FD '03

Chaminade University of Honolulu
FALL 2003
August 25-December 11, 2003

Course: **Math 110-02 Pre-Calculus**
Location: H104
Time: MWF - 8:00-8:50 AM

Instructor: Dr. Eiko N. Tyler
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Office Hours: MWF - 9:00-10:00 (tentative)
MWF - 12:00-1:00 (tentative)

Text: Precalculus - Mathematics for Calculus (4th Edition), by James Stewart, Lothar Redlin and Saleem Watson

Prerequisites: To enroll in this course you must have passed MA 103. You may also be enrolled in this course based on placement or assessment. A good working knowledge of Algebra, basic Geometry or the personal initiative to review topics in those subject areas, as needed, and a willingness to read about, discuss, and attempt to work with a variety of mathematical situations. **It is your responsibility to present me with proof that you are eligible to be in this course. Failure to submit a verification of prerequisites will result in withdrawal from this class.**

Description: This course offers an introduction to the concepts and techniques of functions, polynomial and rational functions, exponential and logarithmic functions, trigonometric functions of real numbers, trigonometric functions of angles and analytic trigonometry. This course is intended to prepare students for course MA 210 Calculus I (Differential Calculus) . This course is not open to students with credit in MA 210 or upper level Calculus classes. There will be group activities that expand upon problem solving abilities.

Course Intent: The intent of this course is to provide for students the opportunities to build foundations of the principles of mathematics that may assist them in growing their academic backgrounds and, in particular, assist them to become successful students of calculus.

Course Objective: For each of the major topics (chapters) in the required textbook, gain proficiency in their repertories in mathematics:

1. Fundamentals of Algebra
2. Functions and Inverse Functions
3. Polynomial and Rational Functions
4. Exponential and Logarithmic Functions
5. Trigonometric Functions of Real Numbers
6. Trigonometric Functions of Angles
7. Analytic Trigonometry

8. Topics in Analytic Geometry
9. Sequences and Series
10. Limits

Course Format: Each class session consists of three parts:

1. Clarification of previous topics
2. Current assigned topic(s)
3. Problem solving strategies

Attendance: Attendance will be taking at the beginning of class. If you are late, it is your responsibility to let me know by the end of the class session that you are in class, otherwise, you will be marked absent. You may be reported to Academic Counseling if you are absent for two consecutive class meetings or if your total absence exceeds six percent of the total hours of class time. That means approximately **four and 1/2 hours**. Attendance is of utmost importance. Missing class typically results in low test scores. Therefore, it is advisable that you not miss class. If you know in advance that you will be absent, let me know in writing. If you do miss class, it is your responsibility to find out and cover whatever material you missed.

Quizzes: There will be a total of 5 quizzes. The lowest score of the 5 quizzes will be dropped. The remaining 4 quizzes are worth a total of 100 points. **THERE WILL BE NO MAKE UP QUIZZES.** The first quiz will be given on Sept. 5th.

Schedule:
Quiz 1 - Friday Sept. 5
Quiz 2 - Friday Oct. 3
Quiz 3 - Friday Oct. .10
Quiz 4 - Friday Nov. 7
Quiz 5 - Monday Nov. 24

Mid-term Exams: There will be a total of 3 mid-terms. The lowest score of the 3 mid-terms will be dropped. The remaining 2 mid-terms are worth 200 points. These exams will be closed book. You may bring (1) 4x6" index card with notes on it. **THERE WILL BE NO MAKE UP EXAMS.**

Schedule:
Mid-term 1 - Monday Sept. 22
Mid-term 2 - Monday Oct. 20
Mid-term 3 - Monday Nov. 17

Final Exam: The final exam will be worth 200 points. This exam will be cumulative over the entire course. You **MUST** take the final exam in order to pass the course.

Grading: Your grade will be based on the following:

450-500 points (90%-100%) A

400-449 points (80%-89%) B
350-399 points (70%-79%) C
300-349 points (60%-69%) D
Below 299 points (0%-59%) F

Homework: Homework is essential for understanding the course materials. Students are responsible for every assigned problems for each covered section. You are responsible for checking your own work for correctness. The solution set is provided in the back of the textbook. If you have trouble with a problem and cannot solve it, come to see me. Some of the homework problems may appear on quizzes and/or exams.

Service Learning: Students who have signed up to do service learning can miss 2 midterm exams. The service learning will be worth 100 points.

Educational Goal: The goal of the service learning activity is to deepen the understanding of fundamentals of algebra and cultivate compassion and tolerance.

Note: I reserve the right to adjust your grade up or down by a small amount if it does not accurately reflect your achievement in the course.

