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

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

**MAC 1147 PRE-CALCULUS, ALGEBRA, TRIGONOMETRY (5 CREDITS)**

The course is designed for students with strong mathematical backgrounds who need a refresher course before beginning the Calculus sequence. Topics covered are a combination of topics from MAC 1140 and MAC 1114. 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 MAC1147 and MAC1114, or for both MAC1147 and MAC1140.

1. **PREREQUISITES FOR THIS COURSE:**

MAC 1105 with a minimum grade of “B,” or appropriate CLM Score and high school trigonometry

**CO-REQUISITES FOR THIS COURSE:**

None

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

• Polynomial, rational and other algebraic functions, their properties and graphs

• Polynomial and rational inequalities

• Exponential and logarithmic functions, their properties and graphs

• Piece-wise defined functions

• Conic sections

• Matrices and determinants

• Sequences and series

• Mathematical induction

• The binomial theorem

• Trigonometric functions, their properties and graphs

* Inverse trigonometric functions, their properties and graphs

• Trigonometric identities

• Conditional trigonometric equations

• Solutions of triangles

• Vector algebra

• Parametric equations

• Polar coordinates

• Applications

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 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.

General Education Competency: **Evaluate**

Course Outcomes or Objectives Supporting the General Education Competency Selected:

* + Polynomial, rational and other algebraic functions, their properties and graphs
  + Evaluate trigonometric and inverse trigonometric functions.
  + Solve polynomial and rational inequalities.
  + Perform matrix operations, evaluate inverses and determinants, and use the results to solve systems of linear equations.

**2.  Listed here are the course outcomes/objectives assessed in this course which play a *supplemental* role in contributing to the student’s general education along with the general education competency it supports.**

General Education Competency: **Analyze**

Course Outcomes or Objectives Supporting the General Education Competency Selected:

* Analyze and sketch the graphs of polynomial and rational functions, including determining any asymptotes, intercepts and other critical values both algebraically and using technology.
* Analyze and sketch the graphs of exponential and logarithmic functions.
* Apply appropriate mathematical properties to graph and interpret continuous and piece-wise functions.
* Use multiple approaches to solve systems of linear and non-linear equations and compare and contrast those approaches.
* Analyze sequences and series using patterning, formulas, and/or technology and extend these concepts to the use of mathematical induction and the binomial theorem.

B**.** **Other Course Objectives/Standards**

At the conclusion of this course, students will be able to demonstrate the following competences:

* Sketch a curve that is represented by a set of parametric equations
* Graph polar equations and convert points and equations from polar form to rectangular form and vice versa
* Perform basic vector operations including the dot product.
* Select and apply appropriate fundamental trigonometric identities, including double angle, half-angle, or sum or difference identities to solve trigonometric equations and to prove trigonometric identities
* Solve right triangles using definitions of the trigonometric functions and solve oblique triangles using the Law of Sines and the Law of Cosines.
* Solve trigonometric equations.
* Graph trigonometric functions and their inverses both analytically and using a graphing utility.

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.)