Course Syllabus   MTH 122   Section 103   Fall 2016

Course Title:	Plane Trigonometry
Course Number:	MTH 122 -- Section 103 -- CRN 2993 -- Credit: 3 Hours
Textbook:	Dugopoloski, Trigonometry, 4th edition. ISBN: 9780321923486
Sections Covered:	P.1-P.4, 1.1-1.6, 2.1-2.4, 3.1-3.6, 4.1-4.4, 5.1-5.4, 6.1-6.2, 6.3
Course Description:	A study of the trigonometric functions, graphs of the trigonometric functions, identities, equations, inverse trigonometric functions, vectors, complex numbers, and applications.
Calculator:	TI-83 or higher, graphing calculators may not be allowed for some problems in exams.
Prerequisites:	ACT Math 22 or SAT 520 or a grade of C or better in MTH127 or MTH130
Meeting Time:	MWF: 11:00 – 11:50 AM
Classroom:	Smith Hall 531
Instructor:	Dr. Basant Karna
Office:	Smith Hall 715
Office Hours:	9:00-10:00 AM MTWRF, 11:00-11:30 AM TR, others by appointment
Phone/Email:	Phone: (304) 696-4332, Email: karna@marshall.edu
Webpage:	http://www.science.marshall.edu/karna/
Course Objectives:	The objective of this course are: to present a comprehensive development of trigonometry and some of its applications, to prepare students for courses in calculus and analytic geometry, to prepare students for study in areas such as physics, engineering, biology, chemistry, pharmacy, geology, and medicine.

Course student learning outcomes	How students will practice each outcome in this course	How student achievement of each outcome will be assessed
Students will learn about degree and radian measure of angles, and angular velocity	By doing homework and in class activities.	Quizzes, homework assignments, exams, Final exam
Students will learn how to evaluate and graph the six trig functions	By doing homework and in class activities.	Quizzes, homework assignments, exams, Final exam
Students will learn how to define and use inverse trig functions	By doing homework and in class activities.	Quizzes, homework assignments, exams, Final exam
Students will learn how to prove trig identities and solve trigonometric equations	By doing homework and in class activities.	Quizzes, homework assignments, exams, Final exam
Students will learn applications of trigonometry to the real world	By doing homework and in class activities.	Quizzes, homework assignments, exams, Final exam
Students will learn how to use trig functions to multiply and divide	By doing homework and in class activities.	Quizzes, homework assignments, exams, Final exam
Students will learn how to find polar coordinates and graph polar equations	By doing homework and in class activities.	Quizzes, homework assignments, exams, Final exam

Course Contents:	- Right Triangular Ratios - Trigonometric Functions - Graphs of Trigonometric Functions - Trigonometric Identities - Inverse Trigonometric Functions and Trigonometric Equations - Applications (Law of Sines, Law of Cosines, Vectors) - Polar Coordinates and Complex Numbers

