



University of Hawai`i at West O`ahu Department of Education

Course Title: Math 111 Math for Elementary School Teachers I Spring 2017	
Building: E133	Instructor: Laurie James, Ed.D.
Course Credits: 3 credits	Email: Ljames7@hawaii.edu
Meeting Times: Tues/Thur 12:30-1:50PM	Phone: (808) 689-2364
Dates: January 10 th – April 26 th , 2017	Office hours: Wednesday 12:00-1:30PM or by appointment, room E117

Required Textbook/Materials

- A Problem Solving Approach to Mathematics for Elementary School Teachers, by Billstein, Libeskind, and Lott, 12th Edition. Publisher: Pearson Education, Inc., 2016
- MyMathLab Access Code at www.mymathlab.com
* The MyMathLab site will also be used in MATH112.

Prerequisites

Grade of "C" or better in MATH 103 or equivalent course work within the past two years; placement into MATH 111; or consent of Instructor.

Course Description

Math for Elementary School Teachers I is designed especially for prospective elementary school teachers, to enhance their mathematical skills, and to prepare them to take the teaching-methods course. This course is not intended to be a course in elementary-school math, nor a course in how to teach elementary-school math. Rather, it is intended to give prospective teachers a specialized understanding of the math they will be teaching. This type of understanding is different from what it takes to do well in a math course as a student or good at other jobs that require mathematics; it is also essential for effective teaching.

Course Format: Student Learning Outcomes

This course is workshop-based, emphasizing problem solving, and classroom experiences designed for you as both a learner of mathematics and as a future teacher of mathematics. The course focuses on mathematical content for teaching, and includes not only topics, ideas, skills, and procedures in specific mathematical domains but also the mathematical thinking and reasoning involved in the mathematical tasks that teachers do.

Upon successful completion of Math 111 - Math for Elementary Teachers I, students will be able to apply critical thinking, including rules of logical sequence, to problem-solving. The student will have a clearer understanding into algebraic and geometric concepts and techniques as well as into the power of mathematics reasoning (ILO 3, GELO 3).

Specifically, the student will be able to carry out the following:

1. Possess adequate knowledge and flexible understanding of the mathematics necessary for teaching students in grades K-6, and the ability to use that knowledge.
2. Understand the central features of an adequate mathematical explanation and be able to provide such explanations.
3. Be able to interpret, evaluate, and respond to the ideas, explanations, solutions and methods of others.
4. Be able to identify and analyze student errors.
5. Be able to choose and use multiple representations (verbal, symbolic, visual, etc.), examine correspondences and equivalences among representations, and make sense of representations different from your own.
6. Be able to adequately communicate mathematical ideas both in writing and orally, in a clear convincing, and accurate way and make use of appropriate representations when applicable.

The abovementioned learning outcomes are aligned with the UHWO Institutional Learning Outcome Critical Thinking (ILO 3) to demonstrate critical thinking skills by applying information to make well-reasoned arguments or solve a problem, and the UHWO General Learning Outcome Symbolic Reasoning (GELO 3) to use quantitative and symbolic reasoning to obtain accurate results in solving problems.

General Education Foundations - Symbolic Reasoning (FS)

This course falls under the designation of symbolic reasoning (FS). The hallmarks for symbolic reasoning are as follows: expose students to the beauty and power of formal systems, as well as to their clarity and precision. This course will not focus solely on computational skills. Students should understand the concept of proof as a chain of inferences. They should be able to apply formal rules or algorithms. They should also be able to engage in hypothetical reasoning. In addition, the course should aim to develop the ability of students to use appropriate symbolic techniques in the context of problem solving, and in the presentation and critical evaluation of evidence.

UHWO Mission Statement

UHWO develops lifelong learners enriched by career competencies and educational opportunities that address state, regional, and international needs. As a diverse indigenous-serving institution, UHWO embraces the Native Hawaiian culture while simultaneously providing an environment where students of all ethnic backgrounds are valued and respected. Our campus fosters excellence in teaching and learning and serves the community of Hawai'i.

