

MATH 2412 Pre-Calculus

CREDIT

4 Semester Credit Hours (4 hours lecture)

MODE OF INSTRUCTION

Face-to-face

PREREQUISITE/CO-REQUISITE:

Passed MATH 1314 College Algebra with a “C” or better.

COURSE DESCRIPTION

This course is an in-depth combined study of algebra, trigonometry, and other topics necessary for Calculus readiness.

COURSE OBJECTIVES

Upon successful completion of this course, students will:

1. Demonstrate and apply knowledge of the properties of functions.
2. Recognize and apply algebraic and transcendental functions and solve related equations.
3. Apply graphing techniques to algebraic and transcendental functions.
4. Compute the values of trigonometric functions for key angles in all quadrants of the unit circle measured in both degrees and radians.
5. Prove trigonometric identities.
6. Solve right and oblique triangles.

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.



**LAMAR INSTITUTE
OF TECHNOLOGY**

INSTRUCTOR CONTACT INFORMATION

Instructor: Daniel Dove

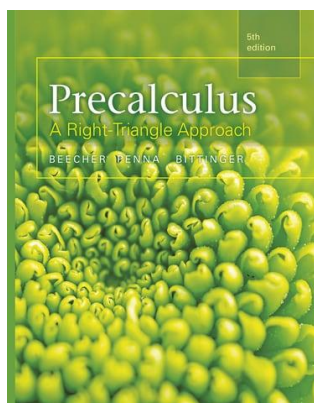
Email: dadove@lit.edu

Office Phone: (409) 247-5017

Office Location: TC 112 A

Office Hours: M: 8:30 – 9:30, 2:00-3:00
T: 8:30-9:30
W: 8:30-9:30, 2:00-3:00
R: 8:30-9:30
F: 11:00-3:00

REQUIRED TEXTBOOK AND MATERIALS



Single-term access

ISBN-13: 9780135676264 (\$90 plus tax)

Multi-term access

ISBN-13: 9780135299449 (\$ 150 plus tax)

(Comes inclusive with ELE bundle for \$42)

Calculator of your choice. (Ask instructor for available resources)

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 of	Assignment	Due Date
Aug 24	Syllabus 1.1 Introduction to Graphing 1.2 Functions and Graphs	August 31
Aug 31	1.5 Linear Equations, Functions, Zeros and Applications 2.1 Increasing, Decreasing and Piecewise Functions	Sep 7
Sep 7	2.2 The Algebra of Functions 2.3 The Composition of Functions	Sep 14
Sep 14	2.5 Transformations 3.2 Quadratic Equations, Functions, Zeros and Models 3.3 Analyzing Graphs of Quadratic Equations	Sep 21
Sep 21	3.4 Solving Rational Equations and Radical Equations 4.1 Polynomial Functions and Models 4.2 Graphing Polynomial Functions	Sep 28
Sep 28	4.3 Polynomial Division; The remainder and Factor Theorem 4.4 Theorems about Zeros Chapter 1, 2 and 3 Test Wednesday Sep 30	Oct 5
Oct 5	4.5 Rational Functions 5.1 Inverse Functions 5.2 Exponential Functions and Graphs	Oct 12
Oct 12	5.3 Logarithmic Functions and Graphs 5.4 Properties of Logarithmic Functions	Oct 19
Oct 19	5.5 Solving Exponential and Logarithmic Equations Chapter 4 and 5 Test Wednesday, Oct 28	Oct 26
Oct 26	6.1 Trig functions of Acute Angles 6.2 Applications of Right Triangles 6.3 Trig Functions of any Angle	Nov 2
Nov 2	6.4 Convert Degrees/Radians 6.5 Circular Functions: Graphs and Properties 6.6 Graphs of Transformed Sine and Cosine Functions	Nov 9
Nov 9	7.1 Identities: Pythagorean and Sum/Difference 7.2 Identities: Cofunction, Double Angle and Half Angle 7.3 Proving Trig Identities Core Assessment Due Nov 30	Nov 16
Nov 16	7.4 Inverses of Trig Identities 7.5 Solving Trig Equations Chapter 6 and 7 Test Monday, Nov 30	Nov 23
Nov 23	8.1 The Law of Sines 8.2 The Law of Cosines Core Assessment Due Nov 30	Nov 30
	Thanksgiving Holiday, November 25, 26, 27	
	Final exam December 2	

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

- Test 60%
- Assignments 20%
- Final Exam 20%
 - Core Assessment (20% of Final Exam)

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

What To Expect from Instructor Daniel Dove:

- Response to email within 24 hours (except for messages sent Friday afternoon and on weekends)
- Please add name course and section to all email so that I can identify you
- Flexible office hours/ virtual help when needed. (Schedule an appointment with me if my offered hours do not work for you)
- Grade updates within a week of syllabus due date. Late work, if accepted, will be graded within one week of submission.

Student Behavior Expectations:

- Seek help from instructor early and often, do not wait until the last minute!
- 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
- Participate in class lecture/discussions.
- Homework is due at certain times throughout the semester. If you cannot complete all Homework Assignments by their due date, you can complete them late for a penalty. The final deadline for all homework assignments, even with late penalty, is December 2!
- Exams are to be given during class time on the days listed in the syllabus. If a test must be moved, I will notify everyone through announcements in class and through Blackboard.
- Keep in mind that each student comes from a different cultural background and brings a different set of beliefs and values. As a result, students may disagree on various topics during discussion. Disagreements can lead to critical thinking and deeper understanding, therefore be respectful of other class members and different opinions. Disrespect for others will not be tolerated.
- You are adults, you will be treated as such. If you need to excuse yourself from class for work call, personal family call, or restroom etc. Please do so quietly with minimal disruptions. Please know that you are responsible for any information that you miss during your absence.
- On exams, all of your work should be completely your own. For example, NO use of Artificial Intelligence, your neighbor's paper, or web browsing on devices is allowed during exams or on the Core Assignment, whether given in class or online. For exams, you are allowed scratch paper, a pen or pencil, and a calculator of your choice, but no phones or other devices to be used as a calculator. Any other materials are at the discretion of the instructor.

Math AI Policy

- **No AI tools, apps, software, etc. are to be used on any work that is scored, graded, assessed, etc.**
 - This includes all homework, exams, tests, projects, assessments, quizzes, discussions, etc.
- **Failure to follow these guidelines (as deemed by the instructor) may be considered academic dishonesty and will be managed by instructor discretion or for exams, the Math testing policy.**

Math Testing Policy

- **All online Math courses will use Respondus Lockdown Browser and Monitor. This means students will be recorded when taking exams and will need a webcam and microphone.**
- **If a student is suspected of cheating, such as with AI use or other cheating methods, the student will be given a zero on the exam. The student will have one week of being**

notified to have a meeting with the instructor either face to face in the instructor's office or through an online method through such means as Microsoft Teams or Zoom. During this meeting, the student may be asked to work out problems or even the entire test in front of the instructor to adjust the student's grade.

- If the student is caught using AI or the student fails to meet with instructor within one week of notification or the student is unable to complete the work on the exam with instructor present, a zero will be given for that exam or assignment, and there will be no opportunity for a redo.