Attendance Policy:	Attendance is required and you must come with your text. Attendance will be taken every class day either by sign-in-sheet or by quiz. Having more than **25%** absences (excused or unexcused) may result in a course grade of **F**! Absences which can be excused include illness, emergencies, or participation in another university activity. Excused absences must be approved by the office of the dean of students.
Grading Policy:	A. *Quizzes*: Throughout the semester, there will be 12 quizzes given during the last 15 minutes of the class on Fridays. Problems in quizzes will be given from assigned homework problems (textbook will not be allowed). Two lowest quizzes scores will be dropped. B. *Exams:* There will be 2 exams given in class during the semester. C. *Homework Problems:* Homework problems will be assigned and collected. You are responsible for reading the text, working the exercises, coming to office hours for help when you're stuck, and being aware of the dates for the major exams. D. *Final Exam:* There will be a two-hour final exam on December 13, 2016.
Points Distribution:	Attendance 25 Pts Homework(5) 50 Pts Quizzes(10) 100 Pts 2 Major Exams 200 Pts Final Exam 125 Pts --- Total Pts: 500 Pts
Grades	The semester grade will be based on the percentage of the 500 total possible points, using the following scale. A: 90 -100 % , B: 80 - 89 %, C: 70 - 79 %, D: 60 - 69 %, F: 0 - 59 % Note: The class score will be posted on MUOnline.
Make-ups:	A. Quizzes: For unavoidable missed quizzes with valid documentation, I will give you make up quiz within a week of the original quiz date (two quizzes). B. *Exams*: Making up a missed exam is possible only if you receive prior permission from me and only for serious and unavoidable circumstances. Make-ups must be taken within a week of the original exam date. You can't make up a make-up exam. C. *Final*: If you don't take final exam, you will receive an "F" for the class.
Exam Dates:	Exam 1 –September 30, Exam 2 – November 11 (Fridays) Quizzes: Q1-A26, Q2-S2, Q3-S9, Q4-S16, Q5-S23, Q6-O7, Q7-O14, Q8-O21, Q9-O28, Q10-N4, Q11-N18, Q12-D2 (Fridays) Final Exam: December 13 @ **10:15 AM**(Tuesday)
Important Dates:	▪ August 29, Monday – "W" Withdrawal period begins ▪ September 5, Monday – Labor Day – No Class ▪ October 28, Friday – Last day to drop ▪ November 21, Monday – November 26, Saturday – Thanksgiving Break ▪ December 9, Friday – Last class day
Disruptive Actions:	If your actions become disruptive or distracting for me or another student, you will be asked to cease your behavior. If you choose to continue, you will be asked to leave. Disruptive behavior may include, but are not limited to the following: cell phone use in class, talking during class, and the use of iPods or MP3 players during class. These will count as unexcused absences.

Academic Honesty:	By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to http://www.marshall.edu/academic-affairs/policies/ 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
Free Tutoring:	Free tutoring in Smith Music Hall 115 (10:00-4:00 PM Monday to Thursday and 10:00 to Noon on Friday) and in Smith Hall 620 (5:00 PM-6:30 PM Monday to Thursday).
Disable Students:	The Disabled Student Services web site is now available. You may visit it at http://www.marshall.edu/disabled . Students seeking special accommodations need to follow the university policy detailed at this web site. It is their responsibility to initiate the process for receiving accommodations based upon their disability. If you have any questions or comments, please contact Sandra Clements, the Director of Disabled Student Services.
Coming Late:	Students should come on time and stay in the class for entire class. If you are late by more than 5 minutes, you will be considered to be absent.

Teaching Outline

Week	Sections Covered
1	P.1: The Cartesian Coordinate System P.2: Functions, P.3: Transformations, Quiz #1
2	P.4: Compositions and Inverses 1.1: Angles and Degree Measure 1.2: Radian Measure, Arc Length, and Area, Quiz #2
3	1.3: Angular and Linear Velocity 1.4: The Trigonometric Functions 1.5: Right Triangle Trigonometry, Quiz #3
4	1.6: The Fundamental Identity and Reference Angles 2.1: The Unit Circle and Graphing 2.2: The General Sine Wave, Quiz #4
5	2.3: Graphs of the Secant and Cosecant Functions 2.4: Graphs of the Tangent and Cotangent Functions, Quiz #5
6	3.1: Basic Identities, **Review for Exam 1, Exam 1 on September 30**
7	3.2: Verifying Identities 3.3: Sum and Difference Identities for Cosine, Quiz #6
8	3.4: Sum and Difference Identities for Sine and Tangent 3.5: Double-Angle and Half-Angle Identities, Quiz #7
9	3.6: Product and Sum Identities 4.1: The Inverse Trigonometric Functions, Quiz #8
10	4.2: Basic Sine, Cosine, and Tangent Equations 4.3: Equations involving Compositions, Quiz #9
11	4.4: Trigonometric Equations of Quadratic Type 5.1: The Law of Sines, Quiz #10
12	5.2: The Law of Cosines, **Review for Exam 2, Exam 2 on November 11**
13	5.3: Area of a Triangle/ 5.4: Vectors, Quiz #11
14	November 21, Monday – November 26, Saturday – Thanksgiving Break
15	6.1: Complex Numbers 6.2: Trigonometric Form of Complex Numbers, Quiz #12
16	6.3:Powers of Complex Numbers, **Review for Final on December 13**