UHWO Teacher Education Mission Statement

The UHWO Teacher Education program is dedicated to its vision of providing innovative teacher preparation programs and public service activities in support of the continuing development of West O`ahu communities. To realize this vision, the mission of the program is to provide teacher candidates with the knowledge, skills, and dispositions necessary to become outstanding educators, especially in the elementary schools located in central and leeward communities.

UHWO Teacher Education Conceptual Framework

The Conceptual Framework (CF) serves as a guide for fulfilling the UHWO Teacher Education Program vision of preparing highly qualified teachers for entry into the skilled workforce. The program recognizes the contributions of general education, content area studies, and professional studies to the preparation of educators. Three key values underlie the professional studies philosophy and objectives:

- (1) standards-based education
- (2) student-centered learning
- (3) an orientation to social justice.

Within this framework, the UH West Oahu Bachelor of Education degree program develops teacher candidates who have the knowledge, skills, and dispositions to:

- meet the rigorous professional standards for teaching in order to help their students meet high standards for learning
 - teach in a caring, student-centered manner, differentiating instruction as needed to enable all learners to succeed
 - understand issues of equity, use culturally responsive instruction, and build bridges between school and community
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Attendance Policy

As adult learners, you are expected to maintain a standard of professional responsibility for class attendance. This means that you are expected to arrive on time and to remain for the entire class session. You are always responsible for everything that occurs in class whether you are there or not.

You must notify the Instructor of any anticipated absence or tardy within a reasonable timeframe. Each unexcused absence beyond one will result in lowering of final course grade by one letter. Every two (2) tardy arrivals will be considered one (1) absence. Exceptions will be considered on a case-by-case basis.

Missed Work

It is the Instructor's prerogative to decide if missed work may be reassigned for partial credit. It is your responsibility to contact other members of the class for any missed work or assignments. Exams and quizzes must be taken on the scheduled date (there will be NO RETESTS). If a student is unable to take an exam or quiz for any reason whatsoever, then the student must notify the Instructor immediately by email and present proper documentation. No more than one make-up exam and quiz may be taken.

Credit Hour Statement

The UHWO Credit Hour Policy states that students in a 3-credit course are expected to devote a **minimum of 9-hours a week** (135 hours/semester) on course related work (see UHWO General Catalog). In accordance with the UHWO Credit Hour Policy, this course was reviewed to assure that the work assigned to achieve the stated student learning outcomes meets the UHWO credit hour policy. To achieve adequate learning in this course, it is expected that students will need to devote a **minimum of 9 hours a week** attending scheduled class meetings, reading the textbook, completing homework assignments, and studying for scheduled quizzes and exams.

Credit Hour Policy

One credit hour represents the amount of work that is expected of a student to achieve intended learning outcomes. In a traditional face-to-face course, that approximates not less than one hour of direct faculty instruction and a minimum two hours of student work outside of class per week through (approximately) one 15-week semester. The clock-hour requirements apply uniformly to courses of varying credits, duration, modes of delivery, and types of academic activity.

Electronic Devices Policy

Use of mobile phones and some electronic devices during classes is strictly prohibited unless specifically permitted by the Instructor (calculators are allowed). This includes the prohibited use of mobile phones, cameras, iPods, tape recorders, video recorders, MP3 players, etc. All lectures, discussions, dialogues, and other real-time instructional classroom activities are prohibited from any live recording, except by permission of the Instructors.

Incomplete Grade (I) Policy

In general, this course is a self-fulfilling course, so course requirements and assignments are due as stated in the course syllabus. Under extreme situations (e.g., verifiable medical reasons), an exception to this policy may be negotiated and approved by the Instructor. As appropriate, sufficient documentation may be required to justify an exception.

