AMBERTON UNIVERSITY
e-COURSE SYLLABUS

BUS3104.E1 Statistical Analysis I
Fall 2026

PROFESSOR INFORMATION:

Professor: Doug Richey
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COURSE INFORMATION:

BUS3104.E1 Statistical Analysis I
Level: Undergraduate
Beginning Date of Session: Saturday, September 12th, 2026
Ending Date of Session: Thursday, November 19th, 2026
Student access available to the Student Portal: Saturday, September 12th, 2026

Students enrolled in distance learning courses are not assessed any additional fees for security or identity verification.

PREREQUISITES:

Six semester hours of mathematics.

TEXTBOOK(S) AND REQUIRED MATERIALS:

Title: Introductory Statistics
Author: Barbara Illowsky; Susan Dean

Publisher: OpenStax
Year Published: 2017
Edition: 1st
ISBN: 10: 1938168208 or 13: 9781938168208
Price: Available at http://amberton.ecampus.com

Students should verify enrollment in course before purchasing textbooks. Textbook information and ordering options are available through the Amberton Virtual Bookstore. Since no books are sold on campus, students should plan accordingly and purchase their books in advance of the first day of class, allowing time for shipping.

APA REQUIREMENT:

APA (American Psychological Association) style is most commonly used to cite sources within the social sciences. This resource, revised according to the 7th edition, offers examples for the general format of APA research papers, in-text citations, endnotes/footnotes, and the reference page. For more information, please consult the Publication Manual of the American Psychological Association, (7th ed.). All coursework at Amberton University will comply with the standards contained in the APA Publication Manual.

COURSE COMPETENCIES:

This course presents quantitative decision-making techniques applying principles of probability and statistical analysis to managerial decision-making. The course emphasizes conceptual understanding rather than mathematical proofs. Key activities include distinguishing between variables, random sampling and understanding descripting and inferential statistics.

UPON COMPLETION OF THE COURSE, THE STUDENT WILL BE COMPETENT IN:

1. Distinguishing between independent and dependent variables.
2. Identifying and applying the concept of a random variable.
3. Differentiating between discrete and continuous random variables.
4. Identifying random sampling techniques and describing the importance of sampling distributions.
5. Illustrating and utilizing descriptive and inferential statistics.
6. Calculating the common measures of central tendency.
7. Calculating the variance and standard deviation for a population and for a sample.
8. Determining a standard score and finding percentages under the normal curve.
9. Recognizing the general properties of probability, binomial, and normal distributions.
10. Applying the laws governing probability principles.
11. Identifying and stating the null and alternative hypotheses.
12. Describing what is meant by the level of significance and the region of rejection.
13. Differentiating between one-tailed and two-tailed tests for hypotheses.
14. Discerning the general procedures for testing statistical hypotheses including the definition of sampling error, the differentiation of Type I and Type II errors, and the use of the Z and T distributions.
15. Explaining the central limit theorem and its importance in statistical inference.
16. Utilizing Artificial Intelligence for collecting, organizing and analyzing raw data to gather important information.

ACQUIRED SKILLS:

1. Critiquing a Problem Solving Model
2. Developing a Personal Critical Thinking Algorithm
3. Completing a Quantitative Decision Making Project

COURSE POLICIES:

All mid-term homework in one word file and mid-term exam in a separate word file are due to the appropriate Moodle drop boxes provided after completion of the appropriate material according to the syllabus course outline. The same is true for final homework and final exam. All assignments (homework/participation) and exams are due according to Moodle due dates. Late work may not be accepted so view the due dates in Moodle as the last possible moment for submission. No extra credit or makeup work will be given.

All homework assignments and exams will be completed with pencil, paper, calculator, laptop and other resources as approved by the professor. All work will be available through Moodle. Participation is through emails, Moodle messaging, discussion forums and chats, which can stack the deck in your favor on a close final grade call by your professor.)

