MA 105-01-1: Math for Elementary Teachers I
School of Education & Behavioral Sciences
Chaminade University Honolulu
Fall 2023 / 3 Credits
Monday, Wednesday, Friday 1:30 – 2:20 pm
Brogan Hall 101

Instructor:	Dr. Travis Mukina	**Office Location:**	Brogan 132
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Learning Materials

- **Textbook (Recommended, but not required)**: Beckmann, Sybilla (2017). Mathematics for Elementary Teachers with Activities. 5th ed. Pearson. ISBN-10: 0134392795
- **Textbook (Required)**: Boaler, J. (2019). *Limitless mind: Learn, lead, and live without barriers*. ISBN-10: 0062851748
- **GroupMe App**: A way to stay up-to-date with all class announcements, assignments, and questions between you, your professor, and your classmates.
- **Google Drive/3-Ring Binder**: This should be comprised of self-created notes, provided guided notes, video lectures, and all other assignments.

Additional Resources

- The Math Learning Center - Virtual Math Manipulatives

Course Catalog Description
This course provides a foundation for prospective early childhood and elementary education majors with pre-K to 8 mathematics. Guided by NCTM Standards and through the study of concepts and properties of number systems; the four fundamental operations of arithmetic; the basic knowledge in data, the student will be able to undertake further study in mathematics education. No prerequisites required.

Course Overview
This is the first of two elementary math courses to provide you insight on different strategies to solve K - 8 mathematics problems conceptually and procedurally.

Marianist Values
This class represents one component of your education at Chaminade University of Honolulu. An education in the Marianist Tradition is marked by five principles and you should take every opportunity possible to reflect upon the role of these characteristics in your education and development:

1. Education for formation in faith
2. Provide an integral, quality education
3. Educate in family spirit
4. Educate for service, justice and peace
5. Educate for adaptation and change

Native Hawaiian Values
Education is an integral value in both Marianist and Native Hawaiian culture. Both recognize the transformative effect of a well-rounded, value-centered education on society, particularly in seeking justice for the marginalized, the forgotten, and the oppressed, always with an eye toward God (Ke Akua). This is reflected in the ʻOlelo Noʼeau (Hawaiian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua (ʻŌlelo Noʻeau 364) May I live by God
2. Provide an Integral, Quality Education (Naʼauao) Lawe i ka maʻalea a kūʻonoʻono (ʻŌlelo Noʻeau 1957) Acquire skill and make it deep

3. Educate in Family Spirit (‘Ohana) ‘Ike aku, ‘ike mai, kōkua aku kōkua mai; pela iho la ka nohana ‘ohana (‘Ōlelo No‘eau 1200) Recognize others, be recognized, help others, be helped; such is a family relationship
4. Educate for Service, Justice and Peace (Aloha) Ka lama kū o ka no‘eau (‘Ōlelo No‘eau 1430) Education is the standing torch of wisdom
5. Educate for Adaptation and Change (Aina) ‘A‘ohe pau ka ‘ike i ka hālau ho‘okahi (‘Ōlelo No‘eau 203) All knowledge is not taught in the same school

Program Learning Outcomes (PLOs)

1	Apply knowledge of learner development, learner differences, diverse students and the learning environment to optimize learning for Elementary students.
2	Describe central concepts, tools of inquiry and structures of the subject matter disciplines for Elementary students.
3	Utilize formative and summative assessments, to determine, select, and implement effective instructional strategies for Elementary students.
4	Analyze the history, values, commitments, and ethics of the teaching profession within the school community.
5	Explain the Marianist tradition of providing an integral, quality education within diverse learning communities.

Course Learning Outcomes (CLOs)

1	Students will be able to demonstrate and justify inventive and standard algorithms for addition, subtraction, multiplication, and division of whole numbers, integers, fractions, and decimals.
2	Students will be able to use problem-solving skills to investigate real-life mathematical situations, and communicate mathematical ideas with others verbally, numerically, symbolically, graphically, and/or geometrically.
3	Students will be able to explain the use of elementary classroom manipulatives to model sets, operations, and algorithms.
4	Students will read for personal growth as educators and write to inform others about informational texts.

