

Precalculus Honors

(MVCC Dual Credit Course - MA150)

Classroom Expectations and Syllabus

Welcome to Precalculus Honors. This course bridges topics introduced in Algebra2 to Calculus. Over the course of this year you will extend your knowledge of functions, trig topics and also be exposed to new and interesting concepts, such as matrices, limits and derivatives.

Clinton High School is teaming with Mohawk Valley Community College to offer the opportunity to receive SUNY credit for successful completion of their course requirements. The requirements to receive credit include an appropriate placement exam result (which most of you took in June) and a grade of C or above for the course. If these requirements are met, at the end of the school year the student can obtain a transcript from MVCC showing the completion of Precalculus. By fulfilling the requirements to receive SUNY credit for Precalculus, the student is automatically eligible to receive dual credit after the completion of AP Calculus.

COURSE OUTLINE – see attached.

MATERIALS:

- 3-ring binder for notes and handouts (or spiral notebook for notes and folder for handouts)
- Loose-leaf filler paper.
- PENCIL and good eraser
- Graphing calculator (TI83 Plus or better)

STUDENT RESPONSIBILITIES:

The student is responsible for his/her own success in the learning process. He/she should be actively involved in the learning process and should behave appropriately for a learning environment.

- The student is responsible for attending class every day. In the event that you are absent, any handouts given in your absence will be located in a folder near the door.
- The student is responsible for arriving to class on time.
- The student is responsible for remaining quiet and on task during class time so as not to disrupt the learning of other students. (This includes NOT using your cell phone for any reason, other than when instructed by the teacher.)
- The student is responsible for bringing to class all necessary materials (handouts, paper, pencil, calculator, etc.)
- The student is responsible for completing all assignments, including quizzes and tests.
- The student is responsible for participating in all class discussions and question-and-answer sessions.
- The student is responsible for arranging to take make-up quizzes and tests in a timely manner.

BASIC CLASSROOM RULES

- 1. Be Polite**
- 2. Be Prepared**
- 3. Be Prompt**
- 4. Be Positive**
- 5. Be Productive (Try first, then ask questions)**

GRADING SYSTEM

You will receive points for tests, quizzes, homework, and classwork. When quarter grades are calculated your total points earned will be divided by total possible points.

Daily homework will be checked regularly, either by collecting or on-the-spot quiz taken directly from the homework. Any classwork packets assigned will be collected and graded for accuracy.

The 2nd quarter will include the midterm examination grade, which will be counted as 1/3 of the 2nd quarter grade. The final grade for the class (in June) will consist of the average of 5 parts – the four (4) quarter grades plus the final examination grade. There will be a final exam in this course and will be administered during finals week in June.

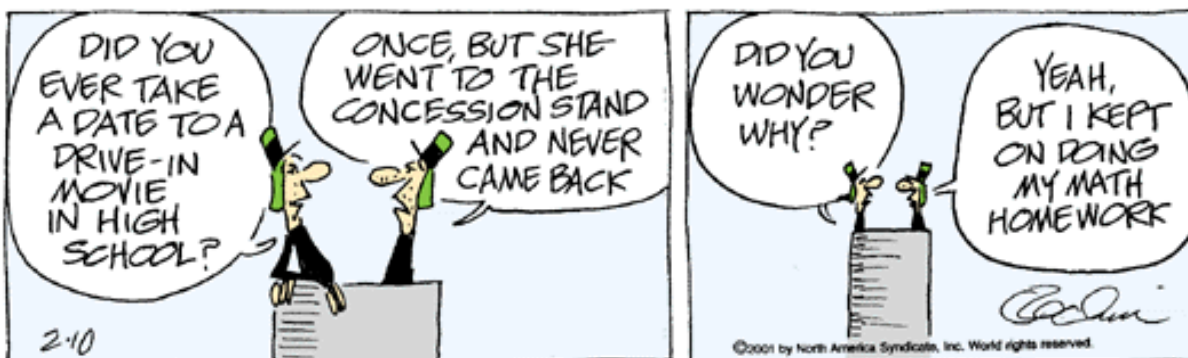
Homework is a crucial part of the learning process. It is NOT optional. Homework will be checked regularly. Points will be awarded for completed homework, if checked. No late checked homework will be accepted. You are responsible for work that is assigned for homework as it may appear on the unit test.

