MA 305-01-1: Math for Elementary Teachers II
School of Education & Behavioral Sciences
Spring 2020 / 3 Credits
Brogan Hall 101
Monday, Wednesday, & Friday 1:30 – 2:20 pm

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

- **Textbook**: Beckmann, Sybilla (2017). *Mathematics for elementary teachers with activities*. 5th ed. Pearson. ISBN-10: 0134392795
- **Textbook**: Boaler, J. (2019). *Limitless mind: Learn, lead, and live without barriers*. ISBN-10: 0062851748
- **CueThink**: An online problem-solving platform for mathematical discussions.
- **GroupMe App**: A way to stay up-to-date with all class routines, assignments, and questions between you, your professor, and your classmates.
- **Computer Folder/Google Drive/3-Ring Binder**: This should be comprised of provided guided notes lectures, class activities, CueThink problems, problem-solving sets, and exams.

Additional Resources:

- **Common Core State Standards for Mathematics:**
  - http://www.corestandards.org/Math/

Essential Question(s):

1. What does it mean to reason mathematically?
2. How can mathematics be used to provide models that help us interpret data?
3. How does learning mathematics conceptually help me to be a more efficient problem solver?

Course Catalog Description:
This course provides prospective elementary education majors with a deeper and more comprehensive understanding of fundamental concepts underlying the mathematics taught in grades K through 8. Guided by NCTM Principles and Standards, this course focuses on the big ideas of geometry, measurement, data analysis, and probability and statistics. This course fulfills an upper division elective requirement in mathematics for Elementary Education majors.
Prerequisites: *MA 105*

Mission Statement:
The mission of the education division is to foster the education of teachers and leaders in education through programs based in the liberal arts tradition, Catholic Marianist's values, current research, and best practices.

Marianist Values:
1. Educate 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

WASC Core Competencies:
1. Written Communication
2. Oral Communication
3. Quantitative Reasoning
4. Critical Thinking
5. Information Literacy

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 algebraic relationships, generalize patterns, measurable attributes of objects, geometric relationships, and statistical relationships.
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 algebraic thinking, geometry, and statistics.

General Education Learning Outcome for Quantitative Reasoning:

- Students will analyze and interpret quantitative data.
- 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
Essential Questions	1, 2, 3	1, 2, 3	1, 2, 3

Assessment:
The assignments described below 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 every assignment.

1. Class Participation – 10% of Final Grade **[CLO 2]**
Due: Ongoing evaluation by instructor throughout the semester
1: Low Participation 2: Majority Participation 3: Full Participation
Your cooperation and active participation are necessary to facilitate this course synchronously and asynchronously, including submitting assignments on time. It is important that you listen to the ideas of others and respect their thoughts. Your grade will be determined based a holistic evaluation of your professionalism and participation.

2. CueThink Problems – 20% of Final Grade **[CLO 1, 2, & 3]**
Due: Every Friday by Midnight
5 points per problem
This online problem-solving platform is used to promote discussion around different types of open-ended mathematical situations. There are 10 CueThink problems provided throughout the semester where you are expected to provide a solution(s) to the problem, a verbal explanation of your solution, and provide professional feedback on other classmates' solutions. Registration instructions can be found on Canvas.

3. Problem-Solving Sets – 20% of Final Grade **[CLO 1, 2, & 3]**
Due: After the Completion of Every Chapter
10 points per set
Each chapter, you will be required to complete five questions from each chapter's content. These questions will require detailed explanation of thought processes and mathematical drawings to show solutions. Please understand that simply "getting the problem correct" is not always sufficient to earn full-credit for the questions.

4. Exams – 30% of Final Grade (15% Each) **[CLO 1, 2, & 3]**
Exam 1 (Chapters 9, 10, 11): Week Exam 2 (Chapters 12, 13, 14): Week 13
50 points each
Both exams will focus on content demonstrated in the guided notes, activities/discussions that occur in class, and strategies used in your problem-solving sets.

5. Limitless Mind (by Jo Boaler) Book Review – 20% of Final Grade
Due: Week 13
50 points
After the completion of reading this book, you will write a 5 – 7 page, double-spaced reflection in APA format, on the book responding to all of the questions stated under the assignment on Canvas.

