MA 105-90-4: Math for Elementary Teachers I
School of Education & Behavioral Sciences
Chaminade University Honolulu
Summer 2024
3 Credits

Instructor:	Dr. Travis Mukina	**Office Location:**	Brogan 132
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Learning Materials
- **Textbook (Recommended)**: Beckmann, Sybilla (2017). Mathematics for Elementary Teachers with Activities. 5th ed. Pearson. ISBN-10: 0134392795
- **Google Drive/3-Ring Binder**: This should be comprised of 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 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 (ʻOhana) ʻIke aku, ʻike mai, kōkua aku kōkua mai; pela iho la ka nohana ʻohana (ʻŌlelo Noʻeau 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 noʻeau (ʻŌlelo Noʻeau 1430) Education is the standing torch of wisdom
5. Educate for Adaptation and Change (Aina) ʻAʻohe pau ka ʻike i ka hālau hoʻokahi (ʻŌlelo Noʻeau 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.

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**
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
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
Program Outcomes	1, 2	1, 2	1, 2

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. A scoring rubric is provided with every assignment 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 – 0% of Final Grade**
   Module 1: [1 point per assignment]
   - There is one assignment which contributes to your overall participation in this course: an introductory post. Although this are not a contributing factor to your final grade, it is required to complete.

2. **Problem-Solving Sets (PSS) – 50% of Final Grade** **[CLO 1, 2, & 3]**
   Modules 1, 2, 3, 4, 6, 7, 8, 9: [10 points per set]
   - Each chapter, you will complete five questions from each chapter's content. These questions will require detailed explanation of thought processes and mathematical drawings to show solutions.

3. **Open Middle Problems (OMP) – 50% of Final Grade (25% Each)** **[CLO 1, 2, & 3]**
   Modules 5 & 10: [15 points each]
   - Both sets of open middle problems focus on content demonstrated in the guided notes and strategies used in your problem-solving sets. These are meant to be thought provoking and to provide you with a resource to use in your future classrooms.

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

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

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 ʻIke: 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 ʻIke 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

> *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 36 hours completing key assessments. There will be an additional 61.5 hours of work required beyond what is listed here (video lectures, guided notes), averaging 4.1 hours each week.*

Below is how the 135 hours are calculated in more detail:

Clock Hour Category	Total Time (hours)
Seat Time	37.5
Problem-Solving Sets	16
Open Middle Problems	20
Sub-Total	73.5
Remaining Hours	61.5
Remaining Hours / 15 Weeks	*4.1 hours/week*

Course Schedule

Module Information

- *Modules do not have a start or end date.*
- *Modules must be completed in sequential order and all assignments from the previous module must be submitted before the next module will open to ensure each student completes the module at a pace appropriate for them.*
- *All modules must be submitted by **August 9th, 2024**.*

Module #	Module Content	Assignments
Module 1	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	o Introductory Post o PSS (Chap. 1)
Module 2	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	o PSS (Chap. 2)
Module 3	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	o PSS (Chap. 3)
Module 4	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	o PSS (Chap. 4)
Module 5	Work on Open Middle Problems (Chap. 1 – 4)	o OMP (Chap. 1 – 4)
Module 6	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	o PSS (Chap. 5)
Module 7	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	o PSS (Chap. 6)
Module 8	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	o PSS (Chap. 7)
Module 9	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 Section 8.5: Greatest Common Factor and Least Common Multiple Section 8.6: Rational and Irrational Numbers	o PSS (Chap. 8)
Module 10	Work on Open Middle Problems (Chap. 5 – 8)	o OMP (Chap. 5 – 8)