Late Submission Policy

All assignments, presentations, papers, activities, etc. are due as stipulated in the course syllabus and/or by the Instructor. Any assignment submitted past the due date will either have a **10% late penalty each day** or be accepted for partial-credit if submitted by 11:00PM on Saturday of the week the assignment was due. The Instructor must approve all exceptions to this policy. Assignments will not be accepted after the last day of class.

Credit for Coursework

Courses for the programs in the College of Education are offered for a specific number of credits only, and are non-negotiable. Candidates are granted full credits after satisfactorily completing all course requirements, including the completion of assignments and satisfactory course attendance. The final grade issued at the end of each term confirms the satisfactory completion of the course.

Academic Honesty

All students are expected to demonstrate integrity and honesty in completion of class assignments. Students must give credit to appropriate sources utilized in their work. Copying the work of professional writers or other students and then turning it in as one's own constitutes plagiarism and are not allowed. Plagiarism and cheating are serious offenses and, at the discretion of the Instructor, may be punished by failure on the exam, paper, or project; failure in the course; and/or expulsion from the university. Integrity is expected of every student in all academic work. The guiding principle of academic integrity is that a student's submitted work must be the student's own. For further information on what is expected of UH West O'ahu students, please refer to the student Academic Responsibilities and Student Code of Conduct sections (pp. 17-18) of the UHWO Student Handbook.

Ethical Behavior

All work submitted must include proper documentation and crediting of sources. Failure to properly introduce and document paraphrased material or borrowed ideas is plagiarism. Plagiarism and cheating are serious offenses that carry serious consequences and possible dismissal from the program. Integrity is expected of every student in all academic work. Please see “Student Regulations” and the UH Student Conduct Code section of the University of Hawai’i - West O’ahu (UHWO) Student Handbook for specific guidelines related to plagiarism.

Library

The UHWO Library is committed to helping students succeed and achieve their academic goals while studying at UHWO. In upholding its commitment, the library provides seamless access to both print and electronic resources; instructs and guides students, faculty, staff and community members on how to use such resources; and enables students to make independent, confident decisions regarding their research and information needs. ALL computers in the library have the MyMathLab software installed.

No’eau Center

The No’eau Center offers services designed to help students improve their overall academic performance. Tutoring in math and other subjects is offered by appointment, on a walk-in basis, by phone, and online via email or video chat. Students may schedule an appointment by calling or stopping by the center. Workshops are also offered on topics including various formatting styles (e.g. ASA, APA). Testing services and ADA accommodations are also available. For more information, stop by the No’eau Center (Library, B203), visit our website www.tinyurl.com/noeaucenter, or call 808-689-2750.

Learning Challenges and Accommodations

In keeping with University policy, any student with a disability who needs academic accommodation for testing, note taking, reading, classroom seating, etc., is to call Student Services, and speak with Dr. Steven Taketa, Psychologist: Taketas@hawaii.edu

University Statement on Non-Discrimination

UHWO strives to provide an environment that emphasizes the dignity and worth of every member of its community and that is free from harassment and discrimination. Such an environment is necessary to a healthy learning, working, and living atmosphere because discrimination and harassment undermine human dignity and the positive connection among all members in our UHWO community. UHWO can help to provide valuable information. Examples of behavior that may be considered sex or gender-based discrimination may include, but is not limited to, the following: sexual harassment, harassment of LGBTQ students, sexual assault, stalking, and domestic and dating violence. If you or someone you know is experiencing sex or gender-based discrimination, or if you have any questions regarding UHWO's process or policies, please feel free to contact the UHWO Title IX Coordinator via email at: uhwot9c@hawaii.edu, or you can visit the UHWO Title IX website for more information at: <http://www.uhwo.hawaii.edu/about-us/university-policies/title-ix/>

Safety

The safety of students is a priority. The telephone number for security is **689-2911**.

