



K-12
TEXAS TECH

Algebra I B v8.0 – Syllabus

Course Name

ALG1-B

ALGEBRA I v8.0 – Semester B

Course Information

ALG1-B is the first semester of this two-semester course.

Algebra 1-B is the second course in a two-course sequence. In Algebra 1-B, you will focus on the Algebra 1 benchmarks related to exponential and quadratic functions, as well as data and statistics. The Lessons are designed to help you develop fundamental algebraic skills for problem-solving in the real world.

Instruction will be focused on ensuring mastery in these four areas:

- performing operations with polynomials and radicals and extending the Laws of Exponents to include rational exponents
- extending understanding of functions to quadratic and exponential functions and using them to model and analyze real-world relationships
- solving quadratic equations in one variable
- building functions, identifying their key features, and representing them in various ways

Course Delivery Method

Online

Contacting Your Instructor

You may contact your instructor using your Canvas Inbox. Technical support is available 24/7 at [TTU K-12](#).

Course Topics

After completing this course, the students should be able to:

- Simplify, add, subtract, multiply, and divide numerical radical expressions.
- Write and solve one-variable quadratic equations within a mathematical or real-world context.
- Determine and interpret the key features of a quadratic function.
- Graph quadratic functions within a mathematical or real-world context.
- Write a quadratic function from a graph, a table of values, a written description, or using the roots and another point on the function.
- Identify the effect on the graph of a quadratic function after a vertical or horizontal translation or dilation.
- Identify the effect on the table representing a quadratic function after a vertical or horizontal translation or dilation.
- Given an equation or a graph that defines a function, determine the function type.
- Given a table that defines a function, determine a function type that could represent it.
- Identify if a data set is numerical or categorical and if it is univariate or bivariate.
- Determine an appropriate way to represent data sets.
- Identify the shape of the distribution of data, given various displays.
- Interpret data distributions using different displays and interpret data using key components of the display.
- Construct a two-way frequency table and use the table to determine possible associations.
- Interpret joint and marginal frequencies.
- Estimate a population total, mean, and percentage using data from a sample survey.

Textbook and Materials

No textbooks required. All content is within Canvas.

Materials

- Handheld or online scientific calculator

Technical Requirements

- Internet access – preferably high speed (for accessing Canvas)
 - browser (we recommend Chrome)
 - supported browser plugins and settings
- The following plugins and settings may be required to use our courses.
- JavaScript enabled

- Cookies enabled
 - Java installed
- Email
- Printing capabilities
- Adobe Reader (download from [Adobe](#))
- Audio and video capabilities (for watching/listening to course content)
- PDF app (free options available)

Technical Skill Requirements

Be comfortable with the following:

- accessing online learning materials via Canvas
- Internet search engines and browsers (we recommend Chrome)
- uploading assignments into Canvas (there will be instructions for uploading assignments)

Course Pacing

This course is designed to be completed in 18 weeks.

- Print this guide and use a calendar to fill in your goal dates for completing each Module.
- Note that you must have a grade of 70 or above on a Discussion-Based Assessment (DBA) in order to continue moving forward in the course. DBAs occur every other lesson.
- To achieve success, students are expected to submit work in each course weekly.
- Students can learn at their own pace; however, "any pace" still means that students must make progress in the course every week.
- Post the pace guide in a place where you and your Parent or Guardian will see it every day (on the refrigerator or next to the computer). Give yourself a check every time you complete a task, and celebrate your efforts!

Weeks	Lessons	Due Date (you write this in)
1	01.00 Exponential Functions Introduction 01.01 Exploring Exponential Functions 01.02 Key Features of Exponential Functions 01.03 Graphing of Exponential Functions	
2	01.04 Solving Real-World Interest Problems 01.05 Writing Equations for Exponential Functions 01.06 Comparing Key Features of Functions	
3	01.07 Exponential Functions Practice Exam 01.09 Exponential Functions Exam	
4	02.00 Polynomial Operations Introduction 02.01 Exponent Properties 02.02 Powers of Exponents 02.03 Adding and Subtracting Polynomials 02.04 Multiplying a Polynomial by a Monomial	
5	02.05 Multiplying Polynomials 02.06 Special Products 02.07 Polynomial Operations Practice Exam	
6	02.08 Polynomial Operations Discussion-Based Assessment 02.09 Polynomial Operations Exam	
7	03.00 Factoring Polynomials Introduction 03.01 Greatest Common Factor 03.02 Dividing Polynomials by Monomials	
8	03.03 Factoring by Grouping 03.04 Factoring Trinomials Where the Leading Coefficient Is 1 03.05 Factoring Trinomials Where the Leading Coefficient Is Not 1 03.06 Factoring Special Cases	
9	03.07 Factoring Polynomials Practice Exam 03.09 Factoring Polynomials Exam	
10	Midterm Exam	