STUDENTS' RESPONSIBILITIES:

This syllabus contains information, policies, and procedures for a specific course. By enrolling, the student agrees to read, understand, and abide by the policies, rules, regulations, and ethical standards of Amberton University as contained in the current university catalog and schedule of classes.

ATTENDANCE POLICY:

Regular and punctual class attendance and engagement is expected at Amberton University. In case of an absence, it is the student's responsibility to contact the professor as soon as possible. If a student intends on withdrawing from a course, it is the student's responsibility to follow the university's policy on formally withdrawing from a course. **Ceasing to attend classes does not constitute an official withdrawal.**

Attendance in a distance learning course is defined as active participation in the weekly online class sessions. "Active participation" can be defined as: submitting an academic assignment, taking an exam, engaging in an interactive tutorial, participating in an online discussion forum (or chat session), or initiating (or responding to) a communication with a faculty member about an academic assignment or the subject matter of the course. A student not meeting these requirements may be assigned a grade of an "F" or withdrawn at the discretion of Amberton University.

PLAGIARISM POLICY:
Plagiarism is the presentation of someone else's work as though it were your own. If you use another person's words, ideas, or information; or if you use material from an outside source – whether a book, magazine, newspaper, business publication, broadcast, speech, or electronic media – you must acknowledge that source. Plagiarism is a violation of the University's code of student ethical conduct and is one that is taken seriously. Amberton University operates on an honor system; therefore, honesty and integrity are essential characteristics of all who are associated with the institution. All Amberton students are expected to abide by the honor system and maintain academic integrity in all their work. Amberton University and its instructors monitor student work for plagiarism and reserve the right to submit such work to technology-based plagiarism detection services and applications at any time.

Self-plagiarism means reusing work that you have already published or submitted for a class. It can involve:

- Resubmitting an entire paper
- Copying or paraphrasing passages from your previous work

Self-plagiarism misleads your readers by presenting previous work as completely new and original. Students may not submit the same paper in substance in two or more classes without prior written permission of the instructors involved.

Amberton University students who use Artificial Intelligence (AI) generated content must adhere to the following policies:

Originality: Students must avoid presenting AI generated content as their own original work. It is essential to acknowledge the involvement of AI in the content creation process in order to maintain academic and ethical standards.
Paraphrasing: When using AI generated content, students must rephrase and/or modify the generated text. Paraphrased AI generated content should also be properly cited.
Acknowledgement: When using AI generated content in any assignment, proper credit must be given to the AI system that generated the content. https://apastyle.apa.org/blog/how-to-cite-chatgpt

Students agree that by taking this course, all required assignments may be subject to submission for a textual similarity review to Turnitin.com for the detection of plagiarism and self-plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism in future papers. Use of Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com website.

Turnitin is a writing improvement and plagiarism prevention tool which uses special algorithms, to compare text-based student submissions to the Turnitin database and other online sources. Turnitin produces a detailed **similarity report** that can be customized and viewed by instructors and students.

Turnitin "Draft Coach" is a Google based add-on to Turnitin which supports students in developing high-quality academic writing; and serves as an integrity coach. Draft Coach helps address errors and improve the quality of student's writing by highlighting grammar mistakes, identifying incorrectly cited sources, and scanning for similarity across several databases. By providing formative feedback on how to address citation issues, incorrect grammar, and matches with the Turnitin database, Draft Coach provides explanations to help students become more confident writers, capable of producing higher quality work both in academics and in the workplace.

COURSE OUTLINE AND CALENDAR:

Chapter 1: Introduction, Sampling and Data
Week 1

1.1 Definitions and Key Terms
1.2 Data, Sampling and Variation
1.3 Frequency Tables and Levels of Measurement

` 1.4 Experimental Design and Ethics
1.5 Data Collection Experiment
1.6 Sampling Experiment

Related textbook reading sections are 1.1–1.6.
Homework problems are listed in exercises.

