

2024-25 Algebra 3 CP Syllabus

Winthrop High School

Teacher: Mrs. Xu

Room: 126

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COURSE DESCRIPTION

Algebra III is a continuation of Algebra II, designed to deepen students' understanding of algebraic concepts and introduce them to more advanced topics. This course covers a range of topics, including functions, polynomials, radical and rational expressions, exponents and logarithms, trigonometry, series, and an introduction to probability and statistics. Students will engage in problem-solving activities, group work, and individual projects that emphasize real-world applications.

Quarter 1	Unit 1 Functions (4 weeks) - Transforming, interpreting, and analyzing functions in different representations. - Constructing and comparing linear, quadratic, and exponential models to solve problems. - Introduction to inverse functions. Unit 2 Polynomials (4 weeks) - Understanding the relationship between zeros and factors of polynomials. - Factoring polynomials. - Graphing polynomials using symmetry, zeros, and end behaviors.
Quarter 2	Unit 3 Radical Relations (3 weeks) - Graphing square and cube root relations. - Determining domains, solutions, and extraneous solutions. Unit 4 Rational Relations (5 weeks) - Rewriting rational expressions by performing arithmetic operations. - Direct and inverse variations. - Graphing rational relations using discontinuities, end behaviors, and asymptotes.
Quarter 3	Unit 5 Exponents & Logarithms (3 weeks) - Modeling, solving, and graphing exponential and logarithmic functions. - Investigating and discovering properties of exponents and logarithms. - Understanding the constant e and the natural logarithm. Unit 6 Trigonometry (5 weeks) - Solving right triangles and real-world problems using trigonometric ratios

	and laws. • Using the unit circle and radians to model and solve real-world problems. • Modeling, solving, and graphing trigonometric functions.
Quarter 4	Unit 7 Series (4 weeks) • Basic sigma notation. • Exploring, creating, and extending arithmetic and geometric series. Unit 8 Probability & Statistics (4 weeks) • Designing surveys, collecting data, interpreting and displaying experimental data sets. • Exploring and discovering binomial probability and normal distributions.

REQUIRED MATERIALS

- Notebook or binder with sections for notes, classwork, homework, and reviews.
- Graphing calculator.
- Pencils and pens.
- Chromebook with access to Google Classroom.

*All required materials are expected to be brought to class EVERY scheduled class period.

GRADING & ASSESSMENTS

All grades will be updated in PowerSchool within two weeks of the due date. Below you will find the weighing of each category of grades.

Classwork	15%
Homework	15%
Quiz	25%
Test	45%

Tests and quizzes will be given throughout the year. Students can expect ~3 quizzes and ~1 test each Unit. Students will be assessed through traditional quizzes and tests. Assessment dates will be clearly announced in advance.

There will be a review prior to most assessments. Being absent the day of the review is NOT an excuse for not taking the assessment. If absent the day of the assessment, students are responsible to schedule time to make up their assessment upon their return; failure to do so will result in a grade of zero.

CLASSROOM RULES & EXPECTATIONS

- Be Prepared: Bring all necessary materials to every class.
- Be Respectful: Show respect to classmates, the teacher, and the learning environment.
- Be Engaged: Participate actively in class discussions and activities.
- Be Responsible: Complete all assignments on time and make up any missed work promptly.
- No Cell Phones: Phones must be turned off and put away during class.

ATTENDANCE/PARTICIPATION

Students are expected to come to class every day with the required materials. Students are expected to participate in every dynamic of the class. Some work will be collected for grading and some will be used to help students facilitate their own understanding of the material.

HOMEWORK

Homework is a tool to help all students practice the skills and concepts learned in class in a more independent setting and effectively prepare students for upcoming assessments. Homework is expected to be completed to the best of the student's ability in a timely manner. Printed homework will be provided to students, but can also be found on Google Classroom and completed on separate paper.

MAKE-UP & LATE ASSIGNMENTS

Students are expected to maintain a high level of attendance at WHS. Assignments and assessments that are missed due to absences from class are expected to be made up. Students will have up to THREE DAYS to complete and hand in missing assignments.

PLAGIARISM

Any student who cheats/plagiarizes on an examination, or any other assignment, shall receive a zero, and may not make-up such work. While asking for help or working collaboratively with classmates is encouraged; copying classmates homework is not. Representing work from the web, software application or another person as your own is plagiarism. Students who violate these academic integrity guidelines will be privately admonished, receive a zero for the assignment and have their parent/guardian notified.

EXTRA HELP

I am available after school until 2:25 PM each day. If a student needs additional help at a different time (before school or after 2:25 PM), please email yxu@winthrop.k12.ma.us to schedule.