



WACO, TEXAS

COURSE SYLLABUS

AND

INSTRUCTOR PLAN

TERI BARNES

COLLEGE ALGEBRA

MATH 2413 Section 50

This is a 16-Week Blended Course

COVID 19 Notice:

McLennan Community College is committed to providing you with every resource you need to reach your academic goals including your safety. We will continue to monitor the evolving situation with COVID 19 and adjust our safety guidelines to make sure we offer a safe environment for you and our faculty. Please make sure to consult your faculty and the MCC website at <https://www.mclennan.edu/crisis-management/coronavirus-updates/index.html> on any changes to these guidelines.

SPRING 2022

"AN EQUAL OPPORTUNITY INSTITUTION"

Course Description:

This course examines the concept of a limit and its relationship to differential and integral calculus. It introduces the student to topics that may include differentiation of algebraic and trigonometric functions, optimization, antiderivatives, definite integrals, numerical integration, and their applications to problem solving. Graphing calculator is required.
Semester Hours 4 (4 lec)

Prerequisites and/or Corequisites:

Prerequisite: Math 2412 or combination of Math 1314/Math 1316, or consent of division chair.

Course Notes and Instructor Recommendations:

This course has a major component (MyMathLab) that requires a good working knowledge of the computer. Online access is needed at a speed that will facilitate streaming video and downloading of materials. Video lectures and problem solving will be provided. MyMathLab is the online component that will house the course information. All homework and testing will take place in this environment.

Instructor Information:

Instructor Name:	Teri Barnes
MCC E-mail:	tbarnes@mclennan.edu
Office Phone Number:	254 299-8880
Office Location:	MATH 210
Office Hours:	To Be Announced

Required Text & Materials: (No Hard Copy Text Required)

This course is being offered as Inclusive Access—this means you do not purchase a book. The electronic course information is included in tuition payments.

TI 83/84 Graphing Calculator



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

Methods of Teaching and Learning:

In class lectures and problem solving will be provided. MyMathLab is the online component that will house the course information. Lecture notes, reference materials, and videos are available there as well.

Course Objectives and/or Competencies:

Upon completion of the course, the student will be able to:

1. Evaluate limits and demonstrate their use in calculating rates of change and derivatives. (1,2,4,5,6,7,9)
2. Determine the intervals of continuity for various functions. (2,5,6,7,9)
3. Recall and utilize rules of differentiation (including power, product, quotient, and chain rules) and techniques for differentiating trigonometric, exponential, logarithmic, and implicit functions. (2)
4. Apply derivatives to a variety of types of real-world problems, including analysis of functions and graphs, optimization, rates of change, and tangent lines. (1,4,5,7,9)
5. Draw accurate graphs of algebraic and transcendental functions considering limits, continuity, and differentiability. (1,2,5,6)
6. Use L'Hospital's Rule to evaluate limits of indeterminate forms. (2)
7. Evaluate antiderivatives, using the method of substitution where appropriate. (2)
8. Articulate the relationship between derivatives and integrals using the Fundamental Theorem of Calculus. (2,6)
9. Evaluate definite integrals and apply them to solve problems involving areas and volumes. (1,2,4,5,7)
10. Use a graphing calculator to graph and analyze functions and to evaluate derivatives and definite integrals when appropriate. (4,6)

- **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.

- **Communications**: Students participate in assignments involving topics related to Precalculus or other mathematics. They then share their result with their instructor and/or colleagues in class via written, oral, and/or visual methods. Assessment will use at least one of the following: board work, class time explanation, case study presentation, poster board presentation, and small group presentation.
Evaluation process will use departmental rubric for communication assessment.
- **Empirical/Quantitative**: 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 process. Assessment will include discussion, independent practice, or collaborative experience, or instructional technology to include questions from a departmental test bank and the CAAP test.