General Education Learning Outcomes

- Students will apply basic mathematical principles needed to function effectively and develop mathematical reasoning and problem-solving skills.
- Students will define, identify, locate, evaluate, synthesize and present of demonstrate relevant information.

Alignment of Learning Outcomes

	CLO 1	**CLO 2**	**CLO 3**	**CLO 4**
Marianist Values	Provide an integral and quality education Educate for adaptation and change	Provide an integral and quality education Educate for adaptation and change	Provide an integral and quality education Educate for adaptation and change	Provide an integral and quality education Educate for adaptation and change
WASC Core Competencies	Written Communication Oral Communication Quantitative Reasoning Critical Thinking	Written Communication Oral Communication Quantitative Reasoning Critical Thinking	Oral Communication Quantitative Reasoning Critical Thinking	Written Communication
Program Outcomes	1, 2	1, 2	1, 2	1, 2, 4

Assessment:
The assignments in this course are each designed to contribute in a different and significant way to your knowledge and experience relative to diagnosis and remediation of mathematics, and to teaching elementary mathematics. Always be prepared to effectively participate to class discussions, analyze the thinking of others in class, and clearly explain your thinking in assignments. A scoring rubric is provided with every assessment to ensure you know what is required to receive the score desired. Feedback and grades on all assignments are provided within 7 days of submission.

1. **Participation Assignments – 5% of Final Grade**
   Module 1: [1 point per assignment]
   - There are two different assignments, both described on Canvas, which contribute to your overall participation in this course: a mathematical beliefs questionnaire and joining our class GroupMe with an initial post.

2. **Building a Thinking Classroom – 30% of Final Grade** **[CLO 1, 2, & 3]**
   Every Class: [1 percent per day]
   - Every day you attend class and contribute to our classroom thinking activities, you earn 1 percent towards your possible 30%. You must be in class before the thinking activity begins to earn the 1 percent.

3. **Open Middle Problems (OMP) – 25% of Final Grade** **[CLO 1, 2, & 3]**
   Modules 5 & 10: [15 points each]
   - Open middle problems focus on content demonstrated in the classroom thinking activities and strategies used in your check for understanding problems. These are meant to be thought provoking and to provide you with a resource to use in your future classrooms.

4. **Mathematical Approach Analyses (MAA) – 25% of Final Grade** **[CLO 1]**
   Modules 5 & 10: [15 points each]
   - You will observe, analyze, and reflect how three different people, not from this course, solve particular mathematics problems covered in selected chapters mentally and on paper with algorithms/diagrams.

5. ***Limitless Mind*** **(LM) Reflections – 15% of Final Grade** **[CLO 4]**
   Module 1, 2, 3, 4, 6, 7, 8, 9: [3 points each]
   - You will respond to reflection questions based on what you read in the assigned chapters. This book by Jo Boaler is a game changer for all future educators.

Grading Scale	
90 – 100 %	A
80 – 89 %	B
70 – 79 %	C
60 – 69 %	D
0 – 59 %	F

A - Outstanding scholarship and an unusual degree of intellectual initiative
B - Superior work done in a consistent and intellectual manner
C - Average grade indicating a competent grasp of subject matter
D - Inferior work of the lowest passing grade, not satisfactory for fulfillment of prerequisite course work
F - Failed to grasp the minimum subject matter; no credit given

** The Model Code of Ethics for Educators is intertwined throughout various activities within this course, as well as the other courses you will take within the program. The responsibility to profession, of professional competence, to our students, to the school, and with the use of technology are integral to all aspects of this course. **

