RANGER COLLEGE

COURSE SYLLABUS

Mathematics for Business & Social Sciences

MATH 1324 - Fall 2020

3 credit hours

FALL 2020

INSTRUCTOR:

Krystal Ostdiek

INSTRUCTOR: Krystal Ostdiek
EMAIL: kostdiek@rangercollege.edu
OFFICE: Stephenville: Back Office
Brownwood: By appointment
PHONE: Office: TBA

HOURS: Zoom or in person office hours are available **on Tuesdays by appointment.**

I. Texas Core Curriculum Statement of Purpose

Through the Texas Core Curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world, develop principles of personal and social responsibility for living in a diverse world, and advance intellectual and practical skills that are essential for all learning.

II. Course Description

The application of common algebraic functions, including polynomial, exponential, logarithmic, and rational, to problems in business, economics, and 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.

III. Required Background or Prerequisite

Meet TSI college-readiness standard for mathematics.

IV. Required Textbook and Course Materials

- Barnett, Ziegler, Byleen & Stocker, College Mathematics for Business, Economics, Life Sciences, and Social Sciences, 14th Edition. Pearson 2019. ISBN -13: 9780134674148.
- MyMathLab Access Code, Pearson Publishing- Will be handed out to you by your instructor.
- Graphing calculator (TI-83 or 84) strongly recommended.
- Multiple supplementary documents distributed via Blackboard.

V. Course Purpose

This course focuses on quantitative literacy in logic, patterns, and relationships. The course involves the understanding of key mathematical concepts and the application of appropriate quantitative tools to everyday experiences.

VI. Learning Outcomes

Learning Outcomes Upon successful completion of this course, students will:

1. Apply elementary functions, including linear, quadratic, polynomial, rational, logarithmic, and exponential functions to solve real-world problems.
2. Solve mathematics of finance problems, including the computation of interest, annuities, and amortization of loans.
3. Apply basic matrix operations, including linear programming methods, to solve application problems.
4. Demonstrate fundamental probability techniques and application of those techniques, including expected value, to solve problems.
5. Apply matrix skills and probability analyses to model applications to solve real-world problems.

VII. Core Objectives

This course meets the following of the six Core Objectives established by Texas:

☒ **Critical Thinking Skills (CT) –** Creative thinking, innovation, inquiry, and analysis; evaluation and synthesis of information

☒ **Communication Skills (COM) –** effective development, interpretation and expression of ideas through written, oral, and visual communication

☒ **Empirical and Quantitative Skills (EQS) –** The manipulation and analysis of numerical data or observable facts resulting in informed conclusions

☐ **Teamwork (TW) –** The ability to consider different points of view and to work effectively with others to support a shared purpose or goal

☐ **Social Responsibility (SR) –** Intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

☒ **Personal Responsibility (PR) –** The ability to connect choices, actions, and consequences to ethical decision-making

VIII. Methods of Instruction

The instructional delivery of this class may be face-to-face, online, or hybrid. Students may be expected to watch instructional videos outside class, attend Zoom class sessions, work in groups via Zoom, or attend regular class in person. Students are also expected to complete assignments online through Blackboard and Lumen.

IX. Methods of Assessment

- **Homework (and other formative assessments – CT, COM, EQS, PR): 30%**
  - This average will come from an overall mean score from the online homework system.
    - A formative assessment can include homework, quizzes, class discussions, group work, and other in-class assignments.
- **Attendance and Participation (CT, COM, EQS, TW, PR): 10%**
  - You will be expected to attend class everyday, either face to face or on Zoom. You will also be asked to participate in class. Participation will include answering questions, in class discussions, and potential group work.
- **Unit Tests (and other summative assessments – CT, COM, EQS, PR): 35%**
  - A minimum of 3 summative assessments will be administered online, in-person, or through a project.
    - A summative assessment can include projects, discussion boards, video submissions, etc.
- **Final Exam (CT, COM, EQS, PR): 25%**
  - The final will be a proctored exam. This will be a cumulative exam of material covered up until the time of the exam.

