McLennan COMMUNITY COLLEGE

WACO, TEXAS

COURSE SYLLABUS

AND

INSTRUCTOR PLAN

Mathematics for Business and Economic Analysis I

MATH 1324.87

MARK CRENWELGE, M.A.

NOTE: This is an 6-week online 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.

Course Description:
The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and the social sciences are addressed. The applications include mathematics of finance, including simple and compound interest and annuities; systems of linear equations; matrices; linear programming; and probability, including expected value.

Prerequisites and/or Corequisites:
Math 0311 or consent of division chair. Semester Hours 3 (3 lec)

Course Notes and Instructor Recommendations:
Math 1324 involves online homework assignments. Everything is available online including an electronic version of the text and both publisher and instructor videos. There are numerous other learning aids available on the online site.

Instructor Information:

Instructor Name:	Mark Crenwelge, M.A.
MCC Email:	mcrenwelge@mclennan.edu
Office Phone Number:	254-299-8874
Office Location:	MWF 221
Office/Teacher Conference Hours:	To be announced
Other Instruction Information:	Email is the best way to contact me

Required Text & Materials:
Title: MyMathLab Student Access Kit (Standalone) NO TEXT REQUIRED
Author:Lial, Greenwell & Ritchey
Edition:10
Publisher:Pearson

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

Methods of Teaching and Learning:

The following methods for teaching and learning will be used: online video lecture, online homework, online exams, and tutorial software. A three pronged approach is used in this course.

For each instructional unit a video recording of the lecture will be available on the Pearson site.

Students may be asked to meet with the instructor via ZOOM at the beginning of the semester. ZOOM office hours will also be available.

Course Objectives and/or Competencies:

- Use a variety of algebraic and matrix methods to solve systems of linear equations
- Formulate matrix models and use them to solve linear programming and input-output open model economics problems
- Recall and use a variety of symbols and terms, including Venn diagrams, to solve set theory problems
- Distinguish between probability and odds and calculate both for stated problems
- Distinguish between and use the counting principles of permutations, combinations, and the multiplication principle, and apply them to probabilities
- Construct a probability distribution and use it to calculate expected value for a given experiment
- Summarize one-variable data using statistical measures of central tendency and variance
- Analyze normal data distributions
- Solve a variety of finance problems involving interest, effective rates, and annuities
- Classify nonlinear functions as quadratic, polynomial, rational, exponential, or logarithmic; and identify their graphs and key characteristics
- Demonstrate the use of the limit definition of the derivative to determine the derivative of polynomial, square root, or rational functions

Course Outline or Schedule:

Week 1	2.1 Solution of Linear Systems by the Echekon Method 2.2 Solution of Linear Systems by the Gauss-Jordan Method 2.3 Addition and Subtraction of Matrices 2,4 Multiplication of Matrices 2.5 Matirx Inverses 2.6 Input-Output Model TEST 1 Chapter 2
Week 2	3.1 Graphing Linear Equalities 3.2 Solving Linear Programming Problems Graphically 3.3 Applications of Linear Programming 4.1 Slack Variables and the Pivot 4.2 Maximization Problems TEST 2 Chapters 3 & 4
Week 3	7.1 Sets 7.2 Applications of Venn Diagrams 7.3 Introduction to Probability 7.4 Basic Concepts of Probability 8.1 The Multiplication Principle; Permutations 8.2 Combinations 8.3 Probability Applications of Counting Principles 8.4 Binomial Probability 8.5 Probability Distributions; Expected Value
Week 4	TEST 3 Chapters 7 & 8 9.1 Frequency Distributions; Measures of Central Tendency 9.2 Measures of Variation 9.3 The Normal Distribution 10.1 Properties of Functions 10.2 Quadratic Fundtions; Translation and Reflection 10.3 Polynomial and Rational Fundtions
Week 5	10.4 Exponential Functions 10.5 Logarithmic Functions 10.6 Applications: Mathematics of Finance 11.1 Limits 11.2 Continuity 11.3 Rates of Change 11.4 Definition of the Derivative TEST 4 Chapters 9, 10 & 11
Week 6	FINAL EXAM

Course Grading Information:

Grading in this course will be based on Assignments, Tests, and a comprehensive Final Exam according to the following perccentages.

Assignment Average	40%
Test Average	40%
Final Exam	20%

Assignments include all online homework online in the Pearson site. **Anyone NOT enrolled in MyStatLab by the Census Date (June 6) will be dropped from the course.** The assignments will have a due date corresponding to the date they are tested. They will still be available to complete or correct after that date with a 10% penalty for late work. Assignments may also include any activities which will be assessed in these three areas:

*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 the instructor and/or other colleagues in class via written, oral, and/or visual methods.

*Critical Thinking: Critical Thinking is the essence of all mathematical studies. Through inductive and deductive reasoning, students explore probability and statistical problems using the logical process and 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 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.

Communication Assignment Rubric

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

Tests will be given online with NO makeup available. If there is a problem with one of the test dates please make arrangements before the test is given with the instructor. I will replace the lowest test grade with the grade on the Final Exam if it is higher.

The FINAL Exam is cumulative and is Required.

The letter grade received in this course will be based on the customary 90-80-70-60 scale. You can check your grades using the "Gradebook" button on the left side of the MyMathLab component.

Late Work, Attendance, and Make Up Work Policies:

Due dates are set for all homework and tests. If students do not meet the deadlines those grades will be recorded as a Zero. Homework can be completed/corrected after the due date with the 10% penalty. If a test is missed, the grade will be recorded as a Zero and can be changed when the Final Exam is taken.

With ALL grading policy I reserve the right to make adjustments if there is an emergency or special situation.

Attendance will be based on participation in the course. Each week I will assess if the student has participated by completing assignments and/or tests. **Students are allowed to miss up to 25% of classes (1 week) before you could be dropped for non-participation.** Be sure to complete assignements each week online for attendance.

Student Behavioral Expectations or Conduct Policy:

Students are expected to maintain online decorum that includes respect for other students and the instructor. Students should demonstrate an attitude that seeks to take full advantage of the education opportunity.

I will be available through email and ZOOM office hours. Please take advantage of this and ask questions when needed. Summer classes move at a much faster pace than long semester classes so be prepared to allow time to complete the work.

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.

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.

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.