



**MATH-2413-101CL**  
**Calculus I**  
**Summer 2024**  
**M T W Th 10:30 – 12:30, STEAM 115**

**Instructor Information**

Dr. Jason Duvall (jduvall3@com.edu)

**Student hours and location:**

TBA

**Required Textbook/Materials:**

The textbook used in this course is Thomas' Calculus, Early Transcendentals, by Hass, Heil and Weir, 14th edition, published by Pearson. Free online access to the textbook is available to students by default, although students may opt out of this (thought this is not recommended).

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

You will need access to the internet to access course materials using MyMathLab. If you do not have your own internet access, you can get access on campus in the Innovations Computer Lab, TVB 1324, the Library, and the Tutoring Center, TVB 1310.

**Course Description:**

This course covers limits and continuity, the Fundamental Theorem of Calculus, definition of the derivative of a function and techniques of differentiation, applications of the derivative to maximizing or minimizing a function, the chain rule, mean value theorem, rate of change problems, curve sketching, definite and indefinite integration of algebraic, trigonometric, and transcendental functions, with applications to include calculation of areas.

**Course requirements:**

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

Quizzes and Exams: There are 6 quizzes, 4 chapter-exams and a comprehensive final exam. All the quizzes are to be done online using MML. You can retake each quiz just once to improve your score; the higher score will be the one that counts.

Exams: All exams are taken in the classroom. There are no retakes on any of the exams.

**Determination of Course Grade/Detailed Grading Formula:**

The course grade will be determined by the following formula:

Final Average = 64% Exam 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:

A: Final Average in [90, 100]

B: Final Average in [80, 90)

C: Final Average in [70, 80)

D: Final Average in [60, 70)

F: Final Average in [0, 60)

**Late Work, Make-Up, and Extra-Credit Policy:**

If you are unable to make a scheduled exam, you will be allowed to make up the exam outside of class provided you notify the instructor prior to the exam and have a legitimate reason for the absence. All makeup exams must be taken in the Testing Center by appointment.

**Attendance Policy:**

Attendance is not required, but it is strongly recommended.

**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.

**Learning Objectives:**

Student Learner Outcome	Maps to Core Objective	Assessed via this Assignment
1. Develop solutions for tangent and area problems using the concepts of limits, derivatives, and integrals.		Quizzes 1,6
2. Draw graphs of algebraic and transcendental functions considering limits, continuity, and differentiability at a point.	Communication Skills	Quiz 4, Exam 3
3. Determine whether a function is continuous and/or differentiable at a point using limits.		Exam 1
4. Use differentiation rules to differentiate algebraic and transcendental functions.		Exam 2
5. Identify appropriate calculus concepts and techniques to provide mathematical models of real-world situations and determine solutions to applied problems.	Critical Thinking	Quizzes 3,5, Exam 2
6. Evaluate definite integrals using the Fundamental Theorem of Calculus.		Quiz 6
	Empirical and Quantitative Skills	Exam 1

**Academic Dishonesty:**

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 online 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 the Mathematics Department Chair, Leslie Richardson, at [lrichardson@com.edu](mailto:lrichardson@com.edu).

**Course Outline:**

Week	Topic	Section	Due
1	Rate of Change and Tangent Lines	2.1	June 11
	<i>Quiz 1</i>		
	Limit of a Function and Limit Laws	2.2	
	Precise Definition of a Limit	2.3	
	One-sided Limits	2.4	
	Continuity	2.5	
2	Limits Involving Infinity and Asymptotes	2.6	June 18
	Review		
	<i>Exam 1</i>		
	Tangent Lines, Derivative at a Point	3.1	
	Derivative of a Function	3.2	
	Derivative Rules	3.3	
	The Derivative as a Rate of Change	3.4	
	Derivative of Trigonometric Functions	3.5	
	The Chain Rule	3.6	
	<i>Quiz 2</i>		
	Implicit Differentiation	3.7	
	Derivatives of Inverse Functions and Logarithms	3.8	
3	Inverse Trigonometric Functions	3.9	June 18
	Review		
	<i>Exam 2</i>		
	Related Rates	3.10	
	<i>Quiz 3</i>		
	Extreme Values of a Function on a Closed Interval	4.1	
	The Mean Value Theorem	4.2	
	Monotonic Functions, The First Derivative Test	4.3	
Concavity, Curve Sketching	4.4		

	<i>Quiz 4</i>		
	Indeterminate Forms, L'Hopital's Rule	4.5	
	Applied Optimization	4.6	
4	<i>Quiz 5</i>		
	Antiderivatives	4.8	June 25
	Review		
	<i>Exam 3</i>		
	Area, Estimating with Finite Sums	5.1	
	Sigma Notation, Limits of Finite Sums	5.2	
	The Definite Integral	5.3	
5	Fundamental Theorem of Calculus	5.4	
	<i>Quiz 6</i>		July 2
	Review		
	<i>Exam 4</i>		
	Review		
	<i>Final Exam</i>		

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### 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/docs/Student\\_Handbook\\_2023-2024\\_v2.pdf](https://www.com.edu/student-services/docs/Student_Handbook_2023-2024_v2.pdf). *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 with 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 accommodations is requested to contact:

Kimberly Lachney, Student Accessibility Services Coordinator

Phone: 409-933-8919

Email: [AccessibilityServices@com.edu](mailto: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 1<sup>st</sup> 5-week session is July 1. The last date to withdraw from the 10-week session is July 30. The last date to withdraw for the 2<sup>nd</sup> 5-week session is August 2.

**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](mailto:deanofstudents@com.edu) or [communityresources@com.edu](mailto: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.