Math 0997• Support for Quantitative Reasoning

(2 credit hours)

Mathematics Department
College of Science and Mathematics
Valdosta State University

Pre-requisites: No Prerequisites. Must be taken concurrently with MATH 1001.

Required Text: 'Viewing Life Mathematically' (2nd Edition): Hawkes Learning (Available through Day One in BlazeVIEW in MATH 1001 course)

Required Resources: Scientific calculator

Course Description: This course emphasizes quantitative reasoning skills needed for informed citizens to understand the world around them. Topics include logic, proportional reasoning, basic probability, data analysis, and modeling from data with the appropriate use of technology.

***NOTE: Learning outcomes, education outcomes, and course outline are the same as for MATH 1001. MATH 0997 by itself does not cover these topics per se but serves as support for students who are taking MATH 1001.

Student Learning Outcomes:

bly using symbolic, visual, numerical, or verbal

s of inference and develop strategies for solving

Day 1 Program:

Valdosta State University is participating in a textbook program called Day 1. We are part of a pilot program testing a new learning platform, so everyone enrolled in our course will automatically have access to the digital course materials for free.

Course Outline (based on class meeting three times a week):

Chapter/Section	Topics	Suggested Days
1.1, 1.2, 1.3	Thinking Mathematically Estimating and Evaluating Problem Solving	3-4
2.1, 2.2, 2.3, 2.4	Set Notation Subsets and Venn Diagrams Operations with Sets Applications and Survey Analysis	4-4
4.1, 4.2, 4.3, 4.4, 4.5	Proportions, Percentages, and Ratios Using Percentages Rates, Unit Rates, and Rates of Change Using Rates for Dimensional Analysis Proportionality	5-6
5.1, 5.2, 5.3	Linear Equations and Functions Linear Modeling Solving Linear Systems of Equations in Two Variable	3-4
6.1, 6.2, 6.3, 6.4, 6.5	Understanding Interest Saving and Investing Borrowing Money Federal Revenue Budgeting	5-6
7.4, 7.5 9.1, 9.2	The Metric System Converting Between the US and Metric Systems Two-	2-3

Optional Sections (to be chosen from at instructor's discretion):		
3.1	Logic Statements and Their Negations	
3.2	Truth Tables	
3.3	Logical Equivalence and De Morgan's Laws	
3.4	Valid Arguments and Fallacies	
5.4	Linear Inequalities in Two Variables	
5.5	Linear Programming	
5.6	Modeling with Quadratics	
5.7	Exponential and Logarithmic Functions	
7.1	Numerical Systems Based on Position	
7.2	Early Numeral Systems	
7.3	Working with Base Number Systems	
8.1	Prime Numbers	
8.2	Modular Arithmetic	
9.3	Angles and Trigonometry	
10.5	Binomial Probability	6-14 days
10.6	Expected Value	
11.4,	The Normal Distribution	
11.5	Confidence Intervals	
12.1	The Science of Data	
12.2	Data Wrangling	
12.3	Data Exploration	
12.4	Data Storytelling	
13.1	How to Determine a Winner	
13.2	Flaws in Voting Methods	
13.3	Apportionment	
13.4	Weighted Voting Systems	
14.1	Introduction to Graph Theory	
14.2	Trees	
14.3	Matchings	
14.4	Planar Graphs	