College Algebra (MATH 1314)

CREDIT

3 Semester Credit Hours (3 hours lecture, 0 Lab hours lab)

MODE OF INSTRUCTION

LAMAR INSTITUTE OF TECHNOLOGY

PREREQUISITE/CO-REQUISITE:
TSI Complete for Math

COURSE DESCRIPTION
In-depth study and applications of polynomial, rational, radical, exponential, and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability, and conics may be included.

COURSE OBJECTIVES
Upon completion of this course, the student will be able to:

1. Demonstrate and apply knowledge of properties of functions, including domain and range, operations, compositions, and inverses.
2. Recognize and apply polynomial, rational, radical, exponential, and logarithmic functions and solve related equations.
3. Apply graphing techniques.
4. Evaluate all roots of higher degree polynomial and rational functions.
5. Recognize, solve, and apply systems of linear equations using matrices.

CORE OBJECTIVES MEASURED

1. **Critical Thinking Skills**: To include creative thinking, innovation, inquiry, and analysis, evaluation, and synthesis of information.
2. **Communication Skills**: To include effective development, interpretation and expression of ideas through written, oral, and visual communication.
3. **Empirical and Quantitative Skills**: To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

Approved: Initials/date

INSTRUCTOR CONTACT INFORMATION

Instructor: Daniel Dove

Email: dadove@lit.edu

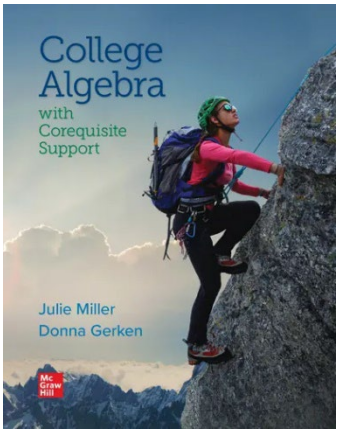
Office Phone: (409) 247-5017

Office Location: TC 112 A

Office Hours:

Monday: 8:30 -9:30
Tuesday: 8:30-9:30, 12:30-2:30
Wednesday:8:30-9:30
Thursday: 8:30-9:30, 12:30-2:30
Friday: 11:00 – 1:00

REQUIRED TEXTBOOK AND MATERIALS



360 Days Access (Standard) $73.44

ISBN10: 1264198434 I ISBN13: 9781264198436

(Comes inclusive with ELE bundle for $15 per SCH or $45)

1. Paper, pencils, and a calculator, access to a computer with internet access.

ATTENDANCE POLICY

Attendance is required, online students should login and work on assignments 2-3 times per week, minimum.

DROP POLICY

If you wish to drop a course, you are responsible for initiating and completing the drop process by the specified date as listed in the College Calendar on the Student Success web page. If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

COURSE CALENDAR (Dates and assignments subject to change with notice)

Week #	*Section*	*Topic Description*	
		Week of	***01/18***
1		First Day of Class: 01/20	
		Introduction	
	3.3	Complex Numbers	
		Week of	***01/25***
2	3.6	Solving Quadratic Equations by Using the Quadratic Formula	
	4.3	Rational Equations	
		Week of	***02/01***
3	!	Census Day: 02/04	
	4.5	Radical Exponents	
	4.6	Radical Equations and Equations with Rational Exponents	
		Week of	***02/08***
4	4.7	Equations in Quadratic Form	
	5.1	The Rectangular Coordinate System and Graphing Utilities	
	EXAM	Exam 01; **Open 02/13**	
		Sections on Exam 01: 3.3, 3.6, 4.3, 4.6, 4.7, 5.1	
		Week of	***02/15***
5	!	Drop Day (without academic penalty): 02/20	
	5.3	Functions and Relations	
	EXAM	Exam 01; **Due 02/17**	
		Sections on Exam 01: 3.3, 3.6, 4.3, 4.6, 4.7, 5.1	
		Week of	***02/22***
6	5.4	Linear Equations in Two Variables and Linear Functions	
	6.1	Transformations of Graphs	
		Week of	***03/01***
7	6.2	Symmetry and Piecewise-Defined Functions	
	6.4	Algebra of Functions and Function Composition	
H		***Week of***	***03/08***
	HOLIDAY	Spring Break: 03/09 – 03/ 13	

