

Updated 07/18/2023



WACO, TEXAS

**COURSE SYLLABUS
AND
INSTRUCTOR PLAN**

**Calculus I
MATH 2413.O081**

Matt Shelton

NOTE: This is a 16-week course

NOTE: This is an Online course

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Course Description:

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, and rate of change problems; curve sketching; definite and indefinite integration of algebraic, trigonometric, and transcendental functions, with an application to calculation of areas.

Prerequisites and/or Corequisites:

MATH 2412 or MATH 1316 with a minimum grade of C or passing score on Precalculus placement test or consent of the division chair.

Instructor Information:

Instructor Name: Matt Shelton

MCC E-mail: mshelton@mclennan.edu

Office Phone Number: (254)299-8834

Office Location: MATH 209

Office/Teacher Conference Hours: Monday & Wednesday 1:00p – 2:00p (In office)

Tuesday & Thursday 1:00p – 3:00p (Online on Zoom)

Required Text & Materials:

All textbook materials provided to students through IncludedED.

Students will need access to a graphing calculator. We recommend the TI-83 or 84 graphing calculator.

MCC Bookstore Website: <http://www.mclennan.edu/bookstore/>

Methods of Teaching and Learning:

In class lecture and problem solving will occur. MyMathLab is the online component that will house the course information. Homework will be done online in this environment. Lecture notes, reference materials and videos are available there as well.

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- Communications: Students participate in assignments involving topics related to finite math or other mathematics with an emphasis on business and social science application problems. They then share their results with their instructor and/or colleagues in class via written, oral, and visual methods.
 - Critical Thinking: Critical thinking is the essence of all mathematical studies. Through inductive and deductive reasoning, students explore problems using the logical process of inquiry, analysis, evaluation, and synthesis.
 - Empirical and Quantitative Skills: Students work on various mathematical problem solving skills throughout the course. The course focuses on the manipulation and analysis of numerical data or observable facts as presented in application problems and /or problem skill sets in which students demonstrate their ability to reach informed conclusions using mathematical processes.

Course Objectives and/or Competencies:

- Develop solutions for tangent and area problems using the concepts of limits, derivatives, and integrals.
- Draw graphs of algebraic and transcendental functions considering limits, continuity, and differentiability at a point.
- Determine whether a function is continuous and/or differentiable at a point using limits.
- Use differentiation rules to differentiate algebraic and transcendental functions.
- Identify appropriate calculus concepts and techniques to provide mathematical models of real-world situations and determine solutions to applied problems.
- Evaluate definite integrals using the Fundamental Theorem of Calculus.
- Articulate the relationship between derivatives and integrals using the Fundamental Theorem of Calculus

Course Attendance/Participation Guidelines:

If a student is not in attendance in accordance with the policies/guidelines of the class as outlined in the course syllabus as of the course census date, faculty are required to drop students from their class roster prior to certifying the respective class roster. A student's financial aid will be re-evaluated accordingly and the student will only receive funding for those courses attended as of the course census date.

Before the 60% point of the semester, a student who is absent for 25% or more of a face-to-face or blended course or who misses 25% or more of assigned work for an online course will be withdrawn from the course with a grade of W. A student may also request to be withdrawn with a grade of W before the 60% point of the semester. After the 60% point of the semester, the student may request to

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be withdrawn if the student is passing, or be assigned the final grade earned at the end of the semester after grades have been updated to reflect missing work.

In this course attendance will be determined by the work you submit in MyMathLab. Attendance will be taken on a weekly basis. In order to be counted present you must log in to Brightspace, go to MyMathLab, open at least one homework assignment and submit at least one homework problem each week. A week will begin on Monday and end Sunday night at 11:59pm. There are two ways you can be dropped for attendance. First, if you do not submit work in MyMathLab by 5:00 pm on September 5th you will be dropped from the course and not allowed re-entry. Second, if you are counted absent 4 times before October 24th you will be withdrawn from the course and receive a grade of W.

A reminder that just doing the minimum amount of work for attendance will not keep you on pace to complete the course on time.

Course Outline or Schedule:

Dates	Lecture/Work	Tests/Objectives
Week 1	2.1 Rates of Change and Tangent Lines to Curves	
Week 2	2.2 Limit of a Function and Limit Laws 2.3 The Precise Definition of a Limit	
Week 3	2.4 One-Sided Limits 2.5 Continuity	
Week 4	2.6 Limits Involving Infinity; Asymptotes of Graphs 3.1 Tangent Lines and the Derivative at a Point	Ch. 2 Quiz OBJ 1-3,5
Week 5	3.2 The Derivative as a Function 3.3 Differentiation Rules	
Week 6	3.4 The Derivative as a Rate of Change 3.5 Derivatives of Trigonometric Functions	
Week 7	3.6 The Chain Rule 3.7 Implicit Differentiation	
Week 8	3.8 Derivatives of Inverse Functions and Logarithms 3.9 Inverse Trigonometric Functions	Ch 3 Quiz OBJ 1,4,5
Week 9	4.1 Extreme Values of Functions on Closed Intervals 4.2 The Mean Value Theorem 4.3 Monotonic Functions and the First Derivative Test	
Week 10	4.4 Concavity and Curve Sketching 4.5 Indeterminate Forms and L'Hopital's Rule	

