

South Plains College

MATH 1324 – Mathematical Analysis I

{ Section 001, M W 10 – 11:45 pm
{ Section 002, M W 1 – 2:45 pm

{ Math Bldg., Rm. 105
{ Math Bldg., Rm. 105 , respectively

Instructor: Miss S. Davis

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Text: Mathematics with Applications in the Management, Natural, and Social Sciences, 12th Edition by Lial, Hungerford, Holcomb, & Mullins, Pearson Publisher, 2019.

(ISBN: 0-13-476762-8)

Supplies: Scientific calculator (preferably a TI-82 or higher), graphing paper, and a ruler.

Purpose: To provide a transferable course in Mathematical Analysis I for Business Administration majors and CIS majors; and to lay a foundation for the study of Mathematical Analysis II.

Monday	Tuesday	Wednesday	Thursday	Friday
9:30 – 10a	4:20 – 5:20p	9:30 – 10a		9 – 12 p
2:45 – 4:15p	(Reese)	2:45 – 4:15p		
<i>or by appointment</i>				
At the times with this designation, I will be in my office to help you. You do not need an appointment to come see me at these times. When you come, I will be doing something else, but I will stop and help you. I am available at other times, but please give me a call before coming to make sure I am there.				

Attendance: Attendance and effort are the most important activities for success in this course. Records of your attendance are maintained throughout the semester. If your lack of attendance (i.e., excessive absences) is determined by the instructor to put you at risk of failing the course, you may be dropped from the class with a F as a final grade. Excessive absences consist of two consecutive weeks or 4 cumulative days. If you unfortunately happen to incur an absence, please contact the instructor either by phone or email and refer to the website to get the assignment before the next class. Please read the “Drops and Withdrawals” policies in the current South Plains College catalog.

Class Attendance

Students are expected to attend all classes in order to be successful in a course. The student may be administratively withdrawn from the course when absences become excessive as defined in the course syllabus.

When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor may permit the student to make up work missed. It is the student’s responsibility to complete work missed within a reasonable period of time as determined by the instructor. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Should a student, for any reason, delay in reporting to a class after official enrollment, absences will be attributed to the student from the first class meeting.

Students who enroll in a course but have “Never Attended” by the official census date, as reported by the faculty member, will be administratively dropped by the Office of Admissions and Records. A student who does not meet the attendance requirements of a class as stated in the course syllabus and does not officially withdraw from that course by the official census date of the semester, may be administratively withdrawn from that course and receive a grade of “X” or “F” as determined by the instructor. Instructors are responsible for clearly stating their administrative drop policy in the course syllabus, and it is the student’s responsibility to be aware of that policy.

It is the student’s responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment.

Assignment Policy: Homework will be given daily. Although the homework assignments will be graded sporadically and will not always be graded, ***the practice is required in order to more fully understand each topic and to successfully negotiate the quizzes and the tests.*** Questions over the homework problems will be discussed at the beginning of each class meeting if time permits.

On-line quizzes: There will be unpredicted number of quizzes all online. You will be responsible for beginning and completing the quizzes during their designated times and knowing when the quizzes become available and when they terminate. If you encounter an absence then you are still responsible for the quiz. All online quizzes can be accessed on Blackboard.

Notebook: Homework, quizzes, tests, and other useful material should be kept in a notebook in which the notebook will be used as a reference and study guide. The notebook will be brought to class everyday! The following material will be placed in the notebook in the order listed:

1. Cover sheet including Name, Class, and Semester
2. Syllabus
3. Assignment sheet
4. Notes
5. Work
6. Tests
7. Miscellaneous

To print additional material for your notebook, please visit my **Blackboard**. All printed material needs to be read at least once during the term of this course.

Blackboard: Some information for this class will exist on Blackboard such as syllabus, homework, etc. Please be responsible to log in to Blackboard and navigate to the appropriate site for this class.

Tests: There will be four tests (final exam inclusive). Any excused (notification must be made in advance) missed exam will be discussed with the instructor. The final exam will be comprehensive since the intent of this class is preparation for Business Math II (MATH 1325). The final exam can replace your lowest test grade provided that it is greater than the lowest test grade (the exception is the **H.E.R.**)

Make-up Policy: There is no automatic provision for making up exams. Only under extreme circumstances (e.g., death in the family or hospitalization) will make-up exams be given, and these circumstances must be documented. If at all possible, the instructor should be notified prior to missing an exam. If you happen to miss an exam, a grade of **0** will be administered, and under the **H.E.R.** (Honest Effort Rule), this missed exam of grade **0** will not be replaced by the final exam even if the final exam is greater.

STUDY: You should normally spend approximately 2-3 hours outside of class in study for each hour of lecture. Try to study the assigned lesson as soon after the class meets as is possible. Refer to the "How to Study" sheet for further detailed studying suggestions.

