Columbus State Community College
Mathematics Department Syllabus

Course and Number: MATH 1172 – Engineering Mathematics A
Credit Hours: 5 **Class Hours Per Week:** 5
Prerequisites: MATH 1151 with a C or higher

COURSE DESCRIPTION: Integration techniques, sequences & series, Taylor series, vectors and parametric curves, several variables, partial derivatives, chain rule, max-min. Not open to students with credit for any higher numbered math class, or for MATH 1152.

COURSE GOALS: Continue to introduce the student to the concepts, methods and applications of differential and integral calculus necessary for further study in calculus, science and engineering; to promote the further development of the student's algebraic, numerical, graphical and communication skills; to develop student's mathematical thinking and problem solving ability; and to facilitate student's progression from a procedural/computational understanding of mathematics to a broader understanding encompassing logical reasoning, generalization, abstraction, and formal proof.

INSTITUTIONAL LEARNING GOALS: Critical Thinking and Quantitative Skills

TEXTBOOK, MANUALS, REFERENCES, AND OTHER REQUIRED MATERIALS:
- Calculus: Early Transcendental Functions, 7th Edition, Larson/Edwards, Cengage Learning, 2019.
- A graphing calculator is recommended. The TI-89, TI-92, TI-Nspire CAS, and other Computer Algebra Systems (CAS) are never allowed during proctored assessments.

UNITS OF INSTRUCTION
- Applications of Integration (Sections 7.1-7.5)
- Integration Techniques (Sections 8.1-8.5, 8.8)
- Sequences and Infinite Series (Sections 9.1, 9.2, 9.6)
- Power Series (Sections 9.7-9.10)
- Parametric and Polar Curves (Sections 10.1-10.5)
- Vectors and Vector-Valued Functions (Sections 11.1-11.6, 12.1-12.5)
- Functions of Several Variables (Sections 13.1-13.6)

GENERAL INSTRUCTIONAL METHODS: Instructional methods may include face-to-face or video lectures or demonstration, face-to-face or virtual discussion, individual or group activities including the use of visual aids, computers and/or other technologies. Students may be expected to participate in these activities during class and/or outside of class. Instructors may require class participation, collaborative learning, and peer review.

STANDARDS AND METHODS FOR EVALUATION:
The final examination will be weighted between 25% and 33% (inclusive) of the course grade. The remainder of the course grade will be determined by the instructor.

GRADING SCALE:
Letter grades for the course will be awarded using a 90% - 80% - 70% - 60% scale.
Grades will NOT be curved, skewed, or otherwise inflated.