Grading Scale: A=90–100% B=80–89% C=70–79% D=60–69% F<60%

X. Course/Classroom Policies

Class participation is strongly encouraged for optimal learning.
Absences – A student WILL be dropped from the course after the sixth absence from class. If you cannot attend class, you must notify the instructor prior to class and attend on zoom.
Make up assignments – Make up exams will be given on a case-by-case basis. Homework will not be opened up after the final exam starts.
Test Corrections – No test corrections will be given unless otherwise stated by instructor.
Homework – Homework due dates will not be extended unless the course calendar changes. Anything completed after the initial due date has a 10% late penalty deducted. **Tests –** Tests may be administered in class or online. You will know ahead of time which method is being used. No cell phones may be used on the test. If a student is caught using a cell phone, the instructor may take the test and deduct points from the score.
Academic Dishonesty - A student found to be cheating or copying on an exam or quiz will be given a grade of "0". Repeated acts of cheating may result in being dropped from class with a grade of "F".
Student Behavior - Students will behave as mature adults and exhibit proper classroom decorum. Students will not cause any distractions that might prevent other students from learning. Students that deviate from this policy will not be permitted to remain in class.
Cell phones - students are encouraged to step outside when receiving phone calls. Cell phones CANNOT be used on a test and are discouraged during notes and practice.
Calculators – please purchase a handheld calculator to use in class (you may not use your phone as a calculator). A TI-84+ is recommended for use in this course. If you cannot purchase

your own calculator, you may borrow one from the school.
Available Support Services - the Learning Resource Center has books, videos, and computer software that may be used as a supplement for this class. Tutors are also available (see counselor).

X. Course Outline/Schedule

WEEK	MONDAY IN CLASS	WEDNESDAY IN CLASS	DUE BY MIDNIGHT SUNDAY
1: AUG 23	Introductions. Syllabus, blackboard, computer lab.	1.1 Linear Equations and Inequalities.	
2: AUG 30	1.2 Graphs and Lines.	1.3 Linear Regression	
3: SEPT 6	**LABOR DAY NO CLASS**	QUIZ-Notes are allowed. 4.1 Review: Systems of Linear Equations in Two Variables	
4: SEPT 13	5.1 Linear Inequalities in Two Variables	5.2 System of linear Inequalities in Two Variables	**ALL 1.1, 1.2, 1.3, 4.1, 5.1, AND 5.2 HOMEWORK**
5: SEPT 20	Group Project Start Day	Group Project Work Day	
6: SEPT 27	Group Project Presentation Day	2.1 Functions	
7: OCT 4	2.2 Elementary Functions: Graphs and Transformations	2.3 Quadratic Functions	
8: OCT 11	2.4 Polynomial and Rational Functions	2.5 Exponential Functions and 2.6 Logarithmic Functions	**ALL CHAPTER 2 HOMEWORK**
9: OCT 18	Review	Chapter 2 Test	
10: OCT 25	3.1 Simple Interest	3.2 Compound and Continuous Compound Interest	
11: NOV 1	3.3 Future Value of an Annuity;Sinking Funds	3.4 Present Value of Annuity; Amortization	**ALL CHAPTER 3 HOMEWORK**
12: NOV 8	Chapter 3 Test	Chapter 7	
13: NOV 15	8.1 Sample Spaces, Events, and Probability	8.2 Union, Intersection, and Complement of Events; Odds	
14: NOV 22	**THANKSGIVING BREAK**	**THANKSGIVING BREAK**	
15: NOV 29	8.3 Conditional Probability,	QUIZ-Notes are allowed.	**ALL CHAPTER 8**

	Intersection, and Independence	REVIEW	**HOMEWORK**
16: DEC 6	IN CLASS REVIEW	**TUESDAY-THURSDAY IS FINALS. MAKE SURE YOU KNOW THE DATE/TIME OF YOUR FINAL. IT IS NOT REGULAR CLASS TIME.**	

XII. Non-Discrimination Statement

Admission, employment, and program policies of Ranger College are non-discriminatory with regard to race, creed, color, sex, age, disability, and national origin.

XIII. ADA Statement

Ranger College provides a variety of services for students with learning and/or physical disabilities. Students are responsible for making initial contact with the Ranger College Counselor, Gabe Lewis (glewis@rangercollege.edu). It is advisable to make this contact before or immediately after the semester begins.