

South Plains College  
Mathematics Department

**Math for Business and Social Sciences – MATH 1324**

Course Syllabus – Spring 2017

**Instructor:** Karol Albus

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**Office hours:** Tuesday: 2:15-3:45, Wednesday: 9:00-11:00, Thursday: 2:15-3:45, Friday: 9:00-12:00 Other times by appointment.

**Disclaimer:** The instructor reserves the right to alter any class policies/dates as deemed necessary by the instructor, and will announce any changes in class.

**Please check your email regularly as it is the only way I have to contact you outside of class.**

**Course Description:** **MATH 1314 – Mathematics for Business and Social Sciences (3:3:0)** Prerequisite: Two units of high school algebra or MATH 0320. 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.

**Student Learning Outcomes/Competencies:**

1. Identify, evaluate, characterize and graph linear, polynomial, rational, exponential and logarithmic functions. (1.2, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6)
2. Determine the domain of a function. (2.1)
3. Set up and solve linear business functions: cost, revenue, profit (1.1)
4. Set up and solve problems involving break-even points (1.1)
5. Set up and solve problems involving equilibrium points. (1.2)
6. Use business formulas to calculate simple and compound interest. (2.5, 3.1, 3.2)
7. Use business formulas to calculate effective rates. (3.2)
8. Use business formulas to evaluate annuities. (3.3, 3.4)
9. Solve systems of equations by substitution, elimination, Gauss-Jordan elimination and matrix inversion. (4.1, 4.3, 4.6)
10. Analyze the nature of the solution to a system of equations. (4.1)
11. Apply the use of technology to perform matrix operations, find the inverse of a matrix, and solve systems of equations. (4.2, 4.4, 4.5)
12. Set up and solve applications involving systems of equations. (4.1, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7)
13. Use graphical methods to solve linear programming problems. (5.3)
14. Use the Simplex Method to solve linear programming problems. (6.1, 6.2, 6.3, 6.4)
15. Set up and solve applications involving linear programming problems. (5.3, 6.1, 6.2, 6.3, 6.4)
16. Simplify and factor algebraic expressions involving polynomials, rational expressions, exponents, and radicals. (A.2, A.3, A.4, A.5, A.6)
17. Solve linear, quadratic, exponential, logarithmic and rational equations. (1.1, 2.3, 2.4, 2.6, A.7)

**Textbook:** The textbook required for this course is **College Mathematics for Business, Economics, Life Sciences, and Social Sciences** by Barnett, Ziegler, and Byleen 13<sup>th</sup> edition published by Pearson.

**Supplies:** You will need a 3 ring binder (1.5 inch), dividers, paper, graph paper, hole punch, textbook, pencils, and erasers. **You will need a TI-83 or I-84 calculator.** These are pretty basic supplies, but you will need to bring them to each class. I require pencil on all work. You will have one warning, and after that, you will earn a zero on that work because you failed to follow my instruction.

**Assignment Policy:** Homework will be assigned at each class meeting. The homework is not a tool by which I torture you, but rather an opportunity for you to practice the skills presented in class which you will be responsible to demonstrate on a quiz the following class period. If you are interested in passing the class, you will need to do well on the quizzes. To do well on the quizzes, you will need to complete the homework. **No late assignments will be accepted.** You should show all work when doing homework. Simply writing the problem

and the answer is not “doing homework.” Using a solutions manual or an app that shows you the steps, and copying them down is NOT “doing homework.” **Remember your effort is key to your success. You have to focus your effort on being able to complete the problems on a quiz/exam without any outside resources.** Some days you will turn in your homework when you take a quiz. 50% of your grade will be from the homework and 50% from the quiz. Keep all class materials (notes, handouts, homework, quizzes, and exams) organized in a notebook (3-ring binder). These materials are subject to be turned in for grading at any time. Please make certain all materials accompany you to each class meeting.