Weeks	Lessons	Due Date (you write this in)
11	04.00 Quadratic Equations Introduction 04.01 Adding and Subtracting Radicals 04.02 Multiplying and Dividing Radicals 04.03 Solving Using Square Roots	
12	04.04 Solving by Factoring 04.05 Completing the Square 04.06 Using the Quadratic Formula	
13	04.07 Quadratic Equations Practice Exam 04.08 Quadratic Equations Discussion-Based Assessment 04.09 Quadratic Equations Exam 05.00 Quadratic Functions Introduction	
14	05.00 Quadratic Functions Introduction 05.01 Exploring Quadratic Functions 05.02 Graphing Quadratic Functions 05.03 Writing Equations for Quadratic Functions	
15	05.035 Quadratic Functions to Model Data 05.04 Translating Quadratic Functions 05.05 Dilating Quadratic Functions 05.06 Determining Function Types	
16	05.07 Quadratic Functions Practice Exam 05.09 Quadratic Functions Exam Final Exam	
17	Floating Vacation Week	
18	Floating Vacation Week	

Course Credit

Your grade will be calculated as follows:

- formative assessments (50%)
- summative assessments (20%)
- summative final exam (30%)

Assignments are labeled as “summative” or “formative” under Grades in Canvas.

Course Completion and Extensions

- Students may not complete the course in less than 30 days.
- All courses expire 180 days after the enrollment date.

Academic Integrity

It is the aim of the faculty of Texas Tech University to foster a spirit of complete honesty and high standard of integrity. The attempt of students to present as their own any work not honestly performed is regarded by the faculty and administration as a most serious offense and renders the offenders liable to serious consequences, possibly suspension.

“Scholastic dishonesty” includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, misrepresenting facts, and any act designed to give unfair academic advantage to the student (such as, but not limited to, submission of essentially the same written assignment for two courses without the prior permission of the instructor) or the attempt to commit such an act.

Artificial Intelligence (AI) Use Policy

This policy covers any generative AI tool, such as ChatGTP, Elicit, Photo Math, etc. This includes text and artwork/graphics/video/audio, etc.

All work submitted in this course must be your own. You may not use artificial intelligence tools to complete your assignments in this course.

If an instructor suspects that an assignment is not the work of the student, it will receive a score of zero. The instructor will message the student or provide feedback on the assignment indicating the need to schedule a one-on-one video conference, during which the student will be required to demonstrate their skills or knowledge through an alternative or mutually agreed-upon assignment. The grade of the alternate or agreed upon assignment will be determined at the instructor’s discretion with the highest possible score being 70%.

If it is determined that a student has violated final exam directions on Final Exam A or CBE Set 1, the exam will be scored as zero. The student may take Final Exam B or CBE Set 2 with the highest possible score being 70%.

The incident will be reported to Texas Tech K-12 Administration and documented in the student’s file. Continued violations of Texas Tech University’s Academic Integrity Policy will result in the removal of the student from the program.

Student/Parent Expectations

You will be expected to log into the Canvas course regularly to be aware of possible announcements/reminders and to pace your student’s progress in the course.

The following are prohibited while using the Canvas interface:

- spamming;
- hacking; and
- using TTU or Canvas email for commercial purposes;

Inappropriate behavior shall result in consequences ranging from a request to correct the problem, to removal from the course or even the university, depending on the severity of the behavior. Disciplinary actions will be taken according to the TTU K-12 Student Handbook.

Communication

- You can expect a reply from your instructor within 2 business days.
- Use the Canvas Inbox for sending messages to your instructor.

Submitting Assignments

You will submit all assignments through Canvas, rather than by mail or email.

Technical Difficulties

Getting Help

For student assistance with Canvas, visit [TTU K-12 Support](#).

Computer Problems

A working computer is necessary for online coursework. Computer problems will not be accepted as a valid reason for failure to complete course activities within the allotted time frame. Identify a second computer, before the course begins, that you can use if you experience computer problems.

Server Problems

When the Canvas server needs to be taken down for maintenance, the Canvas administrator will post an announcement in your course informing you of the time and date. If the server experiences unforeseen problems, your course instructor will notify you.

Lost or Corrupted Files

You must keep/save a copy of every project/assignment on an external disk or personal computer. In the event of any kind of technology failure (e.g., Canvas server crash or virus infection, students' own computer problems, loss of files in cyberspace, etc.) or any disputes, the instructor may request or require you to resubmit the files. In some instances, the instructor may need to open another attempt within Canvas, so communication with your instructor is critical in these circumstances.