Miami Dade College

MGF 1107 **MATHEMATICS FOR LIBERAL ARTS 2**

Course Description: The student will learn the concepts of financial mathematics, linear and exponential growth, numbers and number systems, history of mathematics, elementary number theory, voting techniques, and graph theory. Prerequisite: Course, placement score, or eligible exemption). Fulfills Gordon Rule computational requirement.

Course Competency	Learning Outcomes
Competency 1: The student will demonstrate knowledge of Financial Mathematics by:	Information Literacy Social Responsibility Communication Critical thinking Numbers / Data
1. Differentiating between simple and compound interest 2. Computing the present and future value of lump sums or streams of payments 3. Constructing amortization schedules and computing payments on installment loans 4. Utilizing the coordinate plane to graph relationships 5. Differentiating between linear and exponential growth 6. Developing models of population growth using linear and exponential growth concepts	
Competency 2: The student will demonstrate knowledge of numbers and number systems by:	Information Literacy Critical thinking Numbers / Data
1. Describing what a number system is and what its function is 2. Describing the evolution of the real number system	

3. Converting numbers written in one base to another	
Competency 3: The student will demonstrate knowledge of the History of Mathematics by:	Numbers / Data Cultural / Global Perspective Social Responsibility Information Literacy Communication Aesthetic / Creative Activities Critical thinking Computer / Technology Usage
1. Presenting some of the important events and personalities in the history of mathematics	
Competency 4: The student will demonstrate knowledge of Elementary Number Theory by:	Information Literacy Numbers / Data Critical thinking
1. Applying the properties of the integers and their structure in relation to the prime numbers 2. Computing the least common multiple and greatest common factor of two numbers using the Euclidean Algorithm 3. Performing operations with modular arithmetic	
Competency 5: The student will demonstrate knowledge of Voting Techniques by:	Critical thinking Communication Social Responsibility Numbers / Data Ethical Issues Cultural / Global Perspective Information Literacy
1. Distinguish between plurality, Borda Count, plurality with elimination and pairwise comparison voting methods	

2. Stating what reasonable criteria a voting method must have 3. Determining the flaws in a voting method 4. Determining winning conditions	
Competency 6: The student will demonstrate knowledge of Graph Theory by:	Critical thinking Communication Numbers / Data Social Responsibility Information Literacy
1. Knowing the terminology of graph theory 2. Using graphs to model relationships of sets of objects 3. Applying Euler's Theorem to solve problems 4. Using Fleary's Algorithm to find Euler Circuits 5. Solving routing problems by using graph Eulerization	

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