MATH 1730
COMPETENCIES FOR PRECALCULUS

1. Simplify algebraic expressions involving exponents, radicals, rational expressions, and complex numbers.
2. Solve equations and inequalities including linear, quadratic, higher order polynomials, radical, rational, and absolute value.
3. Graph common functions including linear, quadratic, higher order polynomials, absolute value, square root, cube root, and rational functions.
4. Perform algebraic operations on functions including composition of functions.
5. Simplify the difference quotient for a given function.
6. Find and graph the inverse of a function.
7. Use synthetic division to find the zeros of a polynomial.
8. Find the center and radius of a circle given its equation and graph the circle or semicircle.
9. Work with exponential and logarithmic expressions including their graphs and properties, and solve exponential and logarithmic equations.
10. Demonstrate knowledge of trigonometric functions, their graphs, and trigonometric identities.
11. Solve trigonometric equations.
12. Use trigonometry to solve right and oblique triangles.
13. Use addition, subtraction and multiple-angle formulas to find trigonometric values and prove trigonometric identities.
14. Demonstrate knowledge of inverse trigonometric functions, properties, and graphs.
15. Use a wide variety of algebraic, exponential, logarithmic, and trigonometric equations to solve application problems.
16. Identify and graph conic sections, including ellipses, parabolas and hyperbolas.