Chapter 2: Descriptive Statistics
Week 2
2.1 Stemplots, Line and Bar Graphs
2.2 Histograms, Frequency Polygons and Time Series Graphs
2.3 Measure of Location
2.4 Box Plots
2.5 Central Tendency Measures
2.6 Skewness and Mean, Median and Mode
2.7 Measures of Variation and Dispersion
2.8 Descriptive Statistics

Related textbook reading sections are 2.1–2.8.
Homework problems are listed in exercises.

Chapter 3: Probability Topics
Week 3
3.1 Terminology
3.2 Independent and Mutually Exclusive Events
3.3 Basic Rules
3.4 Contingency Tables
3.5 Tree and Venn Diagrams
3.6 Probability Topics

Related textbook reading sections are 3.1 – 3.6.
Homework problems are listed in exercises.

Chapter 4: Discrete Random Variables
Week 4
4.1 Probability Distribution Functions (PDF)
4.2 Mean or Expected Value and Standard Deviation
4.3 Binomial Distribution

Related textbook reading sections are 4.1–4.3.
Homework problems are listed in exercises.

Week 5
Note: You may now submit all mid-term homework and mid-term examination.

Chapter 6: The Normal Distribution
Week 6
6.1 The Standard Normal Distribution
6.2 Using the Normal Distribution
6.3 Normal Distribution (Lap Times)
6.4 Normal Distribution (Pinkie Length)

Related textbook reading sections are 6.1–6.4.
Homework problems are listed in exercises.

Chapter 7: The Central Limit Theorem

Week 7

7.1 The Central Limit Theorem for Sample Means

Related textbook reading sections are 7.1.
Homework problems are listed in exercises.

Chapter 8: Confidence Intervals
Week 8

8.1 A Single Population Mean using the Normal Distribution
8.2 A single Population Mean using the Student t Distribution
8.3 A Population Proportion

Related textbook reading sections are 8.1-8.3.
Homework problems are listed in exercises.

Chapter 9: Hypothesis Testing with One Sample
Week 9

9.1 Null and Alternative Hypothesis
9.2 Outcomes and the Type I and Type II Errors
9.3 Distribution Needed for Hypothesis Testing
9.4 Rare Events, the Sample, Decision and Conclusion
9.5 Additional Information and Full Hypothesis Test Examples
9.6 Hypothesis Testing of a Single Mean and Single Proportion

Related textbook reading sections are 9.1–9.6.
Homework problems are listed in exercises.

Week 10

Note: You may now submit all final homework and final examination

Week	Topic	Assignment	Competencies Covered	Due Date
Week 1	Sampling and Data	Read Sections 1.1-1.4 & Complete Moodle Assignment	1,2,3,4,56	10/21/26
Week 2	Descriptive Statistics	Read Sections 2.1 – 2.8 & Complete Moodle Assignments	5, 6, 7, 8, 9	10/21/26
Week 3	Probability Topics	Read Sections 3.1 – 3.5 & Complete Moodle Assignments	10, 11, 12,	10/21/26
Week 4	Probability Topics	Read Sections 4.1 – 4.3 & Complete Moodle Assignments	3, 4, 5, 11, 12	10/21/26
Week 5	Midterm Examination	Covers Week 1 – Week 5 Materials	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	10/21/26
Week 6	Discrete Random Variables	Read Sections 6.1 – 6.3 & Complete Moodle Assignments	3, 11	11/19/26
Week 7	Continuous Random Variables	Read Section 7.1, & Complete Moodle	3, 10, 11	11/19/26

	& The Normal Distribution	Assignments		
Week 8	The Central Limit Theorem & Confidence Intervals	Read Sections 8.1 – 8.3 & Complete Moodle Assignments	17	11/19/26
Week 9	Hypothesis Testing with One Sample	Read Sections 9.1 – 9.4 & Complete Moodle Assignments	13, 14, 15, 16	11/19/26
Week 10	Final Examination	Covers Week 6 – Week 10 Materials	3, 10, 11, 13, 14, 14, 15, 16, 17	11/19/26

GRADING CRITERIA:

(Mid-term Homework	50 points	A	270 – 300 points
Mid-term Exam	100 points	B	240 – 269 points
Final Homework	50 points	C	210 – 239 points
Final Exam	100 points	D	180 – 209 points
Total	300 points	F	Below 180 points

Undergraduate

90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
Below 60	F

GRADE NOTIFICATION AND INSTRUCTOR FEEDBACK:
Students should review instructor feedback provided through Moodle or Amberton CampusWeb Portal. Final grades are processed approximately one week after the session and may be viewed through the student portal. Grades will not be released by phone or through unsecured channels. University instructors will not leave a message with comments or grades in any type of media that is not secure.

