

Marshall University – Course Syllabus

Course Title/Number	MTH 122 – Plane Trigonometry – Section 205 - CRN: 4019
Semester/Year	Spring 2016
Days/Time	TR: 12:30 – 1:45 AM
Location	Smith Hall 516
Instructor	Dr. Ari Aluthge (Pronounced: A-luth-gay)
Prerequisites	ACT Math 22 or SAT Math 520 or a grade of C or better in MTH127 or MTH130.
Office	Smith Hall 714
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Office/Hours	MW: 10:00 AM– 1:00 PM or by appointment
University Policies	By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to www.marshall.edu/academic-affairs and clicking on “Marshall University Policies.” Or, you can access the policies directly by going to http://www.marshall.edu/academic-affairs/?page_id=802 Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment.

Course Description: A study of the trigonometric functions, graphs of the trigonometric functions, identities, equations, inverse trigonometric functions, vectors, complex numbers, and applications.

Course Objectives:

- To give students a solid understanding of trigonometric functions and their applications.
- To help prepare students for a course in calculus with analytic geometry. Students should also take college algebra before attempting calculus.
- To help prepare students for study in areas such as physics, engineering, biology, chemistry, pharmacy, geology, medicine, and safety technology.

Course Contents: Most of the topics from chapters 1 through 6 in the textbook

- Right Triangular Ratios • Trigonometric/Circular Functions
- Graphs of Trigonometric/Circular Functions • Trigonometric Identities
- Inverse Trigonometric/Circular Functions and Trigonometric Equations
- Applications (Law of Sines, Law of Cosines, Vectors)
- Complex Numbers and Polar Coordinates (time permitting)

Learner Outcomes: The table below shows the following relationships: How each student learning outcomes will be practiced and assessed in the course. Upon completion of this course, students will have an understanding of the concepts of trigonometric functions and their properties. They will be able to apply these concepts to solve real world applications. In particular,

Course Learning Outcomes:		
Course Student Learning Outcomes	Students will practice each outcome in this Course	Student achievement of each outcome will be assessed by
Students will analyze, compare, evaluate, and graph the six trigonometric functions.	Students will attend class, work on worksheets and homework, participate in class discussions, and ask questions.	Daily worksheets, board work and class participation, weekly online quizzes, and four exams.
Students will analyze, compare, evaluate, and graph the six inverse trigonometric functions.	Students will attend class, work on worksheets and homework, participate in class discussions, and ask questions.	Daily worksheets, board work and class participation, weekly online quizzes, and four exams.
Students will use trigonometric functions to solve real world problems involving triangles and vectors.	Students will attend class, work on worksheets and homework, participate in class discussions, and ask questions.	Daily worksheets, board work and class participation, weekly online quizzes, and four exams.

Students will use the definition of radian measure to solve application problems involving linear and angular speed	Students will attend class, work on worksheets and homework, participate in class discussions, and ask questions.	Daily worksheets, board work and class participation, weekly online quizzes, and four exams.
Students will apply trigonometric identities and solve trigonometric equations in other mathematics courses such as calculus.	Students will attend class, work on worksheets and homework, participate in class discussions, and ask questions.	Daily worksheets, board work and class participation, weekly online quizzes, and four exams.
Students will apply trigonometric functions to multiply and divide complex numbers and find the powers and roots of complex numbers (time permitting).	Students will attend class, work on worksheets and homework, participate in class discussions, and ask questions.	Daily worksheets, board work and class participation, weekly online quizzes, and four exams.

MUonline: Information about the course such as syllabus, assignment schedules, and your grades will be posted on Blackboard. Students should log in to MUonline on a regular basis to check their assignments schedule and grades.

Required Texts, Additional Reading, and Other Materials:

- Dugopoloski, Trigonometry, 4th edition. ISBN: 9780321923486
- A scientific calculator is required and a graphing calculator is recommended
- Reliable internet access. But students can use a campus computer lab to do their work

Grading Policy (Course Requirements and Due Dates)

- Daily attendance and class participation = 100 points
- Weekly online quizzes = 150 points (Due every Sunday starting January 24)
- Weekly worksheets = 150 points (Due every Thursday starting January 21)
- Four Exams (including the final exam) = 400 points total (100 points each). Final exam = Exam 4 (not comprehensive) (Exam 1 on Feb 4, Exam 2 on Mar 3, Exam 3 on April 7, Final Exam (Exam 4) on May 3 (12:45 – 2:45).
- Total possible = 800 points
- Letter Grades: A = [720 –800), B = [640 –720), C = [560 – 640), D = [480 -560), F = [0 -480)

Attendance Policy and class participation.