REMIND

I am asking all students to sign up to my Remind account. This will give me the ability to send you messages via your cell phone. This will be used to give updates to any assignments or special messages, for example, if I decide to postpone a quiz/test. I will be handing out instructions on how to sign up during class. Your parents will also be able to sign up to receive these same messages.

ADDITIONAL HELP AND GUIDANCE

If you need or want extra help, you are encouraged to make arrangements to meet with me. I am available during planning periods (2, 3 and 9) and after school. Please let me know ahead of time so that I will expect you. If you are coming from a study hall, you are required to get a pre-signed pass from me before you will be allowed to leave your study hall.



PRECALCULUS HONORS COURSE OUTLINE

Mrs. Dunn

Unit 1 - Trigonometric Functions

- ✓ Right Triangle Trigonometry
- ✓ Radian and Degree Measure
- ✓ Trig Functions: The Unit Circle
- ✓ Graphs of Sine and Cosine Functions
- ✓ Graphs of Tangent and Inverse Trig Functions
- ✓ Laws of Sine and Cosine

Unit 2 - Trigonometric Identities and Equations

- ✓ Trigonometric Identities
- ✓ Verifying Trigonometric Identities
- ✓ Solving Trigonometric Equations
- ✓ Sum and Difference Identities
- ✓ Multiple-Angle and Product-to-Sum Identities

Unit 3 - Vectors

- ✓ Introduction to Vectors
- ✓ Vectors in the Plane
- ✓ Dot Products and Vector Projections

Unit 4 - Functions from a Calculus

Perspective

- ✓ Functions
- ✓ Analyzing Graphs of Functions (including piecewise functions)
- ✓ Continuity, End Behavior, and Limits
- ✓ Extrema and Average Rates of Change
- ✓ Parent Functions and Transformations
- ✓ Function Operations and Composition of Functions
- ✓ Inverse Relations and Functions

Unit 5 - Power, Polynomial & Rational Functions

- ✓ Power and Radical Functions
- ✓ Polynomial Functions of Higher Degree
- ✓ The Remainder and Factor Theorems
- ✓ Zeros of Polynomial Functions
- ✓ Rational Functions
- ✓ Graphs of Rational Functions
- ✓ Nonlinear Inequalities

Unit 6 - Exponential & Log Functions

- ✓ Exponential Functions and Their Graphs
- ✓ Logarithmic Functions and Their Graphs
- ✓ Properties of Logarithms
- ✓ Solving Exponential and Logarithmic Equations
- ✓ Exponential and Logarithmic Models

Unit 7 - Systems of Equations & Matrices

- ✓ Multivariable Linear Systems and Row Operations
- ✓ Matrix Multiplication, Inverses, and Determinants
- ✓ Solving Linear Systems Using Inverses and Cramer's Rule
- ✓ Partial Fractions
- ✓ Linear Optimization

Unit 8 - Sequences and Series

- ✓ Sequences, Series and Sigma Notation
- ✓ Arithmetic Sequences and Series
- ✓ Geometric Sequences and Series
- ✓ Mathematical Induction

Unit 10 - Polar Coordinates and Complex Numbers

- ✓ Polar Coordinates
- ✓ Graphs of Polar Equations
- ✓ Polar and Rectangular Forms of Equations
- ✓ Polar Forms of Conic Sections
- ✓ Complex Numbers

Unit 11 - Limits and an Intro to Calculus

- ✓ Introduction to Limits
- ✓ Estimating Limits Graphically (including piecewise functions)
- ✓ Evaluating Limits Algebraically
- ✓ Tangent Lines and Velocity
- ✓ Limits at Infinity and Limits of Sequences
- ✓ Derivatives