

7/18/2022

DATE

MSD DIVISION

 REQUIRED COURSE NEW COURSE ELECTIVE COURSE REVISION

Lake Land College

Course Information Form

COURSE NUMBER:		MAT-132		TITLE: (30 Characters Max)		Trigonometry			
SEM CR HRS:	3	Lecture:	3	Lab:	0	ECH:		3	
Course Level:	<input type="checkbox"/> Gen Ed / IAI <input type="checkbox"/> Career/Technical <input checked="" type="checkbox"/> Baccalaureate /Non-IAI <input type="checkbox"/> Dev Ed/ Not in Degree Audit		Clinical Practicum:	0	Work-based Learning:	0	WBL ECH:	0	
COURSE PCS #	11 - 27.0101		IAI Code		Contact Hours (Minutes/Week)				
Repeatable (Y/N):	N	Pass/Fail (Y/N):	N	Variable Credit (Y/N):	N	Min:	Max:	16 Wks: 150, 8 Wks: 300	
Prerequisites:	Placement by assessment or either MAT-129 or MAT-130 with a grade of "C" or higher. Also one year of high school geometry or MAT 009.								
Corequisite	None								
Catalog Description: (40 Word Limit)	Develop the definitions, properties and graphical characteristics of trigonometric functions. Include radian measure, trigonometric identities and equations, solutions of oblique and right triangles and inverse trigonometric functions and polar coordinates. Graphing calculator required.								

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
Basic Trigonometry	26			
Analytic Trigonometry	12			
Additional Topics	7			
TOTAL	45	0	0	0

EVALUATION

QUIZZES <input checked="" type="checkbox"/>	EXAMS <input checked="" type="checkbox"/>	ORAL PRES <input type="checkbox"/>	PAPERS <input type="checkbox"/>
LAB WORK <input type="checkbox"/>	PROJECTS <input type="checkbox"/>	COMP FINAL <input checked="" type="checkbox"/>	OTHER <input type="checkbox"/>

COURSE MATERIALS

TITLE:	Algebra and Trigonometry: Real Mathematics, Real People
AUTHOR:	Ron Larson
PUBLISHER:	Brooks/Cole Cengage Learning
VOLUME/EDITION/URL:	7th
COPYRIGHT DATE:	2016

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		<i>The student will be able to:</i>
Basic Trigonometry		
Measures of Angles	3	1. Demonstrate a working knowledge of how to describe an angle 2. Convert between radian and degree measure 3. Demonstrate the ability to identify a unit circle and its relationship to real numbers 4. Evaluate trigonometric functions of any angles 5. Apply the fundamental trigonometric identities 6. Demonstrate the ability to sketch the graphs of trigonometric functions and translations of graphs of sine and cosine functions 7. Demonstrate the ability to evaluate the inverse trigonometric functions and to evaluate the compositions of trigonometric functions and inverse trigonometric functions 8. Sketch and solve right triangle, using trigonometric functions
Converting degrees to Radians, Radians to Degrees	2	
Basic and Co-function Identities	2	
Trigonometric Functions of Acute Angles	3	
Trigonometric Functions of a Real Variable	3	
Graphs of Trigonometric Functions, Amplitude Vertical Change, Variation and Periodicity	6	
Inverse Trigonometric Functions	4	
Right Triangle Trigonometric Applications	3	
Analytic Trigonometry		
Basic Trigonometric Identities	4	1. Demonstrate the knowledge of how to use fundamental trigonometric identities to evaluate trigonometric functions 2. Simplify trigonometric expressions, to verify trigonometric identities 3. Demonstrate the ability to use sum and difference formulas, double angle formulas and half-angle identities to rewrite and evaluate trigonometric functions 4. Apply standard algebraic techniques and inverse
Use Sum, Difference, Double-Angle, Half-angle Identities, to verify Trigonometric Identities	4	

Trigonometric Equations	4	4. Apply standard algebraic techniques and inverse trigonometric functions to solve trigonometric equations
Additional Topics		
Law of Sines and Cosines and Applications	5	1. Demonstrate an understanding of the Law of Sines and the Law of Cosines 2. Apply them to solve oblique triangles and find the area of oblique triangles
Introduction to Polar Coordinates	2	3. Be able to plot points using polar coordinates and convert between polar and Cartesian coordinates
	45	

Outcomes*	At the successful completion of this course, students will be able to:
Course Outcome	Define and evaluate any trigonometric function at any angle given an input in radian or degree measure
Course Outcome	Graph any of the six trigonometric functions as well as transformations of sine and cosine graphs
Course Outcome	Apply basic trigonometric identities to verify new identities and transform trigonometric expressions
Course Outcome	Find all solutions (and solutions in a specified domain) for a trigonometric equation
Course Outcome	Solve right or oblique triangles, applying the Law of Sines and the Law of Cosines as needed
Course Outcome	Apply inverse trigonometric functions as appropriate and graph inverse trigonometric functions
Course Outcome	Apply the algebraic, trigonometric, and graphing principles learned in this course to solve applications encountered in subsequent math courses
Course Outcome	Apply technology appropriately in problem solving and in exploring and developing mathematical concepts
Program Outcome	
Laker Learning Competency	

*Course and program outcomes will be used in the software for outcomes assessment and should include at least 1 Laker Learning Competency. Limit to 3 - 5.