Course Outline or Schedule:

Dates	Lecture/Work	Tests/Objectives
	Intro 2.1 Rates of Change and Tangents to Curves 2.2 Limit of a Function and Limit Laws 2.3 The Precise Definition of a Limit 2.4 One Sided Limits	
	2.5 Continuity 2.6 Limits Involving Infinity; Asymptotes of Graphs Review Chapter 2	Exam Ch 2
	3.1 Tangents and Derivative at a Point 3.2 The Derivative as a Function	
	3.3 Differentiation Rules 3.4 The Derivative as a Rate of Change 3.5 Derivatives of Trig Functions	Exam Ch 3 Sec 1-5
	3.6 The Chain Rule 3.7 Implicit Differentiation 3.8 Derivatives of Inverse Functions and Logarithms	
	3.9 Inverse Trig Functions 3.10 Related Rates	Exam Ch 3 Sec 6-10
	4.1 Extreme Values of Functions 4.2 Mean Value Theorem 4.3 Monotonic Functions and First Derivative Test	

	4.4 Concavity and Curve Sketching 4.5 Indeterminate Forms and L'Hopital's Rule 4.6 Applied Optimization 4.8 Antiderivatives	Exam Ch. 4
	5.1 Area and Estimating with Finite Sums 5.2 Sigma Notation and Limits of Finite Sums	
	5.3 The Definite Integral 5.4 The Fundamental Theorem of Calculus	
	5.5 Indefinite Integrals and Substitution Method 5.6 Substitution and Area Between Two Curves Review Ch. 5	
		Exam Ch. 5
	Review for Final	
		Final Exam

Course Grading Information:

1. **Homework:** There is a homework assignment for each section that is covered during the semester. Since the test questions will be similar to the homework problems they will be a good source of practice for the tests. Homework due dates will be posted online. You can work on homework assignments as many times as you want to improve your grade before the due date. Once the due date passes, your score is frozen. You can still access problems to practice, but you can't improve your score. Your homework average will count as 30% of your total average.
3. **Tests:** Five tests plus a comprehensive Final. There are no makeup tests or retests. Tests will count as 50% of the final average.

Before each test is available (online or face to face), all homework assignments must be completed with at least a 70% score for that unit. A score of 0 will be assigned to that test if the student has not met this prerequisite for testing by the indicated due date.

4. **Final Exam:** A cumulative final exam is required and cannot be dropped. It will count 20% of the final average.
5. Grading in this course will be based on homework, unit/chapter tests, and a comprehensive final exam according to the following percentages.

You can check your grades using the "Gradebook" button on the left side of the

MathLab component. The standard grading scale applies:

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

This course will use a variety of internal and external assessments. 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.

Late Work, Attendance, and Make Up Work Policies:

Due dates are set for all homework and test dates are scheduled. If students do not make the deadlines, those grades become zero. If a test is missed, the grade is zero. Instructor has the right to make adjustments to this policy under special circumstances.

Student Behavioral Expectations

Students are expected to maintain classroom decorum, that includes respect for other students and the instructor, prompt and regular attendance, and an attitude that seeks to take full advantage of the education opportunity.

[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 additional guidelines specific to this course.

** You will need to access each link separately through your Web browser (for example: Mozilla Firefox, Chrome, Microsoft Edge or Safari) to print each link's information.*

McLennan

C O M M U N I T Y

COLLEGE

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

254-299-8122

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 Title IX Coordinator at titleix@mclennan.edu or by calling Dr. Drew Canham (Chief of Staff for Diversity, Equity & Inclusion/Title IX) at (254) 299-8645. Individuals also may contact the MCC Police Department at 299-8911 or the MCC Student Counseling Center at MCC 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/>

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 a Success Coach by calling (254) 299-8226 or emailing SuccessCoach@mclennan.edu. Students may visit the Completion Center Monday-Friday from 8 a.m.-5 p.m. to schedule a meeting with a Success Coach and receive additional resources and support to help reach academic and personal goals. Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff based on household size. Text (254) 870-7573 to schedule a pantry appointment. The Completion Center and 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.

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

Go to <https://www.mclennan.edu/center-for-teaching-and-learning/Faculty-and-Staff-Commons/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.

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.

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.

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.