

Columbus State Community College Mathematics Department Syllabus

Course and Number: MATH 1131 – Calculus for Business

Credits: 6

Class Hours Per Week: 6

Prerequisites: MATH 1130 with a “C” or better

COURSE DESCRIPTION: An introduction to calculus: limits, continuity, derivatives, rules of differentiation, derivatives of logarithmic and exponential functions, derivative as a limit, slope, and rate of change, increasing and decreasing, extrema, concavity, points of inflection, antiderivatives, definite integrals, area, fundamental theorem of calculus, techniques of integration, differential equations, functions of several variables, partial derivatives. Business applications throughout.

SPECIAL COURSE REQUIREMENTS: None

COURSE GOALS: To help students develop the critical thinking ability and the mathematical knowledge and competence that will allow them to be successful in business or business related courses that use Calculus

GENERAL EDUCATION GOALS: This course addresses the following Columbus State general education goals:

- Critical Thinking
- Quantitative Skills

TEXTBOOK, MANUALS, REFERENCES, AND OTHER REQUIRED MATERIALS:

- College Mathematics for Business, Economics, Life Sciences, and Social Sciences, 14th Ed., by Barnett, Ziegler, Byleen, and Stocker (ISBN#: 987-0-13-579875-1). This book will have a MML component which will include several sections from Algebra & Trigonometry Enhance with Graphing Utilities, 7th Ed., by Sullivan and Sullivan.
- **This course has a MyMathLab (MML) homework system shell. Goto the MyMathLab website: <https://mlm.pearson.com/northamerica/mymathlab/> . Register as an educator if you do not have an account or sign in. Create your MML course shell by copying the shell having Course ID **nedel21250** .**
- A Texas Instruments’ TI-83, TI-83PLUS, TI-84, or TI-84 PLUS Graphing Calculator is REQUIRED. The Columbus State Bookstore has calculators for sale at very competitive prices. Note: Graphing calculators such as the TI-89 and TI-92 that perform symbolic manipulations are not allowed.

A video detailing the use of the graphing calculator is available at:

<http://www.csc.edu/academics/departments/math/graphing-calculator.shtml>

This video should be viewed by anyone using the graphing calculator for the first time.

UNITS OF INSTRUCTION:

Represents sections of the book *College Mathematics for Business, Economics, Life Sciences, and Social Sciences*, 14th Ed., by Barnett, Ziegler, Byleen, and Stocker,

- Limits and Continuity (Sec. 9.1, 9.2, 9.3)
- Differentiation (Sec. 9.4, 9.5, 9.7)
- Additional Differentiation Topics (Sec. 10.1, 10.2, 10.3, 10.4, 10.5)
- Extremas of Functions (11.1, 11.2, 11.5, 11.6)
- Integration (Sec. 9.6, 12.1, 12.2, 12.3, B1, 12.4, 12.5, 13.1, 13.2, 13.3)
- Multivariable Calculus (14.1, 14.2, 14.3, 14.4)

GENERAL INSTRUCTIONAL METHODS: Lecture, discussion, demonstration, exploration and discovery exercises with the use of visual aids, graphing calculators, and/or computer resources.

STANDARDS AND METHODS FOR EVALUATION:

Final Exam = 20% to 25% of course grade

Required Midterm Exam = 20% to 25% of course grade and must equal in percentage to the final exam

The remainder of the grade is to be determined by the instructor, subject to the following departmental policies:

- Award **NO CREDIT** for attendance and/or class participation.
- Award **NO CREDIT** for assignments that are checked for completion, but not graded for accuracy. (i.e. giving points for doing homework, but not grading the problems for correct answers.)
- At least 70% of the course grade must be determined using closed-book, proctored, individual assessments (standard tests and quizzes). Eliminate extra credit assignments, or limit them to no more than 2% of the overall grade for the course.

GRADING SCALE:

Letter grades for the course will be awarded using the following scale:

≥ 90% - A 80-89% - B 70-79% - C 60-69% - D < 60% - E

Grades will not be curved, skewed, or otherwise inflated.