Technical Assistance for Canvas Users

- Search for help on specific topics or get tips in Canvas Students
- Live chat with Canvas Support for students
- Canvas Support Hotline for students: +1-833-209-6111
- Watch this video to get you started
- Online tutorials: click on "Students" role to access tutorials
- Contact the Chaminade IT Helpdesk for technical issues: helpdesk@chaminade.edu or call (808) 735-4855

Tutoring and Writing Services

Chaminade is proud to offer free, one-on-one tutoring and writing assistance to all students. Tutoring and writing help is available on campus at Kōkua 'Ike: Center for Student Learning in a variety of subjects (including, but are not limited to: biology, chemistry, math, nursing, English, etc.) from trained Peer and Professional Tutors. Please check Kōkua 'Ike's website for the latest times, list of drop-in hours, and information on scheduling an appointment. Free online tutoring is also available via TutorMe. TutorMe can be accessed 24/7 from your Canvas account. Simply click Account – Notifications – TutorMe. For more information, please contact Kōkua 'Ike at tutoring@chaminade.edu or 808-739-8305.

Course & Chaminade University Policies

Late Work Policy

Always accepted, but feedback may be delayed.

Grades of "Incomplete"

This policy on incomplete grades aligns with the same University policies.

Writing Policy

For any writing assignments, please use APA format. Please refer to https://apastyle.apa.org for any specific style and grammar guidelines questions.

Instructor and Student Communication

Questions for this course can be emailed to the instructor at travis.mukina@chaminade.edu. Online and/or in-person meetings can be arranged. Response time will take place up to 24 hours.

Disability Access

If you need individual accommodations to meet course outcomes because of a documented disability, please speak with me to discuss your needs as soon as possible so that we can ensure your full participation in class and fair assessment of your work. Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from Kōkua 'Ike: Center for Student Learning by the end of week three of the class, in order for instructors to plan accordingly. If a student would like to determine if they meet the criteria for accommodations, they should contact the Kōkua 'Ike Coordinator at (808) 739-8305 for further information (ada@chaminade.edu).

Title IX Compliance

Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. If you or someone you know has been harassed or assaulted, you can find the appropriate resources by visiting Campus Ministry, the Dean of Students Office, the Counseling Center, or the Office for Compliance and Personnel Services.

Attendance Policy
The following attendance policy is from the 2019-2020 Academic Catalog (p. 54-55). Faculty members should also check with their divisions for division-specific guidelines.

Students are expected to attend regularly all courses for which they are registered. Student should notify their instructors when illness or other extenuating circumstances prevents them from attending class and make arrangements to complete missed assignments. Notification may be done by emailing the instructor's Chaminade email address, calling the instructor's campus extension, or by leaving a message with the instructor's division office. It is the instructor's prerogative to modify deadlines of course requirements accordingly. Any student who stops attending a course without officially withdrawing may receive a failing grade.

Unexcused absences equivalent to more than a week of classes may lead to a grade reduction for the course. Any unexcused absence of two consecutive weeks or more may result in being withdrawn from the course by the instructor, although the instructor is not required to withdraw students in that scenario. Repeated absences put students at risk of failing grades.

Students with disabilities who have obtained accommodations from the Chaminade University of Honolulu Tutor Coordinator may be considered for an exception when the accommodation does not materially alter the attainment of the learning outcomes.
Federal regulations require continued attendance for continuing payment of financial aid. When illness or personal reasons necessitate continued absence, the student should communicate first with the instructor to review the options. Anyone who stops attending a course without official withdrawal may receive a failing grade or be withdrawn by the instructor at the instructor's discretion.

Student Conduct Policy
Campus life is a unique situation requiring the full cooperation of each individual. For many, Chaminade is not only a school, but a home and a place of work as well. That makes it a community environment in which the actions of one students may directly affect other students. Therefore, each person must exercise a high degree of responsibility. Any community must have standards of conduct and rules by which it operates. At Chaminade, these standards are outlined so as to reflect both the Catholic, Marianist values of the institution and to honor and respect students as responsible adults. All alleged violations of the community standards are handled through an established student conduct process, outlined in the Student Handbook, and operated within the guidelines set to honor both students' rights and campus values.

