MA100 COURSE
Dr. Trevorrow

Instructor: Dr. Torrance L. Trevorrow

Class Times: Online as scheduled

Office Hours: As an online course we can meet via the webboard or in person by arrangement: I usually schedule three live sessions during the semester near Pearl Harbor.(Oahu)

Email: All email should be via the web board. If for any reason the server is unavailable then the instructor may be contacted via numeroprime@yahoo.com (make sure MA100 Online is in the subject line).

Text Book: The Nature of Mathematics, Tenth Edition by Karl Smith. Brooks/Cole Publishing Company, 2004. ISBN 0-534-40023-X. This is a very popular text used by major universities. Earlier editions may be used with discernment. If ordered online, please make sure to pay for priority shipping; media rate takes 8-10 weeks.

Supplemental: For those with interest and time, the following books are also excellent: Thinking Mathematically by Robert Blitzer. Pearson/Prentice Hall – is a superb text, with a more vernacular style. Everyday Math DeMystified by Stan Gibilisco. McGraw Hill is comparable to the "Dummies/Idiots" series, and explores various topics in math in a highly readable form (not too closely related to the text but a nice read).

Course Description: This is an introductory course that meets the Track A general education requirement in mathematics and does not meet any prerequisites for any other math course (3 credit hours). Mathematical content is developed from numerical concepts into explorations of geometry, measurements and finance. The course, its content, and grading may be modified at the instructor's discretion.

Course Goals: To improve student skills in reading, interpreting and communicating mathematics contents using numeric, analytic and graphical methods, and to allow students to develop an understanding of both deductive and inductive reasoning. This course will place an emphasis on increasing the student's mathematical skills and knowledge relating to: Problem Solving, Types of Numbers, Geometry, Areas and Volume, and Financial Management.

Course Objectives: At the completion of this course the diligent student should be able to understand and apply:

1. The three hints for success
2. Polya's problem solving model
3. Pascal's triangle as an application to problem solving
4. Order of Operations
5. Inductive and Deductive Reasoning
6. Scientific Notation, Exponential Notation
7. Estimation, Approximation, Accuracy, Precision
8. Basic Number Theory, Prime Numbers, Composite, LCM, GCF, etc.
9. Geometry, Properties of Triangles, Angles, Ratios
10. Measurements: Estimate, Calculate, Convert Dimensions
11. Simple and Compound Interest, Inflation, Apr, Add-on Interest
12. Finance: Investment, Auto Loans, Retirement

Methodology: Most of your learning will come from the students meticulous study of the text and material presented. Multiple quizzes, discussions, and supplementary articles and presentations will be used to reinforce learning. Media articles will also be used to relate mathematical concepts to everyday life.

Success: All courses require a high degree of personal responsibility and time management skills. Grades tend to be proportional to the individual effort that is taken for the learning process. Personal satisfaction will come from studying in earnest, learning as much as you can and not solely depending solely on the text or a quick read.

Universities often recommend 2-3 hrs of study time for each hour of class time. A three credit course would require about 12 hrs per week for study, research, reading, and homework. The "bottom line" is reflected in the homework – can you easily do it, and if not, what will you need to do to achieve success?

Grading: Percentage points and letter grade are as indicated:

Weekly Quizzes	40%	
Homework Posts+ or (-)	10%	(applied if grade is close to: (50, 60, 70, 80, 90)
Final Exam (proctored)	60%	

A = >89%	Outstanding Scholarship and excellent initiative with course
B = >79%	Superior Quality done in a consistent intellectual manner
C = >69%	Satisfactory showing competent understanding of course
D = >59%	Lowest passing grade, inadequate for prerequisites
F = <60%	Unsatisfactory understanding and coursework

Absences: Missed work is not excused unless supported by a Medical Slip, Funeral Home, or Military Orders justifying a 7 day absence. The instructor will determine the appropriate credit if applicable which is usually an average of all course work.

Academic Integrity: All material submitted in fulfillment of course requirements must be done by the registered student. Cut and paste research, copying or having someone else do your work, constitutes plagiarism and will result in a grade of zero and possible failure for the course.

