CHAMINADE UNIVERSITY - MA100 NATURE OF MATHEMATICS, *SCHOFIELD* - DR.TREVORROW

Instructor: Dr. Trevorrow
Class Times: Online 07/12/10 - 09/13/09
Tutoring: Additional help is available before and after class (locations specified in class) and some Saturday afternoons.

Email: torrance.trevorrow@adjunct.chaminade.edu (during the semester) and arithmetic.math@gmail.com (before/after semester)

Text Book: The Nature of Mathematics, 11th edition, by Karl Smith. Brooks/Cole Publishing Company: **ISBN 0495012726** (text only). A student solutions manual may also be helpful ISBN 049510809X. Prices vary depending on source.

Course Description: (from the catalog) 3 Credits. Mathematical thought is studied through inter actions between the foundations of knowledge and the study of the nature of both algebra and geometry. Issues of mathematical thought are addressed through selected studies of the nature of sets, logic, numbers and operations, algebra, geometry, measurement, financial management, probability, statistics, graphs and functions and mathematical systems. This course fulfills the Track A general education requirement in mathematics. The course is intended as a terminal course and is not a prerequisite for any other course in mathematics

Prerequisites: The student should already be competent with basic arithmetic, fractions, percents, and elementary algebra .

Course Goals: To increase the student's mathematical knowledge, skills and abilities. Mathematical style and perspectives are developed and analyzed from the text, problem solving, examples, posts and critiques. A variety of mathematical topics are chosen to expose the student to different types of mathematical thinking and approaches to numerical problem solving.

Course Objectives: At the completion of this course the student should be familiar and demonstrate competency with the following concepts and topics (subject to change).

Reading and writing mathematics, Order of operations
Numeration systems, numerical history, grouping and position
Problem Solving, mathematical style and modeling.
Inductive and deductive reasoning
Nature of numbers, odd, even, natural, prime, special properties
Scientific and Exponential notation, order of operations, reasons, applications
Measurements, units, dimensions, efficiency, accuracy, precision
Algebra, basic, percents, ratios, applications
Finance and Interest, types of loans, inflation, compound interest
Installment loans, add on interest, credit card interest, Apr.
Frequency distribution, graphs, types, advantages, disadvantages, reading
Descriptive Statistics, central tendency - measures, dispersion, applications
Probability, terms, union, intersection, complement, (and, or), spinners, cards, dice
Expected Value, time value, extended warranties, games, contests
Networks and Graph theory, Euler Circuits, Hamilton Cycles

Methodology: Most of your learning will come from class careful reading of the text, taking comprehensive class notes and participation in activities. Multiple quizzes, discussions, and articles will be used to reinforce learning. Class will normally begin with a discussion topic followed by text material.

Success: All courses require a high degree of personal responsibility and time management skills. Grades tend to be proportional to the *personal effort* that is taken for the learning process. Universities often recommend 2-3 hours of study time for each hour of class time. For a three credit class a common estiimate is 8-12 hrs per week in addition to class time.

Grading: Points will accumulate and be converted to a percent. Classwork* (Homework, Quizzes, Papers, Presentations, and Notes) 40%, Midterm 20%, Final 40% (less than 59% on the final exam will be failure for the course). *this score is multiplied by the percentage of class attendance. Changes may be made to the course and grading at the instructor's discretion. Any questions about your grade, please see the instructor after class.

A 90% + Outstanding Scholarship and excellent initiative with course
B 80% + Superior Quality done in a consistent intellectual manner
C 70% + Satisfactory showing competent understanding of course
D 60% + Lowest passing grade, inadequate for prerequisites
F <60% Unsatisfactory understanding and class work

Late Work: Work is due as assigned. One personal extension *may* be permitted before Week 10. Any requested work is due at the beginning of class, not when you arrive. Work not compliant with specified standards will not be accepted.

