COURSE DESCRIPTION: We will be studying precalculus which includes an overview of topics from algebra, trigonometry and analytic geometry that are needed for calculus that are needed for calculus, including equations and inequalities, functions and inverse functions, trigonometric functions and equations.

PRE-REQUISITE: High school Algebra 2 and fulfill TSI requirements.


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 precalculus pertaining to the real numbers; exponents and radicals; polynomials, factoring and rational expressions; equations and inequalities; functions, polynomial and rational functions; inverse and logarithmic functions; graphs and their transformations; trigonometric functions; types of angle measure and notation; parts of triangles and circles; parabolas, ellipses and hyperbolas; and asymptotes.

2. Students will describe the fundamental principles including the mathematical rules and theorems arising from the concepts covered in this course. Students will identify and apply the laws and formulas that result from the definitions; for example, rules of exponents, exponential and logarithmic properties, the quadratic formula, slope and formulas for the equations of lines, the fundamental trigonometric identities, properties of angles and triangles, characteristics of the trigonometric functions and inverse trigonometric functions, formulas of the conic sections, translations of axes and formulas relating polar and rectangular coordinates.

3. The students will apply course material using techniques covered in this course to solve problems. Students will use facts, formulas and techniques learned in this course to simplify algebraic expressions; graph functions; solve equations and recognize and graph trigonometric and inverse trigonometric functions, conic sections and algebraic functions.

4. The students will develop skills, competencies and thought processes sufficient to support further study or work in related fields. Students will acquire a level of proficiency in the fundamental concepts and applications in precalculus necessary to succeed in calculus.

REQUIRED TEXT

1. Topics From Algebra
   1.2 Exponents and Radicals
   1.3 Algebraic Expressions
   1.6 Inequalities

2. Functions and Graphs
   2.1 Rectangular Coordinate Systems
   2.2 Graphs of Equations
   2.3 Lines
   2.4 Definition of Function
   2.5 Graphs of Functions
   2.7 Operations on Functions

3. Polynomial and Rational Functions
   3.1 Polynomial functions of Degree Greater than 2
   3.5 Rational Functions

4. Inverse, Exponential and Logarithmic Functions
   4.1 Inverse Functions
   4.2 Exponential Functions
   4.3 The Natural Exponential Function
   4.4 Logarithmic Functions
   4.5 Properties of Logarithms
   4.6 Exponential and Logarithmic Equations

5. Trigonometric Functions
   5.1 Angles
   5.2 Trigonometric Functions of Angles
   5.3 Trigonometric Functions of Real Numbers
   5.4 Values of the Trigonometric Functions
   5.5 Trigonometric Graphs
   5.6 Additional Trigonometric Graphs

6. Analytic Trigonometry
   6.2 Trigonometric Equations
   6.3 The Addition and Subtraction Formulas
   6.4 Multiple-Angle Formulas
   6.6 The Inverse Trigonometric Functions

10. Topics From Analytic Geometry
    10.1 Parabolas
    10.2 Ellipses
    10.3 Hyperbolas
    10.4 Plane Curves and Parametric Equations
    10.5 Polar Equations
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 (ADAA), 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

Revised 08/30/18
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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