Course Number and Section MATH-2412-221C3
Name of Course: Precalculus 020
Course Semester Fall 2025
Time and days of course: 05:30PM-07:20PM MW, STEM Building 119

Instructor Information:	Abbas J. Masum
Email:	amasum@com.edu
Office Phone Number:	409-933-**8700**
Office Hours:	Half an hour before each class or by appointment only

Communicating with your instructor:
ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class through other electronic means. I will make every effort to respond to your email within 24 hours of receiving it.
Please specify which course you are contacting me about and follow the proper way to write your email. If your email is not clear/proper, no reply will be sent.

Required Textbook/Materials:
The textbook used in this course is: Precalculus, 11th Edition, Michael Sullivan, published by Pearson.
Student hours and location: MML and practicing the required concepts.

Course Description:
In-depth combined study of algebra, trigonometry, and other topics for calculus readiness.
Prerequisites: MATH 1314 grade "C" or better or COM Math Placement Test.

Topics:
Algebra and Function Review
Linear and Quadratic Functions
Polynomial and Rational Functions
Exponential Functions
Logarithmic Functions
Trigonometric Functions
Graphs of Trigonometric Functions
Inverse Trigonometric Functions
Trigonometric Identities
Trigonometric Equations
Applications of Trigonometric Functions
Polar Coordinates and Equations
Complex numbers in Trigonometric Form, Vectors, Conic Sections,
Parametric Equations and Sequences, other topics may be covered.

Homework Assignments
There is an assigned homework for each section to be completed online using MyMathLab.

Quizzes and Exams
There are four quizzes, five-unit exams and a comprehensive final exam. All of the quizzes and exams are to be done online using MyMathlab. You can retake each quiz just once to improve your score; the higher score will be the one that counts. **There are no retakes on any of the exams. Please devote your time and yourself to learning the concepts. There are no extra credits.**

6. Determination of Course Grade

Grading Formula: The course grade will be determined by the following formula:

Final Average = 64%Chapter Exams Average + 16%Final Exam + 10%Homework Average + 10%Quiz Average

The Final Exam score will replace the lowest Chapter Exam Score when it is larger.

Grading Scale:
Grade A: Final Average in [89.5, 100]
Grade B: Final Average in [79.5, 89.5)
Grade C: Final Average in [69.5, 79.5)
Grade D: Final Average in [59.5, 69.5)
Grade F: Final Average in [0, 59.5)

7. Makeup policy
There will be no makeup test for any missed test. However, if a test is missed and you notify me ahead of time, I might arrange for an alternative. No makeup will be granted to be taken during the regular class time. This policy is only good for **ONE MISSED EXAM**. Missing more than one exam will count as ZERO.

4. Technology
A graphing calculator is needed for this course. A Texas Instruments TI 83 Plus or TI 84 Plus is recommended. A TI 89 or higher cannot be used for this course.

Attendance Policy: Attendance for a face-to-face class is mandatory. All students MUST attend all the classes. Attendance will be taken every time we meet. Missing more than 12.5% of the semester hours, resulting in being dropped from the course.

Communicating with your instructor: ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class

through other electronic means. (Faculty may add additional statement requiring monitoring and communication expectations via D2L or other LMS)

Student Learner Outcomes	Maps to Core Objective	Assessed via this assignment
1. Demonstrate and apply knowledge of properties of functions, including domain and range, operations, compositions, and inverses.	Critical Thinking Skills (CT)	Exam
2. Recognize and apply polynomial, rational, exponential and logarithmic functions and solve related equations.	Critical Thinking Skills (CT)	Exam
3. Apply graphing techniques.	Visual Communication Skills (CS)	Quiz
4. Evaluate all roots (zeros) of higher degree polynomials and rational functions.	Critical Thinking Skills (CT)	Quiz
5. Recognize, solve and apply systems of linear equations using matrices.	Empirical and quantitative Skills (EQS)	Exam

Academic Dishonesty: The College of the Mainland is committed to a high standard of academic integrity. All students are responsible for honesty and independent effort. Incidents of academic and scholastic dishonesty (including cheating, plagiarism, and collusion) will be dealt with in a manner that is consistent with College Policy and the Student Handbook. Any student found to have been academically dishonest on an assignment, quiz or exam will receive a zero for that assignment, quiz or exam and he or she will be referred to the Office of Student Conduct for further disciplinary action. Please read the sections on Standards of Student Conduct and Discipline and Penalties in the on-line Student Handbook.