**Attendance:** Attendance and effort are the most important activities for success in this course. Class attendance may be taken at any time during the class period, so please do not be late or leave early. Leaving early and being tardy will be considered  $\frac{1}{2}$  absence. **You may be dropped from this course with a grade of X or F if you are absent four consecutive classes or if you exceed five absences (for any reason) throughout the semester.** If you should incur an absence, please refer to your syllabus, contact the instructor, or contact another student to get the assignment completed BEFORE the next class. **Late homework and makeup quizzes are not an option.** Make ups for **Exams** will only be provided under extreme, documented circumstances. If at all possible, the instructor should be notified prior to the exam day.

**Grading:** Daily work (homework, quizzes, notebook) will count for 16% of the final grade, while all exams count for 80% of the final grade. Expect four major exams (16% each) throughout the course and a cumulative final exam (20%) at the end of the course. **Remember that no late or makeup work will be accepted. If you are not in class you will earn a grade of 0 for homework/quiz on that day.** Your final average in the course will determine the letter grade posted on your transcript. This grade is determined by the following scale: A (90-100%), B (80-89%), C (70-79%), D (60-69%), F (0-59%).

**Grade Reporting:** Grades will be posted on blackboard. If you think I have recorded a grade incorrectly, please notify me immediately. I keep a hard copy of my grades and will be glad to check it and correct it if necessary. I usually update my grades once a week or every other week.

**Phones and other electronics:** All electronic devices are inappropriate. Suspected use will earn you a zero for that day’s quiz or homework. If you use an electronic device (cell phone, iPad, iPod, headphones) during an exam, you will earn a zero on the exam and may be dropped from the course. Please do not use a phone or iPad as your book or calculator.

**Test days:** Test days are very serious days. **Once you begin the exam, you will not be allowed to leave the classroom until the exam is submitted for grading.** Use the restroom before class. Use of electronics during an exam earns you a zero on the exam and possible dismissal from the course.

### Where to Get Help:

- Me! – My office hours are listed at the top of this syllabus. I am also available at some other times by appointment. Email is a great way to contact me – much faster than phone calls and messages. Sometimes I can help on email if you will send a photo of the problem you are doing. Even if I am not in the office, I can work the problem, take a photo and send back. You CANNOT ask for #35 – I won’t have my book with me.
- Free tutoring and video tapes are available in M116 on the Levelland campus. The hours for tutors are posted by that door. Digital versions of the videos are available on YouTube. I will post the links to these videos on Blackboard. Occasionally I will post helpful items on blackboard such as solution sets. **If you are not familiar with Blackboard, you should become familiar.** Login at <http://spc.blackboard.com>. The user name and password should be the same as the MySPC and SPC email.

User name: first initial, last name, and last 4 digits of the Student ID

Password: Original CampusConnect Pin No. (found on SPC acceptance letter)

- Your book is a great resource and it is already purchased!
- You can also seek videos from [www.patrickjmt.com](http://www.patrickjmt.com) and [www.khanacademy.org](http://www.khanacademy.org) or others.
- **I also strongly recommend forming study groups so that you can work with others. Networking is an essential tool both in the classroom and in the workforce.**

**You should expect to spend as much time outside of class as you do in class practicing homework problems and studying. The goal is for you to acquire the skills necessary to be successful in your next MATH course. I WILL NOT send you to the next course if you cannot demonstrate that you have those skills.**

**Academic Honesty:** You are expected to uphold the ideals of academic honesty. All work that is graded must be your own. This policy applies to all work attempted in this course. If this policy is violated the student will receive an F for the assignment and will be dropped with an F. For more details on what is considered cheating, see the South Plains College catalog.

**Diversity Statement:** In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be. (copied from current South Plains College Faculty Handbook)

**Disabilities Statement:** Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland Student Health & Wellness Center 806-716-2577, Reese Center (also covers ATC) Building 8: 806-716-4675, Plainview Center Main Office: 806-716-4302 or 806-296-9611, or the Health and Wellness main number at 806-716-2529.

**Equal Opportunity:** South Plains College strives to accommodate the individual needs of all students in order to enhance their opportunities for success in the context of a comprehensive community college setting. It is the policy of South Plains College to offer all educational and employment opportunities without regard to race, color, national origin, religion, gender, sexual orientation, disability, or age.

