***COURSE:***MATH 1324 Mathematics for Business and Social Sciences

***TEXTBOOK:*** *Mathematics with Applications, 10th ed,*  by Lial, Hungerford, and Holcomb.

*Recommended Reference books: Mathematical Ideas*, by C. D. Miller, V. E. Heeren, J. Hornsby, M.L. Morrow or *College Algebra,* by Dugopolsky

***PREREQUISITE:***College Ready TSI status in Mathematics Courses. Successful completion of MATH 0290 or MATH 0330 will allow one to enter the course.

***INSTRUCTOR:***XXX, **E-Mail:** XXX, ***OFFICE:***MAGC XXX, ***TELEPHONE:***665-XXX
***OFFICE HOURS:*** *XXX*

***TOPICS:*** Topics include inequalities, quadratic functions, logarithmic and exponential functions, sequences and series, mathematics of finance, systems of linear equations, matrices, and an introduction to linear programming. Use of electronic calculators and microcomputers is emphasized to perform numerical computations. This course incorporates the premier topics of mathematical science and offers the coverage of a College Algebra course that accordingly integrates the subject with practical business approach and real world tasks. The course is suited for students who plan to major within the College of Business Administration and Social Sciences.

***COURSE SCOPE*:**

1. Graphs, Lines and Inequalities (Chapter 2, Sections 1-4).
2. Functions and Graphs (Chapter 3, Sections 1-7)
3. Exponential and Logarithmic Functions (Chapter 4, Sections 1-4).
4. Mathematics of Finance (Chapter 5, Sections 1-4).
5. Systems of Linear Equations (Chapter 6, Sections 1-3).
6. Linear Programming (Chapter 7, Sections 1-3).

***HOMEWORK AND QUIZZES*:** Quizzes will be given regularly. Homework assignments are assigned daily and will consist of problems and reading from the textbook. The quizzes and the exams are based on the homework problems.

***EXAMS*:** There will be three one-hour in-class exams. All exams must be taken during their scheduled times. The exam time will be announced in advance and a short review will be given before each exam. No retest opportunities.

***GRADING POLICY***: The course grade will be computed as follows: Quizzes 20%, 3 Exams 20% each, Comprehensive Final Exam 20%. The course grade will be assigned according to the following scale: A(90-100%), B(80-89%), C(70-79%), D(60-69%), F(below 60%).

***CALCULATORS:*** A calculator capable of performing basic scientific computations (arithmetic, trigonometric functions, logarithmic and exponential functions) is required for this course. Graphing calculators, calculators that can store formulas or strings, or calculators capable of performing symbolic calculations will not be allowed in quizzes/tests/exams. Electronic equipment such as pocket organizers, handheld or laptop computers, electronic writing pads or pen-input devices, and cell phones will not be permitted during quizzes and exams. Graphing calculators will be permitted for solving homework problems. Please make sure that laptops, tablet devices, cell phones, and other electronic equipment are turned off and stored during class.

***SUGGESTION:*** You are strongly encouraged to form a study group with two or three of your classmates. The group should have no more than 4 students. The group will serve to help each other in doing homework, studying for tests, and whenever possible, teaching each other. The idea is to help each other keep up with the class and hopefully, be successful.

**The following are ways to get free help outside of class:**

1. Contact your instructor during their office hours or make appointment.
2. Get free Math tutoring from Learning Assistance Center (LAC) building in  Room 114 phone # 665-2532. (Edinburg Campus)
3. Get free Math tutoring from Math Lab in Math building (MAGC) in room  MAGC 1.106 (Edinburg Campus)
4. Visit the Math Tutoring Lab at SETB 1.408 (Brownsville Campus)
5. Visit the Math and Natural Sciences Learning Center at Cavalry Hall; Phone number: (956) 882-7058, (956) 882-8208 (Brownsville Campus)

