McLennan COMMUNITY COLLEGE

WACO, TEXAS

COURSE SYLLABUS

AND

INSTRUCTOR PLAN

TERI BARNES

Calculus Business and Social Science

MATH 1325 Section F2

This is an 8 Week Online Course

Fall 2022

"AN EQUAL OPPORTUNITY INSTITUTION"

Course Description:

Limits and continuity, derivatives, graphing and optimization, exponential and logarithmic functions, antiderivatives, integration, applications to management, economics, and business.

(The content level of MATH 1325 is expected to be below the content level of MATH 2413 Calculus I).

Presents the study of limits and their applications in differential and integral calculus, emphasizing both conceptual and applied mathematics.

Topics may include optimization of functions, curve sketching, definite and indefinite integrals, differential equations, partial derivatives, and Lagrange multipliers.

Prerequisites and/or Corequisites:

MATH 1314 or MATH 1324 with a minimum grade of C, or pass college algebra placement test or consent of division chair.

Course Notes and Instructor Recommendations:

This is a face to face course but a good working knowledge of the computer is essential. 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 some 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 Required

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. (Found at http://pearsonmylabandmastering.com/?cc) Homework will be done online in this environment. Lecture notes, reference materials, and videos are available there as well.

Course Objectives and/or Competencies:

Upon completion of this course, the student will be able to
- recall the limit definition of derivative and use it to derive simple functions.
- recall and use the polynomial, product, quotient, chain, exponential, logarithmic, and implicit rules/techniques for calculating derivatives.
- use derivatives to write equations of tangent lines, calculate rates of change, optimize functions, evaluate marginal functions, and to analyze functions and their graphs for increase/decrease, relative and absolute extrema, concavity, and inflection.
- solve a variety of business and economics applications involving optimization, extrema, and concavity, with and without a graphing calculator.
- calculate antiderivatives, definite integrals, and improper integrals.
- apply antiderivatives to solve elementary differential equations.
- apply definite integrals to calculate areas under and between curves, volumes of solids of revolution, and average value of functions, using a graphing calculator when appropriate.
- calculate first- and second-order partial derivatives of functions in several variables.
- test functions in two variables for relative maxima/minima and saddle points.
    apply Lagrange multipliers to optimize two-variable functions with constraints

Course Outline or Schedule:

Dates	Lecture/Work	Tests/Objectives
Week 1	**Orientation** **12.1 Techniques for Finding Derivatives** **12.2 Derivatives of Products and Quotients**	
	12.3 The Chain Rule **12.4 Derivatives of Exponential Functions**	
Week 2	**12.5 Derivatives of Logarithmic Functions** **13.1 Increasing and Decreasing Functions**	**Chapter 12 Exam**
	13.2 Relative Extrema **13.3 Higher Derivatives, Concavity, and the Second Derivative Test**	
Week 3	**13.4 Curve Sketching**	**Chapter 13 Exam**
	14.1 Absolute Extrema **14.2 Applications of Extrema**	
Week 4	**14.4 Implicit Differentiation** **14.5 Related Rates**	
	15.1 Antiderivatives	**Chapter 14 Exam**
	15.2 Substitution	
Week 5	**15.4 The Fundamental Theorem of Calculus** **15.5 The Area Between Two Curves**	
		Chapter 15 Exam
Week 6	**16.2 Volume and Average Value** **16.3 Continuous Money Flow**	
	17.1 Functions of Several Variables **17.2 Partial Derivatives**	
Week 7		**Chapter16/17 Exam**
	Review for Final	
Week 8		**Final Exam**

Course Grading Information:

1. <u>Homework</u>: 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. <u>Tests</u>: Five/Six 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. <u>Final Exam:</u> 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**)

In this online course, attendance will be taken according to activity. You must have activity (homework or test) each week to be counted Present. Work is counted each Sunday to Saturday.

* 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.

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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 https://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 https://www.lighthouse-services.com/mclennan/incidentLandingPageV2-MCC.asp.

Go to McLennan's Title IX webpage at https://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 https://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 regarding college email, which can be found at https://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf. 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 https://www.mclennan.edu/student-email/.

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.