

## **MATH 75X INTRODUCTION TO MATHEMATICAL REASONING**

4 Credits

MWF 8:30 AM – 9:45 AM

<b>INSTRUCTOR:</b>	<b>Kevin A. Takayama, Instructor, Mathematics</b>		
<b>OFFICE:</b>	<b>Hale Mana‘opono 105</b>		
<b>OFFICE HOURS:</b>	<b>MWF 11:30 AM – 12:30 PM; TTh 10:00 AM – 11:00 AM; or by appointment.</b>		
<b>TELEPHONE:</b>	<b>236-9283</b>	<b>EMAIL:</b>	<b>ktakayam@hawaii.edu</b>
<b>EFFECTIVE DATE:</b>	<b>Fall 2016</b>		

### **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.*

### **CATALOG DESCRIPTION**

This course prepares students for MATH 100, MATH 101, MATH 111, and MATH 115. Course topics include ratio and percent, unit conversion, graphs, data interpretation, basic algebra, solving linear equations, and working with formulas with special emphasis on pattern recognition and problem solving. Additional topics may include set theory, inequalities, and quadratics. (4 hours lecture)

*Pre-Requisite(s): None*

*Co-Requisite(s): None*

### **STUDENT LEARNING OUTCOMES**

The student learning outcomes for the course are:

1. Solve applied mathematical problems, judge reasonableness of results, and communicate conclusions using appropriate terminology and symbols
2. Recognize and express mathematical patterns in various forms and contexts
3. Perform operations on real numbers
4. Utilize precise mathematical language and symbols to effectively communicate mathematics in written and/or oral form

## COURSE CONTENT

### *Concepts or Topics*

- **Critical Thinking and Problem Solving Strategies**
- **Number Sense**
- **Operations on Real Numbers**
- **Proportional Reasoning**
- **Linear Equations in One and Two Variables**
- **Evaluating and Manipulating Formulas**
- **Graphical Representations**
- **Dimensional Analysis**
- **Geometry and Measurement**

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

1. a positive, inquiring attitude towards 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 and the Math Lab personnel 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 discussion-problem solving 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. Lectures, directed student explorations, group work, appropriate technologies, and projects will also be used as appropriate. After the completion of each unit, a review and an exam will be conducted.

## ASSESSMENT TASKS AND GRADING

The student will demonstrate competency in the objectives by participating in and completing all class activities, by completing and turning in all assignments as requested, by taking unit tests, and by taking a final exam over concepts and skill covered in the entire course. Class activities, weekly quizzes, unit tests, and the final exam are to be taken in the classroom and without any references unless otherwise stipulated by the instructor.

It is the student's responsibility to obtain and complete all assignments that are given in any class meeting for which the student is unable to attend. Unless permission is granted by the instructor beforehand, assignments and tests must be completed and submitted to the instructor at the specified date and time.

Points will be assigned to each graded assignment, class activity, weekly quiz, and tests as follows:

1. **MyMathLab.** MML Homework sets will be graded on a 0 - 5 point scale. Assignments are to be completed on the designated date.
2. **Homework Exercises.** Homework Exercise sets will be graded on a 0 - 10 point scale. Assignments are to be turned in the following class that they are assigned. ***Late homework will not be accepted.***
3. **Unit Exam.** The four unit exams are given in class at the end of each unit. A unit exam will be 75 minutes in length and will be scored on a 100-point scale. **The student must achieve a minimum of 70% of the possible points for each unit exam.** Without this minimum requirement, a passing grade for the course is not possible.

**Practice Tests.** At least a day before each unit exam you will be assigned a practice test as preparation. This practice test must be fully completed on the day of the unit exam in order to take the exam.

**Retests.** After each unit exam, a unit retest deadline will be given. One retest is allowed without penalty for each unit exam if it is done by the specified unit retest deadline. The better of the two exam scores will count towards your grade. No retests will be given after the unit retest deadline. Retests are arranged by appointments with your instructor.

To take a retest, all of the following must be met:

- a) All problems from the Chapter Test at the end of the chapter must be completed and shown to the instructor.
- b) The student must meet with the instructor to review mistakes made on the first form of the test taken.
- c) Additional math activities as designated by the instructor must be completed.
- d) The retest must be taken by the designated unit retest deadline.

**5. Final Exam.** The final exam will cover the concepts and skills in the entire course. The final exam is two hours in length and will be scored on a 200-point scale. The student must achieve a minimum of 60% of the possible points for the final exam. Without this minimum requirement, a passing grade for the course is not possible.

