Chaminade University
O F   H O N O L U L U

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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 grades 3 through 6 are explored using hands-on and problem-solving approaches.
Prerequisite: Pass Praxis I or 9 hours of math credit, ED 220, ED 221, ED 322

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 ʻOlelo Noʻeau (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 (Naʻauao) 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	*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
Your attendance, promptness, attention, cooperation, and active participation are necessary to facilitate this course. If you are unable to attend class, it is your responsibility to notify your instructor and to find out what you missed that day during class. 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 in class every day, to be responsive, and participate fully in all class activities. 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 in the following ways:

2. Problem-Solving Sets – 30% of Final Grade
Due: After the Completion of Every Chapter
20 points each
Each chapter, 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.

3. Number Talks Discussions – 15% of Final Grade
Due: Randomly Throughout the Semester
5 points each
You will be required to watch a series of Number Talks videos in this course. Number Talks is a very informal, collaborative way to teach mathematics to an entire classroom. For the Number Talk videos, you will be required to participate in an online group discussion on Canvas. You will post comments and answer questions about the videos you observe. Reponses must be filled with thoughtfulness contributing the conversation in order to receive full credit.

4. Three-Act Fraction Task – 30% of Final Grade
Due: December 6th
100 points
This is exactly what you did in ED 322, but this time, the task must involve fraction content. You will design a three-act task that focuses on the content area of fractions. The lesson can involve any of content dealing with fractions. The task rubric and template will be given to you during the semester, 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.

5. Mathematical Teaching Philosophy – 15% of Final Grade
Due: December 4th
50 points
During the semester, you will begin developing your personal mathematics teaching philosophy. You are to include at least 2 references to support your philosophy. You will submit a written philosophy in APA format, approximately 1 single-spaced page, which will answer the following questions:
   a. If you were asked to describe "mathematics" to a parent, how would you respond? (Complete the statement, "To me, mathematics is…")
   b. One goal we have for every child in our elementary classroom is that each child successfully learns mathematics. Can you share what it means for a child to successfully learn mathematics? (Complete the statement, "To me, learning mathematics requires…")
   c. You have a picture of what mathematics is to you and what you think learning mathematics requires. What does it mean to be a "good mathematics teacher?" (Complete the statement, "To me, being a good mathematics teachers means…")
   d. What factors do you feel will influence your teaching of mathematics?
Your philosophy will be graded on how well you support your statements with research of how children best learn mathematics, specific examples of your own observations, clear expectations of your own classroom, and the quality of your writing.

Assignments	Percentage of Final Grade
Attendance	10%
Problem-Solving Sets	30%
Number Talks Discussions	15%
Three-Act Fraction Task	30%
Mathematical Teaching Philosophy	15%

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

Week # Date	Class Description	Assignments Due Each Week
Week 1 August 19th	• Student Introductions • Go Over Course Syllabus & Schedule	
Week 1 August 21st	Discuss Three-Act Fraction Task in Detail with TA • Examples of Three-Act Tasks	
Week 1 August 23rd	Book: *Chapter 15*: Developing Fraction Concepts (Meanings, Models, & Fractional Parts) • Pages 339 – 358 Handout: • Fraction Constructs	
Week 2 August 26th	Book: *Chapter 15*: Developing Fraction Concepts (Meanings, Models, & Fractional Parts) • Pages 339 – 358 Handout: • Fraction Misconceptions	
Week 2 August 28th	Book: *Chapter 15*: Developing Fraction Concepts (Meanings, Models, & Fractional Parts) • Pages 339 – 358 Number Talks Video: • "What is ¾ of 12? Using a Story Context"	
Week 2 August 30th	Book: *Chapter 15*: Developing Fraction Concepts (Meanings, Models, & Fractional Parts) • Pages 339 – 358 Handout: • Fractional Parts	• Number Talks ¾ of 12 Discussion Post
Week 3 September 2nd	**LABOR DAY**	**NO CLASS**
Week 3 September 4th	Book: *Chapter 15*: Developing Fraction Concepts (Equivalent Fractions & Comparing Fractions) • Pages 358 – 369 Handout: • Equivalent Fractions	
Week 3 September 6th	Book: *Chapter 15*: Developing Fraction Concepts (Equivalent Fractions & Comparing Fractions) • Pages 358 – 369 Handout:	

	• Comparing Fractions Number Talks Video: • "Comparing 24/50 and 21/40"	
Week 4 September 9th	Discuss Book of Big Questions (Chap. 15)	• Number Talks Comparing Fractions Discussion Post
Week 4 September 11st	Work on Problem-Solving Set (Chap. 15)	
Week 4 September 13th	Book: *Chapter 16*: Developing Fraction Operations (Addition & Subtraction) • Pages 371 – 384 Handout: • Fraction Computation Instruction Number Talks Video: • "1/2 + 1/2, 1/2 + 3/4: Developing Addition Strategies with Fractions"	• Problem-Solving Set (Chap. 15)
Week 5 September 16th	Book: *Chapter 16*: Developing Fraction Operations (Addition & Subtraction) • Pages 371 – 384 Number Talks Video: • "3/4 – 3/8: Developing Subtraction Strategies with Fractions"	• Number Talks 1/2 + 1/2, 1/2 + 3/4 Discussion Post
Week 5 September 18th	Book: *Chapter 16*: Developing Fraction Operations (Multiplication & Division) • Pages 384 – 401 Handout: • Multiplication of Fractions Number Talks Video: • "1 1/3 x 3/4: Developing Multiplication Strategies with Fractions"	• Number Talks 3/4 – 3/8 Discussion Post
Week 5 September 20th	Book: *Chapter 16*: Developing Fraction Operations (Multiplication & Division) • Pages 384 – 401 Handout: • Division of Fractions Number Talks Video: • "1 / 3/8: Developing Division Strategies with Fractions"	• Number Talks 1 1/3 x 3/4 Discussion Post
Week 6 September 23rd	Discuss Book of Big Questions (Chap. 16) & Discuss Three-Act Fraction Task Assignment, Show Examples, and Choose Partners	• Number Talks 1 / 3/8 Discussion Post