Tutoring: Free tutoring is available in the room 116 of the Mathematics-Engineering Building. For times and tutor names, please refer to posted tutor schedules in the math building or visit my **Blackboard** page for this class.

Videotapes: Videos for many topics in this course are available through the Mathematics Department on Blackboard. For username and password, please use *mvideos*.

The topics available for this class are

For Math Analysis:

1. Linear Programming – Graphical Method
2. Linear Programming – Standard Simplex Method
3. Nonstandard Simplex

From College Algebra:

8. Quadratic equations
9. Functions
16. Exponential & Logarithmic Functions
17. 2 x 2 Systems
20. m x n Systems
22. Operations with Matrices
11. Inequalities
13. Graphing
18. 3 x 3 Systems
21. Solving Systems of Equations using Matrices
23. Determinants
12. Lines (Slopes, etc.)
19. Systems of Inequalities
24. Cramer's Rule

Grading Scale:

$$\text{Average} = \frac{\text{Test 1} + \text{Test 2} + \text{Test 3} + \text{Quiz Avg} + \text{Final}}{5}$$

A: 90 and above
B: 80 - 89
C: 70 - 79
D: 60 - 69
F: 59 or below

Borderline Grades: These grades will be evaluated with regard to attendance and mature conduct in class.

Critical Dates:

Jan 21	MLK, Jr.	Feb 18	WEB Pre-registration for Summer & Spring Interim 2019	
March 11 – 15	SPRING Break	April 15	WEB Pre-registration for Fall 2019	
April 12	UIL – No office hours	Final Exams		
April 22	Easter	001	May 6	(10:15 – 12:15 p, Monday)
April 25	Last Day to Drop	002	May 8	(10:15 – 12:15 p, Wednesday)

Student Responsibilities:

- Attend class and be aware of announcements made in class.
- Work homework problems early enough to seek help if needed.
- Read and know the attendance policy.
- Form study groups.
- Attend math tutoring lab sessions.
- **** Please, turn off cell phones and pagers during class! ****
 - If the instructor determines that activation of a cell phone, pager, PDA, Ipad, laptop, or any electronic device interrupts the lecture or classroom discussion or impedes the progress of any student then the instructor may confiscate the cell phone, pager, PDA, or laptop until the end of class and/or ask the student to leave.
- **No technologic devices such as cell phones, PDA's, etc. are to be used during tests or in-class quizzes.**
- **Follow the classroom policy, no food or drink allowed in the classroom if posted.**
- **In addition to the No Food or Drink classroom policy, no tobacco products are to be consumed in class.**
- **Do not dress for the beach or bed.**
- **You will obtain your final grade for the class through Texan Connect &/or Colleague.**

Cell Phone Policy: All students will, during each class period and for its duration, place and keep their cell phone in its deactivated state, provided that they are at the present time in possession of said device, face-down in the right-hand corner and on the top surface of their desk. If a student's cell phone activates and/or the student engages in text messaging during class at anytime during the semester, the student, by the instructor's discretion, could be permanently dismissed from the class for the remainder of the semester. If a student's cell is activated during class and/or the student engages in text messaging determined by the instructor, and **the student chose not to place their phone on top of their desk as mentioned above** then the student will be dismissed from the class by the instructor permanently.

Academic Misconduct: Complete honesty is required from students in all facets of course work including homework assignments, tests, and the final exam. See the South Plains College Catalog for more detail.

Sanctions for Cheating or Plagiarizing: A grade of "F" in the course will be assigned to any student caught cheating or plagiarizing; additional sanctions may also be considered. Students are responsible for understanding the meanings of the words cheating and plagiarizing.

Special Requests: If you happen to become **ill** during the semester, please respect your instructor and your classmates by making your best effort to prevent contamination of the rest of the class including the instructor.

Questions: I invite all your questions **except** the following:

1. I wasn't able to make it to class. Did I miss anything? (Yes.)
2. Is this going to be on the test? (Perhaps, not directly, but if the ideas were not important, I would not be discussing them in class.)
3. Do you have the test graded? (I normally have the tests graded by the next class day. However,
4. there are times that I do not have them graded but I will have them graded as soon as I can.)

Course Objectives: Upon completion of this course and obtaining a passing grade, the student will have mastered at least 70% of the course objectives. The course objectives state that the student will be able to:

- h. Graph and name linear functions.
- g. Set up and solve problems using a linear model.
- f. Define, evaluate, and graph a function.
- e. Graph and name a quadratic function.
Solve systems of equations by graphing, Elimination, Gauss-Jordan elimination, Cramer's rule using determinants, and Inverse
- d. Matrix Method
- c. Perform matrix operations, evaluate a determinant, and find the inverse of a matrix
- b. Solve a linear programming problem graphically and using the Simplex Method.
- a. Use business formulas to calculate simple interest, compound interest, and evaluate annuities in order to solve finance problems.

Diversity: 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.

