



**ED 322-90-4: Elementary Math Methods I**  
**School of Education & Behavioral Sciences**  
[Chaminade University Honolulu](https://www.chaminade.edu/)  
**Fall 2023**  
**3 Credits**

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**Office Location:** Brogan 132  
**Office/Zoom Hours:** By Appointment

### Learning Material

- **Textbook (Required):** J.A. Van DeWalle, K. Kary, J.M. Bay-Williams (2016). *Elementary and middle school mathematics: Teaching developmentally*. 10th ed. Pearson. ISBN-10: 013480208X
- **Google Drive/3-Ring Binder:** This is comprised of problem-solving sets, discussion posts, and all other assignments.

### Additional Resources

- [Common Core State Standards \(CCSS\) for Mathematics](#)
- [The Math Learning Center – Virtual Math Manipulatives](#)
- Mathematical Research Articles [provided in some modules and should be saved for future reference]

### 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, ED 322

### Course Overview

This is the first of two elementary math methods courses to provide insight on how to teach different strategies to solve K – 3 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 'Olelo No'eau (Hawaiian proverbs) and Marianist core beliefs:

1. Educate for Formation in Faith (Mana) E ola au i ke akua ('Olelo 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 ('Olelo 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)**

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

**Course Learning Outcomes (CLOs)**

|          |                                                                                                                                                                                                                                         |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1</b> | Students will be able to design real-world mathematics lessons that reflect appropriate consideration of student needs, objectives to be achieved, content to be taught while allowing exploration, conjectures, and logical reasoning. |
| <b>2</b> | 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.            |
| <b>3</b> | Students will be able to analyze and implement various approaches, strategies, and materials for teaching lower and upper elementary mathematics.                                                                                       |

**Alignment of Learning Outcomes**

|                               | <b>CLO 1</b>                                                                               | <b>CLO 2</b>                                                                               | <b>CLO 3</b>                                                                   |
|-------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| <b>Marianist Values</b>       | Provide an integral and quality education<br>Educate for adaptation and change             | Provide an integral and quality education<br>Educate for adaptation and change             | Provide an integral and quality education<br>Educate for adaptation and change |
| <b>WASC Core Competencies</b> | Written Communication<br>Oral Communication<br>Quantitative Reasoning<br>Critical Thinking | Written Communication<br>Oral Communication<br>Quantitative Reasoning<br>Critical Thinking | Oral Communication<br>Quantitative Reasoning<br>Critical Thinking              |
| <b>Program Outcomes</b>       | 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. Van De Walle (VDWR) & Number Talks Reflections (NTR) – 30% of Final Grade [CLO 2 & 3]

Modules 1, 2, 3, 4, 5, 7, 8, 9: [3 points each]

- After reading the first 5 chapters of the Van De Walle textbook, specific Number Talks pages in the Parrish textbook & watching the corresponding classroom videos, you will submit reflections about what you saw by responding to provided questions.

### 3. Problem-Solving Sets (PSS) – 40% of Final Grade [CLO 2, & 3]

Modules 4, 5, 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.

### 4. Three-Act Task – 30% of Final Grade [CLO 1]

Module 2, 10: [45 points]

- You will create your own real-world math lesson called a Three-Act Task, which must focus on one of the content areas covered in this course.

| 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](mailto: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](mailto: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](mailto: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](mailto: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:*
  - 75 minutes TR = 150 minutes weekly x 15 weeks = 2,250 minutes or 37.5 hours
- *Time Spent on Key Assessments:*
  - Van De Walle & Number Talks Reflections = 20 hours reading, viewing, & completing
  - Problem-Solving Sets = 10 hours completing
  - Three-Act Task = 15 hours creating
- *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 (reading and researching)

## Course Schedule

*Modules do not have a start and end date. Modules are completed at the best speed for the student.  
All assignments from all modules must be submitted by **December 7<sup>th</sup>, 2023.***

| Module #         | Module Content                                                                                                                                                                                                                                                              | Assignments                                                                                                                                                    |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Module 1</b>  | Van De Walle Textbook<br>Chapter 1: Teaching Mathematics in the 21 <sup>st</sup> Century<br>Chapter 2: Exploring What It Means to Know and Do Mathematics<br>Chapter 3: Teaching through Problem Solving<br><br>Number Talks Videos<br>Author Clip A.1 & Classroom Clip 3.4 | <ul style="list-style-type: none"> <li>○ Introductory Post</li> <li>○ VDWR (Chap. 1 – 3)</li> <li>○ NTR (Module 1)</li> </ul>                                  |
| <b>Module 2</b>  | Van De Walle Textbook<br>Chapter 4: Planning in the Problem-Based Classroom<br>Chapter 5: Creating Assessments <i>for</i> Learning<br><br>Number Talks Videos<br>Classroom Clips 5.3 & 3.1                                                                                  | <ul style="list-style-type: none"> <li>○ VDWR (Chap. 4 &amp; 5)</li> <li>○ NTR (Module 2)</li> <li>○ Three-Act Task Information &amp; Understanding</li> </ul> |
| <b>Module 3</b>  | Van De Walle Textbook<br>Chapter 7: Developing Early Number Concepts and Number Sense<br><br>Number Talks Videos<br>Classroom Clips K.1, 2.1, K.3, & K.2                                                                                                                    | <ul style="list-style-type: none"> <li>○ NTR (Module 3)</li> </ul>                                                                                             |
| <b>Module 4</b>  | Van De Walle Textbook<br>Chapter 8: Developing Meanings for the Operations<br><br>Number Talks Videos<br>Classroom Clips 2.2, 3.7, & 5.4                                                                                                                                    | <ul style="list-style-type: none"> <li>○ NTR (Module 4)</li> <li>○ PSS (Chap. 8)</li> </ul>                                                                    |
| <b>Module 5</b>  | Van De Walle Textbook<br>Chapter 9: Developing Basic Fact Fluency<br><br>Number Talks Videos<br>Classroom Clips 3.6 & 3.5                                                                                                                                                   | <ul style="list-style-type: none"> <li>○ NTR (Module 5)</li> <li>○ PSS (Chap. 9)</li> </ul>                                                                    |
| <b>Module 6</b>  | Work Week<br>Three-Act Task                                                                                                                                                                                                                                                 |                                                                                                                                                                |
| <b>Module 7</b>  | Van De Walle Textbook<br>Chapter 10: Developing Whole-Number Place-Value Concepts                                                                                                                                                                                           | <ul style="list-style-type: none"> <li>○ PSS (Chap. 10)</li> </ul>                                                                                             |
| <b>Module 8</b>  | Van De Walle Textbook<br>Chapter 11: Developing Strategies for Addition and Subtraction Computation<br><br>Number Talks Videos<br>Classroom Clips 3.2, 3.3, 3.1, & 5.6                                                                                                      | <ul style="list-style-type: none"> <li>○ NTR (Module 8)</li> <li>○ PSS (Chap. 11)</li> </ul>                                                                   |
| <b>Module 9</b>  | Van De Walle Textbook<br>Chapter 12: Developing Strategies for Multiplication and Division Computation<br><br>Number Talks Videos<br>Classroom Clips 5.2, 5.1, & 5.5                                                                                                        | <ul style="list-style-type: none"> <li>○ NTR (Module 9)</li> <li>○ PSS (Chap. 12)</li> </ul>                                                                   |
| <b>Module 10</b> | Work Week<br>Three-Act Task                                                                                                                                                                                                                                                 | <ul style="list-style-type: none"> <li>○ Three-Act Task (Final Submission)</li> </ul>                                                                          |