

## **MATH 135 Precalculus: Elementary Functions**

**INSTRUCTOR:** Robert Garry

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**OFFICE:** Mana'opono 110a

**OFFICE HOURS:** Tuesday and Thursday 12:00 – 1:00 or by Appointment

**TELEPHONE:** (808) 236-9276

**EFFECTIVE DATE:** Fall 2017

**CRN 61163 Days TR Time 1:00 – 2:15 Room Manao 113**

### **Windward Community College Mission Statement**

*Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai'i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O'ahu's Ko'olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.*

### **Course Description**

An analysis of elementary functions. A study of polynomial, rational, exponential, and logarithmic functions. Topics also include graphing techniques, transformations, applications, and related topics. Emphasis is placed on topics that will prove useful to students planning to take Calculus or to those who are interested in pursuing math related careers. (3 hrs. lecture)

**PREREQUISITES:** Grade of "C" or better in Math 103 or equivalent, or satisfactory placement test score, or consent of instructor.

### **Foundation Hallmarks**

Math 135 fulfills 3 credits of the General Education requirements (Foundations: Symbolic) for both an A.A. degree at WCC and a Bachelor's degree at UH Manoa. Consequently, it meets the hallmarks of the symbolic reasoning requirement.

1. Students will be exposed to the beauty, power, clarity and precision of formal systems.
2. Instructors will help students understand the concept of proof as a chain of inferences.
3. Instructors will teach students how to apply formal rules or algorithms.
4. Students will be required to use appropriate symbolic techniques in the context of problem solving, and in the presentation and critical evaluation of evidence.
5. The course will not focus solely on computational skills.

Instructors will build a bridge from theory to practice and show students how to traverse this bridge.

### **Student Learning Outcomes**

1. Demonstrate proficiency in writing math expressions into different forms and finding the solutions to an equation and inequality using complex numbers where appropriate, by applying formal rules or algorithms.
  2. Use appropriate symbolic techniques (such as algebraic techniques) to analyze and solve applied problems, and in the critical evaluation of evidence.
  3. Interpret equations geometrically and use geometrical information to obtain the equation of lines and circles.
  4. Utilize function concepts.
  5. Draw the graphs of functions utilizing behavior information and/or transformations.
  6. Utilize precise mathematical language and symbols to effectively communicate mathematics in written and/or oral form and in the presentation of evidence.
  7. Traverse the bridge from theory to practice by using theorems related to polynomial functions and demonstrate proficiency in working with polynomial functions.
  8. Apply concepts and properties of the logarithm functions.
  9. Understand the concept of proof as a chain of inferences by doing some proofs.
- Note: All SLO assessments are embedded in class activities, homework, or Exams.

### **Required Materials**

Text: Precalculus, Mathematics for Calculus, 7th ed., by Stewart, Redlin & Watson

Calculator: TI-83 or TI-84 (any model)

### **Course Content**

- Ch. 1 Fundamentals
- Ch. 2 Functions
- Ch. 3 Polynomial and Rational Functions
- Ch. 4 Exponential and Logarithmic Functions

### **Assessment**

- Homework and weekly quizzes 60%

- Midterms 20%
- Final Exam 20% Tuesday Dec 12<sup>th</sup> at 1:00

#### Letter Grade Definition

A 90% - 100% of the cumulative points possible  
 B 80% - 89% of the cumulative points possible  
 C 70% - 79% of the cumulative points possible  
 D 60% - 69% of the cumulative points possible  
 F Less than 60% of the cumulative points  
 CR/NC CR requires 70% or better of the cumulative points  
 W grade Official Withdrawl  
 I See: Math Department Policies.

#### Learning Resources:

- Math Lab: La'akea (Library Learning Commons) Room 220  
[http://windward.hawaii.edu/About\\_WCC/Math\\_Lab/index.php](http://windward.hawaii.edu/About_WCC/Math_Lab/index.php)
- Testing Center: La'akea (Library Learning Commons) Room 228  
 Phone: 235-7498  
[http://windward.hawaii.edu/Testing\\_Center/index.php](http://windward.hawaii.edu/Testing_Center/index.php)
- Brainfuse Online Tutors: <http://windward.hawaii.edu/Brainfuse/>
- OLA (UH online tutoring program): <http://manoa.hawaii.edu/ola/>
- TRiO: <http://windward.hawaii.edu/TRIO/index.php>
- WolframAlpha: <http://www.wolframalpha.com>
- Kahn Academy Videos: <http://www.khanacademy.org>

#### DISABILITIES ACCOMMODATION STATEMENT

*If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, [lemke@hawaii.edu](mailto:lemke@hawaii.edu), or you may stop by Hale 'Akoakoa 213 for more information.  
 or visit <http://windward.hawaii.edu/Disabilities>*