Marshall University – Course Syllabus

Course Title/Number	MTH 122 – Plane Trigonometry – Section 104 - CRN: 3117
Semester/Year	Fall 2017
Days/Time	TR: 12:30 – 1:45 PM
Location	Smith Hall 509
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
Phone	(304) 696 3050
E-Mail	aluthge@marshall.edu (Please include "**Your Name & MTH 122 – Sec 104**" in the subject line.
Office/Hours	MW: 10:00 AM– 12:00 PM, TR: 10:00 AM – 11:00 AM 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 be 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 an d 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 an d 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 an d 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 an d 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 an d 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 an d 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 read notes, take quizzes, check their assignments schedule and grades. Students can send me messages via the "Internal Mail Box" tool on Blackboard.

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 = 25 points (**1 point for each day of attendance** – total possible 30 points to earn)
- Fourteen Weekly online quizzes = 140 points (Due every Sunday starting September 02)
- Nine Weekly worksheets = 135 points (Due every Thursday starting August 31)
- Four Exams (including the final exam) = 450 points total (100 points each Test and 150 point for the Final Exam).
- (Test 1 on **Sep 19**, Test 2 on **Oct 19**, Test 3 on **Nov 28**, and the Final Exam on **December 12 (12:45 – 2:45).**
- Total possible = 750 points
- **Letter Grades: A = [675 – 750), B = [600 – 675), C = [525 – 600), D = [450 - 525), F = [0 - 450)**

Attendance Policy and class participation.

Daily attendance will be taken (1 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.

Free Tutoring:
 Free tutoring will be available in Smith 625 starting next week. No appointment is necessary.

The schedule is as follows:

Monday – Thursday: 10 AM – 4 PM and 5:00 PM – 6:30 PM
Friday: **10:00 AM - Noon**

Tentative Class Schedule:

Week of	Coverage (book sections)	Topics
Week #1 (8/21 – 8/25)	Sections 1.1 – 1.3	Angles, arc length and area, angular and linear velocity
Week #2 (8/28 – 9/1)	Sections 1.3 – 1.4	Finish angular and linear velocity, Trigonometric Functions
Week #3 (9/4 – 9/8)	Sections 1.5 – 1.6	Right triangle trigonometry , Fundamental identities
Week #4 (9/11 – 9/15)	Section 2.1, Review	Sine and cosine graphs, Catch up and Review.
Week #5 (9/18 – 9/22)	**Test 1**, Section 2.2	**Test 1 on Tuesday,** More types of sine and cosine graphs
Week #6 (9/25 – 9/29)	Sections 2.3 – 2.4, Skip 2.5	Graphs of secant, cosecant, tangent and cotangent
Week #7 (10/2 – 10/6)	Sections 3.1 - 3.3	Basic identities, verifying identities, sum/difference identities for cosine
Week #8 (10/9 – 10/13)	Sections 3.3 - 3.5	Sum/difference identities for sine & tangent, Double & Half-angle identities
Week #9 (10/16 – 10/20)	Section 3.6, Review, **Test 2**	Sum to product identities, Review, **Test 2 on Thursday**
Week #10 (10/23 – 10/27)	Sections 4.1 – 4.2	Inverse trigonometric functions, Basic trigonometric equations
Week #11 (10/30 – 11/3)	Sections 4.3 - 4.4	More types of trigonometric equations.
Week #12 (11/6 – 11/10)	Sections 5.1 - 5.2	Law of sines and law of cosines
Week #13 (11/13 – 11/17)	Section 5.3, Review, Test 3	Area of a triangle, Review,
Week #14 (11/20 – 11/24)	Thanksgiving break	No classes
Week #15 (11/27 – 12/1)	**Test 3**, Sections 5.4	**Test 3 on Thursday** , Vectors
Week #16 (12/4 – 12/8)	Sections 5.5- 6.1, Review	Complex numbers and their trigonometric forms, Review for the final
Week #17 (12/11 – 12/15)	**Comprehensive Final Exam**	**Final Exam (Multiple Choice) – Tuesday, December 2, 12:45 PM – 2:45 PM**

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	**August 19**	**September 3**
2	1.3 – 1.4	**August 26**	**September 10**
3	1.4 – 1.5	**September 2**	**September 17**
4	2.1 – 2.2	**September 9**	**September 24**
5	2.3 – 2.4	**September 16**	**October 1**
6	3.1 – 3.2	**September 23**	**October 8**
7	3.3 – 3.4	**September 30**	**October 15**
8	3.5 – 3.6	**October 7**	**October 22**
9	4.1	**October 14**	**October 29**
10	4.2 – 4.4	**October 21**	**November 5**
11	5.1	**October 28**	**November 12**
12	5.2	**November 4**	**November 19**
13	5.3	**November 11**	**December 3**
14	5.4	**November 18**	**December 10**