

COURSE: BU305D/ND Business Statistics
CREDIT: Semester Hours: 3 hours
SEMESTER: Spring 2027 (Jan 11, 2027 – May 7, 2027)
TIME: Tuesday and Thursday, 1:00 to 2:20 pm
LOCATION: Ed 118-9 or online
INSTRUCTOR: Dr. Chris Basel
CONTACT INFO: Email: chris.basel@calvary.edu Phone: 816-425-6201
OFFICE: Room 224, Education Building

DESCRIPTION

This course is designed to acquaint students with major data-driven tools used in business analysis. Mathematical formulas will be demonstrated to help students in analysis of data management. Students should possess skills in algebra. Students will learn how to choose the correct tool(s) for their specific application(s). (Prerequisite: BU200)

This course is offered in two formats: in-person and online. Students registered for in-person attend the classes in person, online students attend the classes via the online classroom. For both in-person and online students, assignments and interaction outside of the class period are done in the learning management system.

OBJECTIVES

- A. General competencies to be achieved. The student will:
1. Recognize that business is complex and requires effective management to succeed (PLO 1,4,5,6).
 2. Evaluate complex business models to understand the need for data skills (PLO 4,5,6).
 3. Identify and interpret real problems to determine skills/tools needed for manual and computer calculations (PLO 4,5,6).
 4. Reason the appropriate statistical method of converting data into information (PLO 4,5,6)
 5. Prepare and interpret graphical representations of data (PLO 4,5,6).
 6. Describe several data-driven tools (PLO 4,5,6).
- B. Specific competencies to be achieved. The student will:
1. Understand an overview of statistical concepts (SLO 2,3).
 2. Understand data collection, probability, and distribution of data (SLO 1-4).

3. Understand methods of estimation, hypothesis testing, and statistical analysis (SLO 1-5).
4. Understand the roles of operations, management, marketing, and research use of data (SLO 1-4).
5. Practice statistical methods in individual projects (SLO 1-6).

REQUIREMENTS

- A. Participate frequently and make regular progress.
- B. Complete reading assignments.
- C. Attend lectures (on-campus students) or listen to videos (online students).
- D. Complete homework, essays and/or discussions, and tests on schedule.

METHODS

- A. **LECTURES:** Lectures will consist of material from the book and additional material from a variety of sources. Students should take notes during lectures, as the homework questions will be directly related to the lectures, and some information may not be from the book.
- B. **READING:** The textbook provides a framework for the class. Not every topic in the textbook will be addressed. Emphasis will be placed on the most important concepts and practical applications. The instructor will tell you which sections of each chapter will be covered.
- C. **HOMEWORK QUESTIONS:** Homework questions will normally be completed using the MyLab Statistics software and Microsoft Excel. You must complete the homework problems to understand the material and perform well on tests. Test questions will often be taken directly from the homework, possibly with minor modification.
- D. **ESSAYS AND DISCUSSIONS:** Inaccurate statistical calculations can lead to problems and can be used for deception. The purpose of this portion of the class is to develop your ability to understand the necessity of using statistics accurately and honestly to reflect the biblical worldview. Assignment instructions will be given in Canvas. Also, *see the Guidelines in Canvas*.
- E. **TESTS:** Questions used for the tests will be like the homework questions. In addition, tests might include essay questions covering lecture topics. The tests will be taken using the MyLab Statistics software in Canvas.

*All online students and on-campus students not taking tests during the class period must use the ProctorU test proctoring service. **The Exam Policy on Canvas gives more details.** Also, see the ProctorU addendum at the end of this syllabus.*
- F. **MISSED OR LATE ASSIGNMENT:** Grades on late assignments will be decreased for each day that they are late. Assignments that are more than three days late will not be accepted and will receive no credit.