UHWO Student Code of Conduct

UHWO supports a positive educational environment that will benefit student success. In order to ensure this vision, UHWO has established the UHWO Student Code of Conduct to ensure the protection of student rights and the health and safety of the UHWO community, as well as to support the efficient operation of all UHWO programs. All currently enrolled students at UHWO are required to abide by UHWO's Student Code of Conduct. A copy of the most current Student Code can be found on UHWO's website at:

<http://www.uhwo.hawaii.edu/campus-life/student-affairs/student-policies/#studentconductcode>

Praxis Core Academic Skills for Educators “Core” – Math Section

It is recommended to take the Praxis immediately after completing Math 103.

- 1) Teacher candidates need to pass all three sections (Reading, Writing, and Math) of the Core Academic Skills for Educators. For more information, refer to the ETS website: www.ets.org/praxis and <https://www.ets.org/praxis/prepare/materials/5732>
- 2) Teacher candidates need to pass the Core to be approved to register for 400-level education courses. The 400-level education courses are taken during the junior and senior years in the four-year Bachelor of Education program.
- 3) Ideally, teacher candidates will take the Core as soon as possible (freshman or sophomore year).

Graded Course Components:

	Due Date	Percentage Points
Attendance & Participation	Ongoing	10%
Problem of the Week & Laulima	Ongoing	10%
Homework Assignments	Ongoing	10%
Presentations	Weeks 4 & 6	10%
TED Talk Activity	Week 6	10%
Final Project	Week 14	25%
Exams/Quizzes	Weeks 3, 5, 8, 11, & 13	25%

Attendance and Participation (10%)

In an academic rich learning environment that values inquiry & collaboration, regular attendance and active participation is vital. This is a course where active “hands-on” learning takes place. To meet the criteria for class participation, you are expected to **be on time to class**, be involved in class discussions, participate in the in-class activities, ask questions, and stay to the end of class.

**Having side conversations with classmates, texting, gaming, or engaging in online activities not related to the class are considered unprofessional and as such have a negative bearing on your grade.*

Please put away all electronics unless directly being used for a class activity.

Problem of the Week (POWs) & Laulima Activities (10%)

Math problems relevant to the topic being discussed will be presented each day. Time will be given to work independently, in pairs, or in groups with a focus on increasing your level of confidence with and appreciation of the math content. A daily grade will be given on a credit/no credit basis depending on evidence of individual effort/input and the Instructor observes active collaboration with classmates in discussing the problems presented.

Activities posted on Laulima may include reflections of journal articles, reviewing Internet sites, math problem-solving, lesson plans, and current issues in teaching. These assignments will be scored as credit/no credit based on completing the work on time and the thoroughness of your summaries. Laulima assignments are due Tuesday prior to class.

You will need to read all materials and complete assignments before each class begins. Additional math tasks and written reflections will be assigned for homework throughout the semester. These tasks will count toward this grade. Directions will be provided at a later date for each individual assignment.

Homework Assignments (10%) **Use MyMathLab*

The MyMathLab homework is assigned on Tuesday and due Thursday before each class begins. Homework will be assigned using the MyMathLab site. MyMathLab provides a rich and flexible set of course materials including exercises, online tools, videos, and a multimedia textbook to assist with understanding and performance. To receive full-credit for MyMathLab homework assignments, you will need **at least a score of 80%**. Any late assignment submitted past the due date will have a 10% late penalty each day and must be submitted by 11:00PM on Saturday of the week the assignment was due. MyMathLab is also accessible through a link on laulima.hawaii.edu (*recommended to use Firefox*).

Math tasks and written reflections will be assigned for homework at the discretion of the Instructor. Directions for completing these tasks will be provided with each assignment.

Presentations (10%) *Due Week 4 and Week 6*

You will give a presentation from Chapter 1 and a presentation from Chapter 2. Your group (*of 2 or 3 people*) will setup and lead a demonstration implementation of the content into a lesson. These will be approximately a 6-minute presentations. You should highlight key ideas/strategies for the specific topic, use appropriate visuals, and involve all group members in some capacity. ***More guidelines for these assignments will be discussed in class.*

TED Talk Activity (10%) *Due Week 6*

Use a TED Talk (www.ted.com) that focuses on the topic of mathematics. Watch the entire clip and take notes. Ask yourself questions along the way and take time to reflect on possible responses. Write a summary including the title of the Talk, targeted audience, content, topic, and relevancy to teaching. Describe what you liked and what you are now aware of due to watching the Talk. Summarize the positives and negatives of the TED Talk. Why you would recommend others to view this resource?