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

Kokua Ike Tutoring Center:
Kokua Ike provides access to free one-on-one tutoring for undergraduate students. The tutoring services are designed to guide students to the point at which they become independent learners, no longer needing a tutor. Subjects tutored include, but are not limited to: Biology, Mathematics, Nursing, English, etc. The tutoring center consists of trained Peer and Professional Tutors.

- In order to receive tutoring, a student must visit the Student Support Services building and complete a brief contract prior to receiving services.
- After submitting the form, a staff member will assist you in creating an online account that allows you to book an appointment through the online system.
- Hours of Operation: Monday – Friday 8:30 am – 4:30 pm
- Want to become a tutor? Ask me how!

Course Attendance Policy:
As stated in the Chaminade University Catalog, students are expected to attend all classes for courses in which they are registered. Students must follow the attendance policy as stipulated in the syllabus of Education Division courses. Penalties for not meeting the attendance requirements may result in lowering of the grade, withdrawal from the course, or failing the course.

1. Excused Absences.

1.1. Since it is expected that students will participate in all class sessions, excused absences are only granted in exceptional situations where evidence is provided by the student to the instructor. Examples would include illness (with verification by a doctor) or the death of a close family member. Students should notify their instructors when a situation prevents them from attending class and make arrangements to complete missed assignments. *While notification of the instructor by a student that he/she will be absent is courteous, it does not necessarily mean the absence will be excused.*

1.2. In cases where excused absences constitute a significant portion of a course's meetings (e.g., more than 20% of on-ground course meetings, or a significant portion of online or hybrid courses), the instructor should refer the case to the Dean with a recommendation on how the case should be handled (e.g., withdrawal or incomplete).

2. Unexcused Absences. Chaminade University policy states that in cases where unexcused absences are equivalent to more than a week of classes the instructor has the option of lowering the grade. In the Education Division, we have added detailed guidelines to cover different types of courses and class schedules:

2.1. On-Ground courses: Missing more than 2 weeks of class (6 classes) will result in an automatic lowering of one letter grade after final grade is calculated.

2.2. Online courses and online portion of hybrid courses: The instructor will specify and enforce expectations for online participation and receipt of assignments appropriate to the design of the course. For online/hybrid courses failure to log in for one week is equivalent to an absence in a traditional on-ground course. Two weeks of not logging in constitutes grounds for removal of the student from the course.

3. Additional Notes.

3.1. If a student does not logon to an online or hybrid course for the first two weeks, the instructor should notify the Dean and the student will be withdrawn from the course.

3.2. Any student who stops attending an on-ground course or stops participating in an online course without officially withdrawing may receive a failing grade.

University Policies

Academic Honesty Statement: Violations of the Honor Code are serious. They harm other students, your professor, and the integrity of the University. Alleged violations will be referred to the Office of Judicial Affairs. If found guilty of plagiarism, a student might receive a range of penalties, including failure of an assignment, failure of an assignment and withholding of the final course grade until a paper is turned in on the topic of plagiarism, failure of the course, or suspension from the University.

Violations of Academic Integrity: Violations of the principle include, but are not limited to:

- Cheating: Intentionally using or attempting to use unauthorized materials, information, notes, study aids, or other devices in any academic exercise.
- Fabrication and Falsification: Intentional and unauthorized alteration or invention of any information or citation in an academic exercise. Falsification is a matter of inventing or counterfeiting information for use in any academic exercise.
- Multiple Submissions: The submission of substantial portions of the same academic work for credit (including oral reports) more than once without authorization.
- Plagiarism: Intentionally or knowingly presenting the work of another as one's own (i.e., without proper acknowledgment of the source).
- Abuse of Academic Materials: Intentionally or knowingly destroying, stealing, or making inaccessible library or other academic resource materials.
  Complicity in Academic Dishonesty: Intentionally or knowingly helping or attempting to help another to commit an act of academic dishonesty.

Plagiarism includes, but is not limited to:

- Copying or borrowing liberally from someone else's work without his/her knowledge or permission; or with his/her knowledge or permission and turning it in as your own work.
- Copying of someone else's exam or paper.
- Allowing someone to turn in your work as his or her own.
- Not providing adequate references for cited work.
- Copying and pasting large quotes or passages without properly citing them.

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.

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 the Counseling Center 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 Kokua Ike Coordinator at (808) 739-8305 for further information (ada@chaminade.edu).