G. GRADING See grading scale in the university catalog.

Assignments	20%
Discussion Questions and Essays	10%
Exams	70%

Special Notes:

- Students with disabilities have the responsibility of informing the Accommodations Support Coordinator (aso@calvary.edu) of any disabling condition that may require support.
- Plagiarism is defined as copying any content without identifying the source. This also includes taking another person's or AI entity's ideas or constructs and presenting them as your own. Plagiarism of any kind will not be tolerated. Most assignments at Calvary require the student to produce original work. Therefore, unless specifically permitted by the instructor, the use of AI-generated content is prohibited (even if cited) as it does not represent original work created by the student and is an unreliable aggregate of ideas from other sources. AI, however, may be utilized in cases where the instructor has explicitly permitted its use to accomplish specific tasks. It is only in these cases that AI-generated (or modified) content may be submitted by the student. If there are any questions as to the permissibility of AI use for an assignment, please ask your instructor for clarification.
- The Clark Academic Center (learning@calvary.edu) is dedicated to providing free academic assistance for Calvary University students. Student tutors aid with all facets of the writing process, tutor in various subject areas, prepare students for exams and facilitate tests. Please take advantage of this service.
- All class papers must follow the APA style according to the *Publication Manual of the American Psychological Association*, 7th edition.

REQUIRED MATERIALS

- A. The Bible is a required textbook in every course at Calvary University. To facilitate academic level study, students are required to use for assignments and research an English translation or version of the Bible based on formal equivalence (meaning that the translation is generally word-for-word from the original languages), including any of the following: New American Standard (NASB), English Standard Version (ESV), New King James (NKJV), or King James (KJV). Other translations and versions based on dynamic equivalence (paraphrases and thought-for-thought translations like NLT and NIV) may be used as supplemental sources. Please ask the professor if you have questions about a particular translation or version.
- B. MyLab Statistics with Pearson eText Instant Access for Business Statistics
ISBN-13: 9780135316283 (2025 update), \$135

Text: Business Statistics (4th Edition), Robert A. Donnelly and Serina Haddad
Do not purchase separately – eText comes with the Software (see above).

(If you want a hard copy of the text, consider purchasing a used book on the internet; however, this is not required.)

- C. Microsoft Excel. ASIN: B09H7GPR1G (ISBN not available), List price: \$149.99. NOTE: This listing reflects the one-time purchase price for Word and Excel Home and Student package on Amazon at the time this syllabus was prepared. Students who already possess Excel DO NOT NEED TO PURCHASE THIS PRODUCT.

OPTIONAL MATERIALS

We might use free software for some statistical calculations, instead of Excel. If so, this software will be downloadable from the internet, and instructions for use will be given.

TENTATIVE CLASS SCHEDULE

A detailed version of the class schedule, including due dates, will be posted on Canvas. Any changes to the schedule will be announced in class, by email, or posted on Canvas. One or more of these topics may be covered briefly or dropped depending on the time available.

TOPIC	CHAPTER
Introduction to Business Statistics	1
Displaying Descriptive Statistics	2
Calculating Descriptive Statistics	3
Introduction to Probabilities	4
Discrete Probability Distributions	5
Continuous Probability Distributions	6
Sampling and Sampling Distributions	7
Confidence intervals	8
Hypothesis Testing for a Single Population	9
Hypothesis Testing Comparing Two Populations	10
Analysis of Variance (ANOVA) Procedures	11
Chi-Square Tests	12
Hypothesis Tests for the Population Variance	13
Correlation and Simple Linear Regression	14
Multiple Regression and Model Building	15
Forecasting	16
Decision Analysis (online)	17
Non-parametric Statistics (online)	18

ProctorU Addendum

Calvary University uses ProctorU test proctoring service. ProctorU is a live online proctoring service that allows you to take your exam from the comfort of your home. ProctorU is available 24/7, however, **you will need to schedule your proctoring session at least 72 hours in advance to avoid any on-demand scheduling fees.** Creating a ProctorU account is simple. You can do so by going to <https://go.proctoru.com/students/users/new?institution=2045>.

