ED 322-91-4 – Elementary Math Methods I
School of Education & Behavioral Sciences
Fall 2019 / 3 credits
Monday, Wednesday, Friday 7:30 – 8:20pm
Computer 2

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Learning Materials:

- **Textbook**: J.A. Van DeWalle, K. Kary, J.M. Bay-Williams (2016). Elementary and Middle School Mathematics: Teaching Developmentally. 9th ed. Pearson. ISBN-10: 0133768937
- Other readings and video links will be provided when necessary.
- **3-Ring Binder**: Throughout the course, you should keep a collection of the course material. This is comprised of chapter handouts, class activities, and problem-solving sets. All will be posted on Canvas under weekly "Modules" and should be kept in an organized binder.

Course Catalog Description:
This course provides an overview and applications of best practice mathematics instructional approaches, strategies, techniques, and assessment methods. Math concepts for students in kindergarten through grade 3 are explored using hands-on and problem-solving approaches. *Prerequisite*: Pass Praxis I or 9 hours of math credit, ED 220, ED 221

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

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 'Olelo No'eau (Hawaiian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua ('Ōlelo No'eau 364) May I live by God
2. Provide an Integral, Quality Education (Na'auao) Lawe i ka ma'alea a kū'ono'ono ('Ōlelo No'eau 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	*Content Knowledge* (Knowledge of subject matter)
2	*Developmentally Appropriate Practice* (Knowledge of how students develop and learn, and engagement of students in developmentally appropriate experiences that support learning)
3	*Pedagogical Content Knowledge* (Knowledge of how to teach subject matter to students and application of a variety of instructional strategies that are rigorous, differentiated, focused on the active involvement of the learner)
4	*Educational Technology* (Knowledge of and application of appropriate technology for student learning)
5	*Assessment for Learning* (Knowledge of and use of appropriate assessment strategies that enhance the knowledge of learners and their responsibility for their own learning)
6	*Diversity* (Skills for adapting learning activities for individual differences and the needs of diverse learners and for maintaining safe positive, caring, and inclusive learning environments)
7	*Focus on Student Learning* (Skills in the planning and design of meaningful learning activities that support and have positive impact on student learning based upon knowledge of subject matter, students, the community, curriculum standards, and integration of appropriate technology)
8	*Professional & Ethical Dispositions and Communication* (Professional dispositions, professionalism in teaching, and ethical standards of conduct consistent with Marianist values, and positive and constructive relationships with parents, the school community and professional colleagues).

Course Learning Outcomes (CLOs):

1	Know, understand, and use the major concepts and procedures that define number and operations, algebra, geometry, measurement, and data analysis and probability.
2	Engage in problem solving, reasoning and proof, communication, connections, and representation.
3	Plan lessons that teach upper elementary students: 1. To understand and use the major concepts and procedures that define number and operations, algebra, geometry, measurement, and data analysis and probability. 2. To explore, conjecture and reason logically; to solve non-routine problems; to communicate about and through mathematics; and to connect ideas within and between mathematics and other intellectual activity.
4	Know what mathematical preconceptions, misconceptions, and error patterns to look for in upper elementary student work as a basis to improve understanding and construct appropriate learning experiences and assessments.
5	Know and are able to help students understand the history of mathematics and contributions of diverse cultures to that history.
6	Foster students’ use of appropriate technology.

Technical Assistance for Canvas Users:

- Search for help on specific topics at help.instructure.com
- Chat live with Canvas Support 24/7/365
- Watch this video to get you started with online guides and tutorials.

- Contact the Chaminade IT Helpdesk for technical issues: helpdesk@chaminade.edu, or (808) 735-4855.

Assessment:
Since this course is online, the dates noted are permanent. Read the textbook sections BEFORE you turn in assignments as indicated on the tentative schedule at the end of this syllabus. Always be prepared to explain your thinking in every assignment and every exam. 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. It will be your responsibility to turn in all assignments on time. Late assignments will not be accepted. Submissions will all be done electronically through Canvas in **PDF format**.

1. Attendance – 10% of Final Grade
Due: Ongoing evaluation by instructor throughout the semester
You are now well into your studies for your chosen career in teacher education. Your attendance, promptness, attention, cooperation, and active participation are necessary to facilitate this process. Attitude and responsibility are also important aspects of professionalism. It is your instructor's responsibility to challenge you to grow as a professional and to help you develop a professional disposition. However, you also have a responsibility to be responsive and participate fully in all activities. Your grade will be determined based a holistic evaluation of your professionalism and participation.

