Math 121 Introduction to Mathematics

Credit Hours: 3

Scheduled hours per week
        Lecture: 3
        Lab: 0
        Other: 0

Catalog Course Description: A survey of mathematical topics including Euclidean geometry, set theory, number theory, numeration, techniques of problem solving, probability and statistics, and the history of mathematics.

Pre-requisites: None

Co-requisites: None

Course learning Outcomes:
    1.   Students will demonstrate the ability of problem solving which includes Polya's four step process, use of multiple strategies, recognizing number patterns and use of inductive and deductive reasoning.
    2.   Students will demonstrate understanding of set theory which includes being able to perform set operations, construction and use of Venn diagrams, and an understanding of infinite sets.
    3.   Students will demonstrate understanding of numeration which includes the positional place value system, working with bases other than ten, and understanding of modular systems.
    4. Students will demonstrate understanding of the basic concepts of number theory which includes LCD, GCF, primes and composites, prime factorization, fundamental theorem of arithmetic, and divisibility.
    5. Students will demonstrate understanding of Euclidean geometry which includes knowledge of a mathematical system, ability to do geometric constructions with a compass and straightedge, understanding of Euclidean geometry in the plane, and understanding of Euclidean geometry spatial figures.
    6. Students will demonstrate knowledge of mathematical history.

Topics to be studied:

Number patterns	Infinite sets
Number sequences	Place value
Problem solving	Bases other than ten
Set notation	Modular systems
Set operations	Divisors
Cardinality of sets	LCM
Venn diagrams	GCF
Set equivalence	Prime numbers
Sets of Numbers	Fundamental theorem of Arithmetic
Point, line, plane	
Rays	

Angles
Angle measuring systems
Triangles
Quadrilaterals
Polygons
Circles
Geometric constructions
Prisms
Pyramids
Cylinders
Spheres

Relationship of Course to Program or Discipline Learning Outcomes:
 (What program outcomes are being met by this course?
For general education courses, a listing of the general education competencies that are met.)

Relationship of Course to Mathematics (MATH) Student Learning Outcomes:	
Demonstrate understanding of the language of mathematics, by their use of symbols, definitions, word phrases, and representations.	x
Display proficiency in mathematical computations.	x
Implement mathematical techniques to solve applied problems.	x
Employ appropriate technology to demonstrate knowledge of mathematical concepts.	x
Exhibit mastery of core course competencies.	x
10/20/2017	

Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	x
Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	
The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
5/3/2016	

Special requirements of the course:
Students will research and write a biographical sketch of a mathematician with an emphasis on who influenced them and who in turn they influenced.

Additional information: None

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