MA 110-01-1: Pre-Calculus
School of Natural Sciences & Mathematics
Chaminade University Honolulu
Spring 2024 / 3 Credits
Monday, Wednesday, Friday 10:30 – 11:20 am
Brogan Hall 101

Instructor:	Dr. Travis Mukina	**Office Location:**	Brogan 132
Email:	travis.mukina@chaminade.edu	**Cell Phone:**	(814) 450-8134

Learning Materials

- **Desmos App**: A free graphing calculator app.
- **GroupMe App**: A way to stay up-to-date with all class announcements, assignments, and questions between you, your professor, and your classmates.
- **Canvas Student App**: A way to submit all assessments and check progress on mastery of course learning outcomes when necessary.
- **Google Drive/3-Ring Binder**: This should be comprised of self-created notes, provided guided notes, Building Thinking Classroom Activities, and all other assignments.

Course Catalog Description
This course provides a foundation for further study in mathematics and prepares for Calculus I. Topics include functions and their graphs, polynomial and rational functions, exponential and logarithmic functions, trigonometric functions and their inverses, and some other selected topics.

Course Overview
This course is designed to produce better conceptual understanding of functions and mathematics in general that leads into understanding procedural understanding of formulas. A strong development of number relationships will also occur by the use of class discussions, sharing of ideas, and thought-provoking-take-home assessments.

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	To demonstrate the understanding and skills in reading, interpreting, and communicating mathematical concepts which are integrated into other disciplines or appear in everyday life
2	To gain understandings of, and practical skills in logical thinking, deductive and inductive reasoning
3	To articulate the understanding of more advanced mathematical concepts and computational skills to support the study of other disciplines, including skills with numeric, analytic, and graphical methods
4	Where relevant, to develop mathematical maturity to undertake higher-level studies in mathematics and related fields

Course Learning Outcomes [CLOs]

Key Outcome = Yellow Supplemental Outcome = Gray

1	Students will contribute to a building thinking classroom by participating in daily in-person activities.
2	Students will be able to draw and explain the fundamentals of coordinate geometry.
3	Students will be able to explain the concept of functions algebraically, graphically, and combine multiple functions.
4	Students will be able to explain the concept of linear functions algebraically and graphically.
5	Students will be able to explain the concept of quadratic functions algebraically and graphically.
6	Students will be able to explain the concept of polynomial and rational functions algebraically and graphically.
7	Students will be able to explain the concept and relationship of exponential and logarithmic functions algebraically and graphically.
8	Students will be able to explain the concept of trigonometric functions and analyze them in real-world situations.
9	Students will be able to solve trigonometric equations.

Alignment of Learning Outcomes

	CLO 1	CLO 2	CLO 3	CLO 4	CLO 5	CLO 6	CLO 7	CLO 8	CLO 9
Marianist Values	2, 5	2, 5	2, 5	2, 5	2, 5	2, 5	2, 5	2, 5	2, 5
Program Learning Outcomes	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4

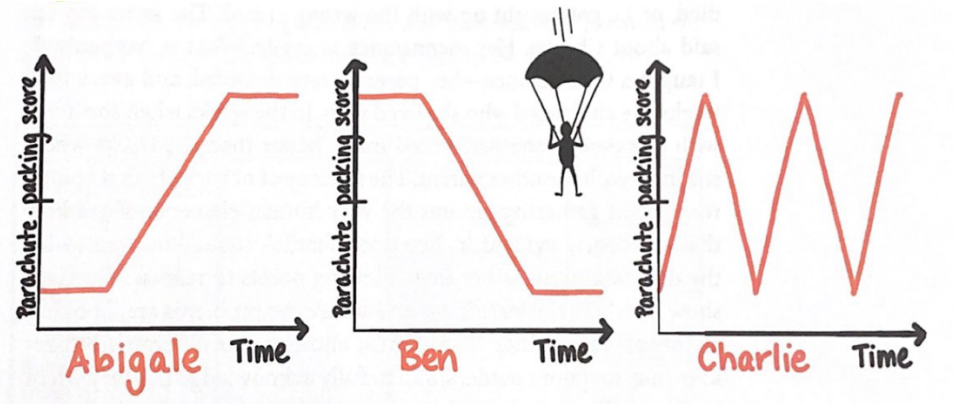
Assessment
This course is designed to contribute in a different and significant way to your knowledge and experience relative to diagnosis and remediation of mathematics. Always be prepared to effectively participate to class discussions, analyze the thinking of others in class, and clearly explain your thinking. A mastery rubric is provided with every assessment. Feedback on all assessments is provided within 7 days of submission.

1. **Participation Assignments**
   Assessed: Module 1
   - There are two different assignments, both described on Canvas, which contribute to your overall participation in this course: a mathematical beliefs questionnaire and joining our class GroupMe with an initial post.

2. **Building a Thinking Classroom** **[CLO 1]**
   Assessed: Every In- Person Class
   - Every day you attend in-person class, you are expected to contribute to our building thinking classroom activities by communicating effectively with your classmates to solve various mathematical situations. You must be in class before the building thinking activity begins to be assessed.

3. **Chapter Assessments** **[CLO 2, 3, 4, 5, 6, 7, 8, 9]**
   Assessed: Module 2, 4, 7, 9
   - These assessments focus on course learning outcomes demonstrated in the building thinking classroom activities and strategies used in your check for understanding problems. A full class period is provided to complete problems from the chapters being assessed in a written communication form.

