



Algebra III

Period 4 (10:54-11:47 am)

ROOM # 37

Mrs. Traci Bernardy, Instructor
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Prep: 1st Period (8:05 – 8:58 AM) **Study Hall:** 7th Period (2:12 – 3:05 PM)
Home #: 507/747-2545
School #: 507/342-5114 ext.143

This is an elective course designed to reinforce and extend many Algebra II concepts before students enroll in Pre-Calculus. The course will give students a more comprehensive understanding of mathematics and more confidence in their problem-solving ability. Topics will be dependent on the needs of the enrolled students. A special focus will be placed on mastery of simplifying and solving polynomial, rational, radical, and exponential functions. More in-depth instruction than was provided in Algebra II will be provided for series and sequences. An introduction to conic sections and Trigonometry will be included as time allows.

The course will implement a mixture of instructional techniques. Students will often work in random small groups to develop their mathematical thinking about algebraic topics. After completing the tasks, the teacher will help summarize the information, and students will be encouraged to record what they have discovered. Exercises to check the student's understanding – and the answers for those exercises – will be provided. Students will be expected to check their answers before coming to class and ask follow-up questions the next day if they have questions. Other times, a lecture/student practice format will be used. Students will still be expected to check exercises for which answers are available.

There may be a time when you have trouble with a unit or assignment. Please feel free to use all your resources to get help with these items. Ask a parent, classmate, and me if you are having trouble. I am available during my prep time, before school at 7:45 am (or earlier by appointment), and after school until 3:30 pm – but usually later. If you cannot make it during any of these times, let me know, and we'll try to find a time that works.

Satisfactory completion of this course counts as 1 credit toward graduation math requirements. No credit will be given to a student who is continually absent from the class as per the Wabasso HS attendance policy. The following is a tentative outline of our topics during this course. We may add or remove items as we progress through the school year.

Course Outline & Learner Outcomes:

(The course outline is subject to adjustment through the school year and the timeline is approximate.)

	Focus of Lessons - Learner Outcomes	Assessment	Time (in days)
Unit 1 – Expressions, Equations & Inequalities	- Students will be able to (SWBAT) solve linear equations and inequalities with multi-steps & in real-world applications. - SWBAT solve equations, inequalities, & apps involving absolute value. Graph the results. - SWBAT interpret and use interval and set notation for inequalities.	Section Quizzes Unit Exam	7

Unit 2 – <i>Linear Functions, Equations & Graphs</i>	• SWBAT recognize relations as functions. • SWBAT use the function notation of a relation and evaluate it at a given point. • SWBAT recognize & solve equations of direct variation. • SWBAT create, write, solve, graph, and interpret linear equations and use them as models. • SWBAT interpret, solve & graph piecewise relations • SWBAT recognize families of functions and use transformations to solve and graph them. • SWBAT identify parts & graph absolute value functions and inequalities.	Section Quizzes Unit Exam	12
Unit 3 – <i>Linear Systems</i>	• SWBAT solve systems of linear equations and linear inequalities. • SWBAT use linear programming to solve real world applications. • SWBAT use Matrices to solve systems.	Section Quizzes Activity Unit Exam	14
Unit 4 – <i>Quadratic Equations & Complex Solutions</i>	• SWBAT Apply multiple methods to solve quadratic equations. • SWBAT perform arithmetic with the complex number set. • SWBAT solve quadratic equations with imaginary roots. • SWBAT solve real world problems, including geometric relationships that involve quadratics.	Section Quizzes Activity Unit Exam	20
	<i>END OF QUARTER 1 (Tentative – Mid Unit 4)</i>		
Unit 12 – <i>Probability</i>	• SWBAT identify what counting method is appropriate and calculate total possible outcomes. • SWBAT calculate theoretical, experimental & conditional probabilities. • SWBAT identify and find probabilities of independent, dependent, and compound events.	Section Quizzes Activity Unit Exam	15
Unit 13 – <i>Data Analysis & Statistics</i>	• SWBAT analyze data using measures of central tendency and measures of variance. • SWBAT apply outcomes from sample data and interpret results. • SWBAT work with Binomial & Normal distributions in reporting statistical outcomes using confidence intervals and basic hypothesis testing.	Section Quizzes Activity Unit Exam	17
	<i>END OF QUARTER 2 (Tentative Location)</i>	<i>Cumulative Test?</i>	<i>Jan 10</i>
Unit 5 – <i>Polynomial Functions</i>	• SWBAT use the exponent rules to simplify monomial expressions and polynomials. • Factoring and graphing as options for solving polynomials will be explored. • SWBAT identify polynomial behaviors. • <i>(Tentative: Division of polynomials, identify potential roots of polynomial equations, using the binomial theorem to expand polynomials.)</i>	Section Quizzes Unit Exam	12

