MA 110-02-1: Pre-Calculus
Division of Natural Sciences & Mathematics
Fall 2020 / 3 Credits
Ching Hall 253
Monday, Wednesday, & Friday 11:30 – 12:30 pm

Instructor:	Dr. Travis Mukina	**Office Location:**	Brogan 132
Email:	travis.mukina@chaminade.edu	**Office Hours/Zoom:**	By Appointment
Office Phone:	(808) 440-4250	**Cell Phone:**	(814) 450-8134

Learning Materials:

- **MyMathLab Online Homework**: Purchase access code directly on www.pearson.com/mylab
  - Course ID: mukina07405
- **Desmos Apps**: Desmos App / Desmos Test Mode App is required.
- **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, MyMathLab homework, and exams.

Essential Question(s):

1. What does it mean to reason mathematically?
2. How do patterns and functions help us describe data, physical phenomena, and solve a variety of problems?
3. How do numbers represent quantitative relationships?

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.

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	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):

1	Gain better understanding of the fundamentals of coordinate geometry.
2	Gain understanding of the concept of functions: (a) algebraic definition and graph of a function, and (b) combinations of functions.
3	Develop algebraic and graphical skills to work with polynomial and rational functions.
4	Develop algebraic and graphical skills to work with exponential and logarithmic functions.
5	Gain better understanding of trigonometric functions of real numbers and angles.
6	Develop skills in analytic trigonometry: Using trigonometric identities in simplification and evaluation of trigonometric expressions.
7	Develop skills to solve trigonometric equations.

Alignment of Learning Outcomes:

	CLO 1	**CLO 2**	**CLO 3**	**CLO 4**	**CLO 5**	**CLO 6**	**CLO 7**
Marianist Value(s)	2, 5	2, 5	2, 5	2, 5	2, 5	2, 5	2, 5
WASC Core Competencies	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
Program Outcome(s)	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
Essential Question(s)	1, 2	1, 2	1, 2, 3	1, 3	1, 3	1, 4	1, 4

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. Always be prepared to effectively participate to class discussions, analyze the thinking of others in class, and clearly explain your thinking in every assignment. It will be your responsibility to turn in all assignments on time, as late assignments are not accepted. Feedback and grades on all assignments are provided within 2 days of submission.

1. Class Participation – 10% of Final Grade
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 being actively involved in the class GroupMe app. If you are unable to attend synchronous classes, it is your responsibility to notify your instructor before the start of class and find out from a classmate what you missed. However, you also have a responsibility to be responsive and participate fully in all asynchronous 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.

2. MyMathLab Online Homework – 25% of Final Grade
Due: Every Sunday by Midnight
~10 points per section
Homework is assigned weekly through the MyMathLab website. All homework assignments for each week are due every Sunday by midnight. Extensions will not be granted and missed homework assignments cannot be reopened for completion.

3. Exams – 50% of Final Grade (25% Each)
Exam 1 (Chap. 0, 1, & 2): Week 8 *Exam 2 (Chap. 3 & 4): 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 MyMathLab homework. Desmos Test App is permitted.

4. Sine Wave Project – 15% of Final Grade
Due: Week 15
20 points
This project allows you to dive deeper into understanding the sine wave function and how it can be applied to real-world climate patterns. Partners are recommended, but not required. The use of Desmos is required.

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 (Fall 2020)

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

Blue Group (A)	Silver Group (B)	Everyone (Online)

