# Honors Pre-Calculus Description and Guidelines

Spaulding High School
Spring 2022 Course Syllabus

**Course Title: Honors Pre-Calculus**
**Department: Mathematics**
**Teacher Contact Information**:Ms. Sara Jacobs; sjacoshs@buusd.org
**Department Chair Contact Information**: Ms. Carter, ecartshs@buusd.org

**Description:** Honors Pre-Calculus is a course designed to further your mathematical education. The main focus of this course is to extend your knowledge of functions and trigonometry.  This is the only prerequisite for AP Calculus.

**Topics/Areas of Study/Units of Study:**

Unit 1 - Functions 101

Unit 2 - Trigonometry 101

Unit 3 - Trigonometric Functions

Unit 4 - Trigonometric Equations

Unit 5 - Non-Right Triangle Trigonometry

Unit 6 - Functions Strikes Back

Unit 7 - Polynomials and Rational Functions

Unit 8 - Conic Sections

Unit 9 -  Polar Coordinates

**Materials:** Students should have a
- Three ring binder
- A notebook that has three holes so that it may fit in the binder (this should be separate from the paper you use for nightly practice)
- Your own calculator (TI $83^+$ or better).
- Pencils
- Your textbook where you do your homework

**Replacement cost(s):** $65

**Practice:**
During class you should expect warm-up tasks, investigations, and practice handouts.  You will also be given practice from the book nightly that I will collect daily.  These assignments will take about 30-45 minutes and allow you to test yourself on whether you understood that day's topic.

**Assessment/Reassessment:**
During each unit you will have multiple formative assessments and one summative assessment. Quizzes are graded and feedback is written, but no score is provided because the intent is to give feedback not do the final assessment.  Each unit will have a test at the end where you will be expected to demonstrate the skills we've learned over the unit.  On *all* tests you will be allowed to use a note card of notes.  After the summative assessments happen, You will be able to reassess Performance Indicators if you would like to improve your score.  To qualify for a reassessment I expect you to turn in all homework related to that Performance Indicator adequately completed (3 or 4 as your score). See the Reassessment Directions under Logistics in the classroom.

**Classroom Expectations**:
- Cell phones are to remain in pockets or bags throughout class unless otherwise discussed.
- 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.
- Students are expected to work with peers and teachers within the class respectfully and productively.
- Every student is expected to make mistakes, but to succeed, students must learn from them.
- Supports: Advisory by appointment, after school math tutorial, and Tide Pool

**List of Assessed Course Standards:**

Honors Pre-Calculus Standards Checklist_21-22
**In order to receive credit for the course, you must be proficient in ALL standards.**
**\* = Required Indicators to be proficient**

| Standards | Code | Indicators | Proficiency | |
|---|---|---|---|---|
| A. Functions | *1. | Functions Basics and types of functions (Including Domain, Range, Function Notation, Even vs. Odd Functions, and General Properties for specific functions) | | |
| | *2. | Transformations (Including translations, diations, reflections, and absolute value transformations) | | |
| | *3. | Create and Sketch Inverse Functions | | |
| | *4. | Writing Equations for Specific Functions (Linear, Quadratic, Power, Exponential) | | |
| | *5. | Properties of Logarithms including different bases | | |
| | *6. | Solving Exponential and Logarithmic Equations | | |
| | *7. | Graphs of Polynomials including Real and Complex zeros | | |
| | *8. | Graphs of Rational Functions and Limit Notation | | |
| | 9. | Composition of Functions Including Composition of Restricted Domain | | |
| | 10. | Logarithmic and Logistic Functions | | |
| | 11. | Partial Fractions | | |
| B. Unit Circle Trigonometry | *1. | Angles in a Circle | | |
| | *2. | Value of Sine and Cosine (must show radians and degrees) | | |
| | *3. | Graphs of Sine and Cosine (must show radians and degrees) | | |
| | *4. | Understand Inverse Functions in Trigonometry | | |
| | *5. | Convert between Radians and Degrees | | |
| | 6. | Values of Sec, Csc, Tan, Cot in radians and degrees | | |
| | 7. | Graphs of Sec, Csc, Tan, Cot in radians and degrees | | |
| | 8. | Solving problems with trigonometry (Equations and Right Triangle Problems) | | |
| C. Non-Right Triangle Trigonometry | *1. | Law of Cosines and Sines | | |
| | *2. | Finding area of triangles using trigonometry | | |
| | *3. | Creating and graphing single vectors by magnitude and direction | | |

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| | | as well as by components | | |
| | *4. | Simplifying Trigonometric Identities | | |
| | 5. | Law of Sines Ambiguous Case | | |
| | 6. | Vector Addition | | |
| | 7. | Transforming and Proving Trigonometric Identities | | |
| D. Conic Sections and Polar Graphing | *1. | Graphing Polar Coordinates | | |
| | *2. | Find Intersections of Polar Curves | | |
| | *3. | Determine Types as well as writing equations for different conic sections | | |
| | *4. | Graphs and Equations of Parabolas | | |
| | 5. | Conic Sections in Polar Form | | |
| | 6. | Graphs of Limacons (includes writing equations as well as graphing) | | |
| | 7. | Cartesian Equations | | |
| | 8. | Quadratic Surfaces | | |

**Spaulding High School**
**2021-2022 Overall Course Performance Grading Guideline**

| COURSE PERFORMANCE RATING | GPA Value | GRADING CRITERIA |
|---|---|---|
| Exemplary | 4.33 | ● **All** standards are Exemplary or Proficient, **AND**<br>● **Majority** of standards are Exemplary |
| Partially Exemplary | 3.83 | ● **All** standards are Exemplary or Proficient, with at least one standard being Exemplary |
| Proficient | 3.33 | ● **All** standards are Proficient |
| Partially Proficient | 2.83 | ● **All required** standards are Exemplary or Proficient, **AND**<br>● **Majority** of standards are Proficient, **AND**<br>● **No** standards are Beginning or No Evidence |
| Developing | 2.33 | ● **Majority** of standards are Developing. |
| Beginning | 1.33 | ● **Majority** of standards are Beginning. |
| No Evidence | 0.0 | ● **Majority** of the standards are No Evidence. |