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Week 11	4.6 Applied Optimization 4.8 Antiderivatives	Ch. 4 Quiz OBJ 1,2,4,5
Week 12	5.1 Area and Estimating with Finite Sums 5.2 Sigma Notation and Limits of Finite Sums	
Week 13	5.3 The Definite Integral 5.4 The Fundamental Theorem of Calculus	
Week 14	Thanksgiving Week: Relax, Work Ahead, or Catch Up	
Week 15	5.5 Indefinite Integrals and the Substitution Method 5.6 Definite Integral Substitution and the Area Between Curves	Ch. 5 Quiz OBJ 1,5-7
Week 16		Final Exam All Obj

This course will use a variety of internal and external assessments. A faculty developed comprehensive final exam will assess the core objectives of critical thinking and empirical/quantitative analysis. These core objectives will also be assessed using parts of a standardized test (CAAP). A faculty designed rubric will be used to assess communication skills as well. Review of such items such as GPA, retention levels, and success in following course may be used to evaluate the effectiveness of student learning.

Course Grading Information:

Homework: There is an online homework assignment for each section that is covered during the semester. All of the homework assignments need to be completed by 11:59pm on December 5th. They will be your main source of practice for the quizzes. You can work on a homework assignment as many times as you want to improve your grade up until the due date. Your homework average will count 20% of your final grade.

Chapter Quizzes: There will be online quizzes over each of the chapters covered in this course. Unlike the homework, the quizzes can only be attempted once (see make-up section below), and they are timed. You will have 120 minutes (the same amount of time you would get in a face-to-face course) to complete each quiz once you start. There is no way to save your progress and return at a later time to finish. You must make sure that when you start a quiz you have enough time to complete it. Also make sure that when you are done you hit the "Submit Test" button or else it may not record your grade, and you may not be permitted to access it again. Also if you accidentally close the quiz window or click a link that takes you away from the quiz, you will be locked out of all assignments. You will need to contact me to unlock your assignments. Depending on the situation I may not be able to reopen a locked quiz. The quizzes will look

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exactly like the homework problems for the sections covered. The quizzes must be completed by 11:59pm on December 5th. Each quiz will count 15% of your final grade for a total of 60%.

Final Exam: There will be a comprehensive final exam. It will be done online and will also be timed. You will have 120 minutes to complete the final exam. The problems on the test will look like the quiz problems from the previous units. The final exam will be due by 11:59pm on December 5th. It will count as 20% of your final grade.

The standard grading scale applies:

90 – 100 = A 80 – 89 = B 70 – 79 = C 60 – 69 = D 59 and lower = F

Communication Assignments Rubric (not for a grade)

Course name/number/section: Student name/number:
Type of Communication Event:
___ Boardwork
___ Classtime explanation
___ Personal interview
___ Case study presentation ___ Poster board project presentation
___ Small group presentation ___ Online presentation

	4	3	2	1
IN WRITTEN LANGUAGE	Student demonstrates full knowledge with no mistakes and elaborates on mathematical concepts.	Student demonstrates good knowledge but does not elaborate .	Student demonstrates limited knowledge but makes several mistakes .	Student does not have a grasp of the mathematical information.

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IN ORAL LANGUAGE	4 Student uses fluent and accurate words to describe mathematical concepts and processes.	3 Student uses somewhat appropriate words to describe mathematical concepts and processes.	2 Student uses vague words to describe mathematical concepts and processes.	1 Student uses incorrect and confusing words to describe mathematical concepts and processes.
IN VISUAL PRESENTATION	4 Student uses appropriate and accurate visual representation of mathematical concepts and processes.	3 Student uses somewhat appropriate visual representation of mathematical concepts and processes.	2 Student uses some inaccuracy in visual representation of mathematical concepts and processes.	1 Student uses total inaccuracy in visual representation of mathematical concepts and processes.

Late Work and Make Up Work Policies:

Due dates are set for all homework, quizzes, and tests. If students do not make the deadlines, those grades become zero. I plan on dropping a couple of the lowest homework grades at the end of the semester. Each student will be allowed one quiz retake for the semester in case you accidentally get locked out or you just make a low score. Your retake will need to be completed by 11:59pm on December 5th. It is your responsibility to contact me when you've decided which quiz you would like to retake.

Student Behavioral Expectations or Conduct Policy:

Cheating will not be tolerated in class. Having someone else do your online homework assignment and tests are both violations of the academic integrity policy and either may result in failing grades and/or being dropped from the class. Infractions such as these will be reported to the administration for tracking and possible college action. At any time you may be asked to prove that the submitted work on your account is actually yours.

