

Dual Credit Math 1325 Spring 2022

Business Calculus Syllabus

Disclaimer

This syllabus is current and accurate as of its posting date, but will not be updated. For the most complete and up-to-date course information, contact the instructor.

Instructor Information

Margaret Franklin

Llano High School. 2509 S SH 16, Llano, TX

Phone: 325-248-2200

Email: mfranklin@llanoisd.org

Major Course Requirements

Tests - Students may expect a test at the end of each chapter-oriented topic. The exact dates and coverage of these tests will be announced in class. The final exam will be held as specified in the Llano High School semester exam schedule.

Daily Work - Daily work will consist primarily of traditional homework problems completed on paper or assignments completed on WebAssign.

Quizzes - Weekly quizzes will be completed in class on paper or on WebAssign.

Student Learning Outcomes

- 1. Students will demonstrate factual knowledge including the mathematical notation and terminology used in this course.** Students will read, interpret, and use the vocabulary, symbolism, and basic definitions used in Business Calculus and Finite Mathematics II including set theory, counting techniques, probability, statistics, derivatives and integration.
- 2. Students will describe the fundamental principles arising from the mathematical ideas associated to business applications.** Students will identify and apply the laws and formulas that result directly from the definitions; for example, the properties associated with probability models and probability experiments as well as the relationships between probability and statistics; normal probability distributions; the formulas and concepts underlying descriptive statistics; limits, derivatives and integrals.
- 3. Students will apply the course material along with techniques and procedures covered in this course to solve business related problems.** Students will use the facts, formulas, and the techniques learned in this course to solve basic business problems. For example, students will be able to use the facts, formulas and techniques learned in this course to analyze data in various

ways; apply probability models to business problems; maximize and minimize profit and loss respectively using derivatives; explore the relationships between integration and probability; use normal curves to answer statistical questions; use the formulas for mean, median, mode, range and sample standard deviation to analyze data sets.

4. **Students will develop specific skills, competencies, and thought processes sufficient to support further study or work in this field or related fields.** Students will acquire a level of proficiency in the fundamental concepts and applications necessary for business statistics as well as other areas requiring Business Calculus and Finite Mathematics II as a prerequisite. These areas might include business, marketing, finance, computer science, nursing, and the social sciences, as well as mathematics.

Textbook

Mathematical Applications, 11th edition, by Harshbarger and Reynolds.

Course Content

The following chapters including the particular sections listed are covered.

1. **Sets:** Unions, intersections, complements, universal set.
2. **Introduction to Probability:** Probability; odds; union and intersection of events; conditional probability; probability trees; counting: permutations and combinations; permutations, combinations and probability.
3. **Further Topics in Probability; Data Description:** Binomial probability; data description; discrete probability distributions; binomial distribution; normal probability distribution; normal curve approximation to the binomial distribution.
4. **Derivatives:** Limits; continuous functions; limits at infinity; the derivative; derivative formulas; product rule and quotient rule; chain rule and power rule; using derivative formulas; higher-order derivatives; applications of the derivative in business and economics.
5. **Applications of Derivatives:** Maxima and minima; curve sketching; concavity: points of inflection; optimization in business and economics; applications of maxima and minima.
6. **Indefinite Integrals:** Indefinite integral; power rule; integrals involving logarithmic and exponential functions.
7. **Definite Integrals:** Area under a curve; definite integral: the fundamental theorem of calculus.

Subject Matter

After the introduction to business applications in Finite Math, we will expand our knowledge. We will delve further into probability including binomial and normal probabilities, find limits of functions, find the derivative using product, quotient, chain and power rules and find business and economic applications of the derivative. We will then look at graphs and sketch curves using the first and second derivative and optimize equations. Finally we will find both definite and indefinite integrals of functions.

The subject matter schedule listed below is tentative, and subject to change and adaptation. For current, updated information about course topics, contact the instructor.

Week	Sections
1	8.1, 8.2, 8.3
2	8.4, 8.5 Chapter 8 Test
3	9.1, 9.2
4	9.3, 9.4, 9.5
5	9.6, 9.7
6	9.8, 9.9 Chapter 9 Test
7	10.1, 10.2
8	10.3, 10.4
9	10.5, Chapter 10 Test
10	11.1, 11.2
11	11.3, 11.4
12	11.4, 11.5, Chapter 11 Test
13	12.1, 12.2
14	12.3, 12.4, 13.1
15	13.2, 13.6, Integrals Test
16	Review for Final, Core Assessment
17	Final Exam

Honor Code

Angelo State University expects its students to maintain complete honesty and integrity in their Academic pursuits. Students are responsible for understanding the Academic Honor Code, Which is available on the web at <http://www.angelo.edu/forms/pdf/honorcode5.pdf>.

Student Disability Services

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation.

The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student's responsibility to initiate such a request by contacting:

Ms. Dallas A. Swafford

Director of Student Disability Services

- 325-942-2047
 - dallas.swafford@angelo.edu
- Houston Harte University Center

Title IX Statement

Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU's Title IX Coordinator:

Michelle Nicole Boone, J.D.

Director of Title IX Compliance 2

- Michelle.boone@angelo.edu
- 325-486-6357
- Mayer Administration Building 204

Student Absence for Observance of Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day for more information.

Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 Grading Procedures for more information.

Student Conduct Policies

Academic Integrity Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

Academic Integrity

Plagiarism

Plagiarism is a serious topic covered in ASU's Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality via Turnitin. Resources to help you understand this policy better are available at the ASU Writing Center.

Copyright Policy

Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

General Policies Related to This Course

All students are required to follow the policies and procedures presented in these documents: Angelo State University Student Handbook and Angelo State University Catalog
he classroom.