Disability 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 Special Services Office, preferably, 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 Special Services Coordinator. For more information, call or visit the Special Services Office in the Student Services Building, 894-9611 ext. 2529.

Confidentiality: As a faculty member, I am deeply invested in the well-being of each student I teach. I am here to assist you with your work in this course. If you come to me with other non-course-related concerns, I will do my best to help. It is important for you to know that all faculty members are mandated reporters of any incidents of sexual misconduct. That means that I cannot keep information about sexual misconduct confidential if you share that information with me. Dr. Lynne Cleavinger, the Director of Health & Wellness, can advise you confidentially as can any counselor in the Health & Wellness Center. They can also help you access other resources on campus and in the local community. You can reach Dr. Cleavinger at 716-2563 or lcleavinger@southplainscollege.edu or go by the Health and Wellness Center. You can schedule an appointment with a counselor by calling 716-2529.

Sexual Misconduct

It is important for you to know that all faculty members are mandated reporters of any incidents of sexual misconduct. That means that I cannot keep information about sexual misconduct confidential if you share that information with me. Dr. Lynne Cleavinger, the Director of Health & Wellness, can advise you confidentially as can any counselor in the Health & Wellness Center. They can also help you access other resources on campus and in the local community. You can reach Dr. Cleavinger at 716-2563 or lcleavinger@southplainscollege.edu or go by the Health and Wellness Center. You can schedule an appointment with a counselor by calling 716-2529.

Campus Concealed Carry: Campus Concealed Carry - Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of locations, please refer to the SPC policy at: (http://www.southplainscollege.edu/human_resources/policy_procedure/hhc.php) Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396 or 9-1-1.

		Course Outline	
		This schedule is tentative and subjective to change. Changes will be announced in class.	
	Week	Topics and Sections Covered	
1	1/14, Mon	Introduction, Misc 2.2 Linear Equations	
	1/16, Wed	2.4 Linear Inequalities	
2	1/21, Mon	MLK, Jr.	
	1/23, Wed	2.3 Linear Models	
3	1/28, Mon	3.1 Functions 3.2 Graphs of Functions	
	1/30, Wed	3.3 Applications of Linear Functions 3.4 Quadratic Functions & Applications	
4	2/4, Mon	3.5 Polynomial Functions 3.6 Rational Functions	
	2/6, Wed	4.1 Exponential Functions 4.2 Applications of Exponential Functions	
5	2/11, Mon	4.3 Logarithm Functions 4.4 Logarithmic & Exponential Functions	
	2/13, Wed	6.4 <i>Matrices: Basic Operations</i> 6.5 <i>Matrix Products & Inverses</i>	
6	2/18, Mon	TEST #1 (Linear Equations & Functions)	
	2/20, Wed	6.1 Systems of Linear Equations in Two Variables 6.2 Larger Systems of Linear Equations – Cramer’s Rule	
7	2/25, Mon	6.2 Contd. Systems of Linear Equations in Three Variables – Gauss-Jordan Elimination(GJE)	
	2/27, Wed	6.6 Application of Matrices 6.3 Applications of Systems of Linear Equations	
8	3/4, Mon	7.1 <i>Graphing Linear Inequalities in Two Variables</i> 7.2 <i>Linear Programming: The Graphical Method (A Geometric Approach)</i>	
	3/6, Wed	TEST #2 (Matrices)	
		3/11 - 3/15 Spring Break	
9	3/18, Mon	7.3 Applications of Linear Programming	
	3/20, Wed	7.4 Simplex Method: Maximization	
10	3/25, Mon	7.5 Simplex Method: Maximization Applications	
	3/27, Wed	7.6 Simplex Method: Duality & Minimization	
11	4/1, Mon	7.7 Simplex Method: Nonstandard Problems	
	4/3, Wed	5.1 <i>Simple Interest & Discount</i> 5.2 <i>Compound Interest</i>	
12	4/8, Mon	TEST #3 (Simplex Method)	
	4/10, Wed	5.3 Annuities, Future Value, & Sinking Funds	
		4/12, Fri UIL – No office hours	
13	4/15, Mon	EASTER	
	4/17, Wed	5.4 Annuities, Present Value, & Sinking Funds	
14	4/22, Mon	Present Value of an Annuity: Amortization Mixture: Future Value & Present Value	
	4/24, Wed	8.3 Introduction to Probability 8.4 Basic Concepts of Probability	
15	4/29, Mon	9.1 Probability Distributions & Expected Value	
	5/1, Wed	9.5 Markov Chains	
Final(s)	5/6	001	Monday, 10:15 – 12:15p
	5/8	002	Wednesday, 10:15 – 12:15p

MATH 1324 (3:3:0)
MATHEMATICAL ANALYSIS I

MATHEMATICS DEPARTMENT

Division of Arts & Sciences

South Plains College

Spring 2019

Shirley Davis