

MATH 1324 STEM
Mathematics for Business and Social Sciences

Western Texas College

- I. Basic Course Information
 - A. MATH 1324 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.
 - B. Any required prerequisites: A grade of C or higher in Math 0303 or placement by college entrance exam scores.
 - C. Advancement Via Individual Determination (AVID) learning strategies will be implemented periodically throughout the course.
 - D. This course has been designed to prepare students whose chosen field of study requires a STEM mathematical pathway.
 - E. Project Based Learning (PBL) is an active learning method in which students gain knowledge and skills by investigating and responding to a tangible, engaging and complex question, problem or challenge.
 - F. Online course content is administered through the college's learning management system (LMS), Moodle, also called eCampus. A link to Moodle can be found on mywtc.edu or the college's home page, www.wtc.edu (the big M with a graduation cap).
- II. Student Learning Outcomes
 - A. Apply elementary functions, including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to solving real-world problems.
 - B. Solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.
 - C. Apply basic matrix operations, including linear programming methods, to solve application problems.
 - D. Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems.
 - E. Apply matrix skills and probability analyses to model applications to solve real-world problems.
- III. Course Requirements
 - A. Major Requirements—All major requirements must be proctored.
 - 1. In-Class Participation
 - 2. Unit Exams
 - 3. Midterm Exam
 - 4. Final Exam
 - B. Minor Requirements
 - 1. Binder Checks

2. Homework
 3. Quizzes
 4. Projects
- IV. Testing Requirements
- A. Students are NOT allowed to use their book or notes of any kind while completing major requirements.
- V. Information on Books and Other Course Materials
- A. Required Book: College Mathematics, 13th edition by Barnett, Ziegler and Byleen. Book ISBN: 978-0-321-94738-3
 - B. Required Access Code: Online Students must purchase a MyMathLab Access Code. This code can be purchased stand alone or bundled with the textbook.
 1. Book bundled with MyMathLab ISBN: 978-0-321-94759-8
 - C. Calculators: Students must have a calculator that provides them with the ln (natural log) function key. A TI-84 or higher is strongly recommended. The TI-89, TI-Inspire with CAS or any other calculator with CAS capability are not permitted.
- VI. Other Policies, Procedures and important dates: Please refer to the [WTC Course Catalog](#) for the following:
- A. Campus Calendar
 - B. Final exam schedule
 - C. How to drop a class
 - D. Withdrawal information
 - E. Student Conduct
 - F. Academic Integrity
 - G. Class Attendance
 - H. Students with disabilities
- VII. Planned Course of Study

Chapters and Sections to be covered throughout the semester	
Ch. 1— Linear Equations and Graphs	1.1 Linear Equations and Inequalities 1.2 Graphs and Lines 1.3 Linear Regression
Ch. 2— Functions and Graphs	2.1 Functions 2.2 Elementary Functions: Graphs and Transformations 2.3 Quadratic Functions 2.4 Polynomial and Rational Functions 2.5 Exponential Functions 2.6 Logarithmic Functions
Ch. 3— Mathematics of Finance	3.1 Simple Interest 3.2 Compound and Continuous Compound Interest 3.3 Future Value of an Annuity; Sinking Funds 3.4 Present Value of an Annuity; Amortization

Ch. 4— Systems of Linear Equations; Matrices	4.2 Systems of linear Equations and Augmented Matrices 4.3 Gauss-Jordan Elimination 4.4 Matrices: Basic Operations
Ch. 5— Linear Inequalities and Linear Programming	5.2 Systems of Linear Inequalities in Two Variables 5.3 Linear Programming in Two Dimensions: A Geometric Approach
Ch. 6— Linear Programming: The Simplex Method	6.1 The Table Method: An Introduction to the Simplex Method
Ch. 8— Probability	8.1 Sample Spaces, Events, and Probability 8.2 Union, Intersection, and Complement of Events; Odds 8.3 Conditional Probability, Intersection, and Independence 8.4 Bayes' Formula 8.5 Random Variable, Probability Distribution, and Expected Value

Disclaimer: Schedule and content is subject to change at the instructor's discretion.

Last Modified: August 23, 2019