2. Problem-Solving Sets – 30% of Final Grade
Due: After the Completion of Chapters 9 – 13
20 points each
Each week you will complete a series of mathematical problems using strategies that elementary level students might use to complete the mathematical tasks. The readings, videos, and presentations can be used to help you make sense of how to solve these problems and prepare you to teach these to students in the future. It is important that you are diligent in solving these each week to the best of your ability. The intention of these problems is to help you not only participate in class discussion, but to help you to deepen your own conceptual understanding of the mathematical concepts you may be teaching in the future. These will be submitted on Canvas in a PDF format.

3. Chapters 1 – 4 Reflections– 15% of Final Grade
Due: After the Completion of Chapters 1 – 4
10 points each
There will be chapter reflections from your readings in the textbook for Chapters 1 – 4. Reading the selected chapters is vital for your success in this class and your own future classroom.

- For ONLY chapters 1 – 4, you will be required to do a reading reflection over those chapters. Your reflections must be submitted on Canvas in a PDF format. The form in which you complete your reflection can be chosen from the following three options:
    a. Written Reflection – requires a 250-word typed reflection of the chapter
    b. Mind Map – summarize main ideas in a mind mapping format that shows strong understanding of the chapter and several of the main ideas presented in the chapter
    c. Agree & Disagree – Make a bulleted list of 10 points in the chapter you agree with and 5 points in the chapter you disagree with. Each bullet must be a complete sentence.

4. Number Talk Discussions – 15% of Final Grade
Due: Randomly throughout the semester
5 points each
There will be Number Talk videos in this course. Watching the videos is vital for your success in this class and your own future classroom. For the Number Talk videos, you will be required to participate in an online group discussion on Canvas. You will post comments, questions, or concerns about

what the videos you observe. Reponses must be filled with thoughtfulness contributing the conversation in order to receive full credit.

5. Three-Act Task – 30% of Final Grade
Due: December 6th
100 points
You will design a three-act task that focuses on one of the content areas covered in this course with a partner. The task can involve any specific content covered in this course. The task rubric and template are on Canvas, as well as more information about what a Three-Act Task consists of. The final version of the task will be submitted on Canvas in a PDF format.

Assignments	Percentage of Final Grade
Attendance	10%
Problem-Solving Sets	30%
Chapter 1 – 4 Reflections	15%
Number Talks Discussions	15%
Three-Act Task	30%

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

University Policies

Disability Access
Sample statement: 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 Counseling Center at (808) 735-4845 for further information.

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 2018-2019 Academic Catalog (p. 57-58). 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 ADA 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.

Academic Conduct Policy
From the 2018-2019 Undergraduate Academic Catalog (p. 42):
Any community must have a set of rules and standards of conduct 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.

For further information, please refer to the Student Handbook:
https://studentaffairs.chaminade.edu/wp-content/uploads/sites/28/2018-19-NEW-STUDENT-HANDBOOK.pdf

Course Schedule (Fall 2019)

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

Week # Date	**Class Description**	**Assignments Due Each Week**
Week 1 August 19th	• Student Introductions • Go Over Course Syllabus & Schedule	
Week 1 August 21st	Book: *Chapter 1*: Teaching Mathematics in the 21st Century • Pages 1 – 12	• My Math Animal Is…
Week 1 August 23rd	Book: *Chapter 1*: Teaching Mathematics in the 21st Century • Pages 1 – 12	
Week 2 August 26th	Work on Chapter 1 Reflection	
Week 2 August 28th	Book: *Chapter 2*: Exploring What It Means to Know and Do Mathematics • Pages 13 – 31	• Chapter 1 Reflection
Week 2 August 30th	Book: *Chapter 2*: Exploring What It Means to Know and Do Mathematics • Pages 13 – 31	
Week 3 September 2nd	**LABOR DAY**	**NO CLASS**
Week 3 September 4th	Work on Chapter 2 Reflection	
Week 3 September 6th	Book: *Chapter 3*: Teaching through Problem Solving • Pages 33 – 55	• Chapter 2 Reflection
Week 4 September 9th	Book: *Chapter 3*: Teaching through Problem Solving • Pages 33 – 55	
Week 4 September 11st	Work on Chapter 3 Reflection	
Week 4 September 13th	Book: *Chapter 4*: Planning in the Problem-Based Classroom • Pages 57 – 83	• Chapter 3 Reflection
Week 5 September 16th	Discuss Three-Act Task Assignment, Show Examples, and Choose Partners	
Week 5 September 18th	Work on Chapter 4 Reflection	