Guidelines for this assignment will be discussed in class.

***This assignment will be submitted to Laulima.**

Final Project (25%) *Due Week 14*

This project is recommended to be done in groups of two or three. Your project will incorporate a presentation, handouts/poster, and an 8-12 page double-spaced paper focusing on a real-world mathematics application of your choice based on a topic covered during the semester. **Presentation portion** (12-minutes) - your group will teach a lesson, use age-appropriate manipulatives, state the learning target, and include the learning objective. **Handouts/large poster** - outline the math lesson/activity with the learning target and learning objective that connects to the CCSS. **Written portion** - includes the following components: 1) Introduction, 2) Data, 3) Methodology, and 4) Conclusion.

<http://standardstoolkit.k12.hi.us/common-core/mathematics/>

Guidelines for this assignment will be discussed in class.

***This assignment will be submitted to Laulima.**

Exams/Quizzes (25%)

There will be two exams for this course (*midterm & final*). The tasks and problems you will be asked to do will be consistent with those you encountered during the course. Although the exams must be completed individually, you may use your notes during the exams.

Exams must be taken on or before the scheduled date. No retests are allowed.

Quizzes will be based on the assigned readings, math content, and the important ideas encountered during the semester. The exact content and nature of the quizzes will be discussed at a future date. (*Suggestion: maintain a notebook that focuses on math content along with the teaching and learning of mathematics.*)

The course grade is based on the sum of the scores obtained on the above requirements. There is no extra credit in this class.

Keys to Success

One of the many keys to success is consistency. Please do a considerable amount of studying mathematics every week. It is essential to study both quantity (number of hours) and quality (focus). To be successful, you must not fall behind. A common mistake is to wait too long, and then effective help is difficult to give. Please ask for help if you need it as soon as possible. Furthermore, if you have a question, do not hesitate to ask. It is likely that others have the same question.

As a future mathematics teacher, you should begin to ask yourself some questions concerning the teaching and learning of mathematics. Throughout the semester, your work will help you develop answers for yourself.

Bonus

If you are (or become) a National Council of Teachers of Mathematics (NCTM) member, please provide me documentation **prior to week 8** and you can earn an **additional 3%** on your total grade for this course.

Grading Scale

A [92%, 100%]	A- [90%, 92%)	B+ [87%, 90%)
B [83%, 87%)	B- [80%, 83%)	C+ [77%, 80%)
C [73%, 77%)	C- [70%, 73%)	D+ [67%, 70%)
D [63%, 67%)	D- [60%, 63%)	F [0%, 60%)

January							February							March							April						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
1	2	3	4	5	6	7				1	2	3	4				1	2	3	4							1
8	9	10	11	12	13	14	5	6	7	8	9	10	11	5	6	7	8	9	10	11	2	3	4	5	6	7	8
15	16	17	18	19	20	21	12	13	14	15	16	17	18	12	13	14	15	16	17	18	9	10	11	12	13	14	15
22	23	24	25	26	27	28	19	20	21	22	23	24	25	19	20	21	22	23	24	25	16	17	18	19	20	21	22
29	30	31	26	27	28	26	27	28	29	30	31	23	24	25	26	27	28	29									

Math 111 Schedule

Tuesday/Thursday 12:30-1:50PM

The following is a tentative schedule of planned activities and topics. The Instructor reserves the right to alter the schedule to meet the needs of the specific group.

