and earn a 40 on your first attempt, a 95 on your second, and an 85 on your third, your grade for Assignment 1 will be $max(40, 95, 85) = 95$ for that assignment when I calculate final grades.
- In the calculation of your final grade, I will drop your single lowest Blackboard assignment grade. Therefore, **no make-ups will be allowed on the assignments.** The missed Blackboard assignment will simply count as the dropped one with no effect on your final grade. **Additional missed assignments will count against your final grade**.
- **Each assignment attempt is independent of the others.** Individual questions that you got right or wrong on one attempt have no impact on the grade of any other attempt; that is, you cannot swap correct answers from previous attempts into another attempt to increase your grade. For example, if you get Question 3 correct on your lowest attempt, but incorrect on your highest attempt, you **do not** get credit back for having once gotten Question 3 correct.

Excel online assignments: Most of the calculations involved in statistical analyses in the real world are done using software, with Microsoft Excel being a popular choice in business applications. To enhance the value of the course to your future career, in the statistics portion of the course, you will complete several Excel assignments corresponding with the major topics of the course. These exercises will be completed online through MindTap (see the textbook information above). **Access to Excel on your personal computer is not required for these exercises.** Rather, you will use a fully functional web-based version of Excel that runs entirely through your browser and works with PC and Mac.

There will be roughly one to three Excel exercises that will follow each Blackboard homework assignment. As with the Blackboard homework assignments, in the calculation of your final grade, I will drop your single lowest Excel online assignment grade. Therefore, **no make-ups will be allowed on the assignments.** The missed Excel assignment will simply count as the dropped one with no effect on your final grade. **Additional missed assignments will count against your final grade**.

Communication Expectation: The goal of this course is to give you practice with applying the concepts and tools of statistics in realistic contexts. Oftentimes, there are many ways to convey a concept or approach a problem, and how I present something in a lecture may leave you with several questions. **Please reach out to me for help! I expect you to ask me questions!** It is almost a guarantee that several other students will have the same question as you do on any given topic.

To ensure that your questions are answered as quickly and efficiently as possible, if you cannot meet with me in person during office hours or after class (as is the case if you are taking the course online), follow the guidelines below:

- If your question **only pertains to you** (such as a question about your grades, attendance/course activity, an emergency, or some other personal matter relevant only to your performance in the course) **and it is not related to a technical problem in Blackboard,** email or call me using the contact information on the first page of the syllabus.
- If you are having trouble accessing Blackboard, viewing or opening an assignment or test, accessing your grades, or experiencing any other technical problem, contact the SHSU Online Support Desk

using the contact information above. They will inform you about whether or not you need to contact me.

- If your question **involves the course content** (such as how to think about a problem, a statistical concept you don't understand, a course policy or deadline, or any other general-interest question) log into the Blackboard page for this course at blackboard.shsu.edu and **post your question in the "Questions for the Instructor" discussion board forum (I don't monitor any other forums).** I will answer discussion board questions within 24 hours on weekdays and within 48 hours on weekends. **Therefore, do not wait until the last minute before something is due to ask a question.**

  Here are some guidelines for asking content-related questions:

  - **Do not simply ask if your answer to a problem is right or not.** You need to show or explain in your post everything you did up to the point you are unsure of. Concepts are vastly more important than calculations, especially at the MBA level.

    For example, "Is the correct answer to Problem #6 2.4?" is a **BAD question** because it doesn't indicate your thought process. Writing "On Problem 6, it looks like I need to find the average. I found the average by taking (2.1+3.6+1.3+2.6)/4. Is that the right approach?" is better.

  - When asking for help on a problem, **provide the full text of the question**. I don't have every word of every problem of every assignment in my head at all times (but I'm flattered some students think I do).

    For example, don't simply say "I need help with #12." What #12 are you talking about? Give me details. Say something like "I need help with Question 12 on Assignment 3," and then provide the **full text of the question** and what specific part you need help with.

  Remember, **ask questions when you do not understand something. The earlier the better.**

Tutoring: The Department of Economics and International Business maintains a free tutoring lab on the Huntsville campus, and some additional tutoring is available at The Woodlands Center campus. Days and times will be posted on Blackboard when they become available. Tutoring is free, requires no appointment, and is offered by well-qualified student volunteers who have been selected by faculty members. **However, I cannot guarantee that the tutors will be able to answer every possible question you could ask them. If the tutors are not able to help you, I expect you to contact me for help.**

Extra Credit: Extra credit opportunities or points may be assigned to the class at my discretion. **I am under no obligation to offer any extra credit, so DO NOT work under the assumption that you will be able to make up missed points.** Any extra credit assignment will be made available to the entire class. **No individual extra credit assignments will be offered for any reason. In addition, if you have not done all of the "regular credit" assignments, you are not eligible for any extra credit.**