Daily attendance will be taken (2 point for each day). When a student is absent from class, he/she is responsible for any and all material covered or assigned. Make-up exams will be given only if the student has an excused absence. Excused absences must be approved by the office of the dean of students. Students will participate in class by asking and answering questions on a daily basis.

Cell Phone Policy: Please turn off your cell phone or at least put it in silent mode before entering the class.

Class Schedule:

Week of	Coverage (textbook sections)	Topics
Week #1 (1/11 – 1/15)	Sections 1.1 – 1.3	Angles, arc length and area, angular and linear velocity
Week #2 (1/18 – 1/22)	Sections 1.3 – 1.5	Finish 3.1, Trigonometric Functions, Right triangle trigonometry
Week #3 (1/15 – 1/29)	Sections 1.5 – 2.1	Finish 1.5, Fundamental identities , Sine and cosine graphs
Week #4 (2/1 – 2/5)	Section 2.1, review, Exam 1	Finish 2.1, review for the exam, Exam 1 (on Chapter 1) on Thursday
Week #5 (2/8 – 2/12)	Sections 2.2 – 2.3	More general sine and cosine graphs, graphs of secant and cosecant
Week #6 (2/15 – 2/19)	Sections 2.3 – 2.4, Skip 2.5	Finish 2.3, Graphs of tangent and cotangent
Week #7 (2/22 – 2/26)	Sections 3.1 - 3.2	Basic identities, verifying identities
Week #8 (2/29 – 3/4)	Review , Exam 2	Finish 3.2, review , Exam 2 (on 2.1-2.4, 3.1-3.2) on Thursday
Week #9 (3/7 – 3/11)	Sections 3.3 - 3.4	Sum/difference identities for cosine, sine, and tangent.
Week #10 (3/14 – 3/18)	Sections 3.5 - 4.1	Double/Half angle and Product/sum identities, inverse trig function
Week #11 (3/21 – 3/25)	Spring Break	No classes

Week #12 (3/28 – 4/1)	Sections 4.1 - 4.2	Finish 4.1, basic trigonometric equations.
Week #13 (4/4 – 4/8)	Sections 4.2, review, Exam 3	Finish 4.2, review , Exam 3 (on 3.3 – 3.6, 4.1-4.2) on Thursday
Week #14 (4/11 – 4/15)	Sections 4.3 - 5.1	More on trigonometric equations, Law of sines
Week #15 (4/18 – 4/22)	Sections 5.2 - 5.4	Law of cosines, Area of a triangle, vectors
Week #16 (4/25 – 4/29)	Sections 5.4 - 6.2	Vectors, Trigonometric form of complex numbers
Week #17 (5/2 – 5/6)	Final Exam (Exam 4)	Exam 4 on Sec 4.3 – 4.4, 5.1 – 5.4, 6.1 – 6.2 on May 3 (12:45–2:45)

Tentative Quiz Schedule:

Each quiz contains 10 questions from the material indicated sections and is 10 points worth. Students are allowed two attempts and the best attempt will count.

Quiz #	Sections covered	Opens at 12 AM on	Closes at 11:59 PM on
1	1.1 – 1.3	January 11	January 24
2	1.3 – 1.4	January 18	January 31
3	1.4 – 1.5	January 25	February 7
4	2.1 – 2.2	February 8	February 21
5	2.3 – 2.4	February 15	February 28
6	3.1 – 3.2	February 22	March 6
7	3.3 – 3.4	February 29	March 13
8	3.5 – 3.6	March 14	March 27
9	4.1	March 21	April 3
10	4.2 – 4.4	March 28	April 17
11	5.1	April 4	April 24
12	5.2	April 11	May 1
13	5.3	April 11	May 1
14	5.4	April 18	May 3 (last day)
15	6.1 – 6.2	April 25	May 3 (last day)