Technical Mathematics II
MATH126
Fall 2015

This course is a continuation of MATH125 Technical Mathematics I. Topics include extensive use of trigonometric relationships, radian measure, vectors, laws of sines and cosines, complex numbers, and exponential and logarithmic relationships. Prerequisite: C- or higher in MATH125 Technical Mathematics I; waiver by placement testing results; or departmental approval.

COURSE OUTCOMES	OUTCOMES ACTIVITIES
At the end of this course, students will be able to:	
Use properties of exponents and radicals appropriately in order to solve related problems in this course and other courses in their program.	1. Evaluate numerical expressions using radical notation and rational exponents. (CT,QS,TS) 2. Simplify radical expressions. (CT,QS,TS) 3. Perform operations involving radical expressions. (CT,QS) 4. Convert between rational exponents and radical notation. (CT,QS) 5. Simplify expressions involving rational exponents. (CT,QS) 6. Solve application problems. (CT,R,TS,QS)
Demonstrate an understanding of the trigonometric functions and their properties and graphs in order to solve applied problems.	1. Convert between degrees and radian measure. (CT,QS,TS) 2. Evaluate trigonometric function of any angle. (CT,QS,TS) 3. Find all angles between 0° and 360º or between 0 and 2π given a trigonometric function value. (CT,QS,TS) 4. Determine the domain, range, and period of a given trigonometric function. (CT,QS) 5. Sketch the graph of six trigonometry functions. (CT,QS,TS) 6. Use trigonometric identities. (CT,QS) 7. Solve trigonometric equations. (CT,QS,TS) 8. Solve application problems (CT, QS, TS)
Use the Law of Sines and the Law of Cosines appropriately in order to solve oblique triangle problems and related applications.	1. Solve triangles using the Law of Sines. (CT,QS,TS) 2. Solve triangles using the Law of Cosines. (CT,QS,TS) 3. Solve related application problems. (CT,QS,TS,R)
Solve problems involving vectors in order to develop techniques necessary to solve application problems.	1. Differentiate between scalars and vectors. (CT,QS,TS) 2. Sketch vectors in the coordinate plane to show displacement and directions. (CT,QS, TS) 3. Find the vertical and horizontal components of a given vector. (CT,QS,TS)
Perform arithmetic operations on complex numbers in order to apply these skills to solve related problems.	1. Add, subtract, multiply and divide complex numbers. (CT,QS,TS) 2. Multiply and divide complex numbers in polar form. (CT,QS,TS) 3. Convert among rectangular form, polar form, and exponential form. (CT,QS,TS)

Use properties of inequalities, solve linear inequalities, inequalities involving absolute values.	1. Solve linear inequalities. (CT,QS) 2. Solve inequalities involving absolute value. (CT,QS)
Demonstrate an understanding of the properties and graphs of exponential and logarithmic functions in order to solve application problems.	1. Evaluate exponential expressions. (CT,QS,TS) 2. Convert between exponential and logarithmic notation. (CT,QS,TS) 3. Evaluate logarithmic expressions. (CT,QS,TS) 4. Find the domain, range, intercepts, and asymptote of an exponential function. (CT,QS, TS)
Strengthen Core Competencies** in order to increase success in this and other courses and in the workplace.	Referenced above

**Indicate the Core Competencies that apply to the outcomes activities and assessment tools: Critical Thinking (CT); Technology Skills (TS); Oral Communications (OC); Quantitative Skills (QS); Reading (R); Writing (W).