Week 5 September 20th	Book: *Chapter 8*: Developing Early Number Concepts and Number Sense • Pages 142 – 164 Number Talks Video: • "Ten Frames: 8+6"	• Chapter 4 Reflection
Week 6 September 23rd	Book: *Chapter 8*: Developing Early Number Concepts and Number Sense • Pages 142 – 164	• Number Talks 8+6 Discussion Post
Week 6 September 25th	Book: *Chapter 8*: Developing Early Number Concepts and Number Sense • Pages 142 – 164	
Week 6 September 27th	Discuss Book of Big Questions (Chap. 8)	
Week 7 September 30th	Book: *Chapter 9*: Developing the Meaning for the Operations • Pages 167 – 191 Number Talks Video: • "Array Discussion: 8x25"	
Week 7 October 2nd	Book: *Chapter 9*: Developing the Meaning for the Operations • Pages 167 – 191	• Number Talks 8x25 Discussion Post
Week 7 October 4th	Book: *Chapter 9*: Developing the Meaning for the Operations • Pages 167 – 191	
Week 8 October 7th	Discuss Book of Big Questions (Chap. 9)	
Week 8 October 9th	Work on Problem-Solving Set (Chap. 9)	
Week 8 October 11th	Book: *Chapter 10*: Developing Basic Fact Fluency • Pages 194 – 220 Number Talks Video: • "Multiplication String: 7x7"	• Problem-Solving Set (Chap. 9)
Week 9 October 14th	Book: *Chapter 10*: Developing Basic Fact Fluency • Pages 194 – 220	• Number Talks 7x7 Discussion Post
Week 9 October 16th	Book: *Chapter 10*: Developing Basic Fact Fluency • Pages 194 – 220	
Week 9 October 18th	Discuss Book of Big Questions (Chap. 10)	

Week 10 October 21st	Work on Problem-Solving Set (Chap. 10)	
Week 10 October 23rd	Book: *Chapter 11*: Developing Whole-Number Place Value Concepts • Pages 222 – 245	• Problem-Solving Set (Chap. 10)
Week 10 October 25th	Book: *Chapter 11*: Developing Whole-Number Place Value Concepts • Pages 222 – 245	
Week 11 October 28th	Book: *Chapter 11*: Developing Whole-Number Place Value Concepts • Pages 222 – 245	
Week 11 October 30th	Discuss Book of Big Questions (Chap. 11)	
Week 11 November 1st	**ALL SAINTS DAY**	**NO CLASS**
Week 12 November 4th	Work on Problem-Solving Set (Chap. 11)	
Week 12 November 6th	Book: *Chapter 12*: Developing Strategies for Addition and Subtraction Computation • Pages 247 – 275 Number Talks Video: • "Addition: 38+37"	• Problem-Solving Set (Chap. 11)
Week 12 November 8th	Book: *Chapter 12*: Developing Strategies for Addition and Subtraction Computation • Pages 247 – 275 Number Talks Video: • "Subtraction: 70-59"	• Number Talks 38+37 Discussion Post
Week 13 November 11th	**VETERAN'S DAY**	**NO CLASS**
Week 13 November 13th	Book: *Chapter 12*: Developing Strategies for Addition and Subtraction Computation • Pages 247 – 275	• Number Talks 70-59 Discussion Post
Week 13 November 15th	Discuss Book of Big Questions (Chap. 12)	
Week 14 November 18th	Work on Problem-Solving Set (Chap. 12)	
Week 14 November 20th	Book: *Chapter 13*: Developing Strategies for Multiplication and Division Computation • Pages 277 – 297	• Problem-Solving Set (Chap. 12)

	Number Talks Discussion: • "Multiplication: 32x15"	
Week 14 November 22nd	Book: *Chapter 13*: Developing Strategies for Multiplication and Division Computation • Pages 277 – 297	• Number Talks 32x15 Discussion Post
Week 15 November 25th	Book: *Chapter 13*: Developing Strategies for Multiplication and Division Computation • Pages 277 – 297	
Week 15 November 27th	Discuss Book of Big Questions (Chap. 13)	
Week 15 November 29th	**THANKSGIVING HOLIDAY**	**NO CLASS**
Week 16 December 2nd	Work on Problem-Solving Set (Chap. 13)	
Week 16 December 4th	Work on Three-Act Task with Partners	• Problem-Solving Set (Chap. 13)
Week 16 December 6th	Work on Three-Act Task with Partners	• Final Version of Three-Act Task