MATH 2413 – 030 – Calculus 1 – Spring 2022

Contact Information:

- Instructor: Jesse Taylor
- Office: MCS 219E
- Email: jesse.taylor@angelo.edu
- Our Classroom: MCS 212
- Meeting Times:
    - 9:00-9:50am MF
    - 9:30-10:20am TR
- Office Hours:
    - Monday: 10:00-11:00am
    - Tuesday: 12:00-1:00pm, 2:00-2:30pm
    - Wednesday: 1:00-4:00pm
    - Thursday: 2:00-2:30pm
    - Friday: 10:00-11:00am, 12:00-1:00pm
    - If the above times do not work please email me to set up another time to meet; virtual office hours are available by request.

Required Textbook

This course uses the OER textbook (free for you!) Calculus: Volume 1 by OpenStax. You can access the book for free at the link below:
www.openstax.org/details/calculus-volume-1

Course Content

Selected sections from chapters 1-5 will be covered.

Homework/Quizzes

Homework will be assigned regularly throughout the semester. In general, I will assign problems after each section and will only grade a selection of them. We will also have quizzes throughout the semester, including the possibility of pop quizzes. Generally, quizzes will consist of a couple of problems and will not take more than 15 minutes to complete. **No late quizzes or homework will be accepted**, regardless of whether or not you attend class. It is always your responsibility to attend class and know when an assignment is due and to make sure it is turned in or taken on time.

Tests (Standards)

This class will use standards-based grading. We will have seven tests (standards) and a cumulative final exam. Each standard is designed to thoroughly test one or two skills. There is no partial credit on the tests, but you can re-take individual standards once per calendar week for up to one month following the initial version of the standard. Your

most recent score is the one that will count toward your grade calculation, whether higher or lower than your previous attempts on a given standard.

Below is a table containing the schedule for our tests, which is subject to change. If you have a conflict with one of the tests you must let me know at least one week before the test is taken to ensure that you receive a make-up exam. The earlier you let me know, the better.

Test	Material Covered	Date
Test 1	Functions and Limits	January 28
Test 2	Continuity and Derivative Basics	February 11
Test 3	Product and Quotient rule	February 25
Test 4	Chain Rule	March 11
Test 5	Implicit and Related Rates	April 1
Test 6	Derivative Applications	April 15 (possibly April 14)
Test 7	Anti-derivatives and Integration	April 29
Final Exam	Cumulative	8:00am-10:00am, Wed May 11

Grading

Your grade in this class will be determined based on the following grading rubric.

- Homework and in-class work: 10%
- Standards: 70% (10% each)
- Final Exam: 20%

Your final letter grade in this class will be determined based on a ten-point grading scale.

Attendance

Attendance will be taken regularly, and each student's absences will be reported with their final grade at the end of the semester.

Technology

Unless you have special accommodations documented with the Student Life office, no cell phones, tablets, laptops, games, or other electronic devices may used at any time during class or during any test.

Study Aids

- The Math Lab offers free math help to all students enrolled in mathematics courses at or below the level of Calculus. The Math Lab is located on the third floor of the library (C302) and its times are listed below.
  - Monday – Thursday: 11:00am – 8:00pm

- - Friday: 11:00am – 3:00pm
  - Sunday: 4:00pm – 8:00pm
- The mathematics department maintains a list of students who are interested in tutoring privately. Students who are interested in obtaining private tutoring or serving as private tutors should visit the math department's office for more information.
- Feel free to come by my office for help. I will be in or near my office during office hours (or there will be a note telling you when I will be back). If my office hours are not convenient for you, email me or speak with me during class to arrange another time that is more convenient.

Notes

- If the university is unexpectedly closed for a scheduled class time, whatever was scheduled for that day and/or whatever was due that day will be scheduled and/or due on the next scheduled class day.
- All electronic correspondence will be sent to your ASU email account unless other arrangements are made.
- If you do not receive a graded homework assignment, quiz, or test on the day they are returned, please come by my office during office hours to pick the assignment up.
- Good luck. I want you to succeed in this course. If at any point during the semester you feel as if you do not understand the material, please come talk with me as soon as possible. An ounce of prevention is worth a pound of cure.
- All items and dates in this syllabus are subject to change as the semester progresses. Students will be notified in class of any changes, and the changes will not be updated within this syllabus.

Mathematics 2413 – Calculus 1

Student Learning Outcomes

1. **The 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 Calculus I as they pertain to functions, limits, derivatives, and integrals.

2. **The students will describe the fundamental principles including the laws and theorems arising from the concepts covered in this course.** Students will identify and apply the laws and formulas that result directly from the definitions; for example, domain and range of a function, operations on functions, the limit laws, the differentiation formulas, and the Fundamental Theorem of Calculus.