* [Click Here for the MCC Attendance/Absences Policy](https://www.mclennan.edu/highlander-guide/policies.html)

(<https://www.mclennan.edu/highlander-guide/policies.html>)

Click on the link above for the college policies on attendance and absences. Your instructor may have guidelines specific to this course.

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ACADEMIC RESOURCES/POLICIES

Accommodations/ADA Statement:

Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact the Accommodations Coordinator as soon as possible to provide documentation and make necessary arrangements. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by the Accommodations Coordinator. For additional information, please visit www.mclennan.edu/disability.

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:

disabilities@mclennan.edu 2542998122 Room
319, Student Services Center

Title IX:

We care about your safety, and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report an incident of sexual misconduct are encouraged to immediately contact the acting Title IX Coordinator at titleix@mclennan.edu or by calling, Dr. Claudette Jackson, (Accommodations/Title IX) at (254) 299-8465. MCC employees are mandatory reporters and must report incidents immediately to the Title IX Coordinator. Individuals may also contact the MCC Police Department at (254) 299-8911 or the MCC Student Counseling Center at (254) 299-8210. The MCC Student Counseling Center is a

confidential resource for students. Any student or employee may report sexual harassment anonymously by visiting <http://www.lighthouse-services.com/mclennan/>. Go to McLennan's Title IX webpage at www.mclennan.edu/titleix/. It contains more information about definitions, reporting, confidentiality, resources, and what to do if you or someone you know is a victim of sexual misconduct, gender-based violence or the crimes of rape, acquaintance rape, sexual assault, sexual harassment, stalking, dating violence, or domestic violence.

Student Support/Resources:

MCC provides a variety of services to support student success in the classroom and in your academic pursuits to include counseling, tutors, technology help desk, advising, financial aid, etc. A listing of these and the many other services available to our students is available at <http://www.mclennan.edu/campus-resource-guide/>

Academic Support and Tutoring is here to help students with all their course-related needs. Specializing in one-on-one tutoring, developing study skills, and effectively writing essays. Academic Support and Tutoring can be found in the Library and main floor of the Learning Commons. This service is available to students in person or through Zoom. You can contact the Academic Support and Tutoring team via Zoom or email (ast@mclennan.edu) by going to our website (<https://www.mclennan.edu/academic-support-and-tutoring/>).

College personnel recognize that food, housing, and transportation are essential for student success. If you are having trouble securing these resources or want to explore strategies for balancing life and school, we encourage you to contact either MCC CREW – Campus Resources Education Web by calling (254) 299-8561 or by emailing crew@mclennan.edu or a Success Coach by calling (254) 299-8226 or emailing SuccessCoach@mclennan.edu. Both are located in the Completion Center located on the second floor of the Student Services Center (SSC) which is open Monday-Friday from 8 a.m.-5 p.m.

Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff. To schedule an appointment, go to https://mclennan.co1.qualtrics.com/jfe/form/SV_07byXd7eB8iTqJg. Both the Completion Center and Paulanne's Pantry are located on the second floor of the Student Services Center (SSC).

MCC Foundation Emergency Grant Fund:

Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all. Should an unexpected expense arise, the MCC Foundation has an emergency grant fund that may be able to assist you. Please go to

<https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html>

to find out more about the emergency grant. The application can be found at

https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf.

MCC Academic Integrity Statement:

Go to www.mclennan.edu/academic-integrity for information about academic integrity, dishonesty, and cheating. The unauthorized use of artificial intelligence (AI) for classwork can be a violation of the College's General Conduct Policy. Whether AI is authorized in a course and the parameters in which AI can be used in a course will be outlined by each instructor.

Minimum System Requirements to Utilize MCC's D2L|Brightspace:

Go to <https://www.mclennan.edu/center-for-teachingandlearning/FacultyandStaffCommons/requirements.html> for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

Minimum Technical Skills:

Students should have basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

Backup Plan for Technology:

In the event MCC's technology systems are down, you will be notified via your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

Email Policy:

McLennan Community College would like to remind you of the policy (<http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf>) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are

expected to read and, if needed, respond in a timely manner to college emails. For more information about your student email account, go to www.mclennan.edu/studentemail.

Instructional Uses of Email:

Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with their students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

Email on Mobile Devices:

The College recommends that you set up your mobile device to receive McLennan emails. If you need assistance with set-up, you may email Helpdesk@mclennan.edu for help.

You can find help on the McLennan website about connecting your McLennan email account to your mobile device:

- [Email Setup for iPhones and iPads](#)
- [Email Setup for Androids](#)

Forwarding Emails:

You may forward emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may be lost or placed in junk or spam filters.

For more helpful information about technology at MCC, go to [MCC's Tech Support Cheat Sheet](#) or email helpdesk@mclennan.edu.

Disclaimer:

The resources and policies listed above are merely for informational purposes and are subject to change without notice or obligation. The College reserves the right to change policies and other requirements in compliance with State and Federal laws. The provisions of this document do not constitute a contract.