Algebra II A v8.0 – Syllabus

Course Name

ALG2-A

Algebra II v8.0– Semester A

Course Information

This is the first semester of this two-semester course.

This course allows students to learn while having fun. Interactive examples help guide students' journey through customized feedback and praise. Mathematical concepts are applied to everyday occurrences such as earthquakes, stadium seating, and purchasing movie tickets. Students investigate the effects of an equation on its graph through the use of technology. Students have opportunities to work with their peers on specific lessons.

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 have increased knowledge of:

Module 1: Radical and Polynomial Operations

- Introduction to Radical and Polynomial Operations
- Rational Exponents
- Properties of Rational Exponents
- Solving Radical Equations
- Complex Numbers

- Operations on Complex Numbers
- Polynomial Operations

Module 2: Factoring and Quadratics

- Introduction to Factoring and Quadratics
- Greatest Common Factors and Special Products
- Factoring by Grouping
- Sum and Difference of Cubes
- Graphing Quadratics
- Completing the Square
- Solving Quadratic Equations
- Solving Quadratic Equations with Complex Solutions
- Investigating Quadratics

Module 3: Solving Polynomials

- Introduction to Solving Polynomials
- Polynomial Long Division
- Theorems of Algebra
- Polynomial Transformations
- Solving and Graphing Polynomials
- Polynomial Identities and Proofs

Module 4: Rational Equations

- Introduction to Rational Equations
- Simplifying Rational Expressions
- Discontinuities of Rational Expressions
- Asymptotes of Rational Functions
- Solving Rational Equations
- Rational Equations

Textbook and Materials

No textbooks required. All content is within Canvas.

Materials

- Desmos Graphing Calculator
- graphing calculator (optional)

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.
- 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	Checkpoint 1 01.00 Introduction to Radical and Polynomial Operations 01.01 Rational Exponents 01.02 Properties of Rational Exponents	
2	01.03 Solving Radical Equations 01.04 Radical and Polynomial Operations Mid-Module Check 01.05 Radical and Polynomial Operations Discussion-Based Assessment	
3	01.06 Complex Numbers 01.07 Operations on Complex Numbers	
4	01.08 Polynomial Operations 01.09 Radical and Polynomial Operations Review and Practice Test	
5	*01.10 Radical and Polynomial Operations Test Part One and Two 02.00 Introduction to Factoring and Quadratics 02.01 Greatest Common Factors and Special Products	
6	02.02 Factoring by Grouping 02.03 Sum and Difference of Cubes 02.035 Modeling with Radical Function	
7	02.04 Graphing Quadratics 02.05 Completing the Square	
8	02.06 Solving Quadratic Equations 02.065 Solving Quadratic Inequalities 02.07 Solving Quadratic Equations with Complex Solutions 02.08 Investigating Quadratics	
9	02.085 Quadratic Functions Checkpoint 2 02.09 Factoring and Quadratics Review and Practice Test *02.11 Factoring and Quadratics Test Part One and Two	
10	03.00 Introduction to Solving Polynomials 03.01 Polynomial Long Division 03.02 Theorems of Algebra	
11	03.03 Polynomial Transformations 03.04 Solving and Graphing Polynomials	
12	03.05 Polynomial Identities and Proofs 03.06 Solving Polynomials Review and Practice Test 03.07 Solving Polynomials Discussion-Based Assessment	

Weeks	Lessons	Due Date *(you write this in)*
13	*03.08 Solving Polynomials Test Part One and Two 04.00 Introduction to Rational Equations 04.01 Simplifying Rational Expressions	
14	04.02 Discontinuities of Rational Expressions 04.03 Asymptotes of Rational Functions 04.035 Transformations of Rational Functions 04.04 Solving Rational Equations	
15	04.045 Transformations of Radical Functions 04.05 Rational Equations Quiz Checkpoint 3	
16	Final Exam Review ***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.