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

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

**MAC 2312 CALCULUS WITH ANALYTIC GEOMETRY II (4 CREDITS)**

This course presents differentiation and integration of trigonometric and hyperbolic functions, special techniques of integration, improper integrals, sequences, infinite series, and analytic geometry in three-dimensional space. If completed with a grade of “C” or better, this course serves to demonstrate competence for the general education mathematics requirement.

1. **PREREQUISITES FOR THIS COURSE:** MAC 2311 with minimum grade of “C” or permission of instructor

**CO-REQUISITES FOR THIS COURSE:** None

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

• Inverse Functions

• Differentiation of Transcendental Functions

• Area and the Definite Integral

• Arc Length

• Techniques of Integration

• Limits

• Taylor’s Formula, Infinite Sequences and Series

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:

* Students will be able to select and apply an appropriate integration technique from among basic integration, *u*-substitution, integration by parts, trigonometric substitution, partial fraction decomposition, and the use of tables.

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

General Education Competency: **Think**

Course Outcomes or Objectives Supporting the General Education Competency Selected:

* Students will be able to select and apply an appropriate method from among disk, washer and shell to determine the volume of a solid of revolution.

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

* Students will be able to apply inverse trigonometric, hyperbolic and inverse hyperbolic patterns to differentiate and integrate functions.
* Students will be able to determine the area of a region between two curves by using integral calculus.
* Students will be able to construct a definite integral to find arc length.
* Students will be able to calculate the work done by applying a constant force and use methods of calculus to determine the work done by applying a variable force.
* Students will be able to solve separable differential equations.
* Students will be able to evaluate limits of indeterminate forms by applying L’Hopital’s Rule.
* Students will be able to determine the convergence or divergence of an improper integral, and evaluate improper integrals that converge.
* Students will be able to select and apply an appropriate test to determine the convergence or divergence of various types of sequences and series.
* Students will be able to find the exact or approximate sum of various convergent series.
* Students will be able to determine the radius and interval of convergence of a power series.
* Students will be able to construct Taylor and Maclaurin polynomials and series.
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.)