4. **Assessment Week** **[CLO 2, 3, 4, 5, 6, 7, 8, 9]**
   Assessed: Module 5 & Module 10
   - These assessments focus on course learning outcomes demonstrated in the building thinking classroom activities and strategies used in your check for understanding problems. Assessments are completed in a verbal and/or written communication format.



Conversion from Outcome-Based Grading to Traditional Grades		How Many Key Outcomes Demonstrate Mastery?						
		6	**5**	**4**	**3**	**2**	**1**	**0**
How Many Supplemental Outcomes Demonstrate Mastery?	**3**	A	A	B	B	C	C	D
	2	A	B	B	C	C	D	D
	1	B	B	C	C	D	D	F
	0	B	C	C	D	D	F	F

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

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 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 sent through a direct message on the GroupMe app. 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).

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 20 hours completing key 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.*

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

Clock Hour Category	Total Time (hours)
Seat Time	37.5
Out-of-Class Assessments	20
Sub-Total	57.5
Remaining Hours	77.5
Remaining Hours / 15 Weeks	*5.2 hours/week*

COURSE SCHEDULE

Module # Dates	Module Content	Assignments
Module 1 Jan 8th – 14th	Chapter F: A Prelude to Functions [CLO 2] Section F.1: The Distance and Midpoint Formulas [CLO 2] Section F.2: Graphs of Equations in Two Variables; Intercepts; Symmetry [CLO 4] Section F.3: Lines	○ Mathematical Beliefs Questionnaire ○ GroupMe Registration ○ ✓ for Understanding (Chap. F)
Module 2 Jan 15th – 28th	Chapter 1: Functions and Their Graphs [CLO 3] Section 1.1: Functions [CLO 3] Section 1.2: The Graph of a Function [CLO 3] Section 1.3: Properties of Functions [CLO 3] Section 1.4: Library of Functions; Piecewise-defined Functions [CLO 3] Section 1.5: Graphing Techniques – Transformations	○ ✓ for Understanding (Chap. 1) ○ Chapter F & 1 Assessment
Module 3 Jan 29th – Feb 11th	Chapter 2: Linear and Quadratic Functions [CLO 4] Section 2.1: Properties of Linear Functions and Linear Models [CLO 5] Section 2.3: Quadratic Functions and Their Zeros [CLO 5] Section 2.4: Properties of Quadratic Functions [CLO 5] Section 2.7: Complex Zeros of a Quadratic Function	○ ✓ for Understanding (Chap. 2)
Module 4 Feb 12th – 25th	Chapter 3: Polynomial and Rational Functions [CLO 6] Section 3.1: Polynomial Functions and Models [CLO 6] Section 3.2: The Real Zeros of a Polynomial Function [CLO 6] Section 3.4: Properties of Rational Functions [CLO 6] Section 3.5: The Graph of a Rational Function	○ ✓ for Understanding (Chap. 3) ○ Chapter 2 & 3 Assessment
Module 5 Feb 26th – Mar 3rd	Chapter F, 1, 2, 3 Assessment Week Verbal Assessment #1: Feb 26th Verbal Assessment #2: Feb 28th Optional Assessment Day: Mar 1st	
Module 6 Mar 4th – 10th	Chapter 4: One-to-One & Exponential Functions [CLO 3] Section 4.1: Composite Functions [CLO 3] Section 4.2: One-to-One Functions; Inverse Functions [CLO 7] Section 4.3: Exponential Functions	○ ✓ for Understanding (Chap. 4)
Module 7 Mar 11th – 17th	Chapter 4: Logarithmic Functions [CLO 7] Section 4.4: Logarithmic Functions [CLO 7] Section 4.5: Properties of Logarithms [CLO 7] Section 4.6: Logarithmic and Exponential Equations	○ ✓ for Understanding (Chap. 4)
Spring Break Mar 18th – 24th	No Class	
Module 7 Mar 25th – 31st	Chapter 4: Logarithmic Functions [CLO 7] Section 4.4: Logarithmic Functions [CLO 7] Section 4.5: Properties of Logarithms [CLO 7] Section 4.6: Logarithmic and Exponential Equations	○ ✓ for Understanding (Chap. 4) ○ Chapter 4 Assessment
Module 8 Apr 1st – 14th	Chapter 5: Trigonometric Functions [CLO 8] Section 5.1: Angles and Their Measure [CLO 8] Section 5.2: Right Triangle Trigonometry [CLO 8] Section 5.3: Computing the Values of Trigonometric Functions of Acute Angles [CLO 8] Section 5.4: Trigonometric Functions of Any Angle [CLO 8] Section 5.5: Unit Circle Approach; Properties of the Trigonometric Functions	○ ✓ for Understanding (Chap. 5)
Module 9 Apr 15th – 21st	Chapter 6: Analytic Trigonometry [CLO 9] Section 6.1: The Inverse Sine, Cosine, and Tangent Functions [CLO 9] Section 6.3: Trigonometric Equations	○ ✓ for Understanding (Chap. 6) ○ Chapter 5 & 6 Assessment
Module 10 Apr 22nd – 28th	Chapter 4, 5, 6 Assessment Week Verbal Assessment #1: Apr 22nd Verbal Assessment #2: Apr 24th Optional Assessment Day: Apr 26th	
Finals Week Apr 29th – May 3rd	Optional Assessment Day Apr 29th	