

Spaulding High School
2021-2022 Course Syllabus

Course Title: Algebra 2

Department: Mathematics

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Course Description:

This is a one-semester course with a rapid progression of topics such as: recursion, functions, relations, transformations, exponential and logarithmic properties, composite and inverse functions, higher degree polynomials and quadratics. The examination of these topics is embedded in real life situations such as projectile motion and modeling. To be successful students must complete daily work and be disciplined to read, listen, and think independently.

Topics/Areas of Study/Units of Study:

See attached standards and performance indicators.

Materials/Text(s):

Some of these will be required on tests/quizzes.

- Graphing Calculator: TI-83 plus or TI-84
- 3-ring binder (2"-2½")
- Composition Book
- Pencils and erasers
- Loose-leaf Paper
- Graph Paper
- Chromebook

Replacement cost(s): No book will be given out.

Practice:

The practice will be done in-person and remotely. Assignments will be posted for students to work on on Google Classroom. For asking questions or getting clarification, students should be meeting during their class time (remote or in-person) every day regardless of their scheduled in-person time designation. We will be doing synchronous learning on Monday, Tuesday, Thursday, and Friday.

Assessment/Reassessment:

All students will do assessments online. Tests are given on Monday, Tuesday, Thursday, or Friday. Students will be required to attend a Google Meet for supervision on days they are not in-person. Assessments may involve an online test. In order to take an assessment, the review assignment MUST BE DONE.

In order to reassess, students must complete extra practice for the indicator that they need.

Academic Expectations

- Be Respectful. Not being respectful will result in a warning. If it continues, then a write up will follow.
- Bring your chromebook to in person class. We will be using it to supplement learning.
- Cell phones are to remain in pockets or bags throughout class. If there is an emergency, please let me know ahead of time. Otherwise, we will have a cell phone holder.

- If you are going to be absent from class I expect you to go to the google classroom to get the notes and the homework assignment. Please contact me if you're confused about the material and we can set up advisory time to work together.
- Every student is expected to make mistakes, but to succeed, students must learn from them.
- If you are interested in exploring a different way of doing something, feel free to try it and let me know about it! We are always open to finding new and interesting ways to work together and create activities.
- Students are expected to work with peers and teachers within the class respectfully and productively.
- If you find you're struggling with the content, I expect you to reach out to me so I can either arrange a time for us to talk or arrange some tutorial times for you with Mr. Willis in Tide Pool.
- Cheating could result in inability to earn Exemplary in the class.

List of Assessed Course Standards:

See attached list of Standards and Performance Indicators.

Algebra 2 Standards Checklist 2021-2022

| Standard | | Indicator | Current Proficiency | | Overall |
|--|---|--|---------------------|--|---------|
| | | | | | |
| A. Functions and Transformations → #1 NEEDS to be Proficient → Need 1 more to be Proficient for Proficient in standard. The rest MUST be Developing or better. | 1 | ★ Understand how transformations apply to all functions and relations | | | |
| | 2 | Composition of functions | | | |
| | 3 | Graph piecewise functions, including step functions | | | |
| B. Fun with Polynomials of all Orders → #1-2 NEEDS to be Proficient → Need 2 more to be Proficient for Proficient in standard. The rest MUST be Developing or better. | 1 | ★ Factoring Quadratics | | | |
| | 2 | ★ Identify real and complex zeros of polynomials | | | |
| | 3 | Add, subtract, and multiply polynomials | | | |
| | 4 | Factoring cubics | | | |
| | 5 | Sketch a graph showing key features and end behavior | | | |
| | 6 | Apply the Rational Root Theorem | | | |
| C. Quadratics → #1-2 NEEDS to be Proficient → Need 1 more to be Proficient for Proficient in standard. The rest MUST be Developing or better. | 1 | ★ Use quadratic formula to find real and complex roots | | | |
| | 2 | ★ Write, interpret and convert between quadratic functions in General, Factored and Vertex forms | | | |
| | 3 | Use quadratic functions to model projectile objects | | | |
| | 4 | Simplify and rationalize radicals | | | |
| | 5 | Operations with complex numbers | | | |
| D. Rational Functions → #1-2 NEEDS to be Proficient → Need 1 more to be Proficient for Proficient in standard. The rest MUST be Developing or better. | 1 | ★ Rewrite simple rational expressions using division | | | |
| | 2 | ★ Identify key features and extraneous solutions in rational functions and sketch their graphs | | | |
| | 3 | Add, subtract, multiply, and divide rational expressions | | | |

| | | | | | |
|---|---|--|--|--|--|
| F. Exponents, Exponential Functions, and Logarithms → #1-4 NEEDS to be Proficient → The rest MUST be Developing or better. | 1 | ★ Apply integer and non-integer exponent properties | | | |
| | 2 | ★ Write equations in point-ratio form, create functions to model exponential situations, and convert to general form | | | |
| | 3 | ★ Apply Log properties | | | |
| | 4 | ★ Use Logs to solve exponential equations | | | |
| | 5 | Solve exponential equations using exponent properties | | | |
| | 6 | Find inverse of functions and relations | | | |
| G. Trigonometry → #0 NEEDS to be Proficient | 0 | ★ Special right triangles | | | |
| | 1 | Extend the domain of trig functions using the unit circle | | | |
| H. Series → Need 2 or more to be Proficient for Proficient in standard. The rest MUST be Developing or better. | 1 | Partial sums for Arithmetic Series | | | |
| | 2 | Use finite geometric series to solve problems | | | |
| | 3 | Convergent Infinite Geometric Series | | | |

The **shaded standards** and ★ indicators need to be Proficient in order to receive credit for the class.

To be Partially Proficient in the course, **ALL shaded standards** plus 1 more, AND **ALL** of the ★ indicators NEED to be Proficient, with no standards/indicators at Beginning or No Evidence.

To be Proficient in the course, **ALL** covered standards MUST be Proficient.

For a *standard* to be Exemplary, the majority of indicators need to be Exemplary, with **NO** indicators below Proficient.

For a *standard* to be Proficient, the majority of indicators need to be Proficient or better, with **NO** indicators at or below Beginning.

For a *standard* to be Developing, any indicator in the standard is Beg, or less than a majority is Prof.

For a *standard* to be Beginning, any indicator in the standard is NE, or majority beginning.

Spaulding High School

Overall Course Performance Grading Guideline

| COURSE PERFORMANCE RATING | GPA Value | GRADING CRITERIA |
|---------------------------|-----------|--|
| Exemplary | 4.0 | <ul style="list-style-type: none">• All standards are Exemplary or Proficient, AND• Majority of standards are Exemplary |
| Partially Exemplary | 3.5 | <ul style="list-style-type: none">• All standards are Exemplary or Proficient, with at least one standard being Exemplary |
| Proficient | 3.0 | <ul style="list-style-type: none">• All standards are Proficient |
| Partially Proficient | 2.5 | <ul style="list-style-type: none">• All required standards are Exemplary or Proficient, AND• Majority of standards are Proficient, AND• No standards are Beginning or No Evidence |
| Developing | 2.0 | <ul style="list-style-type: none">• Majority of standards are Developing. |
| Beginning | 1.0 | <ul style="list-style-type: none">• Majority of standards are Beginning. |
| No Evidence | 0.0 | <ul style="list-style-type: none">• Majority of the standards are No Evidence. |

*Honors and AP courses would add an additional 0.33 to the GPA score.

The guideline is used to assess an overall course performance. When the guideline does not completely represent the situation, professional discretion will be used.