

# Math 78 /100

## Survey of Mathematics

4 credits

Section 61465/61466

MWF 11:30 am – 12:45 pm

Mana 101

**INSTRUCTOR:** Clayton K. Akatsuka, Professor, Mathematics

**OFFICE:** Mana 112

**OFFICE HOURS:** MW 9:45 am - 11:15 am;  
TTh 12:30 pm - 1:00 pm;  
or by appointments.

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**EFFECTIVE DATE:** Fall 2017

### 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.*

### 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/>*

### CATALOG DESCRIPTION

This course provides students concurrently enrolled in MATH 100, MATH 101, MATH 111, or MATH 115 with Just-In-Time support with special emphasis on pattern recognition and problem solving. Course topics are tailored to the concurrent course and may include ratio and percent, unit conversion, graphs, data interpretation, basic algebra, solving linear equations, and working with formulas. (One Lecture Hour)

Pre-Requisite(s): C or better in MATH 25, 26, 28, 29, 75X or higher or equivalent, co-requisite enrollment in Math 78, satisfactory math placement test score, or consent of instructor.

An introduction to quantitative and logical reasoning for the non-science/non-mathematics major. The question, “What is mathematics?” is explored, while focusing on mathematical systems or models, cultivating an appreciation for mathematics as an aesthetic art, and developing skills in problem solving and analysis.

WCC: FS

## STUDENT LEARNING OUTCOMES

Upon completion of the course, the student will be able to:

- Demonstrate college-level mathematical reasoning skills
1. Utilize basic properties and/or operations related to the topics covered in the course.
  2. Employ symbolic/mathematical techniques to solve applied problems.
  3. Utilize precise mathematical language and symbols to effectively communicate mathematics in written and/or oral form.

*Note: All SLO assessments are embedded in class activities, homework, quizzes, or exams.*

## FOUNDATION HALLMARKS

Math 100 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 rule 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.
6. Instructors will build a bridge from theory to practice and show students how to traverse this bridge.

## COURSE CONTENT

### *Concepts or Topics*

- **Algebra: Graphs and Functions**
- **Set Theory**
- **Logic**
- **Counting Methods**
- **Probability**
- **Statistics**

### *Skills or Competencies/Responsibilities of Students. Success in this course will be enhanced by:*

1. *A positive, inquiring attitude towards learning mathematics;*
2. *Setting aside adequate time for studying and working of problems;*
3. *Reading the text carefully and making use of other learning materials whenever necessary;*
4. *Seeking assistance from the instructor, the Math Lab personnel, Supplemental Instruction(SI) Leader, or online resources whenever necessary;*
5. *Completing assignments by the designated date;*
6. *Regular class attendance, participation and maintaining accurate class notes.*

## COURSE TASKS

The mode of instruction is primarily lecture-discussion-class activities where the initial portion of each class period may be utilized to discuss and clarify any questions from the preceding class meeting and/or assignment, and the remaining portion is used to discuss new material. It is strongly recommended that students read sections prior to each class meeting. After the completion of each unit of instruction, a review and an exam will be conducted. Lectures, directed student explorations, group work, appropriate technologies, and projects will also be used as appropriate.

## ASSESSMENT TASKS AND GRADING

The student will demonstrate competency in the objectives by participating in, completing and turning in all assignments, class activities, and special projects requested, by taking unit exams and quizzes, and by taking a comprehensive final exam.

It is the student's responsibility to obtain and complete all assignments which are given in any class meeting for which the student is unable to attend.

Points will be assigned to each assignment, activity, quiz and exam that counts toward the student's grade as follows:

1. **Homework.** Homework sets will be graded on a 0 – 3 point scale. Assignments are due at the next class meeting. Work must be shown neatly and completely. Late homework may be accepted with penalty.
2. **Class Activity.** Class activities are done in class and will be graded on a 0 – 2 point scale. There is no make-up for a missed class activity. Students must be present in class to participate.
3. **Unit Exam.** There are three unit exams and one unit quiz given in class. A unit exam will be approximately 75 minutes in length and will be scored on a 100 point scale, and the unit quiz will be scored on a 50 point scale. There is no retest.

4. **Make-up Policy.** If you are unable to attend class on an exam day, discuss your situation with the instructor as soon as possible before the exam day. It may be possible for you to take the exam earlier than the specified day/time. If you unexpectedly must be absent on an exam day, notify me by 4:00 pm via e-mail or voicemail. If the notification is received and the reason is justified then a make-up exam will be scheduled. The instructor reserves the right to request documentation to determine whether the absence is justifiable. For each student, NO MORE THAN ONE make-up exam may be taken.

5. **Final Exam.** The final exam will cover the concepts and skills in the entire course. The final exam is 2 hours in length and will be scored on a 200 point scale. There is no retest. There is no make-up.

6. **Calculators.** A basic 5-function calculator is recommended for homework and is necessary for chapters 11 and 12. Calculator use is allowed on some exams. The following is NOT allowed on exams: graphing calculators, iPods, cell phones or any other electronic device not solely designated as a calculator, or sharing of calculators.

Each letter grade for the course will be assigned according to the level of achievement as provided in the table below:

### Letter Grade

A	earns 90% - 100% of the cumulative points possible.
B	earns 80% - 89% of the cumulative points possible.
C	earns 70% - 79% of the cumulative points possible.
Cr	earns 70% - 100% of the cumulative points possible.
D	earns 60% - 69% of the cumulative points possible.
NC	earns less than 70% of the cumulative points possible.
F	earns less than 60% of the cumulative points possible.

Note: Students must apply for the Cr/NC grading option at the Admissions Office. Check your Schedule of Classes for deadline.

## LEARNING RESOURCES

### Required materials:

- Textbook: Thinking Mathematically, 6th edition, by Blitzer  
Although not required, a Student Solution Manual is also available.
- Basic Calculator: Must have a square root function

### Learning Resources:

- Supplemental Instruction Leader: TBA
- Testing Center: La`akea (Library Learning Commons) Room 228  
Phone number: 235-7498  
[http://windward.hawaii.edu/Testing\\_Center/index.php](http://windward.hawaii.edu/Testing_Center/index.php)
- WCC Math Lab: La`akea (Library Learning Commons) Room 222  
[http://windward.hawaii.edu/Math\\_Lab/](http://windward.hawaii.edu/Math_Lab/)
- Brainfuse Online Tutoring: <http://windward.hawaii.edu/brainfuse/>

- OLA (UH Online Tutoring): <http://manoa.hawaii.edu/ola/>
- Kahn Academy Videos: <http://www.khanacademy.org>

### **Additional Information**

1. Grading on homework, class activity, quiz or exam. To receive full marks for problems done on any graded activity, you must show your work neatly and completely. Partial credit may be awarded.
2. Absences. It is your responsibility to attend class. Even if you are absent, you are responsible for those topics and examples covered in the class that you missed. Furthermore, you are responsible for obtaining any important announcements and assignments given during the class that you missed. If you are absent frequently or for an extended period of time, contact the instructor as soon as possible to discuss your situation. Absence and tardiness to class can have a negative impact on your success in this course. Frequent or long periods of absence require a professional note justifying the absence.