Jan 9th – Jan 27th

Homework: <i>Mathematics for Elementary School Teachers</i>		Notes
❖ Week 1: 3.1		Homework for this course will be submitted to MyMathLab before class on Thursdays. (Need to earn 80% or better to receive credit.)
❖ Week 2: 3.2 & 3.3		
❖ Week 3: 3.4 & 3.5 - Quiz (Thursday)		
Tuesdays	Thursdays	<i>Select groups and content for the week 4 presentation.</i> * Quiz: Thursday of Week 3
<ul style="list-style-type: none"> ▪ Introduction ▪ Focus: Primary grades ▪ Numeration Systems ▪ Whole Numbers ▪ POWs 	<ul style="list-style-type: none"> ▪ Read aloud ▪ Math Games ▪ Online Resources ▪ MyMathLab ▪ Quiz 	

Jan 30th – Feb 17th

Homework: <i>Mathematics for Elementary School Teachers</i>		Notes
❖ Week 4: 4.1 - Presentation #1		Feb 2nd (Thursday of week 4) Presentations #1 <i>Select groups and content for the week 6 presentation.</i>
❖ Week 5: 4.2 & 4.3 - Quiz (Thursday)		
❖ Week 6: TED Talk - Presentation #2		
Tuesdays	Thursdays	* Quiz: Thursday of Week 5 Feb 14th (Tuesday of week 6) TED Talk Activity <i>*Submit the written TED Talk to Laulima</i>
<ul style="list-style-type: none"> ▪ Focus: Intermediate ▪ Number Theory ▪ Prime & Composite ▪ Text Review ▪ TED Talk share out ▪ POWs 	<ul style="list-style-type: none"> ▪ Presentations ▪ Online Resources ▪ Journal Activity ▪ Laulima Activity ▪ Quiz 	
		Feb 16th (Thursday of week 6) Presentations #2

Feb 20th – March 3rd

Homework: <i>Mathematics for Elementary School Teachers</i>		Notes
❖ Week 7: 5.1 & 5.2		Feb 28th (Tuesday of week 8) Exam #1
❖ Week 8: Exam #1 (Tuesday)		
Tuesdays	Thursdays	March 2nd (Thursday of week 8) Conferencing <i>March 3rd - Last day to submit NCTM membership</i>
<ul style="list-style-type: none"> ▪ Focus: Upper grades ▪ Integers ▪ Multiply & Divide ▪ POWs ▪ Exam Review 	<ul style="list-style-type: none"> ▪ Internet Sites ▪ Video Clips ▪ Practice Problems ▪ Laulima Activity 	

March 6th – April 7th

Homework: <i>Mathematics for Elementary School Teachers</i>		Notes
❖ Week 9: 6.1		<i>March 10th Last day to withdraw, no refund, W grade</i>
❖ Week 10: 6.2		
❖ Week 11: 6.3 - Quiz (Thursday)		
❖ Week 12: 6.4		
Tuesdays	Thursdays	* Quiz: Thursday of Week 11
<ul style="list-style-type: none"> ▪ Fractions ▪ Decimals ▪ Rational Numbers ▪ Estimation ▪ POWs ▪ Text Review 	<ul style="list-style-type: none"> ▪ Projects ▪ Online Sites ▪ Math Games ▪ Laulima Activity ▪ Quiz 	March 27th-31st - Spring Recess
		<i>April 6th (Thursday of week 12) Out of class worktime for online activity and to work on your final project.</i>

April 10th – April 26th

Homework: <i>Mathematics for Elementary School Teachers</i>		Notes
❖ Week 13: Take home - Exam #2 (Thursday)		April 13th (Thursday of week 13) Exam #2
❖ Week 14: Final Projects		
❖ Week 15: Games/Activities		
Tuesdays	Thursdays	April 18th & April 20th (week 14) Final Projects <i>*Submit the written paper to Laulima</i>
<ul style="list-style-type: none"> ▪ Problem Solving ▪ POWs ▪ Additional Resources ▪ Final Project 	<ul style="list-style-type: none"> ▪ Internet Activities ▪ Math Games ▪ Assessments ▪ Exam 	
		April 25th – Final class session