



**Course Title:** Pre Calculus  
**Instructor:** Mr. Braden Ballantyne  
**Instructor Availability:** Any day at lunch. After school by appointment  
**Instructor Contact:** [bballantyne@gomperscharter.org](mailto:bballantyne@gomperscharter.org)  
(949)302-8890

## Course Description:

Pre-Calculus is a fourth year mathematics course designed to prepare students for college-level mathematics, especially in calculus. Core topics are a combination of Trigonometry and Mathematical Analysis as described in the California Mathematics Framework. The foundation of this course combines many algebraic, geometric and trigonometric concepts in order to expand their mathematical reasoning used to solve problems as well as strengthen their comprehension of problems. The use of scientific and graphing calculators will be utilized so that students may acquire, interpret and verify solutions to problems.

In addition to the base mathematical skills, this course focuses on skills necessary to solve real-world problems; expressing through oral and written communication their comprehension of math concepts with correct notation; using graphing utilities to visualize, solve, interpret and verify results; recognizing equivalent representations of the same concept; thoroughly explaining the use of problem-solving approaches to investigate and understand mathematical content; demonstrate the ability to apply the process of mathematical modeling to real-world problem situations, and proving mathematical assertions by constructing proofs including indirect proofs and proofs by mathematical induction.

## GPA Grading Guidelines:

Category	Grading Criteria	Percentage
Classwork	Students are expected to compile daily notes in their course notebook. In addition, daily prelude tasks will be assigned at the beginning of class. Completion of these tasks will be monitored daily with a cumulative grade assigned each week. Classwork also includes assignments and other work given in class.	30%
Demonstrations of Learning	This course consists of 12 units. Units 01-11 will end with a comprehensive unit test graded on a standard 100 point scale. The course will conclude with a Statistics unit.	35%



	Students will complete a project requiring them to collect/analyze data and present their findings.	
Homework/Independent Learning	Students will be assigned homework on a daily basis as indicated on the unit summary and assignments document that will be distributed at the beginning of each unit.	10%
Quarter Finals	Four Quarter Finals will be given throughout the year. Each is a cumulative test that covers all content from the 9 week quarter.	25%

**Prerequisites:** Integrated Math I, Integrated Math II, Integrated Math III

**Course Materials:** This course requires significant use of several internet based tools. (Google Classroom, DESMOS graphing tool and calculator, IXL web based skills practice and electronic versions of textbooks and reading materials.) Students are also expected to bring paper, pen, pencil, and their interactive student notebook (ISN) to school everyday.

**Course Structure:** This course will be a mixture of lecture based instruction with a heavy emphasis on student lead mathematical investigations. Student work will be structured to facilitate development of Mathematical Practice Standards as follows:

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

**Course of Study:**

The following table summarizes each unit of this course. A detailed pacing guide containing specific dates, topic descriptions and common core standards can be found in google classroom. Detailed unit plans will be given to students at the beginning of each unit throughout the year.

Unit Name	Topics	Estimated Time Line
01 - Foundation Skills Review	1.1 Linear Relationships review 1.2 .Point Slope Form 1.3 Solving Equations 1.4 Solving Absolute Value Equations 1.5 Linear Inequalities 1.6 Absolute Value Inequalities Key Assignments: End of Unit Exam	09/05/17 - 09/20/17
02 - Functions	3.1 Functions Definition and Notation 3.2 Operations on Functions 3.3 Function Composition 3.4 Inverse Functions 3.5 Piecewise Functions 3.6 Function Families and Transformations Key Assignments: End of Unit Exam	9/21/17 - 10/11/17
03 - Radical Functions	3.1 Simplifying Radical Expressions 3.2 Radical Functions 3.3 Solving Radical Equations Key Assignments: End of Unit Exam	10/12/17 - 10/20/17
04 - Quadratic Functions	4.1 Quadratic Function and Factoring Review 4.2 Quadratic Formula Review 4.3 Converting between Standard form and Vertex 4.4 Quadratic Graphs 4.5 Complex Numbers and Operations 4.6 Quadratic Modeling Key Assignments: End of Unit Exam	10/23/17 - 11/17/17
05- Polynomial Functions	5.1 Polynomial function definition and properties 5.2 Operations on Polynomial Functions 5.3 Polynomial Division 5.4 Finding All Roots Key Assignments: End of Unit Exam	11/27/17 - 12/15/17
06 - Rational Functions	6.1 Fraction Frenzy 6.2 Rational Function definition and properties 6.3 Multiplying and Dividing Rational Expressions 6.4 Adding and Subtracting Rational Expressions Key Assignments: End of Unit Exam	01/09/18 - 01/31/18



07 - Exponential Functions	7.1 Review Rules for Exponents 7.2 Exponential Function Definition and Properties 7.3 Modeling Growth and Decay 7.4 Financial Applications 7.5 Discovering and Using Euler's Constant e. Key Assignments: End of Unit Exam	02/01/18 - 02/14/18
08 - Logarithmic Functions	8.1 Definition of Logarithms 8.2 Applications for Log functions 8.3 Properties of Logs 8.4 Solving Log equations 8.5 Solving Exponential Equations Key Assignments: End of Unit Exam	02/15/18 - 03/09/18
09 - Trigonometry	09.1 Trigonometry Fundamentals Review 09.2 Application Problems 09.3 Special Right Triangles 09.4 Unit Circle 09.5 Graphs of Trig Functions 09.6 Trig Identities Key Assignments: End of Unit Exam	03/09/18 - 04/20/18
10 - Geometry	10.1 Properties of angles and parallel lines 10.2 Triangle Congruence 10.3 Triangle Similarity 10.4 Using Congruence and Similarity 10.5 Deriving Area and Volume Formulas 10.6 Angle Relationships and Circles 10.7 Segment Relationships and Circles Key Assignments: End of Unit Exam	04/23/18 - 05/23/18
11 - Statistics	11.1 Sampling and Survey Methods 11.2 Measures of Central Tendency 11.3 Normal Distributions and Standard Deviation Key Assignments: Statistics Project	05/24/18 - 05/31/18