Students should conduct themselves in a manner that reflects the ideals of the University. This includes knowing and respecting the intent of rules, regulations, and/or policies presented in the Student Handbook, and realizing that students are subject to the University's jurisdiction from the time of their admission until their enrollment has been formally terminated. Please refer to the Student Handbook for more details. A copy of the Student Handbook is available on the Chaminade website under Student Life.

For further information, please refer to the Chaminade Catalog.

Credit Hour Policy
The unit of semester credit is defined as university-level credit that is awarded for the completion of coursework. One credit hour reflects the amount of work represented in the intended learning outcomes and verified by evidence of student achievement for those learning outcomes. Each credit hour earned at Chaminade University should result in 45 hours of engagement.

The minimum 45 hours of engagement per credit hour can be satisfied in fully online, internship, or other specialized courses through several means, including (a) regular online instruction or interaction with the faculty member and fellow students and (b) academic engagement through extensive reading, research, online discussion, online quizzes or exams; instruction, collaborative group work, internships, laboratory work, practica, studio work, and preparation of papers, presentations, or other forms of assessment. This policy is in accordance with federal regulations and regional accrediting agencies.

How This Course Meets the Credit Hour Policy

The paragraph below outlines how students will meet the required hours of engagement in the course through regular instruction and academic engagement. There are three components to the amount of time students will spend in a course:

1. Seat time (this is the amount of time students are physically in the classroom)
2. Time spent on key assessments, including study time (e.g., projects, essays, assessments)
3. Additional time each week (e.g., reading, studying, check for understanding)

This is a three-credit hour course requiring 135 clock hours of student engagement, per the official CUH Credit Hour Policy. Students enrolled in this course are anticipated to spend 37.5 hours in class and 20 hours completing out-of-class assessments. There will be an additional 77.5 hours of work required beyond what is listed here (video lectures, guided notes, check for understanding), averaging 5.2 hours each week.

To calculate the amount of time students will spend on readings and assignments, we are drawing on research reviewed by the Center for Teaching Excellence at Rice University. The information and formulas for calculating hours are linked in the examples below as "time spent on key assessments". Even though students will work at different speeds, these numbers provide a good estimation for credit hour policies.

Per the official CUH Credit Hour Policy, each credit hour should equal 45 clock hours of student engagement. Therefore, a traditional three credit hour undergraduate course would require 135 hours of engagement. Below is how the 135 hours are calculated in more detail:

- *Seat Time*:
  - 50 minutes MWF = 150 minutes weekly x 15 weeks = 2,250 minutes or 37.5 hours
- *Time Spent on Key Assessments*:
  - Open Middle Problems = 20 hours researching & completing
  - Mathematical Approach Analyses = 10 hours interviewing & reflecting
  - Limitless Mind Book Reading & Reflecting = 15 hours reading
- *Sub-Total* = 82.5 hours (seat time + key assessments)
- Total required engagement 135 hours – 82.5 hours = 52.5 hours remaining
- 52.5 hours divided by 15 weeks = 3.5 additional hours each week (video lectures, guided notes, check for understanding)