**Communication Skills:** effective development, interpretation, and expression of ideas through written, oral, and visual communication.

Develop, interpret, and express ideas through written communication

Develop, interpret, and express ideas through oral communication

Develop, interpret, and express ideas through visual communication

**Critical Thinking:** creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information.

Generate and communicate ideas by combining, changing, and reapplying existing information

Gather and assess information relevant to a question

Analyze, evaluate, and synthesize information

**Empirical and Quantitative Competency Skills:** the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Manipulate and analyze numerical data and arrive at an informed conclusion

Manipulate and analyze observable facts and arrive at an informed conclusion

**Math for Business and Social Sciences Tentative Course Outline**

Tues/Thurs MATH 1324.003 (1:00-2:15), 1324.203 (7:00-8:15)

Spring 2017

<b>Week</b>	<b>Day</b>	<b>Date</b>	<b>Lesson</b>	<b>Bonus Assign</b>
1	Tues	Jan 17	1.1 Linear Equations and Inequalities	
	Thurs	Jan 19	1.2 Graphs and Lines	
2	Tues	Jan 24	2.1 Functions	
	Thurs	Jan 26	2.2 Elementary Functions: Graphs 2.3 Quadratic Functions	#1 Due
3	Tues	Jan 31	2.4 Polynomial and Rational Functions	
	Thurs	Feb 2	2.5 Exponential Functions	
4	Tues	Feb 7	2.6 Logarithmic Functions	#2 Due
	Thurs	Feb 9	Review	
5	Tues	Feb 14	<b>Exam 1</b>	
	Thurs	Feb 16	3.1 Simple Interest	
6	Tues	Feb 21	3.2 Compound and Continuous Compound Interest	
	Thurs	Feb 23	3.3 Future Value of an annuity; Sinking Funds	
7	Tues	Feb 28	3.4 Present Value of an Annyty; Amortization	#3 Due
	Thurs	Mar 2	Special Topics	
8	Tues	Mar 7	Review	
	Thurs	Mar 9	<b>Exam 2</b>	
		Mar 13-17	Spring Break	
9	Tues	Mar 21	4.1 Review of Systems of Linear Equations	
	Thurs	Mar 23	4.2 Systems of Linear Equations and Augmented Matrices	#4 Due
10	Tues	Mar 28	4.3 Gauss-Jordan Elimination	
	Thurs	Mar 30	4.4 Matrices: Basic Operations 4.5 Inverse of a Square Matrix	
11	Tues	April 4	Review	
	Thurs	April 6	<b>Exam 3</b>	
	<i>Friday</i>	<i>April 7</i>	<i>UIL Competition – No Office Hours</i>	
12	Tues	April 11	5.1 Linear Inequalities in Two Variables 5.2 Systems of Linear Inequalities in Two Variables	#5 Due
	Thurs	April 13	5.3 Linear Programming in Two Dimensions: A Geometric Approach	
13	Tues	April 18	6.1 The Table Method: An Intro to the Simplex Method 6.2 The Simplex Method: Maximization with Problem Constraints of the Form $\leq$	
	<i>Wed</i>	<i>April 19</i>	<i>Registration Summer/Fall classes opens</i>	
14	Thurs	April 20	6.3 The Dual Problem: Minimization with Problem Constraints of the Form $\geq$	#6 Due
	<i>Friday</i>	<i>April 21</i>	<i>Advising Day for Engineering, Math, CS Majors</i>	
	Tues	April 25	Special Topics	
15	Thurs	April 27	Review	
	<i>Thurs</i>	<i>April 27</i>	<i>Last day to drop a class</i>	
	Tues	May 2	<b>Exam 4</b>	
16	Thurs	May 4	Comprehensive Review	
	Tues	May 9	<b>Final Exam 1324.203 7:15-9:15</b>	
	Thurs	May 11	<b>Final Exam 1324.003 10:15-12:15</b>	