### Course Specific Student Expectations:

THERE ARE NO RETAKES/MAKEUPS of UNIT TESTS. Students who miss a test will receive a score of zero unless I am notified two days in advance (In writing or by email. Verbal notification DOES NOT COUNT.) This is intended to prepare you for college.

All other work is due prior to the end of the unit. No unit work will be accepted after a unit test.

### Accommodations/Modifications and Supports:

Any student who requires accommodations, modifications or additional supports should contact me as early as possible so that we may arrange accommodations, modifications and supports.



## **GPA Student Expectations**

**School-wide Attendance:** All students are expected to be punctual and in their classroom seat, ready to learn for each day. Under California law (Ed. Code 48200) all children between the ages of six and eighteen are required to be enrolled and in regular attendance at school. GPA families know that school attendance is the critical first step to make sure that each student receives an education that will help them on their path to college. Students cannot learn what they need to be prepared for the next grade level, if they are not in school. The more absences from school a student has, the more they fall behind in their classes and the more difficult it will be to make it to college.

**Planner Use:** All students are expected to write all assignments in their GPA planner daily. Your first GPA planner will be provided by the school to support organization and time management.

**Homework Completion:** As a school working toward college preparation, all GPA students are expected to complete their daily/weekly assignments. Students who fail to complete their homework assignments on time, and are unexcused, will be required to attend lunch and after school tutoring support daily until completed. Until all assignments are completed, students may not be eligible for athletics, clubs, and other extracurricular activities.

**Electronic Device Policy:** Cell phones, smart watches, and other electronic communication devices that can send and/or receive data are not permitted to be visible, heard, or used in any manner during school hours except by approval of school authorities. Any violation and/or disruption of the learning process will result in the confiscation of the item. The parent/guardian must pick up the confiscated item from the Office of Student Conduct or the teacher.

**Computer/Internet Usage Policy:** Students may not use computers and/or the GPA network without proper adult supervision. The teacher/staff will choose resources on the Internet that are appropriate for classroom instruction and/or research for the needs, maturity, and ability of their students.

### *Acceptable Use-*

- Access to any site that provides information relevant to current class assignments
- Access to college or university websites
- Use of teacher approved educational software (games, instructional tools, etc.)

**Academic Integrity:** Honest behavior is an expectation for all students at Gompers Preparatory Academy. Our goal is to create and maintain an ethical academic atmosphere. Acts of academic dishonesty that will not be tolerated at GPA are listed below:



- Cheating on any classroom assignment, test, or quiz
- Plagiarism - copying or representing another's ideas, words, or work as one's own, without properly citing the source. Plagiarism includes the misuse of published material, electronic material, and/or the work of other students. The original writer who intentionally shares his/her work for another to copy, without the permission of the teacher, is also engaged in plagiarism.
- Fabrication (any falsification or invention of date, citation, or other authority in an assignment); theft or alteration of materials
- Unauthorized collaboration
- Unauthorized use of electronic devices

Students found in violation of GPA's Academic Integrity Policy will be disciplined appropriately which may lead to formal suspension. Consequences for offenses may include, but are not limited to, detention, *lowering of academic and citizenship grade and/or suspensions/exclusion from extracurricular activities.*

### **Standards/Format for Writing Papers - MLA Format:**

The standard format for all papers follows the MLA formatting rules:

1. Typed, double-spaced: TIMES NEW ROMAN, 12 font, including title
2. Heading: 4 lines - UPPER LEFT corner
  - Student name: "Sammy Gompers"
  - Teacher name: Ms. Teacher
  - Course name, period: English I, Period 3
  - Date 06 February 2009
3. All pages numbered: upper right corner, last name and page number; no punctuation, no "p." or "pg."
4. Title: centered, upper and lower case
5. Work Cited/ Documentation Format: It is necessary to credit any source that is used in a paper or project. Plagiarism is considered cheating. All sources must be documented. Citing sources in a paper must be thorough and accurate. MLA formatting for in text citations and works cited is mandatory

### **Important Dates:**

Quarter 1:

- Q1 Finals Week: October 23rd and 27th
- Parent Conferences: October 23rd - 27th
- End Date: October 30th

Quarter 2:



# GOMPERS PREPARATORY ACADEMY *A UCSD Partnership*

1005 47th Street, San Diego, CA 92102 p. (619) 263-2171 f. (619) 264-4342 [www.gompersprep.org](http://www.gompersprep.org)

- Q2 Finals Week: January 22nd - 26th
- Parent Conferences: January 16th - 22nd
- End Date: January 31st

## Quarter 3:

- Q3 Finals Week: April 9th - 13th
- Parent Conferences: April 16th - 20th
- End Date: April 23rd

## Quarter 4:

- Q4 Finals Week: May 29th - June 1st
- End Date: June 26th

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Student Signature : \_\_\_\_\_ Parent/Guardian Signature: \_\_\_\_\_

Date: \_\_\_\_\_





