McLennan COMMUNITY COLLEGE

WACO, TEXAS

COURSE SYLLABUS

AND

INSTRUCTOR PLAN

TERI BARNES

CALCULUS

MATH 2413 SECTION 87

This is SUMMER 5 WEEK Course Online

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.

SUMMER 2022

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.

Prerequisites and/or Corequisites:

Prerequisite: Math 2412 or combination of Math 1314/Math 1316, or consent of division chair.
Semester hours: 4

Course Notes and Instructor Recommendations:

This course has a major component (MyMathLab) that requires a good working knowledge of the computer. Lecture notes and video lectures provided for all sections.
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. This course is geared for the student who is motivated and responsible in dealing with deadlines and scheduling.

Instructor Information:

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

Required Text & Materials:

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.

No hard copy text required

Graphing calculator required.

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

Methods of Teaching and Learning:

This course has a major component (MyMathLab) that requires a good working knowledge of the computer. Lecture notes and video lectures provided for all sections.

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

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 derivates and definite integrals when appropriate. **(4,6)**

Course Outline or Schedule:

Dates	Lecture/Work	Tests/Objectives
Week 1	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
Week 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
Week 3	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
Week 4	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

Week 5	**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**	**Exam Ch. 5**
		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.

2. 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.

3. Final Exam: A cumulative final exam is required and cannot be dropped. It will count 20% of the final average.

4. 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

- Communications: Students participate in assignments involving topics related to Calculus or other mathematics. 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 Calculus 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 applying the techniques of differential and integral calculus to the analysis of functions and numeric data as presented in application problems.

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 adapt 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.

MCC Attendance Policy:

Click Here for the MCC Attendance/Absences Policy

(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.

Attendance for this Online Course:

Attendance will be based on participation in the course. You should have activity (homework or test) in the course each week. A report will be run each week (on Sundays) to determine activity in the course. Any week in which no work is logged, will count as an absence. You are allowed two weeks of inactivity, before you can be dropped. You will receive an email when you are on the Inactivity report in any week.

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

McLennan COMMUNITY 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. For more information about your student email account, go to 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 (https://support.microsoft.com/en-us/office/set-up-an-outlook-account-in-the-ios-mail-app-b2de2161-cc1d-49ef-9ef9-81acd1c8e234?ui=en-us&rs=en-us&ad=us)
- Email Setup for Androids (https://support.microsoft.com/en-us/office/set-up-email-in-android-email-app-71147974-7aca-491b-978a-ab15e360434c?ui=en-us&rs=en-us&ad=us)

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.