Saint Leo University
MAT 131
College Mathematics

Course Description:
Topics include critical thinking, number theory, measurement, percentages, geometry, counting methods, probability, and statistics. Offered every semester.

Prerequisite:
None

Textbooks:

1. White, J. & White, S., College Mathematics: Combining Values and Critical Thinking to Solve Problems Amazon CreateSpace. ISBN# 9781986536059
2. Blitzer, Thinking Mathematically (0232/2048 Saint Leo -CUSTOM) (7th edition). New York: Pearson Custom. ISBN# 9781323911839

(Note: This custom package contains both the eBook and MyMathLab access. As this is a Direct Digital Access package integrated within the course, no access code is required)

The custom package above was created from the following national text and resources:
Blitzer, Robert. Thinking Mathematically. (7th Ed.) Pearson Education, Incorporated. ISBN# 9780134683713

MyMathLab for Blitzer, Thinking Mathematically. (7th Ed.)

Learning Outcomes:
Students will be able to:

1. Students will be able to calculate the measurements of basic geometric figures including angles, perimeter, area, and volume as demonstrated on problem sets, quizzes, projects and tests
2. Students will be able to represent and communicate basic measurements using multiple scales and systems, including distance, area, volume, weight, and temperature, with English and Metric systems using appropriate grammar, syntax, and formatting when communicating as demonstrated on problem sets, quizzes, and tests. CC1.3
3. Students will be able to support conclusions and express patterns as well as solve real world problems using mathematical reasoning including inductive and deductive reasoning as demonstrated on problem sets, quizzes, and tests.QS1.3
4. Students will be able to express numbers in multiple forms, including fraction, decimal, percent, and word form, and manipulate them with basic arithmetic operations as demonstrated on problem sets, quizzes, and tests
5. Students will be able to determine the number of ways outcomes can occur, and the probability of them occurring including both Theoretical and Empirical Probability where

Empirical probability is interpreting data presented in tables, as demonstrated on problem sets, quizzes, and tests. QS1.2

6. Students will demonstrate basic skills in Statistics by organizing and summarizing data in table, graph, and numeric forms including central tendency and dispersion as demonstrated on problem sets, quizzes, projects and tests. QS1.1
7. Students will correctly solve problems and through discussion they will illustrate how those solutions enhance the value of Community.

Evaluation:

This course will require each student to submit completed problems at the end of selected chapters for evaluation and to take tests/quizzes associated with that application.

Evaluation Type	Percentage Break down	Total Percentage
Discussions	8 @ 1%	8%
Problem Sets	7 @ 2%	14%
Quizzes	4 @ 2%	8%
Exams	4 @ 11.25%	45%
Final Exam	1 @ 25%	25%

Assessment of the Learning Outcomes:

The following distribution will be used in assigning grades (decimal points will be rounded to the nearest whole number at semester's end):

Grade		Percentage
A	Exceptional	94% to 100%
A-	Superior	90% to 93%
B+	Excellent	87% to 89%
B	Very Good	84% to 86%
B-	Good	80% to 83%
C+	Above Average	77% to 79%
C	Average	74% to 76%
C-	Below Average	70% to 73%
D+	Marginal	67% to 69%

D	Poor	60% to 66%
F	Failure	Below 60%

Course Schedule:

Module 1 Critical Thinking

Objectives When you complete this module, you should be able to:

- Use Inductive and Deductive Reasoning
- Use estimation techniques to approximate a problem, interpret graphical information, and develop mathematical models
- Solve problems using the organization of the four-step problem-solving process

Readings Thinking Mathematically Chapter 1, sections 1-3

Assignments

Items to be Completed:	Due No Later Than:
Post an introduction to the class	Thursday 11:59 PM EST/EDT
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Complete Problem set	Sunday 11:59 PM EST/EDT

When you complete this module, you should be able to:

Module 2 Measurement

Objectives

- Express numbers in fraction, decimal, and percent form and use these numbers to calculate percent increase, decrease, and percent problems.
- Change units of measure for length, area, volume and weight within the English measurement system, within the Metric system, and between the English and Metric systems.
- Use Temperature scales.

Readings Thinking Mathematically Chapter 8
Thinking Mathematically Chapter 9, sections 1-3

Assignments

Items to be Completed:	Due No Later Than:
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Complete Problem set	Sunday 11:59 PM EST/EDT
Practice Quiz	Sunday 11:59 PM EST/EDT
Quiz 1	Sunday 11:59 PM EST/EDT
Complete MyLab Math Exam 1	Sunday 11:59 PM EST/EDT

Module 3 Geometry Basics

Objectives When you complete this module, you should be able to:
- Use points, lines, planes, angles, triangles, polygons and tessellations
- Solve problems related to angles and geometric figures

Readings Thinking Mathematically Chapter 10, section 1-3

Assignments

Items to be Completed:	Due No Later Than:
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Complete Problem set	Sunday 11:59 PM EST/EDT

When you complete this module, you should be able to:

Module 4 Geometry

Objectives

- Use formulas to compute the area of plane regions, circles, and circumference of a circle.
- Use formulas to compute volume and surface area of three dimensional figures and solve problems using these concepts.

Readings Thinking Mathematically Chapter 10, section 4-5

Assignments

Items to be Completed:	Due No Later Than:
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Complete Problem set	Sunday 11:59 PM EST/EDT
Quiz 2	Sunday 11:59 PM EST/EDT
Complete MyLab Math Exam 2	Sunday 11:59 PM EST/EDT

Module 5 Counting Methods & Fundamental of Probability

Objectives When you complete this module, you should be able to:

- Apply the Fundamental Counting Principle, permutations, and combinations to determine the number of possible outcomes in a given situation and solve problems involving these concepts
- Compute theoretical and empirical probability

Readings Thinking Mathematically Chapter 11, section 1-4

Assignments

Items to be Completed:	Due No Later Than:
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Complete Problem set	Sunday 11:59 PM EST/EDT

When you complete this module, you should be able to:

Module 6 Probability Theory

Objectives

- Find the probability of one event, and/or a second event, an event not occurring, and conditional probabilities.
- Calculate odds.
- Compute and use expected value.

Readings Thinking Mathematically Chapter 11, section 5-8

Assignments

Items to be Completed:	Due No Later Than:
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Complete Problem set	Sunday 11:59 PM EST/EDT
Practice Quiz	Sunday 11:59 PM EST/EDT
Quiz 3	Sunday 11:59 PM EST/EDT
Complete MyLab Math Exam 3	Sunday 11:59 PM EST/EDT

When you complete this module, you should be able to:

Module 7 Introduction to Statistics

Objectives

- Describe populations, select an appropriate sample, organize and present data.
- Determine measures of central tendency

Readings Thinking Mathematically Chapter 12, section 1-3
Determine measures of dispersion

Assignments

Items to be Completed:	Due No Later Than:
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Complete Problem set	Sunday 11:59 PM EST/EDT

When you complete this module, you should be able to:

Module 8 Statistics

Objectives

- Statistically analyze a set of data

Readings none

Assignments

Items to be Completed:	Due No Later Than:
Post an introduction to the class	Thursday 11:59 PM EST/EDT
Post an initial response to the discussion question	Thursday 11:59 PM EST/EDT
Post responses to at least two classmates	Sunday 11:59 PM EST/EDT
Practice Quiz	Sunday 11:59 PM EST/EDT
Quiz 4	Sunday 11:59 PM EST/EDT
Practice Final Exam	Sunday 11:59 PM EST/EDT
Cumulative Final Exam	Sunday 11:59 PM EST/EDT