

Mathematics 2313
Calculus I
Monday – Friday
2nd Period, Room 112

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Conference: 4th Period

Course Description

MATH 2313 Calculus I (3 college credits): Differential calculus for functions of one variable including a study of limits, continuity, derivatives of different classes of functions, maxima and minima, concavity, related rates, and optimization problems.

Textbook: Essential Calculus: Early Transcendentals; 2nd edition; by James Stewart.

Prerequisite: Math 1316 and Math 2312.

Grading for each 6 week grading period: Tests 80%, Quizzes 10%, Homework 10%

Grading for final semester grade: Six week grades and Final Exam each 25%

Your Responsibilities: This is a college course. You will be held to the same standards as college students. In order to be successful, you must apply yourself to learn. To do this, you must take notes, do homework, study for exams, and ask questions. Homework is designed to prepare you for tests. Therefore, to be successful requires doing homework.

Absences: If you will be absent on an assessment day, you must make arrangements to take the assessment prior to your absence or the day the you return. If you miss a lecture, have a friend send you a copy of the notes.

Assignments: Assignments will be posted in Remind. Each weeks' assignments are due the following Monday, regardless of how many absences you had during the week (except for certain extenuating circumstances). Ten points will be deducted per day that each assignment is late, up to Friday. After Friday, late work will not be excepted.

Exams: Exams are to be finished during class time. No additional time will be given. If you cheat, you will be given a zero with no option to retake the exam. To receive credit for a question, you must show your work clearly, orderly, and legibly.

Calculators: Calculator use will depend on the topic being studied. Calculators are used for some lessons and not for others. While in class you may use my graphing calculators. They may not, however, be removed from my classroom.

Cell Phones: Cell phone use in class is strictly prohibited. I will remove them from you if I see them.

Ethics: 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>.

Disabilities: Persons with disabilities which may warrant academic accommodations must contact the Student Affairs Office, in order to request such accommodations prior to any accommodations being implemented. You are encouraged to make this request early in the semester so that appropriate arrangements can be made.

Ms. Dallas A. Swafford, Director of Student Disability Services
Houston Harte University Center, Suite 112 Phone: 325-942-2047 or by E-mail:
dallas.swafford@angelo.edu

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, and derivatives.
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, and the differentiation formulas.
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.
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. Fall 2017

Course Content

Textbook: Essential Calculus: Early Transcendentals; 2nd edition; by James Stewart. The following chapters including the particular sections listed are covered.

1. Functions and Limits: Functions and Their Representations, A Catalog of Essential Functions, The Limit of a Function, Calculating Limits, Continuity, Limits Involving Infinity.
2. Derivatives: Derivatives and Rates of Change, The Derivative as a Function, Basic Differentiation Formulas, The Product and Quotient Rules, The Chain Rule, Implicit Differentiation, Related Rates, Linear Approximations and Differentials.
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. Optional Topics: Exponential Functions (3.1), Inverse Functions and Logarithms (3.2), Exponential Growth and Decay (3.4), Inverse Trigonometric Functions (3.5), Hyperbolic Functions (3.6)