



## MTH 172: Precalculus with Trigonometry

This course is designed to present both pre-calculus and trigonometry topics in order to prepare students for calculus. Topics include inverse functions and relations, exponential and logarithmic functions, right triangle trigonometry, trigonometric functions and their graphs, trigonometric identities, the inverse trigonometric functions, solving trigonometric equations, conic sections, introduction to the polar coordinate system, and applications of topics cited. Prerequisite(s): A grade of C- or higher in MTH 152 or a score of 237 or higher on the Advanced Algebra and Functions (AAF) Accuplacer Test. Four lecture hours per week. Instructional Support Fee applies.

### Course Student Learning Outcomes

Students who successfully complete this course will: 1. Demonstrate study skills and habits necessary to succeed in a college math class. 2. Determine if a given function is one-to-one and if so, find the inverse function. 3. Evaluate logarithmic expressions. 4. Simplify, graph, and solve exponential and logarithmic functions and equations. 5. Use growth and decay formula to solve application problems. 6. Convert measures of angles between degrees and radians. 7. Find trigonometric function values for any multiple of 30, 45, 60 and 90 degrees. 8. Use the unit circle and right triangle trigonometry to identify and graph the six trigonometric functions. 9. Prove trigonometric identities using basic, co-function, double angle, half-angle, power reducing, sum/difference, and Pythagorean identities. 10. Use inverse trigonometric functions to simplify expressions and to solve trigonometric equations. 11. Use the Law of Sines and Law of Cosines to solve triangles including real world applications. 12. Analyze the graphs exponential and logarithmic functions, trigonometric functions, inverse trigonometric function, and conic sections.

**Credits:** 4

**Program:** Mathematics