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

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

**MAC 1105 COLLEGE ALGEBRA (3 CREDITS)**

Topics include linear, quadratic, rational, radical, exponential, and logarithmic functions. Graphing and applications are emphasized. If completed with a grade of “C” or better, this course serves to demonstrate competence for the general education mathematics requirement. Credit is not given for both MAC 1105 and MAC 1106.

1. **PREREQUISITES FOR THIS COURSE:**

Testing, or (MAT 0057 with a grade of “A”), or (MAT 1033 with a grade of a “C” or better), or (MGF 1106 with a grade of "B" or better), or (MGF 1107 with a grade of “B” or better)

**CO-REQUISITES FOR THIS COURSE:**

None

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

• Functions and functional notation

• Domains and ranges of functions

• Graphs of functions and relations

• Operations on functions

• Inverse functions

• Linear, quadratic, and rational functions

• Absolute value and radical functions

• Exponential and logarithmic properties, functions, and equations

• Systems of equations and inequalities

• Applications (such as curve fitting, modeling, optimization, exponential and logarithmic growth and decay)

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**

1. Listed here are the outcomes/objectives assessed in this course which play an integral part in the student’s general education along with the general education competency they support.

  General Education Competency: **Evaluate**

Course Outcomes or Objectives Supporting the General Education Competency Selected:

* Analyze and interpret a function numerically, graphically, and algebraically

**B. In accordance with Florida Statute 1007.25 concerning the state’s general education core course requirements, this course meets the general education competencies for *mathematics*.**

* Students will determine appropriate mathematical and computational models and methods in problem solving, and demonstrate an understanding of mathematical concepts.
* Students will apply appropriate mathematical and computational models and methods in problem solving.

**C.** **Other Course Objectives/Standards**

* Use set builder and interval notation to express the domain and range of a function defined graphically and defined algebraically.
* Evaluate graphically and algebraically defined functions, including piecewise-defined functions.
* Perform operations on functions, including compositions and difference quotients.
* Evaluate and interpret the slope and y-intercept of a line, both analytically and graphically.
* Interpret slope as a rate of change in real world scenarios.
* Construct the equation of a line using a point and the slope or two points.
* Determine the distance between two points and the midpoint of a line segment.
* Apply the Pythagorean Theorem to real world examples.
* Graph relations and functions and classify which relations are functions.
* Starting with functions represented graphically or in basic algebraic form use transformation techniques to construct formulas and/or graphs of related functions.
* Determine and defend whether a function is one-to-one, and if so, find its inverse algebraically and/or graphically.
* Determine the defining properties of linear, quadratic, rational, radical, absolute value, exponential, and logarithmic functions and use those properties to sketch their graphs.
* Determine the optimum value (maximum or minimum) of a quadratic function.
* Determine appropriate values for logarithmic and exponential expressions.
* Solve exponential and logarithmic equations by applying the properties of logarithms and exponents.
* Solve systems of linear and non-linear equations by determining and applying appropriate techniques which include elimination, substitution, and graphing.
* Graph the solution to systems of inequalities.
* Analyze, determine, and implement mathematical models required to solve application problems.

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](mailto: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.)