Calculus 2

Fall 2019

Course no. 2413.020
Instructor Trey Smith
Time MF 1:00-1:50, TR 12:30-1:20
Location MCS 214
Office MCS 219A
Hours MTWRF : 10:00-11:00, 2:00-3:00
Others by Appointment
Phone (325) 486-5441
Email trey.smith@angelo.edu
Fax (325) 942.2503

Grading This is a Standards Based Course; you will need to demonstrate mastery of seven different standards in order to be successful. You will do this by taking seven quizzes – one for each standard. These quizzes will be given on the Fridays designated in the schedule below. You will receive credit for a 70% or above on each quiz. If you make less than 70%, you will receive no credit. Your final grade will be computed using the averages of those seven quizzes subject to the final exam which will be discussed below. There is a worksheet included at the end of this syllabus to help you keep up with your quiz grades. You are encouraged to print this and keep it in your notebook.

The final exam will affect your grade in the following way: if you score less than 60% on the final, your quiz average will be reduced by a letter grade. If you score a 90% or above on the final, your grade will improve by a letter grade.

Homework You will be assigned homework every class period. The next class, the homework will generally be collected or a daily quiz based on the homework given. Your homework average will be used as bonus points (up to 10) for each of the standards quizzes, BUT only for the first attempt taken on the assigned quiz day. In other words, the bonus points will not be applied to any quiz re-takes.

Attendance Regular class attendance is expected. There will be no make-up for missed homework, so a missed day may result in a zero. Additionally, if you have an unexcused absence on a scheduled quiz day, you will not be allowed to make up that quiz unless you have received approval from the instructor.

Calculators Calculators will generally not be allowed during exams.
Course Outline

The following is a tentative outline of the material to be covered. I reserve the right to change the material and/or sequence.

Topics by Week

1) Basic Functions and an Introduction to Limits
2) Limits and Continuity
3) Introduction to the Derivative and Basic Formulas
4) The Product, Quotient, and Chain Rule
5) Trigonometric Formulas and Implicit Differentiation
6) Inverse Trigonometric Formulas and Logarithm Formulas
7) Related rates and Hyperbolic Trig Formulas
8) L'Hopital's Rule and Indeterminate Forms
9) Applications
10) Applications
11) Antiderivatives and Area
12) The Definite Integral
13) The Fundamental Theorem of Calculus
14) The Substitution Rule
15) Review
16) Final Exam

General University Policies

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:

Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
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 Boone, J.D. You may submit reports in the following manner:

Online: www.angelo.edu/incident-form
Face to Face: Mayer Administration Building, Room 210
Phone: 325-942-2022
E-Mail: michelle.boone@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: www.angelo.edu/title-ix.

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. (http://www.angelo.edu/opmanual/ -- OP 10.19)

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. The College of Science and Engineering adheres to the Statement of 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
- Angelo State University Catalog

**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: Essential Calculus: Early Transcendentals; 2nd edition; by James Stewart. The following chapters are covered. (See textbook "Contents")

3. Inverse Functions: Derivative of Logarithmic and Exponential Functions, Inverse Trigonometric Functions, Indeterminate Forms and l’Hospital’s Rule.
4. Applications of Differentiation: Maximum and Minimum Values, the Mean Value Theorem, Derivatives and Shapes of Graphs, Curve Sketching, Optimization Problems, Antiderivatives.
5. Integrals. Areas, the definition of the definite integral, the Fundamental Theorem of Calculus, properties of the definite integral, indefinite integrals, substitution.

Optional Topics: Exponential Functions (3.1), Inverse Functions and Logarithms (3.2), Exponential Growth and Decay (3.4), Hyperbolic Functions (3.6)
Standards Quiz Worksheet

**Procedure:** You will be expected to take a quiz on each of the seven designated Quiz Days. If you do not pass a particular quiz, you may attempt it again after coming by my office and setting up a time to take it. There is currently no limit on the number of times you may take a quiz, but if a quiz is taken outside of my class, it will be during my office hours or at another time convenient for me. Also, if you take a quiz in order to improve your grade, you will receive the result of the new quiz regardless of whether the score is lower or higher.

The last possible day to take a quiz is Wednesday, December 4th.

**Standards:**

1) _________ Functions and Limits (September 6th)  
2) _________ Basic Derivatives (September 20th)  
3) _________ Special Derivatives (October 4th)  
4) _________ Advanced Derivative Topics (October 18th)  
5) _________ Applications (November 1st)  
6) _________ Antiderivatives and Area (November 15th)  
7) _________ The Substitution Rule (November 26th)

The Final Exam is scheduled for Wednesday, December 11th from 1:00 to 3:00.