Peters Township High School  
Course Syllabus: PRECALCULUS HONORS

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| Course Information | Teacher Information |
| Course Length: Full Year  Class Location: 212  Teacher Website: wentzelsworld@educatorpages.com | Name: Renee Wentzel  Phone: 724-941-6250 ext. 5340  Email: wentzelr@pt-sd.org |

**Course Overview and Essential Skills**

This course includes an in-depth study of functions: inverse, polynomial, rational, exponential, logarithmic, and trigonometric, systems of equations and inequalities, sequences and series, conic sections, and polar coordinates, and limits. Essential skills covered will include: solving equations, graphing and analyzing functions, understanding and applying the unit circle and trigonometric functions, and exploring and analyzing patterns, conic sections, and limits. The pace of this course will be accelerated commensurate with the ability of the class. Emphasis will be placed on applications using graphing calculators.

**Course Textbook and Required Materials**

* Precalculus with Limits, A Graphing Approach, Larson, Cengage Learning, ISBN# 978-1-305-11753-2
* Online textbook: LarsonPrecalculus.com
* Required daily materials: Textbook, Three-Ring Binder, Pencil, Graphing Calculator (TI-83 Plus, TI-84, or TI-84 Plus)

**Course Outline of Material Covered:**

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| Unit or Topic | Concepts/Skills/Resources | Timeframe |
| Prerequisites and Functions | Factoring, Circles, Linear Functions, Parent Functions, Transformations of Functions, Function Operations, Composite Functions, Inverse Functions, Linear Regression  Chapter 1, Appendix B | 4 weeks |
| Trigonometric Functions | Radian and Degree Measure, Unit Circle, Right Triangle Trigonometry, Graphing Trigonometric Functions, Inverse Trigonometric Functions, Trigonometric Regression  Chapter 4 | 4 weeks |
| Analytic Trigonometry | Fundamental Identities, Verifying Trigonometric Identities, Solving Trigonometric Equations, Sum and Difference Formulas  Chapter 5 | 4 weeks |
| Additional Trigonometric Topics | Law of Sines, Law of Cosines, Vectors, Dot Products, Complex Numbers  Chapter 6 | 2 weeks |
| Linear Systems and Matrices | Solving Systems of Equations (Graphing, Substitution, Elimination), Multivariable Linear Systems, Matrices and Systems of Equations, Operations with Matrices, Inverse Matrices, Determinants, Applications of Matrices and Determinants  Chapter 7 | 4 weeks |
| Sequences and Series | Sequences and Series, Partial Sums, Binomial Theorem, Pascal’s Triangle  Chapter 8 | 3 weeks |
| Analytic Geometry | Circles, Ellipses, Hyperbolas, Parabolas, Parametric Equations, Polar Coordinates, Graphs of Polar Equations  Chapter 9 | 3 weeks |
| Limits and an Introduction to Calculus | Limits (Graphically, Numerically, Analytically), Tangent Line Problem, Limits at Infinity and Infinite Limit  Chapter 11 | 4 weeks |
| Polynomial and Rational Functions | Quadratic Functions, Polynomial Functions of Higher Order, Real Zeros of Functions, Complex Numbers, Fundamental Theorem of Algebra, Rational Functions and Asymptotes, Graphs of Rational Functions, Quadratic Regression  Chapter 2 | 3 weeks |
| Exponential and Logarithmic Functions | Graphing Exponential and Logarithmic Functions, Properties of Logarithms, Solving Exponential and Logarithmic Equations, Exponential and Logarithmic Regression  Chapter 3 | 3 weeks |
| Midterm and Final Exam Review and Assessment | Review and assessment of all PreCalculus Honors topics | 2 weeks |

\****Depending on the needs of the class or changes in the school year, the course outline is subject to change.***

**Website Reminder**

Absent a day? Get your assignment…homework is posted daily!

[**wentzelsworld@educatorpages.com**](http://www.teacherweb.com/PA/PetersTownshipHighSchool/RWentzel/)

**Teacher Grading Policy:**

* The grading scale for the district is as follows:

A 90 - 100

B 80 – 89

C 70 – 79

D 60 – 69

F 59 and below

* The overall grade for a nine-week period will be determined by dividing a student’s total points by the overall total points and multiplying by one hundred.
* Each student’s grade will consist of the following:

Tests 75 - 135 points each

Quizzes 10 – 50 points each

Class Activities 5 – 10 points each

Homework 5 points each

A midterm will be given in February and averaged into the 3rd quarter grade. A final will be given at the end of the year. It will be worth 1/9 of the overall course grade.

**Classroom Procedures and Expectations:**

* **Class Expectations:**
  + Please use a pencil – no ink may be used for any graded work.
  + Be prepared and organized for class. Bring the following daily:
    - Pencil and eraser
    - Book
    - Paper – non-perforated!
    - Three-ring binder to contain all notes, handouts, and assignments.

\*\* Notebooks are expected to be in order and neat!\*\*

* + - Graphing Calculator… **Graphing calculators are a requirement for this course.** If there is a problem with purchasing a graphing calculator, please see me ASAP, since many homework assignments will require the use of the calculators.
  + Homework/Notes
    - Notes should be taken on a daily basis.
    - **Homework needs to be completed daily.** Make sure you give EVERY problem a good attempt. Incomplete assignments will result in lower homework grades.
  + BYOD
    - When students are given the opportunity to use their own technology devices (iPads, laptops, smartphones, etc.) to support and enhance their learning (taking notes in class, participating in focus activities, placing homework assignments in their digital calendars, etc.), they must adhere to the BYOD Expectations and Guidelines and School Board Policy found online and in the Student Handbook.

### **Honor Code**

* + All academic work in this course follows the Academic Integrity Policy (#145) of the Peters Township School District.  Students are expected to maintain the Peters Township Honor Code:
    - As a student of Peters Township School District, I recognize the value of my own learning and pledge to maintain honesty and academic integrity in all that I do.  All work that I submit is my own.
  + Any student that is unsure of the expectations of an assignment should seek clarification from the teacher.
  + Upon submission of every assignment and assessment in this class, you are agreeing to comply and uphold the PTHS Honor Code.
* **Absences:**
  + When absent, it is the student’s responsibility to:
    - **Get assignments posted on the homework page of my website.**
    - Get any missed notes from a RELIABLE friend and read the textbook.
    - Make an appointment with me after doing all of the above, if help is still needed.
  + Homework:
    - Hand in the assignment that was due the day you were absent as soon as you come into class.
    - Hand in any assignments that were given on the day you were absent on the following day at the beginning of class.
  + Tests/Quizzes:
    - If you were absent on the day of an announced test/quiz, you will be expected to take the test/quiz on the day you return to classv.
    - It is your responsibility to arrange a time to make-up any quizzes/tests, if you do not want to miss class time to take the quizzes/tests.
* **Class Rules & Discipline:**
  + Class Rules:

1. Follow directions the first time given.

2. Come to class on time and prepared. **Begin working on the Focus Activity.**

3. Do not talk while I am talking or while someone else in class is talking.

4. Keep hands, feet, and objects to yourself.

5. Remain in your seat until dismissed. The bell does not dismiss you.

* Consequences:

First Offense: Warning

Second Offense: Phone call/email to parent/guardian

Third Offense: After school detention

Fourth Offense: Discipline referral to assistant principal

Cell phone and other electronic device usage (calls, texts, photos, social media, etc) are not permitted unless the student has received my permission.

**\*\*A cell phone violation during any assessment will result in a failing grade (0%) on that assessment.\*\***