Student Concerns: If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact:

Leslie Richardson
Department Chair, Math & Computer Science
lrichardson@com.edu , (409) 933-8329

Course outline: We will follow the following table of contents throughout the semester. All students should know what we will be covering before attending each class. This calendar and syllabus are subject to change and if there are any changes, students will be notified by email or D2L announcement page.

Date	Math 2412_Fall 2025_COM
Mon., Aug. 18, 2025	**Course Orientation & Review of Requirements**
	3.1 Properties of Linear Functions and Linear Models
	3.2 Building Linear Models from Data
Wed., Aug. 20, 2025	**3.3 Quadratic Functions and Their Properties**
	3.4 Build Quadratic Models from Verbal Descriptions and from Data
	3.5 Inequalities Involving Quadratic Functions
	4. Polynomial and Rational Functions
Mon., Aug. 25, 2025	**4.1 Polynomial Functions**
	4.2 Graphing Polynomial Functions; Models
	4.3 Properties of Rational Functions
Wed., Aug. 27, 2025	**4.4 The Graph of a Rational Function**
	4.5 Polynomial and Rational Inequalities
	4.6 The Real Zeros of a Polynomial Function
Mon., Sep. 1, 2025	**Labor Day-No Class**
	5. Exponential and Logarithmic Functions
Wed., Sep. 3, 2025	**5.1 Composite Functions**
	5.2 One-to-One Functions; Inverse Functions
	5.3 Exponential Functions
	5.4 Logarithmic Functions
Mon., Sep. 8, 2025	**5.5 Properties of Logarithms**
	5.6 Logarithmic and Exponential Equations
	5.7 Financial Models
Wed., Sep. 10, 2025	**5.8 Exponential Growth & Decay; Newton's Law; Logistic Growth and Decay Models**
	5.9 Building Exponential, Logarithmic, and Logistic Models from Data
	Test 1 Review
Mon., Sep. 15, 2025	**Test 1**
	6. Trigonometric Functions
Wed., Sep. 17, 2025	**6.1 Angles, Arc, Length, and Circular Motion**
	6.2 Trigonometric Functions: Unit Circle Approach
	6.3 Properties of the Trigonometric Functions
Mon., Sep. 22, 2025	**6.4 Graphs of the Sine and Cosine Functions**
	6.5 Graphs of the Tangent, Cotangent, Cosecant, and Secant Functions

	6.6 Phase Shift; Sinusoidal Curve Fitting
	7. Analytic Trigonometry
Wed., Sep. 24, 2025	**7.1 The Inverse Sine, Cosine, and Tangent Functions**
	7.2 The Inverse Trigonometric Functions (Continued)
	7.3 Trigonometric Equations
Mon., Sep. 29, 2025	**7.4 Trigonometric Identities**
	7.5 Sum and Difference Formulas
	7.6 Double-angle and Half-angle Formulas
Wed., Oct. 1, 2025	**7.7 Product-to-Sum and Sum-to-Product Formulas & Review for test 2**
	Test 2 Review
Mon., Oct. 6, 2025	**Test 2**
	8. Applications for Trigonometric Functions
Wed., Oct. 8, 2025	**8.1 Right Triangle Trigonometry; Applications**
	8.2 The Law of Sines
	8.3 The Law of Cosines
Mon., Oct. 13, 2025	**8.4 Area of a Triangle**
	8.5 Simple Harmonic Motion; Damped Motion; Combining Waves-Optional
	9. Polar Coordinates; Vectors
	9.1 Polar Coordinates
Wed., Oct. 15, 2025	**9.2 Polar Equations and Graphs**
	9.3 The Complex Plane; De Moivre's Theorem
	9.4 Vectors
	9.5 The Dot Product
Mon., Oct. 20, 2025	**9.6 Vectors in Space**
	9.7 The Cross Product
	Test 3 Review
Wed., Oct. 22, 2025	**Test 3**
	10. Analytic Geometry
Mon., Oct. 27, 2025	**10.1 Conics**
	10.2 The Parabola
	10.3 The Ellipse
Wed., Oct. 29, 2025	**10.4 The Hyperbola**
	10.5 Rotation of Axes; General Form of a Conic-Optional
	10.6 Polar Equations of Conics
	10.7 Plane Curves and Parametric Equations

