Columbus State Community College
Mathematics Department Syllabus

Course and Number: MATH 1130 – Business Algebra  Credits: 5  Class Hours Per Week: 5
Prerequisites: MATH 1075 with a “C” or better, or placement by MATH 1099 or COMPASS or ACT test.

COURSE DESCRIPTION: This course focuses on college algebra topics for students majoring in economics and business. It presents a review of applications of equations, inequalities and function notation. Course serves as an introduction to: graphs of functions, translations and reflections of graphs of functions, asymptotic behavior; algebra of functions including function composition and inverses, difference quotients and average rates of change, direct and inverse variation, behavior and modeling of functions including: linear, quadratic, polynomials functions of higher degree, rational, radical, exponential, logarithmic and piecewise functions; matrices: addition, subtraction, multiplication, row reduction, and solving systems using row reduction; and the mathematics of finance: compound interest, annuities, amortization and sinking funds. Business applications evidenced throughout.

SPECIAL COURSE REQUIREMENTS: None

COURSE GOALS: To develop mathematical thinking and communication skills and learn to apply precise logical reasoning to problem solving. A broad range of examples and applications will be used involving business and other disciplines. This course will also prepare students for MATH 1131: Calculus for Business and will satisfy five hours of the liberal arts requirement of the AA degree.

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

• Critical Thinking  
• Quantitative Literacy  
• Effective Communication

TEXTBOOK, MANUALS, REFERENCES, AND OTHER REQUIRED MATERIALS:

• 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.cscc.edu/academics/departments/math/graphing-calculator.shtml This video should be viewed by anyone using the graphing calculator for the first time.
• Graph paper
GENERAL INSTRUCTIONAL METHODS: Lecture, discussion, demonstration, exploration and discovery exercises with the use of visual aids, graphing calculators, and/or computer resources.

UNITS OF INSTRUCTION:

- Applications of Equations and Inequalities (H: Sec. 2.1 - 2.3)
- Functions: Properties, Operations, and Transformations (H: Sec. 3.1 - 3.3, S: Sec. 3.2 - 3.5)
- Lines, Parabolas, and Systems (H: Sec. 4.1 - 4.6)
- Functions: Polynomial and Rational (S: Sec. 5.1, R.6, 5.2 - 5.6)
- Functions: Compositions and Inverse Functions (S: Sec. 6.1 - 6.2)
- Exponential and Logarithmic Functions (H: Sec. 5.1-5.4)
- Mathematics of Finance (H: Sec. 6.1, 6.2, 6.4, 6.5)
- Matrices, Matrix Operations, Solving Linear Systems by Matrices (H: Sec. 7.1 - 7.5)

STANDARDS AND METHODS FOR EVALUATION:
Final Exam = 25% of course grade (final exam is 100% departmental).
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:

\[ \geq 90\% - A \quad 80-89\% - B \quad 70-79\% - C \quad 60-69\% - D \quad < 60\% - E \]

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