Students must read all information and comply with all directions below to be successful for their proctored exam experience. Calvary University hopes that students will have a smooth experience, and to decrease student anxiety and increase success, please use this guide to help you plan for your test. Please note that, per ProctorU, there will be penalties for students who miss their testing window. Technical trouble will not be an excuse for missing the window. Therefore, pay attention to all details within this guide, and all links included.

System Requirements: Please see the information below supplied by ProctorU for system requirements. If your computer does not have these capabilities, please consider borrowing a computer as you will still be required to complete the exam using the live proctor system with ProctorU. Please note that you will not be able to take your exam(s) in the Calvary University Library due to the activity that will be picked up in a public place.

In order to use ProctorU, you will need a high-speed internet connection, a webcam (internal or external), a Windows or Apple Operating System, and a government issued photo ID. ProctorU recommends that you visit <https://test-it-out.proctoru.com/> prior to your proctoring session to test your equipment. They recommend you click on the button that says "connect to a live person" to fully test out your equipment. If using Firefox, please make sure that you are using the current version of your Firefox browser and have downloaded the ProctorU extension available at <https://www.proctoru.com/firefox>.

Type	Minimum	Recommended	Calvary University Minimum
Web Camera	640×480 resolution	1280×720 resolution	1280×720 resolution
PC Users	Windows Vista	Windows 10 (10 S is not supported)	same
Mac Users	OS X 10.5 or higher	OS X 10.13 High Sierra	same

Internet Download Speed	.768 Mbps	1.5 Mbps	3 Mbps
Internet Upload Speed	.384 Mbps	1 Mbps	2 Mbps
RAM	1024 MB	2 GB	same
Ports	1935, 843, 80, 443, 61613, UDP/TCP	1935, 843, 80, 443, 61613, UDP/TCP	same

- Desktop computer or laptop (not a tablet, Chromebook or cell phone).
- Webcam and microphone (built-in or external) – test your webcam at <https://test.webrtc.org/>
- Connection to network with sufficient internet speed: at least 3 Mbps download speed and 2 Mbps upload – test internet speed at www.speedtest.net
- Operating systems: Windows Vista or newer, Mac OS X 10.5 – or newer
- Browser with pop-up blocker disabled: Google Chrome v39 or later, Mozilla Firefox v34 or later.

Additionally, please visit and review the test-taker resource center by going to <https://www.proctoru.com/proctoru-live-resource-center>. You should expect the startup process with the proctor to take about 10-15 minutes. However, this time will not affect your exam time. Please feel free to direct any questions to the student support team via the live chat within your account.

******If you have any questions or concerns, contact Proctor U's technical support team 24/7 via their live chat support at <https://www.proctoru.com/contact-us>**

Costs for ProctorU exams are listed below and are payable to ProctorU at the time of the test. These costs assume that a student will schedule their exam at least 72 hours in advance of the exam start time:

- 60 minutes or less - \$8
- 61 – 120 minutes - \$10
- 121 – 180 minutes - \$12

For those not scheduling an exam at least 72 hours in advance, late scheduling charges are added in addition to the above fee structure. There are two options for late scheduling:

- "Take It Soon" allows a test to be scheduled less than 72 hours but more than 24 hours before the desired start time. This option includes an additional fee of \$8.00. (Total cost for a 60 minute exam scheduled as "Take It Soon" would be \$16.)
- "Take It Now" allows a test to be taken on-demand with no appointment

needed. This option includes an additional fee of \$12.00. (Total cost for a 60 minute exam scheduled as "Take It Now" would be \$20.)

These options are for the convenience of the examinee. Any charges applicable to the examinee must be paid with a credit or debit card. The test taker will be required to enter payment information on a secure page connected to a third-party card processor. The page is encrypted and secure and ProctorU does not see or store any credit card data.

Examinees will be required to re-enter payment information each time new charges are incurred.