Course Schedule

Module # Dates	**Module Content**	**Assignments**
Module 1 Aug 21st – 27th	Chapter 1: Numbers and the Base-Ten System Section 1.1: The Counting Numbers Section 1.2: Decimals and Negative Numbers Section 1.3: Reasoning to Compare Numbers in Base Ten Section 1.4: Reasoning about Rounding Limitless Mind: Introduction	○ Mathematical Beliefs Questionnaire ○ GroupMe Registration ○ ✓ for Understanding (Chap. 1) ○ LM Reflection (Intro)
Module 2 Aug 28th – Sept 10th	Chapter 2: Fractions and Problem-Solving Section 2.2: Defining and Reasoning About Fractions Section 2.3: Equivalent Fractions Section 2.4: Comparing Fractions Section 2.5: Percent Limitless Mind: Chapter 1	○ ✓ for Understanding (Chap. 2) ○ LM Reflection (Chap. 1)
Module 3 Sept 11th – 24th	Chapter 3: Addition and Subtraction Section 3.1: Interpretations of Addition and Subtraction Section 3.2: The Commutative and Associative Properties of Addition, Mental Math, and Single-Digit Facts Section 3.3: Why the Standard Algorithms for Adding and Subtracting Numbers in Base-Ten System Work Section 3.4: Adding and Subtracting Fractions Section 3.5: Adding and Subtracting with Negative Numbers Limitless Mind: Chapter 2	○ ✓ for Understanding (Chap. 3) ○ LM Reflection (Chap. 2)
Module 4 Sept 25th – Oct 8th	Chapter 4: Multiplication Section 4.1: Interpretations of Multiplication Section 4.2: Why Multiplying by 10 is Special in Base-Ten Section 4.3: The Commutative and Associative Properties of Multiplication, Area of Rectangles, and Volumes of Boxes Section 4.4: The Distributive Property Section 4.5: Properties of Arithmetic, Mental Math, and Single-Digit Multiplication Facts Section 4.6: Why Algorithms for Multiplying Whole Numbers Work Limitless Mind: Chapter 3	○ ✓ for Understanding (Chap. 4) ○ LM Reflection (Chap. 3)
Module 5 Oct 9th – 15th	Work Week Open Middle Problems (Chap. 1 – 4) Mathematical Approach Analysis (Chap. 1 – 4)	○ OMP (Chap. 1 – 4) ○ MAA (Chap. 1 – 4)
Module 6 Oct 16th – 22nd	Chapter 5: Multiplication of Fractions, Decimals, and Negative Numbers Section 5.1: Multiplying Fractions Section 5.2: Multiplying Decimals Section 5.3: Multiplying Negative Numbers Section 5.4: Powers and Scientific Notation Limitless Mind: Chapter 4	○ ✓ for Understanding (Chap. 5) ○ LM Reflection (Chap. 4)
Module 7 Oct 23rd – Nov 5th	Chapter 6: Division Section 6.1: Interpretations of Division Section 6.2: Division and Fractions and Division with Remainders Section 6.3: Why Division Algorithms Work Section 6.4: Fraction Division from the "How Many Groups?" Perspective Section 6.5: Fraction Division from the "How Many in One Group?" Perspective Section 6.6: Dividing Decimals Limitless Mind: Chapter 5	○ ✓ for Understanding (Chap. 6) ○ LM Reflection (Chap. 5)
Module 8 Nov 6th – 12th	Chapter 7: Ratio and Proportional Relationships Section 7.1: Motivating and Defining Ratio and Proportional Relationships Section 7.2: Solving Proportion Problems by Reasoning with Multiplication and Division Limitless Mind: Chapter 6	○ ✓ for Understanding (Chap. 7) ○ LM Reflection (Chap. 6)
Module 9 Nov 13th – 26th	Chapter 8: Number Theory *Section 8.1*: Factors and Multiples *Section 8.2*: Evens and Odds *Section 8.3*: Divisibility Tests *Section 8.4*: Prime Numbers	○ ✓ for Understanding (Chap. 8) ○ LM Reflection (Concl)

	Section 8.5: Greatest Common Factor and Least Common Multiple *Section 8.6*: Rational and Irrational Numbers Limitless Mind: Conclusion	
Module 10 Nov 27th – Dec 3rd	Work Week Open Middle Problems (Chap. 5 – 8) Mathematical Approach Analysis (Chap. 5 – 8)	○ OMP (Chap. 5 – 8) ○ MAA (Chap. 5 – 8)