

1/7/2025

DATE

TEC DIVISION



REQUIRED COURSE

 NEW COURSE

ELECTIVE COURSE

 REVISION

# Lake Land College

## Course Information Form

COURSE NUMBER:	APT-041		TITLE: (30 Characters Max)		Applied Mathematics I						
SEM CR HRS:	3	Lecture:	3	Lab:	0	ECH:		3			
Course Level:	<input type="checkbox"/> Gen Ed / IAI <input type="checkbox"/> Baccalaureate /Non-IAI		<input checked="" type="checkbox"/> Career/Technical <input type="checkbox"/> Dev Ed/ Not in Degree Audit		Clinical Practicum:	0	Work-based Learning:	0	WBL ECH:	0	
COURSE PCS #	12 - 27.0301		IAI Code		N/A		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:	None										
Corequisites:	None										
Catalog Description: (40 Word Limit)	Fundamentals of basic arithmetic, calculator usage, simple equations, word problems, algebra, right triangles, charts and graphs.										

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
Numerical computation	9			
Basic algebra	9			
Simple equation and word problems	12			
Functions and graphs	3			
Geometry	7			
Right triangles	5			
<b>TOTAL</b>	<b>45</b>	<b>0</b>	<b>0</b>	<b>0</b>

### 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:	Technical Mathematics with Calculus
AUTHOR:	Calter
PUBLISHER:	John Wiley & Sons
VOLUME/EDITION/URL:	6th Edition
COPYRIGHT DATE:	2011

MAJOR COURSE SEGMENT	HOURS	LEARNING OUTCOMES
		<i>The student will be able to:</i>
Numerical computation	9	
Real numbers and signs		1. Perform arithmetic operation on signed numbers and approximate numbers.
Calculator usage		1. Perform arithmetic operations, plus powers, roots and reciprocals.
Units conversion		1. Perform computations involving units conversion.
Scientific notations		1. Convert between decimal and scientific notation, substitute into equations.
Order of Operations		1. Perform combined arithmetic operations to obtain a numerical value.
Substitution		1. Substitute given values into formulas.
Percent		1. Solve common percentage problems.
Basic algebra	9	
Algebra expressions		1. Recognize and use constants, variables, symbols for grouping, terms, factors, expressions.
Integral exponents		1. Use law of exponents to simplify and combine expressions containing powers.

Multiplication		1. Add, subtract and multiply the algebraic expressions. 2. develop perfect square trinomial.
Division		1. Use rules and signs and symbols of division, divide a monomial by a monomial.
Simple equations and word problems	12	
First degree equations		1. Solve linear equations and check solution.
Solving word problems		1. Write algebraic expression to describe a verbal statement.
Financial and mixture problems		1. Identify the unknown terms, write the equations, use relationships and percentage.
Statics		1. Calculate the moment of a force, and determine reaction forces on static systems.
Application problems		1. Solve unknowns for work, fluid flow, energy flow and word problems.
Functions and graphs	3	
Graphing		1. Graph points and empirical data in rectangular coordinates.
Slope-intercept		1. Write the equation of a line using slope-intercept form.
Geometry	7	
Transversals		1. Solve practical problems involving transversals.
Triangles		1. Solve practical problems that require finding the sides and angles of triangle.
Area		1. Solve practical problems in which the area of a triangle or quadrilateral must be found.
Circles		1. Solve application problems involving the circumference, diameter and area of a circle or tangent to the circle.
Volumes		1. Compute volumes of solid figures.
Right triangles	5	
Solution of right triangles		1. Use sine, cosine, tangent and the Pythagorean theorem to solve right triangles.
Applications		2. Solve practical problems involving the right triangle.
45		

Outcomes*	At the successful completion of this course, students will be able to:
Course Outcome 1	Convert units of measurement.
Course Outcome 2	Setup and solve simple word problems.
Course Outcome 3	Graph points in rectangular coordinates.
Course Outcome 4	Solve for components of a right triangle.
Primary Laker Learning Competency	Scientific Literacy: Students identify foundational science concepts and apply the scientific process to real-life situations.
Secondary Laker Learning Competency	Quantitative Literacy: Students utilize mathematical knowledge to test claims and hypotheses, perform data analysis and recognize patterns in real-life situations.

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