For questions regarding grades after the semester has ended, students should use their university email account and contact the instructor at the faculty email address as provided above in Professor Information area.

INCOMPLETE GRADES:
An "I" (Incomplete) grade is granted only at the professor's discretion for emergencies or illness.

Students have 30 days from the end of the session to complete the course requirements. If the conditions are not met within this 30-day window, the "I" automatically converts to an "F".

HOW TO WITHDRAW FROM A COURSE:
To be official, the class withdrawal must be in writing and signed by the student requesting the withdrawal; no withdrawal is accepted verbally. Please review the “Schedule of Classes” (online or in-print) for procedures for class changes or withdrawals and the refund policy and schedule.

COURSE DELIVERY METHODOLOGY:
This course is delivered through Moodle. Students are expected to have reliable internet access, basic computer skills, the ability to upload/download files, use Amberton email, and submit assignments in the required format. Students needing assistance should use the Amberton SSO support/ticket process.

HOW TO ACCESS YOUR COURSE:

SINGLE SIGN-ON (SS0) INSTRUCTIONS FOR AMBERTON UNIVERSITY:
Students should access Amberton systems through the Single Sign-On portal at https://sso.amberton.edu. After logging in, students can access Moodle, Amberton email, CampusWeb, and other assigned applications. Students who need help accessing SSO should submit a support request through the SSO support option or contact support@amberton.edu..

MOODLE TUTORIAL:
Upon successful log in and access to the Moodle learning platform, there is a Student Moodle Tutorial course available, to learn about the basics of Moodle. Simply click on the link for the Student Moodle Tutorial and read through the various learning topics: Navigating; Communicating; Assignments & Exams; Grades; and Student Resources.

COURSE COMMUNICATIONS:
Students will communicate with faculty through the Moodle Learning Platform or the Amberton University email system.

EMAIL COMMUNICATION:
Students are expected to use their Amberton email account and Moodle for course communications. Students must use their official university email account for all university related communication and should check their Amberton emails regularly for course and university notices.

Upon completion of a session, all communication and course specific information is removed from the Moodle system. If a student needs to maintain a record of communications or assignments, the student is strongly encouraged to print out or download these items to a disk for their own records.

FORMAT AND SUBMISSION OF ASSIGNMENTS:
Assignments must be submitted through the appropriate Moodle assignment link unless otherwise directed by the instructor. Students are responsible for submitting files in the format required by the instructor.

INSTRUCTOR/COURSE EVALUATION:
Students will have the opportunity to complete an anonymous course and instructor evaluation near the end of the session. Instructions and dates will be provided through Moodle and/or Amberton email.

RESEARCH RESOURCES:
The Amberton Library provides access to full-text articles, peer-reviewed databases, and research tools, with options like Interlibrary Loan (ILL) and TexShare for items outside its collection. For research assistance, students can connect with library staff during operating hours via email (library@amberton.edu), phone (972-279-6511 ext. 185), "How-to" videos, live online chat, or in person at the Garland campus. The online library is available through Single Sign On (SSO).

MICROSOFT OFFICE 365 EDUCATION:
Amberton University students may access Microsoft 365 Education resources as provided by the university.

GOOGLE WORKSPACE FOR EDUCATION:
Amberton students are assigned a Google Workspace for Education account, including Amberton Gmail, Google Drive, Google Docs, Sheets, and Slides. Students should use their Amberton Google account for course-related work when required.