Week 6 September 25th	Work on Problem-Solving Set (Chap. 16)	
Week 6 September 27th	<u>Book</u>: *Chapter 17*: Developing Concepts of Decimals and Percents • Pages 403 – 427 <u>Handouts</u>: • Introduction to Decimals • Comparing Decimals Misconceptions	• Problem-Solving Set (Chap. 16)
Week 7 September 30th	<u>Book</u>: *Chapter 17*: Developing Concepts of Decimals and Percents • Pages 403 – 427 <u>Number Talks Video</u>: • "Placing 0.9, 0.13, 0.255 on the Number Line: Connecting Fractions to Decimals"	
Week 7 October 2nd	<u>Book</u>: *Chapter 17*: Developing Concepts of Decimals and Percents • Pages 403 – 427 <u>Handout</u>: • Computation with Decimals	• Number Talks Placing Decimals Discussion Post
Week 7 October 4th	<u>Book</u>: *Chapter 17*: Developing Concepts of Decimals and Percents • Pages 403 – 427 <u>Handout</u>: • Percent Instruction Guidelines <u>Number Talks Video</u>: • "1/4 x 1/3: Connecting Fractions to Percentages"	
Week 8 October 7th	Discuss Book of Big Questions (Chap. 17)	• Number Talks 1/4 x 1/3 Discussion Post
Week 8 October 9th	Work on Problem-Solving Set (Chap. 17)	
Week 8 October 11th	<u>Book</u>: *Chapter 18*: Ratios, Proportions, and Proportional Reasoning • Pages 429 – 450 <u>Handout</u>: • Types of Ratios	• Problem-Solving Set (Chap. 17)
Week 9 October 14th	<u>Book</u>: *Chapter 18*: Ratios, Proportions, and Proportional Reasoning • Pages 429 – 450 <u>Handout</u>:	

	• Teaching Proportional Reasoning	
Week 9 October 16th	Book: *Chapter 18*: Ratios, Proportions, and Proportional Reasoning • Pages 429 – 450 Handout: • Modeling Proportion Word Problems	
Week 9 October 18th	Discuss Book of Big Questions (Chap. 18)	
Week 10 October 21st	Work on Problem-Solving Set (Chap. 18)	
Week 10 October 23rd	Book: *Chapter 19*: Developing Measurement Concepts • Pages 453 – 487 Handout: • Measurement Brainstorming	• Problem-Solving Set (Chap. 18)
Week 10 October 25th	Book: *Chapter 19*: Developing Measurement Concepts • Pages 453 – 487 Handout: • Area & Volume Problem-Solving	
Week 11 October 28th	Book: *Chapter 19*: Developing Measurement Concepts • Pages 453 – 487 Handout: • Area & Volume Problem-Solving (Continued)	
Week 11 October 30th	Discuss Book of Big Questions (Chap. 19)	
Week 11 November 1st	**ALL SAINTS DAY**	**NO CLASS**
Week 12 November 4th	Work on Problem-Solving Set (Chap. 19)	
Week 12 November 6th	Book: *Chapter 20*: Geometric Thinking and Geometric Concepts • Pages 488 – 524 Handout: • Geometry Goals for Students	• Problem-Solving Set (Chap. 19)
Week 12 November 8th	Book: *Chapter 20*: Geometric Thinking and Geometric Concepts • Pages 488 – 524	

	Handout: • The van Hiele Levels	
Week 13 November 11th	**VETERAN'S DAY**	**NO CLASS**
Week 13 November 13th	Book: *Chapter 20*: Geometric Thinking and Geometric Concepts • Pages 488 – 524 Handout: • The van Hiele Levels (Continued)	
Week 13 November 15th	Discuss Book of Big Questions (Chap. 20)	
Week 14 November 18th	Work on Problem-Solving Set (Chap. 20)	
Week 14 November 20th	Book: *Chapter 14*: Algebraic Thinking, Equations, and Functions (Properties, Patterns, & Functions) • Pages 299 - 318 Handout: • Algebra Thinking Strands	• Problem-Solving Set (Chap. 20)
Week 14 November 22nd	Book: *Chapter 14*: Algebraic Thinking, Equations, and Functions (Properties, Patterns, & Functions) • Pages 299 - 318 Handout: • Algebra Thinking Strands (Continued)	
Week 15 November 25th	Discuss Book of Big Questions (Chap. 14)	
Week 15 November 27th	Work on Problem-Solving Set (Chap. 14)	
Week 15 November 29th	**THANKSGIVING HOLIDAY**	**NO CLASS**
Week 16 December 2nd	Work on Mathematical Teaching Philosophy	• Problem-Solving Set (Chap. 14)
Week 16 December 4th	Work on Three-Act Task with Partners	• Mathematical Teaching Philosophy
Week 16 December 6th	Work on Three-Act Task with Partners	• Final Version of Three-Act Task