

MA100³⁰ Survey of Mathematics
Course Syllabus

Instructor

Dr. David Lani (telephone: 538-3669)

Office Hours

TR 5:00 pm – 5:25 pm; in classroom if possible

Textbook

The Nature of Mathematics / Smith, Karl J. — 8th edition

Supplies

a *scientific* calculator is required; no borrowing allowed on tests and quizzes
11" x 8.5" lined paper; please, no spiral notebooks if possible
#2 (or darker) pencils; no pens

Course Objectives

- (1) To introduce students to the nature of mathematics;
- (2) To help students develop problem-solving techniques;
- (3) To emphasize pattern recognition, critical reasoning and deductive reasoning through the study of the topics covered (see list).

Course Requirements

Attendance:

Attendance at each class is mandatory. A score of 0, 50 or 100 is recorded for each meeting. The best 18 of 20 scores are used to determine the score for attendance, which counts 10% of the final grade.

Homework:

Assignments are due at the *beginning* of class; otherwise, they are considered late. Work that is no more than one day late is accepted but assessed a 50% deduction. Work that is more than one day late is not accepted; a score of 0 is recorded. Problem solving is a major focus of this course and mathematics in general. Therefore, all work and/or explanations must be included; in general, answers alone are not sufficient to receive full credit.

Tests and Quizzes:

All tests and quizzes are closed-book, with no notes allowed. Some have "no calculator" parts; some have "calculator allowed" parts. Quizzes are twenty minutes each, and the two midterm tests are one hour each. The time limit for the final examination is two hours.

Grading

Attendance — 10% of final grade (best 18 of 20 scores)
Homework — 15% of final grade (best 14 of 15 scores)
Quizzes — 20% of final grade
Midterm Tests — 25% of final grade
Final Exam — 30% of final grade

Topics Covered

Problem Solving (chapter 1)

Polya's method; sets; inductive and deductive reasoning; scientific notation; estimation.

Sets of Numbers and Their Properties (chapter 4)

Natural numbers; prime and composite numbers; integers; rational numbers; irrational numbers; real numbers.

Logic (chapter 2)

Deductive reasoning; truth tables; operators; laws of logic; proofs.

Elements of Algebra (chapter 5)

Polynomials; factoring; evaluation; equations; inequalities; ratios; proportions; applications.

Sequences and Series (chapter 6)

Interest; installment buying; arithmetic and geometric sequences and series; annuities; amortization.

Measurement (chapter 8)

Units of measurement; length; area; volume.

Student Exercises

Completion of all tests, quizzes and homework assignments as described in the course requirements.