

Calculus I – MATH 2313-GR1

Instructor: Kathi Ash

Office Hours: Monday – Friday, 7:15 – 7:50 AM
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COURSE DESCRIPTION: We will be studying Calculus topics including limits, derivatives, implicit differentiation, particle motion, related rates, optimization, antiderivatives, Riemann sums, trapezoid rule, integration techniques, volumes of revolution, separation of variables.

PRE-REQUISITE: High school PreCalculus and fulfill TSI requirements.

TEXTBOOK: Calculus, Larson, Hostetler, Edwards, 8th edition.

STUDENT LEARNING OUTCOMES

1. Limits

- Limit of a function
- Trig limits
- Continuity
- Intermediate Value Theorem
- Limits as x approaches infinity

1. Introduction to Derivatives

- Average and Instantaneous Rates of Change
- Difference Quotient
- Graphs of functions and their derivatives
- Equations of tangent lines
- Formal definition of a derivative
- Differentiability

2. Derivative Rules

- Constant and power rules
- Product and Quotient rules
- Linear approximation
- Trig derivatives
- Chain rule
- Higher order derivatives
- Motion problems

3. Implicit Differentiation

- Implicit Differentiation
- Related Rates

4. Applications of Derivatives
 - Mean Value Theorem
 - 1st Derivative Test
 - Extreme Values
 - Concavity
 - 2nd Derivative Test
 - Optimization
5. Inverses
 - Exponential and log functions
 - Derivatives of a^x and e^x
 - Derivatives of log functions
6. Integration
 - Anti-derivatives
 - Definite integrals
 - Area under a curve
 - Riemann sums
 - Fundamental Theorem of Calculus, Part 1
 - Mean Value of a Function
 - Fundamental Theorem of Calculus, Part 2
 - U-substitution
 - Trapezoid Rule
7. Volume
 - Area Between Two Curves
 - Disk method
 - Washer method
 - Cross sections other than circles
8. Separation of Variables
 - Slope fields
 - Differential Equations
 - Separation of Variables
 - Growth and Decay

EVALUATION STANDARDS:

These course objectives and student learning outcomes will be assessed through the administration of a minimum of 3 in-class exams (60%), quizzes and/or homework (20%) and a comprehensive final exam (20%). Calculators will not be allowed on the final exam.

GRADING KEY:

100-90 = A 89-80 = B 79-70 = C 69-60 = D 59-below = F

GRADING STANDARDS:

- A - Student's work is exceptional and consistently above average.
- B - Student's work is above average. Required assignments were completed in a timely manner and have met at least the minimum required standards.
- C - Student's work is acceptable. Majority of assignments meet the minimum required standards.
- D - Student's work fails to meet the minimum requirements for a grade of "C." Overall performance was sub-standard in comparison to normal expectations for this class.
- F - Student's work is clearly unacceptable. Student either did not attempt the work or failed to meet any of the minimum required standards.

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
•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.

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.

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