PRE-AP TRIGONOMETRY/PRE-CALCULUS
Course Syllabus

Course Number: PENG-0010  
OHLAP Credit: Yes

OCAS Code:  
4612 Pre Calculus  
4750 Trigonometry

Course Length: 120 Hours  
Career Cluster: Science, Technology, Engineering and Mathematics

Career Pathway: Engineering and Technology

Career Major(s): PLTW Pre-Engineering (Comprehensive High Schools), PLTW Pre-Engineering

Pre-requisite(s): This course is designed to be in preparation for Calculus or AP Calculus. A graphing calculator is recommended. The course includes a study of six basic functions of trigonometry, solutions of right and oblique triangles, identities, and complex numbers. The calculator is used as an aid to computations. The course gives a review study of straight lines, conic sections, simplification of equations, algebraic curves, transcendental curves, a completed study of straight lines, simplification of equations, polar coordinates, and an introduction to limits and derivatives

Textbooks: Precalculus with Limits; Ron Larson, Robert Hostetler, and Bruce H. Edwards; 5th Edition

Course Objectives: A. Student will be able to calculate and understand applications for:
1. Quadratic Formula  
2. Periodic Functions and Right Triangle Problems  
3. Functions and Mathematical Models  
4. Applications of Trigonometric and Circular Functions  
5. Trigonometric Function Properties, Identities, and Parametric Functions  
6. Properties of Combined Sinusoids  
7. Triangle Trigonometry  
8. Properties of Elementary Functions  
9. Matrix Transformations and Fractal Figures  
10. Analytic Geometry of Conic Sections and Quadric Surfaces  
11. Polar Coordinates, Complex Numbers, and Moving Objects  
12. Sequences and Series  
13. Polynomial and Rational Functions Limits and Derivatives

Teaching Methods: The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised classroom time is provided for students to complete required projects.
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2. Each course must be passed with seventy (70%) percent or better.
3. Grading scale: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=50-59%.

Description of Classroom, Laboratories, and Equipment: Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

Available Certifications/College Credit: The student may be eligible to take state, national or industry exam after completion of the program. College credit may be issued from Oklahoma State University-Okmulgee or Tulsa Community College. See program counselor for additional information.

College Credit Eligibility: The precalculus course prepares juniors to take AP Calculus as a senior.