FE99

MATH 1005

SURVEY OF MATHEMATICS

MEETING DATES:	October 2 - December
MEETING TIMES:	Saturdays, 8:00 AM - 12:00 PM
REQUIRED TEXT:	Karl J. Smith, The Nature of Mathematics, 8th edition Brooks/Cole Publishing Co., 1998
INSTRUCTOR:	Mrs. Beth Motoki Phone: 293-9308 (home) e-mail: bmotoki@aol.com 842-8897 (work)

COURSE DESCRIPTION: Math 100 is an introductory course in mathematics for humanities majors. The course fulfills the general education requirement in mathematics but is not recommended for students who intend to take Math 103, 110, or 210. Topics will be selected to acquaint the student with the field of mathematics. Topics will include, but are not limited to: problem solving, inductive and deductive reasoning, truth tables, probability, logic and statistics.

GRADING: The grade in Math 100 will be based on three exams (100 points each), attendance and class participation (100 points), a research paper (100 points), a class presentation (50 points), and a homework notebook (50 points). At the end of the term, the course grade will be computed by dividing the total number of points earned by total possible points. There is NO extra credit, with the possible exception of bonus questions on exams.

ATTENDANCE: Students are expected to attend all classes. If you are unable to attend a class, you are still responsible for the material that was covewred, 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.

HOMEWORK: As much as possible, we will follow the attached course outline. Each week, you should preview the material that will be covered in class by reading the appropriate chapter sections. After the material has been covered in class, you should attempt as many of the odd-numbered problems as needed for you to achieve mastery of that topic. There will be opportunity to ask questions about the exercises at the beginning of each class session. Problems should be completed in a separate notebook that will be turned in for grading the week before the semester ends.

COURSE OUTLINE

OCT. 9 Distribute syllabus, complete information sheet
Unit I (The Nature of Logical Thinking and Problem Solving) :
Chapter 1 Sections 1, 2, 3, 4

OCT. 16 *Unit I* : Chapter 2 Sections 1, 2, 3, 4, 5

OCT. 23 Review of *Unit I*
EXAM #1

OCT. 30 *Unit II (The Nature of Calculation, Numbers and Geometry)* :
Chapter 3 Sections 3, 5 ; Chapter 4 Sections 2, 5 ; Chapter 5 Section 3
OUTLINE FOR RESEARCH PAPER DUE

NOV. 6 *Unit II* : Chapter 7 Sections 4, 5, 6, 7

NOV. 13 Review of *Unit II*
EXAM #2

NOV. 20 *Unit III (Probability, Statistics and Financial Management)* :
Chapter 9 Sections 1, 2, 3, 4, 5

NOV. 27 *Unit III* : Chapter 6 Sections 1, 2 ; Chapter 10 Sections 1, 2
PAPER DUE

DEC. 4 Review of *Unit III*
EXAM #3

DEC. 11 **CLASS PRESENTATIONS**

REQUIREMENTS FOR RESEARCH PAPER

For Math 100, a research paper on a mathematics-related topic is required. The text of your paper should be three to four type-written pages, single spaced with a double space between paragraphs. Your bibliography should contain a minimum of three sources, including at least two different types of sources (book, periodical, video, etc.). In addition to the text, the paper should contain two or more diagrams, charts or illustrations, and an appendix with two or more related math problems and their solutions. An outline for this paper (including sources) is due on October 23, and the paper is due November 20.During the last class session, each student will present his/her paper orally. A visual aid (slide, chart, poster, model, etc.) must be used during the presentation, and at least one math problem must be presented to the class for solution during the presentation. Length of presentations can vary, but a maximum time limit will be imposed depending on enrollment in this class. Discussion will follow each presentation. The paper and the presentation will be graded on effort, accuracy, interest-level, and creativity, as well as meeting all of the requirements.

Some possible topics for research:

Numeration Systems
Computers and the Binary System
Prime Numbers and their generation
Golden Rectangles
Topology
Fractals
Tesselations
Map Coloring
Coding
M.C. Escher
Fibonacci Numbers
Counting and Computing Devices
Pi
Demographics
Lewis Carroll
Mobius Strips and Torus Maps
George Polya
Martin Gardner
Pascal's Triangle