Course Outline (Spring 2021)

***The professor reserves the right to make adjustments to this outline to better accommodate student needs.**

Week # Date	**Class Description** [Assigned readings completed BEFORE class]	**Assignments Due by Midnight**
Week 1 Feb. 1st – 7th	Introduction to Course & Syllabus Chapter 9: Algebra [Pages 378 – 450] • *Section 9.1*: Numerical Expressions • *Section 9.2*: Expressions with Variables	February 3rd • GroupMe App Confirmation • CueThink Registration February 7th • CueThink Problem #1
Week 2 Feb. 8th – 14th	Chapter 9: Algebra [Pages 378 – 450] • *Section 9.3*: Equations • *Section 9.4*: Solving Algebra Word Problems with Strip Diagrams and with Algebra	February 14th • CueThink Problem #2
Week 3 Feb. 15th – 21st	Chapter 9: Algebra [Pages 378 – 450] • *Section 9.5*: Sequences • *Section 9.6*: Functions • *Section 9.7*: Linear and Other Relationships	February 21st • CueThink Problem #3 • Problem-Solving Set (Chap. 9)
Week 4 Feb. 22nd – 28th	Chapter 10: Geometry [Pages 451 – 491] • *Section 10.1*: Lines and Angles • *Section 10.3*: Circles and Spheres • *Section 10.4*: Triangles, Quadrilaterals, and Other Polygons	February 28th • CueThink Problem #4 • Problem-Solving Set (Chap. 10)
Week 5 Mar. 1st – 7th	Chapter 11: Concepts of Measurement [Pages 492 – 524] • *Section 11.1*: Concepts of Measurement • *Section 11.2*: Length, Area, Volume, and Dimension • *Section 11.4*: Converting from One Unit of Measurement to Another	March 7th • CueThink Problem #5 • Problem-Solving Set (Chap. 11)
Week 6 Mar. 8th – 14th	Work Week • Exam 1 (Chap. 9, 10, & 11)	March 14th • Exam 1 (Chap. 9, 10, & 11)
Week 7 Mar. 15th – 21st	Chapter 12: Area of Shapes [Pages 525 – 549 & 554 – 561 & 564 - 579] • *Section 12.1*: Areas of Rectangles Revisited • *Section 12.2*: Moving and Additivity Principles About Area • *Section 12.3*: Areas of Triangles • *Section 12.4*: Areas of Parallelograms and other Polygons	March 21st • CueThink Problem #6
Week 8 Mar. 22nd – 28th	Chapter 12: Area of Shapes [Pages 525 – 549 & 554 – 561 & 564 - 579] • *Section 12.6*: Area and Circumference of Circles and the Number Pi • *Section 12.8*: Contrasting and Relating the Perimeter and Area of Shapes • *Section 12.9*: Using the Moving and Additivity Principles to Prove the Pythagorean Theorem	March 28th • CueThink Problem #7 • Problem-Solving Set (Chap. 12)

Week 9 Mar. 29th – Apr. 4th	Chapter 13: Solid Shapes and Their Volume and Surface Area [Pages 580 – 607] • *Section 13.1:* Polyhedra and Other Solid Shapes • *Section 13.2*: Patterns and Surface Area • *Section 13.3:* Volumes of Solid Shapes	April 4th • CueThink Problem #8 • Problem-Solving Set (Chap. 13)
Week 10 Apr. 5th – 11th	Chapter 14: Geometry of Motion and Change [Pages 612 – 638 & 643 – 653] • *Section 14.1:* Reflections, Translations, and Rotations • *Section 14.2:* Symmetry	April 11th • CueThink Problem #9
Week 11 Apr. 12th – 18th	Chapter 14: Geometry of Motion and Change [Pages 612 – 638 & 643 – 653] • *Section 14.3:* Congruence • *Section 14.5:* Similarity	April 18th • CueThink Problem #10 • Problem-Solving Set (Chap. 14)
Week 12 Apr. 19th – 25th	Work Week • Exam 2 (Chap. 12, 13, & 14) • Read Limitless Minds	April 25th
Week 13 Apr. 26th – May 2nd	Work Week • Exam 2 (Chap. 12, 13, & 14) • Read Limitless Minds	May 2nd • Exam 2 (Chap. 12, 13, & 14) • Limitless Mind Book Review