

Salisbury University Department of Mathematical Sciences

MATH 210 : Introduction to Discrete Mathematics
Syllabus (Tentative)

Description: Introduction to basic techniques and modes of reasoning for discrete problem solving. Set theory, logic and proof, counting, graph theory, orderings, propositional calculus, and Boolean algebra. 4 Hours Credit: Meets four hours per week. Meets General Education IVB or IVC.

Prerequisites: C or better in MATH 140 or equivalent.

Intended Audience: Students interested in enhancing their reasoning and problem-solving skills. (Required for Mathematics and Computer Science Majors)

Objective: To introduce basic techniques of proof and reasoning, in particular, those for solving discrete problems. To enhance modes of thinking essential to mathematics. To teach techniques widely used in statistics, data science, and computer science.

Textbooks: *Discrete Mathematics: A Brief Introduction*, by Kathleen M. Shannon, 2nd edition; 2024 in WebAssign (also available in hard copy for those who would like a permanent hard copy in addition to the e-textbook, through Salisbury University's Bookstore, or as a pdf from your instructor). WebAssign is required for this course.

Topic	Weeks
Chapter 0: What is Discrete Mathematics? Introduction to Set Theory Discrete vs. Continuous, Königsburg problem, sets, subsets, set operations, set equality.	2.0
Chapter 1: Functions and Relations Functions and relations, equivalence relations, modular arithmetic, partial orderings, and Hasse Diagrams.	1.5
Chapter 2: Logic and Proof Introduction to proof, mathematical induction, strong induction, universal and existential quantifiers. (Optional -3484(ce-33)F39 9.9rcurrce 3elations, Chapter 2:3-511(LoCn)28(trog)-3J/F28 9.9626 Tf 438.34 0 Td [(2.3)]TJ -438.34 -14.944 Td [(F)Multiplition	2.0