Week # Date	Class Description	Assignments Due by Midnight
Week 1 August 24th	Introduction to Course & Syllabus Chapter F: A Prelude to Functions • *Section F.1*: The Distance and Midpoint Formulas • *Section F.2*: Graphs of Equations in Two Variables; Intercepts; Symmetry	• GroupMe App Confirmation • Download Desmos Apps • MyMathLab (MML) Registration
Week 1 August 26th	Introduction to Course & Syllabus Chapter F: A Prelude to Functions • *Section F.1*: The Distance and Midpoint Formulas • *Section F.2*: Graphs of Equations in Two Variables; Intercepts; Symmetry	
Week 1 August 28th	Chapter F: A Prelude to Functions • Chapter F Guided Notes Questions • MyMathLab Chapter F Questions	August 30th • MML F.1 • MML F.2
Week 2 August 31st	Chapter F: A Prelude to Functions • *Section F.3:* Lines • *Section F.4:* Circles	
Week 2 September 2nd	Chapter F: A Prelude to Functions • *Section F.3:* Lines • *Section F.4:* Circles	
Week 2 September 4th	Chapter F: A Prelude to Functions • Chapter F Guided Notes Questions • MyMathLab Chapter F Questions	September 6th • MML F.3 • MML F.4
Week 3 September 7th	**LABOR DAY**	**NO CLASS**
Week 3 September 9th	Chapter 1: Functions and Their Graphs • *Section 1.1:* Functions • *Section 1.2:* The Graph of a Function • *Section 1.3:* Properties of Functions	
Week 3 September 11th	Chapter 1: Functions and Their Graphs • Chapter 1 Guided Notes Questions • MyMathLab Chapter 1 Questions	September 13th • MML 1.1 • MML 1.2 • MML 1.3
Week 4 September 14th	Chapter 1: Functions and Their Graphs • *Section 1.4:* Library of Functions; Piecewise-defined Functions • *Section 1.5:* Graphing Techniques – Transformations	
Week 4 September 16th	Chapter 1: Functions and Their Graphs • *Section 1.4:* Library of Functions; Piecewise-defined Functions • *Section 1.5:* Graphing Techniques – Transformations	

Week 4 September 18th	Chapter 1: Functions and Their Graphs • Chapter 1 Guided Notes Questions • MyMathLab Chapter 1 Questions	September 20th • MML 1.4 • MML 1.5
Week 5 September 21st	Chapter 2: Linear and Quadratic Functions • *Section 2.1:* Properties of Linear Functions and Linear Models	
Week 5 September 23rd	Chapter 2: Linear and Quadratic Functions • *Section 2.1:* Properties of Linear Functions and Linear Models	
Week 5 September 25th	Chapter 2: Linear and Quadratic Functions • Chapter 2 Guided Notes Questions • MyMathLab Chapter 2 Questions	September 27th • MML 2.1
Week 6 September 28th	Chapter 2: Linear and Quadratic Functions • *Section 2.3:* Quadratic Functions and Their Zeros • *Section 2.4:* Properties of Quadratic Functions	
Week 6 September 30th	Chapter 2: Linear and Quadratic Functions • *Section 2.3:* Quadratic Functions and Their Zeros • *Section 2.4:* Properties of Quadratic Functions	
Week 6 October 2nd	Chapter 2: Linear and Quadratic Functions • Chapter 2 Guided Notes Questions • MyMathLab Chapter 2 Questions	October 4th • MML 2.3 • MML 2.4
Week 7 October 5th	Chapter 2: Linear and Quadratic Functions • *Section 2.7:* Complex Zeros of a Quadratic Function	
Week 7 October 7th	Chapter 2: Linear and Quadratic Functions • *Section 2.7:* Complex Zeros of a Quadratic Function	
Week 7 October 9th	Chapter 2: Linear and Quadratic Functions • Chapter 2 Guided Notes Questions • MyMathLab Chapter 2 Questions	October 11th • MML 2.7
Week 8 October 12th	**DISCOVERERS' DAY**	**NO CLASS**
Week 8 October 14th	**EXAM 1 (CHAPTERS 0, 1, & 2)**	
Week 8 October 16th	**EXAM 1 (CHAPTERS 0, 1, & 2)**	
Week 9 October 19th	Chapter 3: Polynomial and Rational Functions • *Section 3.1:* Polynomial Functions and Models • *Section 3.2:* The Real Zeros of a Polynomial Function	
Week 9 October 21st	Chapter 3: Polynomial and Rational Functions • *Section 3.1:* Polynomial Functions and Models • *Section 3.2:* The Real Zeros of a Polynomial Function	
Week 9 October 23rd	Chapter 3: Polynomial and Rational Functions • Chapter 3 Guided Notes Questions • MyMathLab Chapter 3 Questions	October 25th • MML 3.1 • MML 3.2
Week 10 October 26th	Chapter 3: Polynomial and Rational Functions • *Section 3.4:* Properties of Rational Functions • *Section 3.5:* The Graph of a Rational Function	
Week 10 October 28th	Chapter 3: Polynomial and Rational Functions • *Section 3.4:* Properties of Rational Functions	

