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| **PROFESSOR:**        | **PHONE NUMBER:**        |
| **OFFICE LOCATION:**        | **E-MAIL:**        |
| **OFFICE HOURS:**        | **SEMESTER:**        |

1. **COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:**

**MGF 1113 MATHEMATICS FOR TEACHERS (3 CREDITS)**

This course will help students to achieve the National Council of Teachers of Mathematics

Curriculum standards for grades K-5. Mathematical reasoning, problem solving, geometrical concepts, and connections are a central focus in this course. This course provides an introduction to problem-solving, sets and numeration, whole numbers, integers, rational numbers, geometric shapes, and measurement and geometry.

Credit is not given for both MGF 1113 and MGF 1106.

1. **PREREQUISITES FOR THIS COURSE:**

MAT 1033 or MAT 1100 with a “C” or better, or an appropriate placement score.

**CO-REQUISITES FOR THIS COURSE:**

None

1. **GENERAL COURSE INFORMATION:** Topic Outline.

• Introduction to Problem Solving

• Introduction to Logic and Sets

• Numeration Systems and Whole Number Operations

• Elements of Number Theory

• Integers

• Rational Numbers, Proportional Reasoning, and Decimals and Percents

• Real Numbers and Algebraic Thinking

• Basics of Probability

• Basic Elements of Statistics and Data Analysis

• Introductory Plane Geometry

• Applications of Geometric Concepts: Area, Pythagorean Theorem and Volume

1. **All courses at Florida SouthWestern State College contribute to the general education program by meeting one or more of the following general education competencies:**

**C**ommunicate clearly in a variety of modes and media.

**R**esearch and examine academic and non-academic information, resources, and evidence.

**E**valuate and utilize mathematical principles, technology, scientific and quantitative data.

**A**nalyze and create individual and collaborative works of art, literature, and performance.

**T**hink critically about questions to yield meaning and value.

**I**nvestigate and engage in the transdisciplinary applications of research, learning, and knowledge.

**V**isualize and engage the world from different historical, social, religious, and cultural approaches.

**E**ngage meanings of active citizenship in one’s community, nation, and the world.

**A.**  **General Education Competencies and Course Outcomes**

Listed here are the course outcomes/objectives assessed in this course which play an integral part in contributing to the student’s general education along with the general education competency it supports.

1.  Integral *General Education Competency or competencies*: **Evaluate**

 Course Outcomes or Objectives Supporting the General Education Competency Selected:

* Examine solutions provided by elementary-age students, determine the mathematical principles creating their errors, and create a plan to assist the students correct their mistakes.

2.  Supplemental General Education Competency or competencies: Communicate

* Analyze a proposed problem and provide multiple methods of determining and communicating a solution to the problem.

**B. Other Course Objectives/Standards**

* Solve a variety of problems requiring critical thinking
* Discuss the difference between necessary and sufficient
* Determine the validity of an argument by using Euler diagrams
* Write the negation of quantitative logic statements
* Determine the cardinality of a set
* List all possible subsets of a given set
* Perform the operations of union, intersection and/or negation on two or more unique sets
* Analyze and create Venn diagrams
* Distinguish among the elements of the subsets of the real numbers
* Convert between and perform operations within multiple base number systems to include the base-ten number system
* Design multiple methods of demonstrating basic operations on whole numbers, integers and fractions
* Identify numbers with special properties from number theory such as prime, composite, Fibonacci, odd, even, multiples and factors
* Provide multiple representations of fractions, decimals and percentages
* Demonstrate proportional reasoning including its application to similar geometric figures
* Discuss the density of the real number line
* Create visual representations of irrational numbers through the use of the Pythagorean theorem
* Convert numbers between standard form and scientific notation, and determine appropriate settings for using scientific notation
* Design a variety of methods of solving basic algebraic equations
* Demonstrate the meaning of raising a numeric value to both positive and non-positive exponents
* Determine the probability of a simple and a conditional event
* Evaluate situations best suited for mean, median or mode
* Interpret the standard deviation in the context of a set of data
* Create and analyze various displays of statistical data including scatter plots
* Distinguish among basic shapes from plane geometry
* Identify the relationships between angles and parallel lines, and angle measures and convex polygons
* Calculate the area and volume of two-dimensional and three-dimensional geometric figures, respectively, and determine an appropriate unit of measurement
* Given measurement equivalencies, convert units of measure through the use of dimensional analysis
1. **DISTRICT-WIDE POLICIES:**

**Programs for Students with Disabilities**

Florida SouthWestern State College, in accordance with the Americans with Disabilities Act and the College’s guiding principles, offers students with documented disabilities programs to equalize access to the educational process. Students needing to request an accommodation in this class due to a disability, or who suspect that their academic performance is affected by a disability should contact the Office of Adaptive Services at the nearest campus. The office locations and telephone numbers for the Office of Adaptive Services at each campus can be found at <http://www.fsw.edu/adaptiveservices>.

**REPORTING TITLE IX VIOLATIONS**

Florida SouthWestern State College, in accordance with Title IX and the Violence Against Women Act, has established a set of procedures for reporting and investigating Title IX violations including sexual misconduct.  Students who need to report an incident or need to receive support regarding an incident should contact the Equity Officer at equity@fsw.edu.  Incoming students are encouraged to participate in the Sexual Violence Prevention training offered online.  Additional information and resources can be found on the College’s website at <http://www.fsw.edu/sexualassault>.

1. **REQUIREMENTS FOR THE STUDENTS:**

List specific course assessments such as class participation, tests, homework assignments, make-up procedures, etc.

1. **ATTENDANCE POLICY:**

The professor’s specific policy concerning absence. (The College policy on attendance is in the Catalog, and defers to the professor.)

1. **GRADING POLICY:**

Include numerical ranges for letter grades; the following is a range commonly used by many faculty:

90 - 100 = A

80 - 89 = B

70 - 79 = C

60 - 69 = D

Below 60 = F

(Note: The “incomplete” grade [“I”] should be given only when unusual circumstances warrant. An “incomplete” is not a substitute for a “D,” “F,” or “W.” Refer to the policy on “incomplete grades.)

1. **REQUIRED COURSE MATERIALS:**

(In correct bibliographic format.)

1. **RESERVED MATERIALS FOR THE COURSE:**

Other special learning resources.

1. **CLASS SCHEDULE:**

This section includes assignments for each class meeting or unit, along with scheduled Library activities and other scheduled support, including scheduled tests.

1. **ANY OTHER INFORMATION OR CLASS PROCEDURES OR POLICIES:**

(Which would be useful to the students in the class.)