AMY LYNN # ALGEBRA II - SYLLABUS **ROOM 6**

CONTACT INFORMATION:

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MY SCHEDULE:

1ST: ALGEBRA II
2ND: DUAL CREDIT MATH
3RD: ALGEBRA II
4TH: ALGEBRA II
5TH: PREP
< HIGH SCHOOL LUNCH >
6TH: DUAL CREDIT MATH
7TH: 8TH GRADE MATH

MY TEACHING PHILOSOPHY & GOALS:

I will teach my students to appreciate and utilize the analytic side of their brains as well as the artistic and creative side. By the end of the year, I want my students to confidently apply their math skills and knowledge to any problem. Ultimately, my students will always think critically and analytically about any problem presented to them in order to reach logical conclusions, both in a mathematical setting and in life. This is a college preparatory school and course; my goal is to prepare for my students for the rigor and complexity they will face in college.

CLASS RULES & EXPECTATIONS:

There's really only one rule in my classroom: **BE RESPECTFUL**. I expect students to follow all school and district rules, but mostly it just comes down to treating each other, ourselves, and our school with respect. This means coming to class prepared, ready to focus and ready to work, out of respect for the teacher, peers, and self. I will allow food, drinks, and cell phones/technology in class, so long as they do not become a distraction. As soon as something becomes a hindrance to learning for **any** student, I will issue one warning, then if the disturbance continues, the student will have to put the distraction away. If there is an issue a third time, I will take away the distraction either until the end of class or until the end of the day, depending on the situation. If a pattern arises over the semester, I reserve the right to ban the distraction from the classroom and/or take it away until the parent/guardian comes to get it. Please see the PAPA Student Handbook or visit paparts.org for a full list and description of all school rules and policies. Please take special note of the PAPA Attendance Policy; **consistent attendance is not optional**.

COURSE GRADES:

Each quarter, students' grades will be calculated using the following scale:

ASSESSMENTS:	**50%**
PROJECTS:	**25%**
HOMEWORK:	**15%**
ATTENDANCE:	**10%**

SEMESTER GRADES:

Each semester, overall grades will be calculated using the following scale:

1ST QUARTER:	**40%**
2ND QUARTER:	**40%**
FINAL EXAM:	**20%**

All students are required to take a comprehensive final exam at the end of each semester. The fall exam will include material learned over the course of the first semester.

The spring semester final exam is cumulative over the whole year and will also be considered the End of Course Exam.

CLASS STRUCTURE:

Throughout the year, the class will implement a mix of individual, paired, and group work. Students will have daily warmup (Do Now) assignments that connect to the previous topic, introduce the next topic, and give me immediate feedback on their overall understanding. Generally, when introducing a new topic, the Do Now exercise will transition into a more formal note-taking lecture structure, wherein students will be expected to take notes in their composition notebook. These class notes will be graded on completeness and accuracy (see the attached Supply List and the Grades section for more details) in periodic notebook checks. Please note that these periodic notebook checks are counted as project scores, so they can count for as much as 25% of students overall semester grades. I endeavor to keep lectures relatively short, no more than 20-30 minutes, so that students have the opportunity to attempt their assigned homework during class immediately after receiving the new information. I always give students time during class to work so they have access to me to ask any questions and get help. I will generally set aside one day a week as a "work day" wherein after they complete the Do Now assignment, students have the rest of the class to work. If students do not use this time to work, I will revoke it and move on to the next section.

It is my goal in this course to prepare students for college level content and work. I will transition from shorter to longer lectures as the year goes on, so that my students are better prepared for the type of experience they will have in college. The pace and level of difficulty of Algebra II is comparable to a freshman level college math course, so in line with PAPA's vision and mission, this course will emphasize college preparedness.

