NATIONAL UNIVERSITY VIRTUAL HIGH SCHOOL

AN AFFILIATE OF THE NATIONAL UNIVERSITY SYSTEM

Course Syllabus

Syllabus Welcome to Pre-Algebra B!

This course focuses on developing fluency with rational numbers and proportional relationships. Students will extend their elementary skills and begin to learn algebra concepts that serve as a transition into formal Algebra and Geometry.

Students will learn to think flexibly about relationships among fractions, decimals, and percents. Students will learn to recognize and generate equivalent expressions and solve single-variable equations and inequalities. Students will investigate and explore mathematical ideas and develop multiple strategies for analyzing complex situations. Students will analyze situations verbally, numerically, graphically, and symbolically. Students will apply mathematical skills and make meaningful connections to their life experiences.

Pre-Requisites: Math 6

Course Objectives At the end of this course students will be able to

1. Solve multi -step equations and inequalities containing fractions or decimals.
2. Solve equations with variables on both sides.
3. Solve a formula for a given variable.
4. Determine whether a relation is a function.
5. Find solutions of equations with two variables.
6. Graph linear equations with two variables.
7. Find the slope of a line.
8. Write a function rule.
9. Solve systems of linear equations by graphing.
10. Graph linear inequalities and systems of linear inequalities.
11. Name and classify basic geometric figures.
12. Determine whether triangles are congruent.
13. Find circumferences.
14. Find central angles and make circle graphs.
15. Construct a congruent segment or angle, segment bisectors and angle bisectors.
16. Graph a translation, reflection or rotation of a geometric figure.
17. Find areas of rectangles, parallelograms, triangles, trapezoids, circles and irregular figures.
18. Find surface areas and volumes of prisms, cylinders, pyramids, cones and spheres.
19. Find square roots of numbers.
20. Classify real numbers.
21. Use the Pythagorean Theorem, the Distance Formula and the Midpoint Formula.
22. Use the relationships in 45°-45°-90° and 30°-60°-90° triangles.
23. Find trigonometric ratios in right triangles.
24. Make and analyze box-and-whisker plots.
25. Calculate probabilities of independent and dependent events.
26. Find experimental probability.
27. Use permutations and combinations.
28. Describe number patterns with arithmetic or geometric sequences.

29. Graph quadratic and absolute value functions.
30. Add, subtract and multiply polynomials.

Curriculum The curriculum is based on the National Council of Teachers of Mathematics Standards for School Mathematics and the California State Board of Education Mathematics Content Standards for Algebra, Geometry, Trigonometry and Probability and Statistics.

The National Council of Teachers of Mathematics Standards for School Mathematics are listed here:

1. Number and Operations
2. Algebra
3. Geometry
4. Measurement
5. Data Analysis and Probability
6. Problem Solving
7. Reasoning and Proof
8. Communication
9. Connections
10. Representation

This course was developed with the California State Board of Education Mathematics Content Standards.

Textbook and Class Supplies The course uses Prentice Hall Mathematics, Pre-Algebra textbook and supporting materials. Students will need to have a copy of this textbook and/or web access to the Interactive Textbook in order to complete this course. Additional materials the student will need include a folder, or similar method of organizing work, with an adequate supply of ruled and/or graph paper and pencils, and a scientific or graphing calculator.

Course Expectations Before beginning, students will take a Learning Outcomes Assessment. This pre-test will help the student and instructor determine how to focus efforts to successfully complete this course. Each week students will be expected to do the required reading in the textbook or interactive textbook, explore the topic lectures which include illustrated examples and interactive activities, complete the assignments by solving problems, attend at least one of the two one-hour chat sessions to communicate both verbally and in writing with the instructor and other students synchronously, answer questions asynchronously on the discussion board, and demonstrate understanding of the week's material through a multiple choice and free-response test. At the end of the course, students will complete a final exam and submit two projects of their choice.

Students will be working independently and communicating with their classmates and instructor in several ways. Students are encouraged to organize their folder in a way that will aid them in being able to complete work and access this information for assignments, discussions, test preparation and projects. Students will need to properly log in to be able to submit assignments and communicate using the chat tool and discussion board. Students will be expected to attend chats at set times but will structure their own time to complete and submit all assignments, discussion responses and tests by the end of each week. Points will be deducted for late work. Active participation in the course includes the following each week: attending one scheduled chat, exploring lecture topics, doing required

reading, completing and submitting assignments, submitting discussion responses and checking or responding to classmate and instructor responses on the discussion board, and taking and submitting a test. Students should expect to spend between ten and fifteen hours a week to complete this course. Specific details of how to log in properly, due dates, scheduled chat times and instructor contact information will be made available to the student upon registration for the course.

Parents are encouraged to follow student progress. They can preview the lessons, check their child's work and view his/her grade. Parents will be notified three times during the course of their child's progress. Parents, and students, can contact the instructor at any time and receive a response within twenty-four hours.

Grading Criteria
In addition to assignments and tests, students are expected to read all materials, do all practice problems, and follow all links to off-site simulations and activities. Grading will be based on assignments, participation, exams, and the final project.

Grading Policy

Grading Scale
In addition to assignments and tests, students are expected to read all materials, do all practice problems, and follow all links to off-site simulations and activities. Grading will be based on assignments, participation, exams, and the final project.

Letter Grade	Percentage Earned
A	95%+
A-	90% - 94.9%
B+	87% - 89.9%
B	84% - 86.9%
B-	80% - 83.9%
C+	77% - 79.9%
C	74% - 76.9%
C-	70% - 73.9%
D+	67% - 69.9%
D	64% - 66.9%
D -	60% - 63.9%
F	59% and lower

NUVHS Expected Schoolwide Learning Results (ESLRs):

It is anticipated that NUVHS students will be:

Engaged Learners

1. Demonstrate self-directed learning skills such as time management, and personal responsibility through the completion of course requirements
2. Develop an understanding of their own preferred learning styles to enhance their overall academic potential
3. Incorporate effective and relevant internet and multimedia resources in their learning process to broaden their knowledge base

Critical Thinkers

1. Effectively analyze and articulate sound opinions on a variety of complex concepts
2. Illustrate a variety of problem-solving strategies that strengthen college preparation and workforce readiness
3. Formulate a framework for applying a variety of technology and internet-based research to enhance information literacy and collaborative thinking

Effective Communicators

1. Demonstrate awareness and sensitivity to tone and voice in multiple forms of communication
2. Express concepts and ideas in a variety of forms
3. Enhance communication skills through the use of media rich or other technology resources

Global Citizens

1. Appreciate the value of diversity
2. Understand the range of local and international issues facing today's global community
3. Demonstrate awareness of the importance of cultural sensitivity and social responsibility in the 21st century