Math 161-001 – Precalculus and Elements of Calculus for Economics and the Social Sciences
UNIVERSITY OF HAWAI'I AT MANOA

Instructor: Ka Lun Wong (Allan)
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Office hours: M 10:30-11:30a
TR 1:00-2:00p
(or by appointment)

Course Coordinates: MWF 12:30-1:20p KUY 301

Text: Pearson Custom Mathematics for UHM Math 161
(It comes with a Pearson's MyMathLab student access kit)

Course Description: This course will cover algebra review, functions with special attention to polynomials, rational, exponential, and logarithmic functions, algebra of functions, techniques of graphing, differentiation and integration of algebraic functions, and applications in economics and the social sciences. Credit is allowed for only one of the following: MATH 135, MATH 140, or MATH 161. Grade Options: A-F, CR/NC or Audit.

Course Outline:

- **Fundamentals (3 Weeks):** Sets of real numbers, review of elementary algebra, solving equations and inequalities, coordinate geometry, graphs of lines, and functions.

- **Polynomial and Rational Functions (3 Weeks):** Graphing polynomial and rational functions, asymptotes and singularities, the division algorithm, factor theorem, remainder theorem, and the Fundamental Theorem of Algebra.

- **Logarithmic and Exponential Functions (3 Weeks):** Graphing exponential and logarithmic functions, laws of logarithms, modeling and applications.

- **Differentiation (3.5 Weeks):** Tangent lines, differentiability, rules of differentiation and derivatives of algebraic functions, the derivative as rate of change, and applications.

- **Integration (2.5 Weeks):** Integrability, Fundamental Theorem of Calculus, areas under graphs and accumulation, as well as applications.
Grade: Your final grade for the course is determined according to the following scheme:

**Homework (written and online):** 25%
**Quizzes/In-class assignments:** 10%
**Midterm 1:** 20%
**Midterm 2:** 20%
**Final:** 25%

**Course Objectives:** Upon successful completion of MATH 161, the student will be able to work with, apply, and answer questions pertaining to Precalculus, differentiate and integrate algebraic functions, and apply basic ideas of calculus to economics and the social sciences. MATH 161 is a course designed to strengthen the mathematical preparation of students in economics and the social sciences, and to expose these students to basic uses of calculus.

**Homework:** There will be a combination of written and online homework this semester.

**Online homework:** We will utilize Pearson's MyMathLab for the online homework. They will be assigned after every lecture and they are due at the beginning of the next lecture.

**Written homework** will be assigned (occasionally) and they are collected in the next class.

**NO late homework is accepted** unless you have a doctor-signed medical excuse or a University-approved excuse for off-island athletic events. You are encouraged to work with your classmates. Simplify your answers for the written homework. Give exact answers instead of decimals unless specified.

**Quizzes/In-class assignment:** Quizzes will be given in class at advance notice.

**Exams:** Exams are closed book. No notes. No calculators. No cell phones. The final exam will be a written exam given in class on December 16 (Friday), 2016 at 12:00-2:00pm.

**Important Dates:**
- Drop Deadline w/o "W" …............................................... August 29 (Mon)
- Holiday: Labor Day ..........................................................September 5 (Mon)
- Withdrawal Deadline ...........................................................October 21 (Fri)
- Holiday: Election Day ......................................................November 8 (Tue)
- Holiday: Veterans' Day.....................................................November 11 (Fri)
- Holiday: Thanksgiving Day ..............................................November 24 (Thur)
- Non-Instructional Day .......................................................November 25 (Fri)
- Study Days.................................................................December 9-10 (Fri - Sat)
- Final Exam........................................................................ December 16, 12:00-2:00p (Fri)