University of Hawaii Community Colleges
Proposal to Initiate, Modify or Delete a Course

1. Type of Action
   - A. Addition
   - Regular or Experimental or Other (click and type to specify)
   - B. Deletion
   - C. Modification: in credits, in title, in number or alpha, in prerequisites or co-requisites
   - Other (click to specify)

2. New Alpha, Number and Title
3. Credits *

4. Old Alpha, Number and Title MATH 112 - Mathematics for Elementary Teachers II
5. Credits 3 credits

6. New Catalog Description
   MATH 112 is the second 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 representation of and operations on the natural numbers and properties of those operations. Emphasis will be on communication, connections and problems solving, representation and reasoning.

7. Select box and type specific information in text box.
   - Prerequisites
   - Corequisites or Recommended Preparation
   - Grade of "C" or better in MATH 111

8. Student Contact Hours Per Week
   - Lecture 3
   - Lab
   - Other (click to specify)

9. Proposed Date of First Offering
   - Semester Spring
   - Year 2011

10. This course is proposed for the Liberal Arts Program. ☑
    - Can fulfill * If Other, specify Math or Logical Thinking-Symbolic Reasoning (FS) requirement.

11. This course Makes No Difference in the number of credits required for the program/core.

12. Equivalent or similar courses offered in the UH System:

<table>
<thead>
<tr>
<th>Campus</th>
<th>Alpha, Number, Title</th>
<th>Campus</th>
<th>Alpha, Number, Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>HawaiiCC</td>
<td>MATH 108-Mathematics for Education II (4 credits)</td>
<td>UH Hilo</td>
<td>MATH 108-Mathematics for Education II (4 credits)</td>
</tr>
<tr>
<td>KapiolaniCC</td>
<td>MATH 112-Mathematics for Elementary Teachers II (3 credits)</td>
<td>UH Manoa</td>
<td>MATH 112-Mathematics for Elementary Teachers II (3 credits)</td>
</tr>
<tr>
<td>LeewardCC</td>
<td>MATH 112-Mathematics for Elementary Teachers II (3 credits)</td>
<td>MauiCC</td>
<td>MATH 112-Mathematics for Elementary Teachers II (3 credits)</td>
</tr>
</tbody>
</table>

* *

13. This course is (check one and click in appropriate textbox and provide details):
   - Already articulated with
   - Provide details of existing or desired articulation (date, college(s), purposes, pre-major, etc.) in this space:
     ☑ Appropriate for Articulation with UHM, UH Hilo, UH WO, Leeward CC, Kapiolani CC, Maui CC, and Hawaii CC.
     - Provide details of existing or desired articulation (date, colleges(s), purposes, pre-major or major, etc.) in this space:
   - Not yet appropriate for Articulation.

14. Reason for Initiating, Modifying or Deleting Courses or Other Pertinent Comment:
   - The modified MATH 112 Catalog Description will better reflect the content of the course, and it will better align with the Catalog Description of UHM's MATH 112.

Requested by: ____________________________________________  Date: 11-5-2010
Proposer of the Course

Approved by: ____________________________________________  Date: 2-15-11
Curriculum Committee Chairperson

Date: 3-15-11
Faculty Senate Chairperson

Date: 3-15-11
Vice Chancellor for Academic Affairs

Date: 4-15-11
Chancellor

CCCM #6100 (Amended for WCC usd October 2002)
Levels of Review of Course Proposal at Windward Community College

Course Alpha, Number, and Title: MATH 112 - Mathematics for Elementary Teachers II

<table>
<thead>
<tr>
<th>Signatures</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11/5/10</td>
</tr>
<tr>
<td></td>
<td>11/5/2010</td>
</tr>
<tr>
<td></td>
<td>11/5/2010</td>
</tr>
</tbody>
</table>

1. Department Area (more than one departmental instructor’s signature required)

2. Department
   - Department Chairperson
   - Was this course discussed in a department meeting? [ ] Yes [ ] No
   - [ ] 11/5/2010

3. Division
   - [ ] 12/2/2011

4. Curriculum Committee Review
   - Approved [x]
   - Disapproved [ ]

   Reason:
   - [ ] 3/16/11

   Curriculum Committee Chairperson

5. IEC/Peers/committee SLOs
   - [ ] 12/28/2010

CCCM #6100 (Amended for WCC use October 2002)
University of Hawaii Community Colleges
Proposal to Initiate, Modify or Delete a Course
New Course Proposal Form

WCC Form for Course Modifications

Course MATH 112 - Mathematics for Elementary Teachers II
Submitted by Clayton K. Akatsuka
Date October 27, 2010

1. What change is proposed in the course? Provide specific information comparing both the “new” and “old” course.

   The proposed change is the Catalog Description for the MATH 112 course.

2. What is the rationale for the change?

   The rationale is to have a Catalog Description that better reflects the course content.

3. Is the change substantive enough to require a change in course identification? If so, explain thoroughly.

   No.

4. Is the course articulated with any 4-year program? Yes

   If yes, give details of the agreement(s) and explain any impact the proposed modifications may have on articulation.

   This is part of the Elementary Education program prerequisite at UHM College of Education. The proposed modification to the Catalog Description has no impact on the content and therefore has no impact on articulation. WCC continues to use the articulated course material and the proposed Catalog Description closely aligns with the UHM Catalog description for MATH 112.

5. Provide details of any additional staff, equipment, facilities, library/media material, faculty preparation and other financial considerations that would be required to implement this course modification. What has been done to provide for these additional costs? Who will teach the course? Is additional preparation needed?