	11. Systems of Equations and Inequalities
Mon., Nov. 3, 2025	**11.1 Systems of Linear Equations: Substitution and Elimination**
	11.2 Systems of Linear Equations: Matrices
	11.3 Systems of Linear Equations: Determinants, 11.4, 11.5,11.6
Wed., Nov. 5, 2025	**Test 4 Review**
Mon., Nov. 10, 2025	**Test 4**
	12. Sequences; Induction; the Binomial Theorem
Wed., Nov. 12, 2025	**12.1 Sequences**
	12.2 Arithmetic Sequences
	12.3 Geometric Sequences; Geometric Series
Mon., Nov. 17, 2025	**12.4 Mathematical Induction**
	12.5 The Binomial Theorem
	14. A Preview of Calculus: The Limit, Derivative, and Integral of a Function
Wed., Nov. 19, 2025	**14.1 Finding Limits Using Tables and Graphs**
	14.2 Algebra Techniques for Finding Limits
	14.3 One-sided Limits; Continuous Functions
Mon., Nov. 24, 2025	**14.4 The Tangent Problem; The Derivative**
	14.5 The Area Problem; The Integral
	Final Exam Review
Wed., Nov. 26, 2025	**Thanksgiving Holiday-No Class**
Mon., Dec. 1, 2025	**Final Exam-All Chapters Covered**

Institutional Policies and Guidelines

Grade Appeal Process: Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook https://www.com.edu/student-services/student-handbook.html. An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.

Academic Success & Support Services: College of the Mainland is committed to providing students the necessary support and tools for success in their college careers. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

ADA Statement: Any student with a documented disability needing academic accommodation is requested to contact:
Kimberly Lachney, Student Accessibility Services Coordinator
Phone: 409-933-8919 Email: AccessibilityServices@com.edu
Location: COM Doyle Family Administration Building, Student Success Center

Textbook Purchasing Statement: A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

Withdrawal Policy: Students may withdraw from this course for any reason prior to the last eligible day for a "W" grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are permitted to withdraw only six times during their college career by state law. The last date to withdraw from the 1st 8-week session is October 1. The last date to withdraw from the 16-week session is November 14. The last date to withdraw for the 2nd 8-week session is November 25.

FN Grading: The **FN** grade is issued in cases of failure due to a lack of attendance, as determined by the instructor. The FN grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the FN grade is at the discretion of the instructor. The last date of attendance should be documented for submission of an FN grade.

Early Alert Program: The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention are very important to us. I have been

asked to refer students to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If you are referred to the Early Alert Program you will be contacted by someone in the Student Success Center who will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

Resources to Help with Stress: If you are experiencing stress or anxiety about your daily living needs including food, housing or just feel you could benefit from free resources to help you through a difficult time, please click here https://www.com.edu/community-resource-center . College of the Mainland has partnered with free community resources to help you stay on track with your schoolwork, by addressing life issues that get in the way of doing your best in school. All services are private and confidential. You may also contact the Dean of Students office at deanofstudents@com.edu or communityresources@com.edu

Nondiscrimination Statement: The College District prohibits discrimination, including harassment, against any individual on the basis of race, color, religion, national origin, age, veteran status, disability, sex, sexual orientation, gender (including gender identity and gender expression), or any other basis prohibited by law. Retaliation against anyone involved in the complaint process is a violation of College District policy.