Homework Problems

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Section P.1: 1-8, 9, 13, **19**, 21, **24**, **25**, 32, **37**, 49, 51, **56**, 58, 65, 73
Section P.2: 1-6, 7, 9, 12, 17, **21-28**, 29, 47, **55**
Section P.3: **12**, 15, **19**, **27-34**, **35**, **53**
Section P.4: 7, 15, 17, 33, 45, **53**, 57
Section 1.1: **3**, 9, **11**, 19, 25, **29**, 33, 35, **39**, 43, 47, 51, 55-62, **63**, 67, 75, **79**, **97**
Section 1.2: **5**, 7, 13, **17**, 21, 25, 29, **35**, 39, 43, **45**, **55-62**, 65, 71, **83**, 91
Section 1.3: 7, **13**, 17, 21, **25**, 33, 40

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Section 1.4: **5**, 13, **15**, 21, 25, **27**, **33**, 35, **41**, 47, 53, 55, **63**, 69, 83, **95**
Section 1.5: 1-6, **7**, 9, **11**, 13, 15, 17, 19, **23**, 25, 29, **31**, 37, 39, 59
Section 1.6: 3, **5**, **7**, **13**, 17, **19**, 23-33 (**odd**), 35, **37**, 39, 41, **43-54**
Section 2.1: 11, **13**, 17, 24, 27, 29, **31**, 35, 39, **41**, **43**, 47, 51, **55**, 59, **65**, **69**, 71, 81, **87**, **91**, **93**, **99**
Section 2.2: **5**, 9, **11**, 15, 17, **21**, 25, 27, **29**, 31, 41

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Section 2.3: **5**, 11, 13, 15, **21**, 23, **27**, 29, **33**, 37
Section 2.4: **7**, 11, **13**, **19**, 23, **27**, **29**, 35, **37**, 40
Section 3.1: 1-8, **9**, **11**, 13, 15, 17, **19**, **25**, 27, **29**, 31, **36**, 39, **53**, 55, 59, **63**, 71
Section 3.2: 5-14, **15**, 17, 19, **27**, 31, **41**, 43, **45**, 47, **49**, 51, **57**, 65
Section 3.3: 5, **7**, **13**, 15, **17**, **21**, **23**, 25, 27, 29, 31, **33**, 39, 43-50, 59, **61**, 63, **67**, 69, **71**, 75, 77, 81

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Section 3.4: **1**, **5**, 7, 9, **11**, 15, **17**, 21, 25, 27, **29**, 31, 35, 37, **47**, 53
Section 3.5: 1, 5, 7, **9**, 13, **15**, **19**, 20, **25**, 27, **29**, 33, **51**, 57
Section 3.6: 1, **5**, 11, 15, **31**
Section 4.1: 7, **8**, 11, **15**, 21, 29, **31**, 37, **43**, 47, **51**, 57, 65, **75**, **79**, 83, 95, 97, **105**
Section 4.2: **3**, 5, 7, **11**, **15**, 17, 19, 23, **27**, 33, **35**, 39, **55**, 63, 66, 72

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Section 4.3: 1, **3**, 5, 11, **19**, 25, **27**, **39**, 41, 43, **67**, 69
Section 4.4: **1**, 2, **3**, 4, **9**, **11**, 13, **17**, 19
Section 5.1: **5**, 7, **9**, 13, **15**, 16, **27**, 29
Section 5.2: 5, **7**, **9**, 11, **14**, 15, 17, 19, **21**, 23, 37
Section 5.3: **3**, 5, **7**, 9, **11**, **15**, 17, 21, **23**, 25, 28

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Section 5.4: 9, **11**, **15-20**, **21**, 25, 27, **31**, 35, **47**, **55**, 57, 61, 63, 67, 73
Section 6.1: 5, 9, **13**, **17**, 19, 25, 31, 37, 43, **45**, 51, **57**, 65
Section 6.2: **9**, 11, 15, **21**, 25, **29**, 37, **43**, 55, 59
Section 6.3: **3**, 5, **9**, 13, 21

Turn in at least **boldface** problems.
Due dates are Mondays after the Sections are covered.