Week #	*Section*	*Topic Description*	
	HOLIDAY	Energy Conservation Day: 03/ 11	
8		***Week of***	***03/15***
	7.1	Quadratic Functions and Applications	
	7.2	Introduction to Polynomial Functions	
	EXAM	Exam 02; **Open 03/20**	
		Sections on Exam 02: 5.3, 5.4, 6.1, 6.2, 6.4, 7.1, 7.2	
9		***Week of***	***03/22***
	7.3	Division of Polynomials and the Remainder and Factor Theorems	
	EXAM	Exam 02; **Due 03/24**	
		Sections on Exam 02: 5.3, 5.4, 6.1, 6.2, 6.4, 7.1, 7.2	
10		***Week of***	***03/29***
	HOLIDAY	Good Friday: 04/03	
	7.4	Zeros of Polynomials	
	8.1	Introduction to Rational Functions	
11		***Week of***	***04/05***
	8.2	Graphs of Rational Functions	
	9.1	Inverse Functions	
12		***Week of***	***04/12***
	!	Drop Day (with academic penalty): 04/13	
	9.2	Exponential Functions	
	9.3	Logarithmic Functions	
	EXAM	Exam 03; **Open 04/17**	
		Sections on Exam 03: 7.3, 7.4, 8.1, 8.2, 9.1, 9.2, 9.3	
13		***Week of***	***04/19***
	9.4	Properties of Logarithms	
	EXAM	Exam 03; **Due 04/21**	
		Sections on Exam 03: 7.3, 7.4, 8.1, 8.2, 9.1, 9.2, 9.3	
14		***Week of***	***04/26***
	9.5	Exponential Equations and Applications	
	9.6	Logarithmic Equations and Applications	
15		***Week of***	***05/03***
	!	Finals week: 05/07 – 05/13	

Week #	Section	Topic Description
		Last day of class: 05/06
	11.1	Solving Systems of Linear Equations Using Matrices
	EXAM	Final Exam; **Open 05/03**
		Sections on Final Exam: All covered in course (Comprehensive)
		Week of ***05/10***
	!	Finals week: 05/07 – 05/13
16	EXAM	Final Exam; **Due 05/12**
		Sections on Final Exam: All covered in course (Comprehensive)

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

- Test 60%
- Assignments 20%
- Core Assessment 20%

GRADE SCALE

- 90-100 A
- 80-89 B
- 70-79 C
- 60-69 D
- 0-59 F

TECHNICAL REQUIREMENTS

For the latest technical requirements, including hardware, compatible browsers, operating systems, etc., review the Minimum Computer and Equipment Requirements on the LIT Online Experience page. A functional broadband internet connection, such as DSL, cable, or Wi-Fi is necessary to maximize the use of online technology and resources.

DISABILITIES STATEMENT

The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please

contact the Special Populations Coordinator at (409)-951-5708 or email specialpopulations@lit.edu. You may also visit the online resource at Special Populations - Lamar Institute of Technology (lit.edu).

STUDENT CODE OF CONDUCT STATEMENT

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

ARTIFICIAL INTELLIGENCE STATEMENT

Lamar Institute of Technology (LIT) recognizes the recent advances in Artificial Intelligence (AI), such as ChatGPT, have changed the landscape of many career disciplines and will impact many students in and out of the classroom. To prepare students for their selected careers, LIT desires to guide students in the ethical use of these technologies and incorporate AI into classroom instruction and assignments appropriately. Appropriate use of these technologies is at the discretion of the instructor. Students are reminded that all submitted work must be their own original work unless otherwise specified. Students should contact their instructor with any questions as to the acceptable use of AI/ChatGPT in their courses.

STARFISH

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

ADDITIONAL COURSE POLICIES/INFORMATION

Instructor Expectations from Students:

- Weekly email communication regarding assignment and upcoming test due dates
- Response to email within 24 hours Sunday through Thursday, or within 48 hours Friday and Saturday.
- Flexible office hours/ virtual help when needed.
- Weekly grade updates

Instructor Expectations of Students:

- **Seek help from instructor early and often, do not wait until the last minute!**
- **The student will be expected to have access to the internet and their own computer.**
- **On exams, all of your work should be completely your own. You are allowed scratch paper, a pencil, and your calculator. On the Core Assignment, no AI may be used and all work should be completely your own. Any evidence of cheating could result in a zero on that particular exam or the Core Assignment. Repeated offenses will cause you to fail the course.**
- **Plan ahead; if you will miss an exam, make prior arrangements to take it early or schedule a make-up date at instructors' convenience. If you have missed an exam, contact instructor as soon as possible to schedule a makeup exam. I prefer within a day of having to miss to schedule a makeup exam, and within a week of the original exam date to take the test. If you wait longer than that to schedule and take the makeup exam, you will receive a zero on that exam! I reserve the right to make exceptions to this policy based on extenuating circumstances with documentation.**
- **When sending emails identify yourself with class and section.**