<i>Unit 6 – Radical Functions</i>	• SWBAT simplify n^{th} roots and radical values. • SWBAT convert between rational exponents and radical values. • SWBAT perform arithmetic operations with radicals. • SWBAT find inverse functions and describe the function/inverse relationship.	Section Quizzes Unit Exam	15
<i>Unit 7 – Exponential & Logarithmic Functions</i>	• SWBAT analyze and solve exponential equations. • SWBAT evaluate & solve logarithms. Converting between log and exponential, applying properties of logs (including natural log). • SWBAT apply exponential and logarithmic equations to real life applications to find solutions.	Section Quizzes Application project Unit Exam	16
	<i>END OF QUARTER 3 (Tentative Location)</i>		
<i>Unit 8 – Rational Functions</i>	• SWBAT simplify and perform arithmetic operations with reciprocal and rational functions. • SWBAT simplify complex fractions. • SWBAT apply direct, inverse, joint, and combined variation in real life applications.	Section Quizzes Unit Exam	16
<i>Unit 9 – Sequences & Series</i>	• SW know the terminology and notation used with sequences and series. • SWBAT identify a sequence or series as arithmetic or geometric. • SWBAT calculate values of a sequence or series.	Section Quizzes Unit Exam	11
<i>Unit 10 – Conic Sections</i>	• SWBAT identify conic section expressions and their corresponding graph. • SWBAT graph and write the equations for Circles, Ellipses, Hyperbolas & Parabolas. • SWBAT solve non-linear systems.	Section Quizzes Unit Exam	11
<i>Unit 11 – Trigonometry</i>	• SW know the 6 Trig ratios and how to find their values from a right triangle. • SW know the special right triangles and how to apply the Pythagorean Theorem to find missing values. • SW know how to find an angle in Radian Measure. • SWBAT use the Law of Sines and Law of Cosines to solve any triangle. • SWBAT solve Trig Equation	Section Quizzes Unit Exam	16
	<i>END OF QUARTER 4 (Tentative date)</i>	<i>Cumulative Final Exam</i>	<i>May 21</i>

CLASS PROCEDURES

All Scenarios:

- A weekly Lesson Plan will be posted on Schoology.
- The lesson we covered and Check Your Understanding problems will be posted as a Discussion on Schoology.
- SMART Board work/presentations will be posted as a .pdf in Schoology.
- The textbook and any supplemental materials are available on Schoology.
 - The text is in a folder identified as such and sorted by chapter.
 - Supplemental materials (worksheets, notes, videos, links to quizzes/exams etc.) are located in Schoology sorted into the folder for the current chapter.
- Watch both Schoology & your SCHOOL email for communication from me.
- 5-Minute Quizzes will be given as a paper quiz or online– utilizing Schoology or the Quizizz app.
- Question of the Week will be posted and collected via a Schoology.

Hybrid Learning – Scenario 2 - Placement on COVID Isolation

- You will be expected to connect via Zoom during your class period for instruction and question/answer sessions. If you are too ill, the office must be contacted.
- Zoom sessions will be recorded and posted in Schoology to also review later as needed.
- Assignments given will be treated the same as if everyone was present.
- Tests that are scheduled will, for the most part, still be given in class to those students present as scheduled and to the other group on the next day present.
- Sometimes, an exam may be switched to a Schoology online exam, you may be asked to make a presentation via flip-grid or some combination.
- For any online exam, a picture of your work must be submitted with your exam to receive credit.
- Quizzes may utilize Schoology, the app Quizizz, or be given via paper.

Distance Learning – Scenario 3 – Schoolwide Distance Learning

- You will be expected to connect via Zoom during your class period's assigned hour for instruction and question/answer sessions. I will require that I can see &/or hear you to earn attendance credit.
- Zoom sessions will be recorded and posted in Schoology for review later as needed.
- Assignments given will be treated the same as if everyone was present.
- Tests that are scheduled will be adjusted to an online exam. The format may change depending on the section we are covering at the time.
- You may be asked to present via flip-grid, do a Schoology exam, or some combination.
- For any online exam, a picture of your work must be submitted with your exam to receive credit.
- Quizzes may utilize Schoology or the app Quizizz.

