

Prez

CHAMINADE UNIVERSITY of HONOLULU
MATH 10010 - SURVEY OF MATHEMATICS (3 Credits), SYLLABUS
 TR 19:50 - 21:55 SCHOFIELD BARRACKS - BDG. 560 10/05/98 - 12/17/98
 INSTRUCTOR: H. R. BRAVO (rbravo@ed.co.sanmateo.ca.us)

Course Description: Introductory course for humanities majors. Selected topics to acquaint the students with the field of mathematics. Fulfills general education requirements in mathematics.

Contents: The Nature of Problem Solving, Reasoning and Logic, Calculations and Number Systems, the Nature of Numbers, Interest and Compound Interest, Elements of Geometry, Probability and Statistics

Text: Smith, Karl J., THE NATURE OF MATHEMATICS, 8th Edition, 1998, Brooks/Cole Publishing Co., Pacific Grove, California 93950

Objectives: To acquaint the student with a wide variety of topics in mathematics with emphasis on mathematical reasoning and strategies for problem solving. To encourage a logical approach to solve problems. To create a positive attitude toward mathematics and to foster an appreciation of the beauty and power of this area of knowledge. It is not a review of elementary and high school mathematics.

Evaluation: Final grade for the course will be based upon : a. Homework and Class Participation (includes individual and/or group miniprojects), Notebook, and Attendance: 30%, b. Midterm Exam and Tests: 30%, and c. Final Comprehensive Exam: 40%. Grade scale: A,B,C,D, F.

Attendance: A student should be aware that instruction in class will include a significant amount of material which is not otherwise available. Also note that attendance is part of the final grade.

Contents and Text; Scheduling : The total time allocated for the course is 11 weeks, 2 sessions per week. Two sessions will be used for the midterm and the final exam. Probably two sessions to allow time for individual projects presentation. Therefore, each subject below will be given close to two sessions, i.e. one week of the calendar. The Midterm exam will probably be given on the week on Nov 2. The scheduling that follows is **tentative**. It may change depending on the interest of the class on some specific subject

- Oct 6 & 8: a. The Nature of problem solving, use of your calculator, inductive and deductive reasoning. Pascal triangle, Venn diagrams. *Text:* Chapter 1
- Oct 13 & 15: b. The Nature of Logic, the nature of proof, more on deductive reasoning and Venn Diagrams, logic circuits. *Text:* Chapter 2

Oct 20 & 22:	c. <u>The nature of Calculation, evolution of notations for numbers, number systems, computers and binary number system.</u> <i>Text:</i> Chapter 3.3 & 3.5
Oct 27,29, Nov 3:	d. <u>The nature of numbers,</u> prime numbers and divisibility, Sieve of Erathostenes. <i>Text:</i> Chapter 4.1 and 4.2
Nov 5	Midterm
Nov 10 & 12	Presentation of individual projects
Nov 17 & 19	e. <u>The power of compound interest.</u> <i>Text:</i> Chapter 6.1, 6.2, and 6.5
Nov 24- Dec 8	f. <u>Elements of Geometry,</u> triangles and polygons, perimeter, area, volumes, similar triangles, Pythagorean theorem with applications, the golden ratio. <i>Text:</i> 7.1, 7.2, 7.3, 7.4, 7.5
Dec 10	g. <u>The Nature of Probability,</u> fundamental counting principle, combinations, permutations, and calculated probabilities. <i>Text:</i> Chapter 9.1, 9.2, 9.3, and 9.4
Dec 15	h. <u>Elements of Statistics,</u> frequency distributions and graphs, descriptive statistics, and the normal curve. <i>Text:</i> Chapter 10.1, 10.2 , 10.3
Dec 17	Final Exam

PRELIMINARY ASSIGMENT: Read the Preface TO THE STUDENT (page xxiii). Take a look at the Table of Contents (pages xvii-xxii) of the text to get a general idea of what will be covered. Finally thumb through the book to become familiar with its format, how colors are used to emphasize components of the material, and the content of the historical notes.