Supplies: Text Book, Notebook, Ruler, Protractor, Compass, and Calculator with exponential function (see text). A cell phone or PDA is not permitted for exams.

Resources: The Internet has many wonderful sites for learning more about mathematics - many are mentioned in the text. Newspapers, Magazines, Dictionaries, Encyclopedias and your classmates can provide useful material and perspectives for analysis and learning. The text is also supported by its own site: www.mathnature.com. If you meet certain criteria, free tutoring is available on-campus – call the information line.

Requirements: Coursework is required to be property identified, clearly presented*, showing all intermediary steps* and submitted on time. Answers only, messy or incomplete work = zero. Polya's problem solving model is to be used for all mathematical posts.

You are required to seek clarification on any material that you do not understand.

Your contributions and ways of approaching questions will help enrich everyone's learning. It is essential that you participate by studying the text, do the assigned homework, research to enhance your understanding, take the weekly quizzes and final exam.

Please ask questions, discuss topics, and assist other students.

Finals: For those off-island arrangements will need to be made with the AUP office or your site representative – usually about two weeks before the end of class. For those on Oahu, reservations can be made for various base sites. Details are forward from the AUP office towards the end of the course. The final exam is usually closed book, no notes, with formulas provided.

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Week	Section/Topic	Homework
1	1.1 Problem Solving 1.2 Types of Reasoning	1,2,4,5,8,9,11,17,25,26,27,28 1,3,4,5,11,13,17,25,35,48,51,53 Basis for problem solving
2	1.3 Scientific Notation 1.4 Finite and Infinite / Sets	1,2,5,9,13,15,25,27,30,31,33,37,41,48,50 1,2,3,4,5,6,9,15,23,35,40,43,49 Ways of Writing Numbers
3	4.1 Natural Numbers 4.2 Prime Numbers 4.3 Integers	1,4,5,6,17,19,29,45,46,47,48,49 1,2,3,4,5,9,11,13,15,16,19,35,41,45,50 5,6,13,39,51,60 Origins of Numbers and Mathematical Principles
4	4.4 Rational Numbers 4.5 Irrational Numbers	1,2,3,4,15,31,33,37,41,60 1,2,6,9,13,19,21,39,45,47,48 Advanced Number Types
5	6.1 Geometry 6.2 Polygons and Angles	6,7,8,11,15,21,46,47,55,59,60 1,2,5,6,7,9,15,17,19,2731,56,60 Application of logical reasoning, dimensions to space
6	6.3 Triangles 6.4 Similar Triangles	1,2,3,5,7,9,17,35,43,44,49,55,57 1,2,3,5,11,23,29,31,3339,41,43,52,53 Proportion, Applications to Unknown
7	7.1 Perimeter 7.2 Area	1,2,3,4,5,11,25,31,33,35,37,39,41,43,56,59,60 1,2,3,4,5,6,7,11,17,25,37,39,40,43,47,50,59 Application of Numbers to Space
8	7.3 Surface Area, Volume 7.4 Measurements 7.5 Metric Conversions	1,2,3,4,5,6,7,13,29,31,33,35,37,41,47,53,55 1,2,3,13,15,17,19,20,21,22,25,39,41,43,45 Reference tables – know how to use Discovering Optimal Shapes, Efficiency, Conversions
9	9.1 Interest 9.2 Installment Buying	1,2,3,4,5,7,9,11,19,21,25,27,29,33,43,45,49 1,2,3,4,7,9,18,20,21,23,29,37,41,43,47,51,60 Highly Relevant – Types of Loans, Numbers in Finance
10	Open Review	

Suggestion:

Try to think beyond the question to its implications.

- For example if a small pizza has a radius of 6" and a large 12", what is the difference in area – is it double?
- How would the area of a square of side 6" compare to that of a circle with diameter 6"? What does this say about pricing for round or square pizzas?
- You may not have $20,000 to invest for 30 years, but you could perform a personal calculation with a different amount or timeframe.

Use the idea of the question for your own specific case, practicing the principles presented, to make it personally useful.