

WE '00

BM

MATH 100 ⁴⁰

SURVEY OF MATHEMATICS

Course Description

This is an introductory course in mathematics for humanities majors. It fulfills the general education requirement in mathematics but is not recommended for students who intend to take Math 103, 110, or 210. It is a terminal course in mathematics and does not prepare you for these courses.

The course is designed to acquaint you with a wide variety of topics in mathematics with emphasis on mathematical reasoning. You should be proficient in the basic arithmetic operations on whole numbers, fractions, decimals and percents, but will not need to use any advanced algebra or geometry. A scientific calculator will be helpful.

Class Meetings / Attendance

DAYS: 10 Saturdays: January 15 through March 18, 2000

TIMES: 12:30 - 16:40

PLACE: Ft. Shafter, Ed. Center, Bldg. #320, Classroom #8

INSTRUCTOR: Mrs. Beth Motoki Phone: 779-8382 (voice mail)
e-mail: bmotoki@aol.com 842-8897 (work)

Students are expected to attend all classes. The nature of the course (which covers many different topics in a short period of time) as well as the schedule of class meetings makes it very difficult to keep up if you miss one or more days. If you are unable to attend a class, you are still responsible for the material that was covered, including completing the homework exercises that accompany that material. If you have a legitimate reason for absence (illness with doctor's excuse, family emergency, TDY) when a test is being given, contact the instructor immediately to schedule a make-up. Depending on the circumstances, make-ups will be given at the discretion of the instructor.

Textbook / Homework

Required Text: Smith, Karl J., THE NATURE OF MATHEMATICS (8th Edition),
Brooks/Cole Publishing Co., 1998

As much as possible, we will follow the attached course schedule. You should preview the material that will be covered in class each week by reading the appropriate chapter section before the class meeting. Problems will be assigned as each section is discussed in class, and should be completed before the next class meeting. There will be opportunity to ask questions about the exercises at the beginning of each class session. **PROBLEMS SHOULD BE DONE IN A SEPARATE NOTEBOOK WHICH WILL BE TURNED IN FOR GRADING THE WEEK BEFORE THE TERM ENDS.**

Grading

Your grade will be based on a total of 600 points as follows:

3 exams (100 points each)	300 points
a research paper	100 points
a class presentation	50 points
your homework notebook	50 points
attendance (10 points / class)	100 points

At the end of the term, the course grade will be computed using the total number of points earned, as follows:

520 - 600	A
460 - 519	B
400 - 459	C
300 - 399	D
0 - 299	F

There will be NO EXTRA CREDIT, with the possible exception of bonus questions on exams.

Topics Covered

UNIT I - The Nature of Logical Thinking and Problem Solving

Problem Solving, Sets, Inductive and Deductive Reasoning, Scientific Notation, Formal Logic, Truth Tables, Laws of Logic, and Proof

Chapter 1 - Sections 1, 2, 3, and 4

Chapter 2 - Sections 1, 2, 3, 4, and 5

UNIT II - The Nature of Calculation, Numbers and Geometry

Different Numeration Systems, Computers and the Binary System, Prime Numbers, Irrational Numbers, Spreadsheets, Similar Triangles, Golden Rectangles, The Bridges of Konigsberg, Topology and Fractals

Chapter 3 - Sections 3 and 5

Chapter 4 - Sections 2 and 5

Chapter 5 - Section 3

Chapter 7 - Sections 4, 5, 6, and 7

UNIT III - Probability, Statistics, and Financial Management

Probability, Mathematical Expectation, Probability Models, Counting Formulas, Calculated Probabilities, Simple and Compound Interest, Installment Buying, Frequency Distributions, Graphs, and Descriptive Statistics

Chapter 9 - Sections 1, 2, 3, 4, and 5

Chapter 6 - Sections 1 and 2

Chapter 10 - Sections 1 and 2

MATH 100 - COURSE SCHEDULE

- JAN. 15 Read course information, complete information sheet
Unit I - Chapter 1: Sections 1, 2, 3, and 4
- JAN. 22 *Unit I* - Chapter 2: Sections 1, 2, 3, 4, and 5
- JAN. 29 Review of *Unit I*
EXAM #1
TOPIC FOR TERM PROJECT DUE
- FEB. 5 *Unit II* - Chapter 3: Sections 3 and 5
Chapter 4: Sections 2 and 5
Chapter 5: Section 3
- FEB. 12 *Unit II* - Chapter 7: Sections 4, 5, 6, and 7
OUTLINE FOR TERM PROJECT DUE
- FEB. 19 Review of *Unit II*
EXAM #2
- FEB. 26 *Unit III* - Chapter 9: Sections 1, 2, 3, 4, and 5
- MAR. 4 *Unit III* - Chapter 6: Sections 1 and 2
Chapter 10: Sections 1 and 2
TERM PROJECT DUE (Written)
- MAR. 11 Review of *Unit III*
EXAM #3
- MAR. 18 CLASS PRESENTATION OF TERM PROJECT