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

# COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:

## MAC 2233 Calculus for Business and Social Sciences I (4 Credits)

This course is designed for students in business and related studies that need calculus but not trigonometry. Included is a review of equations and inequalities and their applications, functions and graphs, exponential and logarithmic functions. Major topics include mathematics of finance limits and continuity, differentiation and integration and applications of these. If completed with a grade of “C” or better, this course serves to demonstrate competence for the general education mathematics requirement.

## PREREQUISITES FOR THIS COURSE:

{MAC 1105 or MAC 1106 or MAC 1140} with a minimum grade of “C,” or appropriate CLM score

### CO-REQUISITES FOR THIS COURSE:

None

## GENERAL COURSE INFORMATION:

Topic Outline

Limits

Differentiation of algebraic, logarithmic, and exponential functions

Introduction to integration with applications

Applications to business and the social sciences

## 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:

Use the Fundamental Theorem of Calculus to evaluate a definite integral by hand and by using a graphing utility and apply to consumer and producer surplus, average value of a function, and the area between two curves and other real-world problems.B. Other Course Objectives/Standards

Calculate limits and test continuity using algebra, limit theorems, graphs, and tables of data.

Apply the definition of a derivative, or appropriate rules of differentiation to find the derivative of algebraic, logarithmic, and exponential functions.

Calculate and interpret the slope of a tangent line and the instantaneous rate of change using the derivative and extend to other problems in mathematics, business, and the social and life sciences.

Create mathematical models for cost, revenue, profit, and price functions and use these functions to find and interpret the marginal revenue, marginal cost, and marginal profit functions.

Analyze the first and second derivatives of a function to determine critical numbers, inflection points, intervals on which the function increases and decreases, and concavity for a function; and sketch the graph of the function using this information.

Apply derivative concepts to optimization, price elasticity of demand, point of diminishing returns and relative rate of change and interpret the results.

Use exponential growth and decay to model real world situations such as compound interest.

Find an antiderivative by applying basic integration rules and techniques, including finding the particular solution when given the initial condition.

## 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 <https://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 <https://www.fsw.edu/sexualassault>.

## REQUIREMENTS FOR THE STUDENTS:

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

## ATTENDANCE POLICY:

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

## GRADING POLICY:

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

| **Grade Percent** | **Letter Grade** |
| --- | --- |
| 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.)

## REQUIRED COURSE MATERIALS:

(In correct bibliographic format.)

## RESERVED MATERIALS FOR THE COURSE:

Other special learning resources.

## CLASS SCHEDULE:

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

## ANY OTHER INFORMATION OR CLASS PROCEDURES OR POLICIES:

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