3. **The students will apply course material along with techniques and procedures covered in this course to solve problems.** Students will use the facts, formulas, and techniques learned in this course to sketch graphs of functions, to study

position-velocity-acceleration problems, to solve related rate and optimization ("max-min") problems, and to determine the area under the curve of a function.

4. **The 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 further study in academic areas requiring Calculus I as a prerequisite, or for work in occupational fields requiring a background in Calculus I. These fields might include computer science, engineering, the physical and natural sciences as well as mathematics.

Course Content

Textbook: *Calculus Volume 1*; by OpenStax. The following chapters are covered. (See textbook "Contents")

1. **Functions and Graphs**: Review of Functions, Basic Classes of Functions, Trigonometric Functions, Inverse Functions, Exponential and Logarthimic Functions.
2. **Limits**: A Preview of Calculus, The Limit of a Function, The Limit Laws, Continuity, The Precise Definition of a Limit.
3. **Derivatives**: Defining the Derivative, The Derivative as a Function, Differentiation Rules, Derivatives as Rates of Change, Derivatives of Trigonometric Functions, The Chain Rule, Implicit Differentiation, Derivatives of Exponential and Logarithmic Functions.
4. **Applications of Derivatives**: Related Rates, Linear Approximations and Differentials, Maxima and Minima, the Mean Value Theorem, Derivatives and Shapes of Graphs, Limits at Infinity and Asymptotes, Applied Optimization Problems, L'Hospital's Rule, Antiderivatives.
5. **Integration**: Approximating Areas, the Definite Integral, the Fundamental Theorem of Calculus, Integration Formulas and the Net Change Theorem, Substitution.

Optional Topics: (3.7) Derivatives of Inverse Functions, (4.9) Newton's Method, and others as time permits.

Anticipated Schedule

Below is a table containing an approximate guide to what we will cover during each week of the semester. These topics are subject to change.

Course Week	Topic
1	Section 1.1, 1.2, 1.3
2	Section 1.4, 1.5, 2.1; Standard 1
3	Section 2.2, 2.3
4	Section 2.4, 2.5; Standard 2
5	Section 3.1, 3.2, 3.3
6	Section 3.4, 3.5; Standard 3
7	Section 3.6
8	Section 3.8, 3.9; Standard 4
9	Section 4.1, 4.2
10	Section 4.3, 4.4; Standard 5
11	Section 4.5, 4.6
12	Section 4.7, 4.8; Standard 6
13	Section 4.10, 5.1, 5.2
14	Section 5.3, 5.4, 5.5; Standard 7
15	Extra topics and study period for final exam
Final Exam	Wednesday, May 11, 8:00am-10:00am

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[i]
- Angelo State University Catalog[ii]

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.

The College of Science and Engineering adheres to the university's Statement of Academic Integrity.[iii]

Accommodations for Students with Disabilities

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.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student's responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the Student Disability Services website.[iv] The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dr. Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Houston Harte University Center, Room 112

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[v] for more information.

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[vi] for more information.

Title IX at Angelo State University

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex.

You are encouraged to report any incidents involving sexual misconduct to the Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator, Michelle Miller, J.D. You may submit reports in the following manner:

Online: [Incident Reporting Form](https://www.angelo.edu/incident-form)[vii]
Face to Face: Mayer Administration Building, Room 210
Phone: 325-942-2022
Email: michelle.miller@angelo.edu

Note, as a faculty member at Angelo State, I am a mandatory reporter and must report incidents involving sexual misconduct to the Title IX Coordinator. Should you wish to speak to someone in confidence about an issue, you may contact the University Counseling Center (325-942-2371), the 24-Hour Crisis Helpline (325-486-6345), or the University Health Clinic (325-942-2171).

For more information about resources related to sexual misconduct, Title IX, or Angelo State's policy please visit the [Title IX website](https://www.angelo.edu/title-ix).[viii]

Information About COVID-19

Please refer to ASU's [COVID-19 (Coronavirus) Updates](https://www.angelo.edu/covid-19/)[ix] web page for current information about campus guidelines and safety standards as they relate to the COVID-19 pandemic.

Modifications to the Syllabus
This syllabus, including grade evaluation and course schedule, is subject to modification on potentially short notice based on developing circumstances.

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[i] https://www.angelo.edu/current-students/student-handbook/

[ii] https://www.angelo.edu/academics/catalog/

[iii] https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=96

[iv] https://www.angelo.edu/current-students/disability-services/

[v] https://www.angelo.edu/content/files/14197-op-1011-grading-procedures

[vi] https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of

[vii] https://www.angelo.edu/incident-form

[viii] https://www.angelo.edu/title-ix

[ix] https://www.angelo.edu/covid-19/