HOMEWORK:

Homework will be assigned at least 2-3 times per week. Homework is due two (school) days after it is assigned, unless otherwise stated. For example, if I assign homework on a Friday, it is due the following Tuesday. I allot two full days to complete homework so that students, after being introduced to new material, then have the opportunity to try the assignment, ask questions the next day, and then attempt it again. Especially when dealing with higher level mathematics, it's important that the brain be allowed to rest after attempting to learn new material, so I knowingly give students an extra day to "sleep on it" so they are better able to understand these difficult mathematical concepts and internalize them after their initial tries. I **strongly encourage** students to at least start their homework assignments the day they are assigned so that they don't waste the opportunity to ask for help. Homework is meant to help students practice skills, so I will only assign it when it's going to be helpful and meaningful. I believe that homework should help students learn, not just be a chore.

LATE HOMEWORK:

I do accept late homework. All assignments submitted after the due date will automatically lose 20% of the credit, so long as it is in **BEFORE** the test over that material. I will still accept homework after the test has been administered, but it will only receive 50% of the credit.

CORRECTIONS:

Students will be given the opportunity to correct their work for credit back on all assessments. Especially in mathematics, it is vital to identify and fix mistakes. On all assessments, students will receive half the credit they missed for submitting accurate corrections. For example, if a student scored a 60% on an assignment, they can submit corrections to get a final score of 80% which replaces their initial grade. **Corrections are required on all quizzes and tests** (unless it was 100%, of course). We must all learn from our mistakes! I will only accept corrections on each assignment once, so make sure you get help and get all the credit back you can.

COURSE DESCRIPTION:

The bulk of Algebra II focuses on functions: their properties, graphs, and applications. We will begin the year by reviewing those functions introduced in Algebra I and progressing all the way up to exponential, logarithmic, and even trigonometric functions before transitioning into comprehensive overviews on the basic tenets of Probability & Statistics. In all topics, students will be required to remember and understand key concepts and foundational material in order to apply, analyze, and evaluate complex mathematical problems in order to analyze real-world problems and create logical solutions.

Please see the attached copy of Webb's Depth of Knowledge and Bloom's Taxonomy; foundational material supports the higher-level learning required to understand and successfully implement advanced mathematical concepts. Please note that this progression is only an outline and is subject to change throughout the year as needed. Please also refer to the Course Schedule and check www.papalgebra.com for any updates or changes to the overall schedule.

PROGRESSION:

I. Linear Functions: Solving Systems of Linear Equations in 2 & 3 Variables.

II. Quadratic Functions: Completing the Square. Factoring. Complex Number System.

III. Polynomial Functions: Factoring. Polynomial Long Division. Synthetic Division. End Behavior. Multiplicity of Roots. Rational Root Theorem. Conjugate Root Theorem.

IV. *Properties of Exponents.

V. Exponential Functions: Growth & Decay.

VI. *Composition of Functions. Function Operations. Inverse Relations & Functions.

VII. Logarithmic Functions: Properties of Logarithms. Natural & Common Logs. Change of Base Formula.

VIII. *Properties of Exponents.

IX. Radical Functions: Rational Exponents.

X. Reciprocal Functions: Discontinuities. Asymptotes.

XI. *Rational Expressions: Simplifying. Solving Rational Equations.

XII. Rational Functions: Domain Restrictions. Horizontal & Vertical Asymptotes.

XIII. *Angles. Radians. Unit Circle. Special Triangles.

XIV. Trigonometric Functions.

XV. Probability: Experimental. Theoretical. Conditional. Independent/Dependent.

XVI. Statistics: Measures of Central Tendency. Samples. Surveys. Normal Distribution.

*These sections contain foundational information about the nature and properties of the preceding and subsequent functions and related forms to help facilitate a fuller understanding of and fluency with these more complex algebraic functions.

COMMON CORE STATE STANDARDS:

For a thorough discussion of the standards covered in Algebra II, please refer to the Common Core State Standards Mathematics Appendix A (pages 36-43), which can be accessed at: http://www.corestandards.org/assets/CCSSI_Mathematics_Appendix_A.pdf. While this course will not follow the same progression as listed in the appendix, it is a useful resource for reviewing the required standards.