MATH 111 - Mathematics for Elementary Teachers I (WI)
3 Credits

INSTRUCTOR: Clayton K. Akatsuka, Professor, Mathematics
OFFICE: Mana 112

OFFICE HOURS: T, Th 9:30 am - 10:00 am, 12:30pm – 1:30pm; or by appointments.

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e-mail: akatsuka@hawaii.edu

EFFECTIVE DATE: Fall 2011

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, or you may stop by Hale ʻAkoakoa 213 for more information.

CATALOG DESCRIPTION

Math 111 is the first of a two-course sequence designed to give prospective elementary education majors the depth of understanding necessary to teach mathematics in the elementary classroom. Topics include number (natural numbers, integers, fractions, and real numbers) and operations, sets, patterns, functions and algebra. Emphasis will be on communication, connections and problem solving, representations, and reasoning and proof.

Prerequisite: Grade of “C” or better in MATH 25 or placement into MATH 100 or equivalent, and successful completion of ENG 100 (WI).
WRITING INTENSIVE

The Writing Intensive (WI) hallmarks are:

- Writing promotes learning of course content.
- Writing is considered to be a process in which multiple drafts are encouraged.
- Writing contributes significantly to each student’s course grade.
- Students do a substantial amount of writing, a minimum of 4,000 words. Depending on the types of writing appropriate to the discipline, students may write critical essays or reviews, journal entries, lab reports, research reports or reaction papers.
- To allow for meaningful teacher-student interaction on each student’s writing, the class is restricted to 20 students.

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:

1. Explain and utilize numbers, ways of representing numbers, relationships among numbers, and number systems.

2. Explain the meaning of operations and how they relate to each other.

3. Describe various types of patterns and functional relationships.

4. Utilize symbolic forms to represent, model, and analyze mathematical situations to solve problems.

5. Communicate mathematical ideas verbally, in writing, and through mathematical representations to various audiences.

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

COURSE CONTENT

<table>
<thead>
<tr>
<th>Concepts or Topics</th>
<th>Skills or Competencies/Responsibilities of Students. Success in this course will be enhanced by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Operations and Their Properties</td>
<td>1. a positive, inquiring attitude towards learning mathematics;</td>
</tr>
<tr>
<td>• Ordered Pairs, Ordered Triples, Etc.</td>
<td>2. setting aside adequate time for studying and working of problems;</td>
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<tr>
<td>• Set Theory</td>
<td>3. seeking assistance from the instructor and the Math Lab personnel whenever necessary;</td>
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<tr>
<td></td>
<td>4 completing assignments by the designated date;</td>
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<tr>
<td></td>
<td>5. regular class attendance, participation and maintaining accurate class notes.</td>
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</tbody>
</table>
**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, conferences, 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 and completing all class activities, by completing and turning in all assignments as requested, by taking unit tests, by satisfying the hallmarks of a writing intensive course, and by taking a final exam over concepts and skill covered in the entire course. Class activities, 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, and tests as follows:

1. **Homework.** Homework sets will be graded on a 0 - 5 point scale. Assignments are due at the next class meeting to the instructor. Late homework may be accepted with penalty.

2. **Class Activity.** Class activities are done in class. Class activities will be graded on a 0 - 3 point scale. There is no make-up for a missed class activity. Students must be present in class to participate.

3. **Unit Exams.** The three unit exams are given in class at the end of the designated sections. A unit exam will be approximately 50 minutes in length and will be scored on a 100-point scale. There is no retest.

4. **Special Activity.** (a) An essay paper (in partial fulfillment of the writing intensive requirement) will be scored on a 50-point scale. Students will have an opportunity to edit their papers, once it has been reviewed and scored by the instructor, to improve their scores. (b) A Poster Session will be conducted in two parts: students will prepare a poster, utilizing a given rubric, to teach a topic (take home portion); posters will be displayed in class and a review of each poster will be made (in class portion). The Poster Session will be scored on a 50-point scale. There are no make-ups.

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

Make-up opportunity for a unit exam will be possible only upon a timely presentation of a serious and justified explanation of the student’s absence from the class test. 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 test is justified. A make-up exam must be taken within one week of the in-class test unless otherwise specified by the instructor. **No more than one exam may be taken by a student on a**
make-up basis.

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

<table>
<thead>
<tr>
<th>GRADE</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90% - 100% of the total possible points</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89% of the total possible points</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79% of the total possible points</td>
</tr>
<tr>
<td>Cr</td>
<td>70% - 100% of the total possible points</td>
</tr>
<tr>
<td>NC</td>
<td>Less than 70% of the total possible points</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69% of the total possible points</td>
</tr>
<tr>
<td>F</td>
<td>Less than 60% of the total possible points</td>
</tr>
</tbody>
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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

The Math 111 course booklet (available for sale at the Bookstore) is required. It should be placed in a three-ring binder along with additional materials distributed in class. Written assignments, class activities and notes should also be kept in the folder.

*Thinking Mathematically* by Blitzer and *The Nature of Mathematics* by Smith may be helpful references. Copies are available in the Library, Math Lab and the instructor’s office.

Additional Information

1. Grading on Homework, Class Activities, Special Activities 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. In partial fulfillment of the writing intensive requirements, students will have the opportunity to edit their work and resubmit their work to improve their scores. Writing is considered to be a process in which multiple drafts are encouraged. 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 in this course.