Retesting for the final exam is available if the 60% minimum is not met and the 70% minimum per chapter test was met. In that event, a retest of the final exam is possible, however, the maximum score of the retest is 60% of the possible points for the final exam.

**Make-up.** Make-up opportunity for a unit exam or final exam will be possible only upon a timely presentation of a serious and justified explanation of the student's absence from the class exam. The instructor has the right to request documentation of the student's absence from the class and to determine if the absence from the class exam is justified. A make-up exam must be taken within one week of the in-class exam unless otherwise specified by the instructor. **No more than one exam may be taken by a student on a make-up basis.**

**Course grade.** If the student has achieved a minimum of 70% of the possible points for each unit exam and a minimum of 60% of the possible points for the final exam, then a letter grade for the course will be assigned according to the level of achievement as provided in the table below:

GRADE	DEFINITION
A	90% - 100% of the total possible points
B	80% - <90% of the total possible points
C	70% - <80% of the total possible points
Cr	70% - 100% of the total possible points
NC	<70% of the total possible points
D	60% - <70% of the total possible points
F	< 60% of the total possible points

Note: Students must apply for the Cr/NC grading option at the Admissions Office. Consult the WCC Catalog for deadlines.

Note: W grade is given only when the student officially withdraws from the course at the Admissions Office. Consult the WCC Catalog for deadlines.

## LEARNING RESOURCES

**Required Text:** Mathematics in Action, 5th edition, by Pearson.

**Required MyMathLab Access:** Included with the required text is an access code for MyMathLab. If you purchase the textbook secondhand, or through a retail outlet other than the WCC bookstore, you may also need to purchase an access code for MyMathLab. Our course ID for this semester: **takayama87719**

TRiO: Hale Kāko‘o 116

The Math Center: Mana`opono 103

The Math Lab: La‘akea 220

UH Manoa Online Learning Academy: [manoa.hawaii.edu/ola/](http://manoa.hawaii.edu/ola/)

Math Tutorial Videos: <https://windward.hawaii.edu/jitmath/index.php>

## Additional Information

1. **Grading on Homework, Class Activities, Weekly Quizzes, or Exams.** To receive full marks for problems done on any graded activity, you must show your work neatly and completely as well as provide clear written explanations when it is asked for. Partial credit may be awarded.

2. **Absences.** It is your responsibility to attend every class meeting. Even if you are absent, you are responsible for those topics and examples covered in class that you missed. Furthermore, you are responsible for obtaining any important announcements and assignments given during the class 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. Absences and tardiness to class will have a negative impact on your success and overall grade in this course. You are allowed 3 absences without consequence. **If you are absent 4 times, your overall grade will drop by 10%, one letter grade.** You will be deducted 10% of your overall grade for every 4 absences thereafter. You are considered tardy if you come to class between 5-20 minutes after class has started. **Two tardy attendances are worth 1 absence.**

3. **Homework.** For each chapter, as you read through each section, it is recommended that you write down the words, phrase or math symbols and their meanings, formulas, and properties/rules that are important for each section. It is important for you to know these.

After reading through each section carefully, try the suggested odd numbered problems in each section. The answers to the odd numbered problems are available at the back of the textbook. Do as many as you feel is necessary to help you learn and understand the material and become comfortable with the concepts and/or properties. If you have difficulty solving problems in the section, review the material in the text and your class notes. Many examples are solved. Review the solutions to these problems. If, after checking these sources and trying to find your mistakes, you are still unable to solve a problem correctly, make a note of the exercise number so that you can ask someone for help with that problem.

Mathematics is not a spectator sport. To succeed in mathematics, you must do problems. It is often necessary to practice a skill more than the instructor requires. For example, a textbook may provide 50 practice problems in a section and the instructor may assign only 25 of them. However, some students may need to do 30, 40, or all problems. If you are an accomplished

athlete, musician, or dancer, you know that long hours of practice are necessary to acquire a skill. Do not cheat yourself of the practice you need to develop skills taught in this course.

4. **Laulima.** The syllabus, course calendar, homework schedule, grades, etc. are all viewable through Laulima. Check Laulima regularly to stay up to date.

5. **Calculators.** Calculator use is allowed on certain quizzes, tests, and exams. Graphing calculators are not allowed.

6. **Communication.** It is your responsibility to stay in communication with the instructor. If you will be unable to make it to class for any reason, please inform your instructor so it may be determined if the absence is excused. The instructor may need to contact you throughout the semester and will do so via email. It is your responsibility to check your student email on a regular basis.

### **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.*

Revised May 25, 2011