Attendance: Active and early participation is vital to your success. Each student is accountable for all the information posted on the web board and to present work by the due dates. Entry and exit only during class breaks to avoid disruption. Absence from class is rounded to the nearest hour. Class starts promptly at 5.30pm you should be be seated, ready for work.

Guidelines from the undergraduate catalog indicate that if you miss more than a week of classes you are subject to a grade reduction; missing two weeks of classes may result in notification to appropriate authorities and possible withdrawal. Should an illness or personal reasons necessitate continued absence the student should officially withdraw.

Academic Integrity: All material submitted in fulfillment of course requirements must be done by the registered student. Cut and paste research, copying, substitute work, sharing quizzes or homework will result in a grade of zero and possible failure for the course.

Supplies: Text Book, 3 Ring Binder with Divisors, Ruler (cm, inches), Calculator (two line display recommended) with exponential functions. Other items may be required (graph paper).

Resources: The text and class information are the primary resources for the course. Often re-reading the same section of the text (several times) will help more than searching for other material. Your instructor is always available for email help.

Requirements: You are required to **immediately** seek clarification on any material that you do not understand. All submissions should show complete working, clear explanations and identification of the material being presented. Any assignments given advance notice must be stapled with your name at the top right of each page. No tear out sheets are accepted. Any graded material must be picked up during that class.

You are expected to maintain standards of academic performance and courtesy and to comply with all CUH policies. Any requests from the instructor require a prompt response. Should you decide to withdraw from the course please let me know. Any disruption to the class, instructor or your fellow students will result in expulsion from class and at the very least a marked absence for that day.

Midterm and Finals: There will be no midterm exam extensions without significant grade penalty. The final is given during the last day of class and will not be available at any other time. Usually the final is written, closed book, no notes, calculator permitted. Formulas may be provided. All exams must be taken when scheduled. Write your name on each page, no name = zero grade.

Notes:

TEXT TOPICS AND SEQUENCE – MAY BE ADJUSTED

(Match Chapter Sections with those from the weekly announcement)

WEEK	SECTION	PAGES	EXAM-PLES	# Q	REPRESENTATIVE HW QUESTIONS
	Chapter 4: The Nature of Numeration Systems				
W1	4.1	7	7	8	008 026 032 042 044 050 052 055
W1	4.2	5	4	8	013 017 020 027 032 036 039 044c
	Chapter 1: The Nature of Problem Solving				
W2	1.3	14	11	7	008 012 026 028 032 036 043 058
	Chapter 5: The Nature of Numbers				
W3	5.1	5	3	8	012 016c 021c 032 033 041 053c 056
W3	5.2	12	8	8	010 014 020 034 042 046 049 052
	Chapter 6: The Nature of Algebra				
W4	6.7	7	11	8	009 011c 018 026 040 046 053 058
W4	6.8	8	12	8	014 024 028 030 039 044 051 056
	Chapter 9: The Nature of Measurement				
W5	9.1	7	4	8	009c 019c 029c 037c 047 048c 053 056
W5	9.2	7	8	8	004 006 009c 014c 019 025 033 057
W5	9.3	9	9	8	007c 009c 013c 035c 041c 047c 057 058
	MIDTERM COMPREHENSIVE				
	Chapter 11: The Nature of Financial Management				
W6	11.1	12	13	8	019 024 030 034 041 048 055 060
W6	11.2	7	7	8	013 020 025 034 042 044 053 060
	Chapter 13: The Nature of Probability				
W7	13.1	10	11	8	004c 011 013c 023c 027c 031c 040c 057
W7	13.2	6	8	8	009 013 020c 030c 035 040 046 058
	Chapter 14: The Nature of Statistics				
W8	14.1	8	7	8	005 009 012 020 026 047 052 053
W8	14.2	9	8	8	019 028 032 033 037 041 045 058
	Chapter 8: The Nature of Networks and Graph Theory				
W9	8.1	9	7	8	006c 012c 018c 024c 028c 038 042 048
W10	Practice Review				
	FINAL EXAM – SATURDAY PROCTERED				