Student Conduct: Existing policies forbid cheating on examinations, and other forms or academic dishonesty. Violations include (but are not limited to):

1. Receiving or providing assistance on examinations, unless such assistance is authorized by the instructor.
2. Using materials other than those permitted by the instructor during an examination.

Conduct in violation of policies will result in the offending student receiving a score of **zero** on the exam.

Calculators (and other electronic devices): Calculators are permitted in this course. I suggest that you obtain a scientific calculator (graphing calculator TI 83 or better is recommended). No other electronic devices (PDAs, etc.) are allowed.

Misc.: Cell phones and pagers should be turned off or set to silent alert mode. Students whose behavior is not acceptable for the classroom will be dismissed until the next class meeting. Food and drink are not permitted in the classroom.

I reserve the right to modify this syllabus to conform to federal, state, and university regulations, or to make changes that will make this class more effective for the students.

Support Services: If you need help with the materials in the course, you should

Support Services: If you need help with the materials in the course, you should consider utilizing one or more of the following: Get help from, or work with your fellow students. Go to the Drop-in Tutoring Center. Seek out other resources through the Student services office.

Course Goals and Expectations: At the completion of this course you should be able to:

1. Add and subtract polynomials, and combine and factor algebraic expressions.
2. Graph functions , find their inverses, and combine functions.
3. Graph polynomials and find real zeros of polynomials .
4. Graph exponential and logarithmic functions, and solve equations involving exponential and logarithmic expressions.
5. Evaluate trigonometric functions, write one trigonometric function in terms of another, and graph trigonometric functions.
6. Solve a triangle and find the area of a triangle
7. Prove an identity
8. Find the equation of an ellipse and hyperbola.
9. Find the sum of an infinite geometric series
10. Find limits.

Success as a college student is directly proportional to the level of personal responsibility that is taken for the learning process. Good study habits and the motivation to work independently, can make a critical difference in your level of progress towards the successful learning of Pre-Calculus. How much you put into your course work is directly related to what you get out of it. To learn Pre-Calculus, you need to study, you need to work on the problems, you need to do the homework. The amount of work that is to be completed outside of the class is approximately 2 to 3 hours of work outside of class for each hour that is spent inside. Math is learned by doing!

Good luck!

Chaminade University of Honolulu
Fall 2003
Ma 110-02

Course Schedule

Date	Sec.	Sub topic
8/25	1.2	Exponents and Radicals
8/27	1.3, 1.4	Algebraic Expressions/Fractional Expressions
8/29	1.5, 1.7	Equalities/Inequalities
9/03	1.8	Coordinate Geometry
9/05	1.10	Lines, **Quiz 1**
9/08	2.1, 2.2	Functions/Graphs of Functions
9/10	2.3, 2.4	Applied Functions/Average Rate of Change
9/12	2.5, 2.6	Transformations of Functions/Extreme values of functions
9/15	2.8, 2.9	Composite Functions/One-to-one Functions
9/17	3.1	Polynomial Functions and Their Graphs
9/19		Review
9/22		**EXAM I**
9/24	3.2, 3.3	Dividing Polynomials/Real Zeros
9/26	3.4, 3.5	Complex Numbers/Complex Zeros
9/29	3.6	Rational Functions
10/01	4.1	Exponential Functions
10/03	4.2	Logarithmic Functions **Quiz 2**
10/06	4.3	Laws of Logarithms
10/08	4.4, 4.5	Exponential /Logarithmic Equations
10/10	5.1	Unit Circle **Quiz 3**
10/15	5.2	Trig Functions of Real Numbers

10/17		Review
10/20		**EXAM II**
10/22	5.3, 5.4	Trig Graphs
10/24	6.1, 6.2	Angle Measure/Trig of Right Triangles
10/27	6.3	Trig Functions of Angles
10/29	6.4	Law of Sines
10/31	6.5	Law of Cosines
11/03	7.1, 7.2	Trig Identities/Add and Sub Formulas
11/05	7.3	Double-, Half-, Product-Sum Formula
11/07		**Quiz 4**
11/10	7.4	Inverse Trig Functions
11/12	7.5	Trig Equations
11/14		Review
11/17		**EXAM III**
11/19	7.7	Vectors
11/21	9.1,9.2	Parabolas/Ellipses
11/24	9.3	Hyperbolas **Quiz 5**
11/26	9.4	Shifted Conics
12/01	10.1, 10.3	Sequences/Summations
12/03	12.1, 12.2	Limits Numerically/Graphically/Algebraically
12/05		Review
12/		**Final Exam**