**Business Algebra Student Learning Objectives**

After completing this course students will be able to

1. Solve simple linear and absolute value inequalities and apply this skill to real- world problems.
2. Understand the concepts of function, inverse function, and graph of a function; distinguish the different classes of functions, such as linear, nonlinear, quadratic, polynomial, and rational; recognize symmetries in the graphs of functions; and apply simple trans- formations to functions.
3. Solve simple linear and nonlinear systems and apply this skill to real-world problems.
4. Solve exponential and logarithmic equations and understand their relevance to the solution of real-world problems, such as those involving compound interest and general growth and decay.
5. Solve basic time-value-of-money problems.
6. Understand the concept of a matrix, operations on matrices, their application to  solving systems of linear equations, and their application to real-world problems.
7. Solve simple linear optimization (linear programming) problems and apply this skill to real-world problems.
8. Utilize technology where appropriate to accomplish the learning outcomes described above.

**NEW UTRGV Core Objectives**

Students finishing a core curriculum course will be able to demonstrate the following objectives:

* ***CRITICAL THINKING (CT)*** is a habit of mind characterized by the comprehensive exploration of issues, ideas, artifacts, and events before accepting or formulating an opinion or conclusion. This definition meets the THECB’s direction that critical thinking includes creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information; and is aligned with the UTRGV’s SLO for critical thinking skills.

Students will learn to approach symbolic and arithmetic problems form an abstract perspective using multiple representations of problems – geometric and algebraic. Furthermore, a significant portion of the course will focus students on the application of mathematical concepts to aid in critical analysis of a variety of problems from business, economics, and finance.

Student learning objectives 1, 2, 5, and 6 align with this core objective. They will be assessed through specific questions on the tests used in the course.
* ***COMMUNICATION SKILLS (COM)*** include the development, expression, and revision of ideas through the effective use of language (writing, reading, speaking, and listening) across a variety of forums. Communication involves learning to work in many genres and styles while using different technologies, can result in mixing texts, data, and/or images, and develops through diverse experiences across the curriculum. This definition meets the THECB’s direction that communication skills include effective written, oral, and visual communication; and is aligned with UTRGV’s SLO for communication skills.

A strong focus of this course is to develop in students the ability to discuss mathematical ideas in business, economics, and finance with fluency to both experts in mathematics and those with less experience. For many problems the process of the solution is as or more important than the solution itself, making communication a natural skill developed by the course.

Student assessments (both summative and formative) used for student learning objectives 2, 3, 4, 7, and 8 will address the development of students’ communications skills in the course. Student presentations as part of a challenge to analyze a business problem using tools developed in the course will be used in the assessment of students' communication skills.

* ***EMPIRICAL AND QUANTITATIVE SKILLS (EQS),*** which involve numeracy or quantitative reasoning, include competency in working with numerical data and mathematical reasoning. Individuals with strong mathematical skills possess the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. They interpret data and results and can create conjectures and arguments supported by quantitative evidence and/or mathematical reasoning, which they can clearly communicate in a variety of formats (using words, tables, graphs, and/or equations as appropriate). This definition meets the THECB’s direction that empirical and quantitative skills include applications of scientific and mathematical concepts; and is aligned with UTRGV’s SLO for empirical and quantitative skills.

The course strongly centers on the empirical and quantitative skills objective, which permeates almost every topic included in the course and course objectives. These will be assessed through specific questions on the tests used in the course.

**UTRGV Policy Statements**

**Students with Disabilities**

If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. **Brownsville Campus**: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at accessibility@utrgv.edu. **Edinburg Campus:** Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at accessibility@utrgv.edu.

**Mandatory Course Evaluation Period**

Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Online evaluations will be available Nov. 18 – Dec. 9, 2015. Students who complete their evaluations will have priority access to their grades.

**Attendance**

Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

**Scholastic Integrity**

As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

**Sexual Harassment, Discrimination, and Violence**

In accordance with UT System regulations, your instructor is a “responsible employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student’s time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

**Course Drops**

According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

**Electronic Communication Policy**

The university policy requires all electronic communication between the University and students be conducted through the official University supplied systems; namely UTRGV account for email or Blackboard for course specific correspondence. Therefore, please use your UTRGV assigned e-mail or Blackboard account for all future correspondence with UTRGV faculty and staff.