

CICELY TYSON SCHOOL

Pre-Calculus Course Syllabus

Mr. Garcia 2017-18

Room 319, Period 2

Required items for course:

Textbook:

- Pre-Calculus, 7th edition, Addison_wesley

Required Supplies:

- 3 ring binder with loose leaf graph paper or graph paper notebook
- Pencils and Pens
- Graphing Calculator.

COURSE DESCRIPTION:

Pre-Calculus is designed to be the preparation for Calculus, but supports other upper-level mathematics courses such as Statistics. Pre-Calculus is the study of basic functions; identity, quadratic, cubic, rational, square root, exponential, logarithmic, trigonometric, absolute value, piecewise, and logistic functions. Each function is studied from both an analytical (pen-and-paper) approach and also a graphical approach. Solving real-world problems gives students a context for the uses of each function.

COURSE GOALS:

Students will learn to take ownership of the skills necessary for higher level mathematics. Students will develop strategies for solving real-world problems, using analytical and graphical presentations of solutions. Students will build knowledge of a variety of functions and their special properties, and learn to appreciate the interconnectedness of algebra, geometry, trigonometry, and data

Skills and Knowledge

- 1) Know what constitute a relation and function, and perform operations and transformations on functions, find domain, range, and other properties, such as increasing and decreasing intervals.
- 2) Graph, solve, and write equations for linear functions from a variety of given information.
- 3) Graph and solve sine and cosine functions and integrate this knowledge into a calculus course.

- 4) Solve right triangle and scalene triangle problems and their areas.
- 5) Graph, solve, and write equations for quadratic functions, manipulate complex solutions, and understand applications of quadratics.
- 6) Have an understanding of higher degree polynomials, their end behavior, points of inflection, y-intercept, zeros, and factoring using special patterns and the Rational Zeros Theorem in conjunction with long/synthetic division.
- 7) Be aware of several forms of rational functions and be able to create comprehensive graphs including vertical, horizontal and oblique asymptotes.
- 8) Have an understanding of exponential, power, and root functions, their applications and methods for solving these equations.
- 9) Have an awareness of the logistic function and its use in modeling real-world problems.
- 10) Appreciate and use logarithmic function in science, economics, and solving real-world problems analytically and graphically.
- 11) Identify, graph and solve problems from analytic geometry, including circles, parabolas, ellipses and hyperbolas.

General Classroom Procedures

Student Behavior Policies and Expectations:

1. **BE IN CLASS ON TIME EACH DAY.**
2. **NO FOOD OR DRINKS IN CLASSROOM, EXCEPT WATER.**
3. **NO DESK VANDALISM/GRAFFITI.**
4. **SHOW RESPECT TO OTHERS.**
5. **RESTRICTION OF CERTAIN ELECTRONIC DEVICES (Cell Phones)...**
- 6.

Classroom & Academic Policies & Expectations

1. **COME TO CLASS PREPARED.**
2. **ALL WORK IS TO BE DONE IN PENCIL**
3. **KEEP COURSE ASSIGNMENTS ORGANIZED:**
4. **'HONESTY IS THE BEST POLICY'. (No Cheating)**
5. **DO YOUR HOMEWORK EACH AND EVERY NIGHT**
6. **TAKE OWNERSHIP OF YOUR OWN ACADEMIC FUTURE:**

Grading Policy :

90-----100	A
80-----89	B
70-----79	C
60-----69	D
Below 60	F

(In cases, where the letter grade is affected I will always 'round up'. Ex: 89.5% = A)

Grade Components:

Tests	35%
Performance task	15%
Project	15%
Homework/Labs	15%
Portfolio	10%
Notebook	5%
Class Participation	5%

MAKE-UP WORK POLICY FOR TESTS:

➤ *My policy for Tests is the following:*

If a student is absent on the day of a test, they will a second version of the test, which is considered the make-up version of the test. These will be taken before or after school. If a student has to take the 're-take' version of the test, there will be no re-take option for that chapter's test.

Grading of tests (using categorical grading system):

Categorical grades are as follows:

- ✓ **5 – Extremely Well-Qualified (usually corresponds to a 105%)**
- ✓ **4 – Well Qualified (usually corresponds to a 92% or 95%)**
- ✓ **3 – Qualified (usually corresponds to an 82% or 85%)**
- ✓ **2 – Possibly Qualified (usually corresponds to a 70% or 75%)**
- ✓ **1 – Unqualified (corresponds to a 60%)**

Scoring of Free Response Questions:

- ✓ All Free Response Questions will be scored a 0-4 scoring system:
- ✓ The scores mean the following:
 - **4 – Complete Response**
 - **3 – Substantial Response**
 - **2 – Developing Response**
 - **1 – Minimal Response**
 - **0 – Blank or No Response**

Pre- Calculus Course Outline

- Chapter 1: students study functions and their properties. Topics of study include parent functions, combinations of functions, inverses of functions, and transformations.
- Chapter 2: trigonometric functions are applied to real world situations. Connections are made to the unit circle and students analyze trigonometric and circular functions.
- Chapter 3: students simplify expressions and prove identities using trigonometric functions. Students also use the law of sines and the law of cosines to solve problems.
- Chapter 4: students extend their understanding of rational functions from Algebra 2.
- Chapter 5: students extend their understanding of exponential and logarithmic functions from Algebra 2.
- Chapter 6: students apply vectors and parametric functions to real world situations.
- Chapter 7: students explore different aspects of discrete mathematics, including counting principles, the binomial expansion theorem, and sequences and series.