Lake Land College
Course Information Form

COURSE NUMBER:	APT-043	TITLE: *(30 Characters Max)*		Applied Mathematics III		

SEM CR HRS:	2	Lecture:	2	Lab:	0		ECH:	2

Course Level:	☐ Gen Ed / IAI ☐ Baccalaureate /Non-IAI	☑ Career/Technical ☐ 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	100	8 Wks	200

Prerequisites:	APT-042
Corequisites:	None
Catalog Description: (40 Word Limit)	Familiarizes the student with the concepts of logarithms, analytical geometry, vectors and statistics.

List the Major Course Segments (Units)	Contact Lecture Hours	Contact Lab Hours	Clinical Practicum	Work-based Learning
Radian measure and arc length	2			
Trigonometric graphs	3			
Ratio, proportion and variation	5			
Exponential functions	2			
Logarithms	4			
Straight line and slope	4			
Statistics	10			
TOTAL	30	0	0	0

EVALUATION

QUIZZES ☑	EXAMS ☑	ORAL PRES ☐	PAPERS ☐
LAB WORK ☐	PROJECTS ☐	COMP FINAL ☑	OTHER ☐

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
		The student will be able to:
Radian measure and arc length	2	1. Identify the importance of radian measure. 2. Calculate trigonometric functions of an angle given in radians. 3. Use radian measure to calculate arc length, radius or central angle.
Graphs of trigonometric functions	3	1. Identify and determine amplitude, period, frequency and phase shift of the sine curve. 2. Graph a Sine and Cosine curve.
Ratio, proportion and variation	5	1. Set up and solve a proportion for a missing quantity. 2. Solve applied problems using proportions or the constant of proportionality, including direct variation, inverse variation and power function problems.
Exponential functions	2	1. Solve applied compound interest, exponential growth, exponential decay and exponential growth to an upper limit problem.
Logarithms	4	1. Convert expressions between exponential and logarithmic form. 2. Evaluate common and natural logarithms. 3. Solve logarithmic equations.

Straight line and slope	4	1. Calculate the distance between two points. 2. Find the slope of a line given two points. 3. Determine the slope of a parallel and perpendicular line. 4. Write the equation of a line using slope-intercept form, point-slope form or two-point form.
Statistics	10	1. Identify data as continuous, discrete or categorical. 2. Represent data in different formats (pie charts, bar graphs and stem and leaf plots) 3. Organize data into frequency distributions, frequency histograms, frequency polygons and cumulative frequency distributions. 4. Calculate mean, median, mode, range, variance, and standard deviation. 5. Estimate population means standard deviations, and proportions within a given confidence interval.
	30	

Outcomes*	At the successful completion of this course, students will be able to:
Course Outcome 1	Solve applied problems using proportions or the constant of proportionality.
Course Outcome 2	Graph a sine and cosine curve.
Course Outcome 3	Solve compound interest and exponential decay problems.
Course Outcome 4	Write the equation of a line using slope-intercept form, point-slope form, or two-point form.
Course Outcome 5	Illustrate data in different formats (pie charts, bar graphs, stem and leaf plots).
Course Outcome 6	Calculate mean, median, mode, range, variance, and the standard deviation.
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.