Columbus State Community College
Mathematics Department Syllabus

Course and Number: MATH 2366 - Discrete Mathematical Structures
Credits: 5 **Class Hours Per Week:** 5
Prerequisites: MATH 1152 with a "C" or better, or permission of instructor

COURSE DESCRIPTION: This course covers mathematical formalization and reasoning; logic; sets, mappings, and functions; methods of proof, recursive definitions; mathematical induction; elementary counting techniques, probability theory; relations and equivalence relations; Boolean algebra, logic gates; graphs, directed graphs, and trees; with applications to computer science.

INSTITUTIONAL LEARNING GOALS: Critical Thinking and Quantitative Skills

TEXTBOOK, MANUALS, REFERENCES, AND OTHER REQUIRED MATERIALS
- Discrete Mathematics and its Applications, 8th ed., Rosen, McGraw-Hill, 2018.
- A scientific calculator; a TI-84 calculator is fully supported and recommended.
- McGraw-Hill *Connect* access (for ebook and homework)

UNITS OF INSTRUCTION:
- Logic and Proofs (Chapter 1)
- Sets, Functions, Sequences, and Sums (Sections 2.1-2.5)
- Induction and Recursion (Sections 5.1, 5.3)
- Counting (Chapter 6)
- Discrete Probability (Sections 7.1, 7.2, 7.4)
- Relations (Sections 9.1, 9.5)
- Boolean Algebra (Sections 12.1-12.3)
- Graph Theory (Sections 10.1-10.5, Chapter 11)

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 account for between 25% and 35% of the course grade.
- At least two-thirds of the course grade will be based on proctored quizzes, tests, and/or final exam that are closed book and closed notes.

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.