E-Learning Days

- The E-Learning Assignment will be posted on Schoology by 9 AM and is due the next day in class unless otherwise noted on the assignment post. Assignments ARE COLLECTED as proof of attendance as per the school policy.
- Watch your SCHOOL EMAIL and SCHOOLOGY for communications from me.
- I will be available for questions during the normal school day hours. I can be contacted by email or my home phone. Zoom sessions can be arranged as necessary. The link to Zoom is found in Schoology.

Your grade will be determined by 5 major factors:

Unit Test scores. You may retake any test throughout the grading period, within 2 weeks of the original test date. If you would like to take advantage of this option, you need to contact me to set up a time outside of class to do so. If the retake score is higher than the original, it will be averaged with the score from your original test.

Final Exam. A cumulative test will be given at the end of the course & possibly at the end of the first semester. It will be calculated as points and be approximately 10% of the grade.

5-min Check. Quizzes with 5-6 questions on the previous lesson(s) may be utilized in this course. Your score of these quizzes will be recorded and calculated as part of your total grade.

Homework. We will correct homework assignments the following day in class. If I posted the answer key for the assignment, you are expected to check your answers with that key. I will read answers for any problems without posted answers and go through any problems on which we have questions.

Homework will be collected randomly. If I plan to grade an assignment, you will be notified in advance. Late assignments will be penalized 10% per day. They will not be accepted after 5 days. Late homework is any paper not handed in when requested – even if it is handed in later that class period. During the course, projects that require more time for completion may be assigned. A due date will be given with the projects & the late penalty will apply to these also.

Effort. Your effort in-class activities and your attitude will affect your final grade. Points for effort will be awarded at mid-term and at the end of the quarter.

Extra Credit. Available from the “Question of the Week” when posted. Each correct answer turned in with work shown, name, course name, period, and date will receive 2 points extra credit. These will be posted and turned in via Schoology. The answer must be turned in by 8:05 AM on Monday of the next week.

<u>Grading</u>	
100 – 95%	A
94 – 90%	A-
89 – 87%	B+
86 – 84%	B
83 – 80%	B-
79 – 77%	C+
76 – 74%	C
73 – 70%	C-
69 – 67%	D+
66 – 64%	D
63 – 60%	D-
59 & below	F

Classroom Expectations: All members of the class are to meet these expectations, working to the best of their ability to make this a great learning experience.

1. Be an Active Listener.

Do not socialize or cause a disruption while the teacher is instructing.

2. Do your BEST work.

3. Be ready to start class when the bell rings.

Be quiet. Be physically & mentally ready for class to begin. Bring necessary materials and completed homework assignments.

4. Respect everyone & everything in the room.

Definition of Respect: NO groaning (etc) when assigned a partner you may not like. Keep hands, feet etc to yourself, cleaning up after yourself and others, no graffiti or defacing property, and no use of offensive language or symbols.

5. NO POP OR FOOD! Water only will be allowed.

6. No Backpacks are allowed in the classroom.

7. Electronic Devices are not allowed to be used in the classroom unless you request & are given permission to use them for a specific school work activity each time you want to use them. Devices must be turned off & put away while in the classroom.

8. Phones may not be used and should be placed in the pouches upon entering the classroom. Smart Watches are not to be used and may not be worn during testing.

Consequences when our Classroom Expectations are not met:

- **First offense - Verbal Warning:** A discussion with the student, after class or otherwise individually, to be reminded of the classroom expectations. The parent will be emailed.
- **Second offense:** The student will receive a second verbal warning, and a phone call will be made to their parent/guardian about the offense.
- **Third offense:** The student will be asked to remain after class, where he/she will be issued an after-school detention with Mrs. Bernardy and reminded of the classroom expectations and discuss solutions to the issues. An email or phone call about the offense will be made to their parent/guardian.

- **Fourth offense:** The student will be referred to the administration. A parent(guardian)/student/teacher/counselor/administration meeting will be held to develop a behavior plan to address the offense.
- **Subsequent Violations:** Students who continue to exhibit negative behavior after the third violation will be dealt with individually.

Severe Clause: Any student who severely disrupts class by fighting, destroying property, refusing to follow directions, talking back to the teacher or any other behavior not conducive to a positive learning environment will be removed immediately from the classroom and sent to administration.