2024-25 Algebra 2 H Syllabus
Winthrop High School

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COURSE DESCRIPTION

Algebra 2 is an advanced high school mathematics course that builds on the foundational concepts learned in Algebra 1 and Geometry. Students will expand their understanding of functions by exploring logarithmic, polynomial, rational, and radical functions. The course also introduces trigonometric functions and their applications and covers advanced statistical methods, including probability. Emphasizing both theoretical and practical aspects, this course prepares students for higher-level math courses.

Quarter 1	Unit 1 Review Algebra I (2 weeks) • Solve equations & inequalities with various numeric representations. • Model & solve real-life problems involving linear equations & functions from multiple perspectives: analytical, graphical, numerical & verbal. Unit 2 Linear Systems of Equations (3 weeks) • Model & solve real-life problems with systems of linear equations • Interpret solutions of systems of linear equations Unit 3 Functions (3 weeks) • Perform operations & model real-life problems with functions • Create, transform & inverse various functions
Quarter 2	Unit 4 Quadratic Equations & Functions • Model & solve real-life problems with quadratic equations • Interpret & create various forms of quadratic equations • Solve quadratic functions using appropriate methods Unit 5 Polynomial Functions • Understand vocabulary & graphical behaviors of polynomials • Perform operations on polynomials • Create & describe polynomial functions

	Unit 6 Powers, Roots & Radicals ● Simplify & convert exponential & radical expressions
Quarter 3	Unit 7 Exponential Expressions & Functions ● Simplify & convert exponential & logarithmic expressions ● Model & solve real-life problems with exponential & logarithmic functions ● Interpret & create exponential & logarithmic functions Unit 8 Probability ● Model & solve real-life probability problems ● Utilize counting methods & set theory Unit 9 Statistics ● Create, utilize & interpret measures of central tendency & dispersion ● Apply algebraic modeling to data trends
Quarter 4	Unit 10 MCAS Review ● Review various MCAS topics Unit 11 Logarithmic Expressions & Functions ● Relate exponential functions to logarithmic content Unit 12 Trigonometric Functions ● Explore & utilize the unit circle for trigonometry ● Graph & transform sine & cosine functions Unit 13 Rational Functions ● Perform operations on rational expressions ● Graph rational functions, including asymptotes

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 <u>EVERY</u> 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 <u>NOT</u> 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.