   None.

6. Will this course modification result in any alterations in the number of hours required to attain a certificate or degree? * If yes, provide details and justification for these alterations.

   No.

7. If the course is renumbered to 100 or above, does it meet the criteria for transfer level courses? Yes
MATH 112 – Mathematics for Elementary Teachers II
3 Credits

INSTRUCTOR: 
OFFICE: 
OFFICE HOURS: 
TELEPHONE: 
EFFECTIVE DATE: 

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College is committed to excellence in the liberal arts and career development; we support and challenge individuals to develop skills, fulfill their potential, enrich their lives, and become contributing, culturally aware members of our community.

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 112 is the second 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 the representation of and operations on the natural numbers and properties of those operations. Emphasis will be on communication, connections and problem solving, representations, and reasoning.

Activities Required at Scheduled Times Other Than Class Times

Include activities, such as completion of library sections, conferences, TLC lab work, or any activity, the student must complete outside of regularly scheduled class time.

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:
1. Apply formal rules or algorithms in set operation.
2. Utilize precise mathematical language and symbols to effectively communicate mathematics in written and/or oral form and in the presentation of evidence.
3. Use appropriate symbolic techniques to analyze and solve problems, and in the critical evaluation of evidence.
4. Utilize the concept of proof as a chain of inferences.
5. Solve problems using postulates and/or theorem-like statements related to arithmetic operations and set theory.

**COURSE CONTENT** (This section logically follows the student learning outcomes, but it may be included in an appendix or after the Learning Resources section.)

<table>
<thead>
<tr>
<th>Concepts or Topics</th>
<th>Skills or Competencies/Responsibilities of Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Pairing</td>
<td>1. a positive, inquiring attitude towards learning mathematics;</td>
</tr>
<tr>
<td>• Number of Elements in a Set</td>
<td>2. setting aside adequate time for studying and working of problems;</td>
</tr>
<tr>
<td>• Equivalent Sets</td>
<td>3. seeking assistance from the instructor and the Math Lab personnel whenever necessary;</td>
</tr>
<tr>
<td>• Less Than or Greater Than</td>
<td>4 completing assignments by the designated date;</td>
</tr>
<tr>
<td>• Infinite Sets</td>
<td>5. regular class attendance, participation and maintaining accurate class notes.</td>
</tr>
<tr>
<td>• Addition</td>
<td></td>
</tr>
<tr>
<td>• Subtraction</td>
<td></td>
</tr>
</tbody>
</table>

**COURSE TASKS**

This section refers to the tasks or the work the student must complete or what the student must do in order to succeed in this class. Grading of tasks can be included here. In this case, the next section (Assessment Tasks and Grading) is unnecessary.

For example:
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.

**ASSESSMENT TASKS AND GRADING**

This section refers to how the student will be assessed and the grades available to the student. Grading criteria should be included in this section.

For example:
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, 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 is not accepted.

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 Exam.** Four unit exams are given in class. A unit exam will be approximately 50 minutes in length and will be scored on a 100-point scale. There is no retest.

4. **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.

Make-up opportunity for a chapter test 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 test must be taken within one week of the in-class test unless otherwise specified by the instructor. **No more than one test 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>
</table>

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 112 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** *(This may be included in an appendix.)*

- Instructor expectations
- Sample grading rubrics or scoring sheets
- Additional policies
- Expectations
- Any information you feel the student needs to know
MATH 112 - Mathematics for Elementary Teachers II
3 Credits
TTh 8:15 am - 9:30 am

INSTRUCTOR: Clayton K. Akatsuka, Professor, Mathematics
OFFICE: Alakai 130
OFFICE HOURS: TBA
TELEPHONE: 236-9279
e-mail: akatsuka@hawaii.edu
EFFECTIVE DATE: Spring 2010

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT
Windward Community College is committed to excellence in the liberal arts and career development; we support and challenge individuals to develop skills, fulfill their potential, enrich their lives, and become contributing, culturally aware members of our community.

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 `Akoakoa 213 for more information.

CATALOG DESCRIPTION
Math 112 is the second 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 the representation of and operations on the natural numbers and properties of those operations. Emphasis will be on communication, connections and problem solving, representations, and reasoning.

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:
1. Apply formal rules or algorithms in set operation.
2. Utilize precise mathematical language and symbols to effectively communicate mathematics in written and/or oral form and in the presentation of evidence.
3. Use appropriate symbolic techniques to analyze and solve problems, and in the critical evaluation of evidence
4. Utilize the concept of proof as a chain of inferences.
5. Solve problems using postulates and/or theorem-like statements related to arithmetic operations and set theory.
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 following 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.
6. Instructors will build a bridge from theory to practice and show students how to traverse this bridge.

COURSE CONTENT

Concepts or Topics
- Pairing
- Number of Elements in a Set
- Equivalent Sets
- Less Than or Greater Than
- Infinite Sets
- Addition
- Subtraction

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. seeking assistance from the instructor and the Math Lab personnel whenever necessary;
4. completing assignments by the designated date;
5. 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.

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, 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 is not accepted.

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 Exam.** Four unit exams are given in class. A unit exam will be approximately 50 minutes in length and will be scored on a 100-point scale. There is no retest.

4. **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.

Make-up opportunity for a chapter test 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 test must be taken within one week of the in-class test unless otherwise specified by the instructor. **No more than one test 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>
</table>

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 112 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.