Academic Dishonesty: SHSU expects all students to engage in academic pursuits in a manner that is above reproach, and to maintain complete honesty and integrity in academic experiences both in and out of the classroom. The University and its official representatives, acting in accordance with Subsection 5.32 of Academic Policy Statement 810213, may initiate disciplinary proceedings against a student accused of any form of academic dishonesty or cheating. "Cheating" includes, but is not limited to:

- Copying from another student's test paper, laboratory or other report, computer files, data listings, and/or programs;

- Using, during a test, materials not authorized by the instructor, including "homework help" websites, discussion boards, and chat rooms;
- Collaborating, without authorization, with another person during an examination or in preparing academic work;
- Knowingly, and without authorization, using, buying, selling, stealing, transporting, soliciting, copying, or possessing, in whole or in part, the contents of an unadministered test;
- Substituting for another student, permitting any other person, or, otherwise assisting any other person to substitute for oneself or for another student in the taking of an examination or test or the preparation of academic work to be submitted for academic credit, placement, or qualification. **For face-to-face classes, this includes signing an attendance sheet for someone else!**
- Bribing another person to obtain an unadministered test or information about an unadministered test;
- Purchasing, or otherwise acquiring and submitting as one's own work, any research paper or other writing assignment prepared by an individual or firm.

"Plagiarism" means the appropriation and the unacknowledged incorporation of another's work or idea into one's own work. In other words, if you use another person's words, ideas, or artwork and do not clearly indicate in your paper that you have done so–such as with a reference in a standard citation format–you have committed plagiarism.

Penalties for violations of the above policies include, but are not limited to, a significant grade deduction on the assignment, a zero for the assignment, or a failing grade in the course. If I believe that additional disciplinary action is necessary, as in the case of flagrant or repeated violations, the case may be referred to the Dean of Student Life or a designated appointee for further action. If the student involved does not accept my decision, the student may appeal to the chair of the appropriate academic department/school, seeking reversal of the faculty member's decision.

These and other academic policies may be found at shsu.edu/dept/academic-affairs/aps/aps-students.html

Course Access Expectation: I expect you to log into the course at least once per day. I refer all students who do not log into Blackboard regularly to the Sam Houston State First Alert program. Personnel from that office assemble a file on the student and attempt to contact him or her by telephone, letter, email, and regular mail to determine the reason for the lack of activity. **You will almost certainly fall behind if you do not regularly work on the course.**

ADA Accommodations: It is the policy of Sam Houston State University ("University") that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the University. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and e-mail disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the University policy, see shsu.edu/dotAsset/7ff819c3-39f3-491d-b688-db5a330ced92.pdf

Tentative Course Outline: The following schedule will give you an overview of the course. Due dates for Blackboard and Excel assignments will be given in Blackboard. The chapters and documents under the "Reading" column refer to folders of material in the Cengage MindTap e-book.

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Week of	Topics	Reading
1/15	Review syllabus; college algebra topics (percentage change; exponent and logarithm properties; linear functions)	Algebra Topics
1/22	Continue college algebra topics (addition (sigma) notation; price indexes and adjusting for inflation)	Algebra Topics
1/29	Quadratic and exponential functions; rates of change and the concept of the derivative; derivative rules (constant, power, sum)	Algebra Topics; Derivatives
2/5	Continue derivative rules (product, quotient, chain, exponential function); combining rules; derivative applications	Derivatives; Derivative Applications
2/12	Continue derivative applications; get caught up; **Exam 1 opens at 12 p.m. on Friday 2/16 and closes at 11:59 p.m. on Monday 2/19**	
2/19	Introduction to statistics; types of data; describing nominal/categorical data graphically (bar charts, pie charts)	Intro to Statistics
2/26	Describing numeric data graphically (histograms); measures of center (arithmetic mean, geometric mean, median, mode)	Numerical Descriptive Measures
3/5	Measuring and using information about variability (range, variance, standard deviation; Chebyshev's rule; 68-95-99.7 rule);	Numerical Descriptive Measures
3/12	Spring Break!	
3/19	Probability concepts (joint, marginal, conditional probability, independence)	Probability
3/26	Probability rules & trees;	Probability
4/2	Get caught up; **Exam 2 opens at 12 p.m. on Friday 4/6 and closes on Monday, 4/9, at 11:59 p.m.**	
4/9	Random variables and discrete probability distributions; mean, variance, and standard deviation of probability distributions	Random Variables
4/16	Special discrete probability distributions (binomial, Poisson); concept of a continuous distribution; normal distribution Random Variables; Normal Distribution	Random Variables
4/23	Continue normal distribution; get caught up. **Exam 3 opens at 12 p.m. on Friday 4/27 and closes on Monday, 4/30, at 11:59 p.m.**	
4/30	sampling distributions; review; **Final exam opens Friday 5/4, at 12 p.m. and closes Tuesday 5/8 at 11:59 p.m.**	Sampling Distributions