Massasoit Community College

Instructor:
Office:
Email:
Phone:
Office Hours:

Course: Technical Mathematics II
Course Number: MATH126-XX
Semester:
Classroom:
Day and Time:

Course Description: 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.

Required Text and Materials: Allyn J. Washington, *Basic Technical Mathematics*, 10th edition, Pearson Education. ISBN: 0133083500.

Course Topics:

Chapter 8: Trigonometric Functions of Any Angle

Chapter 9: Vectors and Oblique Triangles

Chapter 10: Graphs of Trigonometric Functions

Chapter 11: Exponents and Radicals

Chapter 12: Complex Numbers

Chapter 13: Exponential and Logarithmic Functions

Chapter 17: Inequalities

Teaching Procedures: This course will be taught in a lecture/discussion format with ample opportunity for student questions. Generally, class will begin with a question and answer session on the most recent homework assignment. New material will then be presented in a lecture format and homework be assigned to reinforce the topics covered in class.

Instructional Objectives:

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)

**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).

Basis for Student Grading: Grades for this course will be assigned as follows:

Grade	Average
A	93%-100%
A-	90%-92%
B+	87%-89%
B	83%-86%
B-	80%-82%
C+	77%-79%

Grade	Average
C	73%-76%
C-	70%-72%
D+	67%-69%
D	63%-66%
D-	60%-62%
F	0-59%

The grade you earn is the grade you will receive in this course. Grades are not negotiable. You will not be allowed to make up work, substitute alternative assignments, or submit extra assignments in order to improve your grade during the semester or after the semester ends.

Grades of incomplete are given only in situations when extenuating circumstances prevent a student from taking the final exam or fulfilling a specific requirement in the course. The grade of "I" cannot be used to give students additional time to complete course assignments in order to raise their grade.

Basis for Evaluating Student Performance: The grade for this course will be weighted based on the following categories:

- *Exams (70%)*: There will be four in-class exams given throughout the semester, approximately every 3 weeks. Exams must be taken during the regular class time and no make-up exams will be given. The lowest exam grade will be dropped. Your exam average will account for 70% of your final grade.
- *Final Exam (30%)*: The course will culminate in a cumulative final exam. It will be worth 30% of your final grade.

There is no extra credit available for this course.

Tentative Test Schedule/Assignment(s) Schedule:

Assignment:	Tentative Date:
Test 1	
Test 2	
Test 3	

Test 4	
Final Exam	

Attendance: Attendance for this course is mandatory. After the third absence, students will lose two points per absence thereafter from their final average. I will take attendance at the beginning of every class, and students not present at that time will be marked absent for the class, even if they show up late. If you must miss a regular class, you are still responsible for the material that was presented in class. The average student needs to attend all class meetings in order to be successful in this course.

Accommodations Statement: Massasoit's Disability Services office provides accommodations to students who qualify for services based on a documented disability. Students interested in accessing classroom or testing accommodations must contact Disability Services directly. In an effort to avoid any lapse in services, new and returning students are encouraged to contact Disability Services at the beginning of each semester to receive an Accommodation Letter for the current semester. Students on all campuses can contact Disability Services at 508-588-9100 X 2132 or by e-mail at DisabilityServices@massasoit.edu for further information or questions.

Title IX Statement: Massasoit Community College is committed to providing a safe learning and work environment for all. If you believe you have experienced discrimination, sexual harassment, sexual assault, domestic/dating violence, stalking, or retaliation, we encourage you to report it to *Yolanda Dennis, Chief Diversity Officer and Title IX Coordinator, Office of Diversity and Inclusion, at 508-588-9100, x1309 or* ODI@massasoit.edu. While you may talk to a faculty member, understand that as a "responsible employee" of the College, the faculty member must report what you share to the College's Title IX Coordinator. On and off campus resources and interim measures are available to assist you. Information about both of these policies can be found at www.massasoit.edu/title-ix and www.massasoit.edu/eeo. We are here to support you.

Academic Integrity: Academic dishonesty will not be tolerated. Please see the following URL for more information on the college's policies on academic integrity:

http://www.massasoit.edu/academics/policies/academic-honesty/index