

SALISBURY UNIVERSITY DEPARTMENT OF MATHEMATICS & COMPUTER SCIENCE
 SYLLABUS (*Tentative*)
 MATH 300 *Introduction to Abstract Mathematics*

Intended Audience: Students minoring in mathematics, particularly prospective teachers, will find this a good capstone to their undergraduate mathematical experience. Students majoring in mathematics who have not already completed a 400-level mathematics course will find this a valuable course to help them develop a better understanding of the connection between computational and theoretical mathematics.

Objective: To provide students with an opportunity to develop the foundations of abstract mathematics in a manner similar to that employed by professional mathematicians.

Prerequisite: MATH 210, completed with a grade of C or better.

Text: *Linear Point Set Theory, a Vehicle for Mathematical Metamorphosis*, by Charles C. Coppin (this will be distributed by Dr. May on the first day of class)

| <i>Chapter</i> | <i>Weeks</i> |
|---|--------------|
| 1. Introduction | 2 |
| 2. Axiom 1 and Its Consequences Axiom 1; models of Axiom 1; first and last points; betweenness; regions and end points. | 3 |
| 3. Axiom 2, and Consequences of Axioms 1 and 2 Axiom 2; models of Axioms 1 and 2; limit points; sequences and convergence; open and closed sets; connected and disconnected sets. | 3 |
| 4. Consequences of Axioms 1, 2, and 3 Axiom 3; models of Axioms 1 through 3; least upper and greatest lower bounds; compact, perfect, and dense sets. | 3 |
| 5. Consequences of Axioms 1 through 4 Axiom 4; models of Axioms 1 through 4; separable sets. | <u>3</u> |
| | 14 |

EVALUATION

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|----------------------------|----------|
| Presentations at the Board | 30 - 70% |
| Portfolio | 10 - 30% |
| Midterm Examination | 0 - 15% |
| Final Examination | 0 - 15% |

**Graduate students will be given special assignments.