	• *Section 3.5:* The Graph of a Rational Function	
Week 10 October 30th	Chapter 3: Polynomial and Rational Functions • Chapter 3 Guided Notes Questions • MyMathLab Chapter 3 Questions	November 1st • MML 3.4 • MML 3.5
Week 11 November 2nd	Chapter 4: Exponential and Logarithmic Functions • *Section 4.1:* Composite Functions • *Section 4.2:* One-to-One Functions; Inverse Functions • *Section 4.3:* Exponential Functions	
Week 11 November 4th	Chapter 4: Exponential and Logarithmic Functions • *Section 4.1:* Composite Functions • *Section 4.2:* One-to-One Functions; Inverse Functions • *Section 4.3:* Exponential Functions	
Week 11 November 6th	Chapter 4: Exponential and Logarithmic Functions • Chapter 4 Guided Notes Questions • MyMathLab Chapter 4 Questions	November 8th • MML 4.1 • MML 4.2 • MML 4.3
Week 12 November 9th	Chapter 4: Exponential and Logarithmic Functions • *Section 4.4:* Logarithmic Functions • *Section 4.5:* Properties of Logarithms • *Section 4.6:* Logarithmic and Exponential Equations	
Week 12 November 11th	**VETERAN'S DAY**	**NO CLASS**
Week 12 November 13th	Chapter 4: Exponential and Logarithmic Functions • *Section 4.4:* Logarithmic Functions • *Section 4.5:* Properties of Logarithms • *Section 4.6:* Logarithmic and Exponential Equations	November 15th • MML 4.4 • MML 4.5 • MML 4.6
Week 13 November 16th	**EXAM 2 (CHAPTERS 3 & 4)**	
Week 13 November 18th	**EXAM 2 (CHAPTERS 3 & 4)**	
Week 13 November 20th	Sine Wave Project Information & Sign Ups Chapter 5: Trigonometric Functions • *Section 5.1:* Angles and Their Measure • *Section 5.2:* Right Triangle Trigonometry	November 22nd • MML 5.1 • MML 5.2
Week 14 November 23rd	Chapter 5: Trigonometric Functions • *Section 5.3:* Computing the Values of Trigonometric Functions of Acute Angles • *Section 5.4:* Trigonometric Functions of Any Angle • *Section 5.5:* Unit Circle Approach; Properties of the Trigonometric Functions	
Week 14 November 25th	Chapter 5: Trigonometric Functions • *Section 5.3:* Computing the Values of Trigonometric Functions of Acute Angles • *Section 5.4:* Trigonometric Functions of Any Angle • *Section 5.5:* Unit Circle Approach; Properties of the Trigonometric Functions	
Week 14 November 27th	**THANKSGIVING BREAK**	**NO CLASS**

Week 15 November 30th	Chapter 5: Trigonometric Functions • Chapter 5 Guided Notes Questions • MyMathLab Chapter 5 Questions	November 29th • MML 5.3 • MML 5.4 • MML 5.5
Week 15 December 2nd	Chapter 6: Analytic Trigonometry • *Section 6.1:* The Inverse Sine, Cosine, and Tangent Functions • *Section 6.3:* Trigonometric Equations	
Week 15 December 4th	Chapter 6: Analytic Trigonometry • Chapter 6 Guided Notes Questions • MyMathLab Chapter 6 Questions • Sine Wave Project Final Questions	December 6th • MML 6.1 • MML 6.3
Finals Week December 7th		• Sine Wave Project