

# *Concepts in Math* Mrs. Dunn ([mdunn@ccs.edu](mailto:mdunn@ccs.edu))

Course Syllabus

Clinton High School

Concepts in Math is a continuation of the fundamentals of mathematics and is appropriate for students whose future college programs do not require a mathematics sequence. It includes such topics as problem solving, logic, geometry, statistics, and consumer mathematics. It develops problem solving skills with an emphasis placed on applications.

This course is a one-semester (two-quarter) course. 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. An appropriate placement test result or the completion of Introduction to College Mathematics is required. A passing grade on the final as well as a grade of C or above for the course will result in receiving a transcript from MVCC that shows the completion of Concepts in Mathematics (MA108).

## **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 in 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, pen, 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
- The student is responsible for being their own advocate; to ask questions when it is necessary to understand what is being taught and to speak to Mrs. Dunn to arrange for extra help when necessary. (see Additional Help and Guidance below)

## **CLASSROOM RULES**

- 1. Be Kind. No put-downs!**
- 2. Be Prepared**
- 3. Be Prompt**
- 4. Be Positive**
- 5. Be Respectful**
- 6. Be Productive (Try first, then ask questions)**

## **MATERIALS:**

- 3-ring binder for notes and handouts (or spiral notebook and folder for handouts)
- Loose-leaf filler paper.
- **PENCIL** and good eraser
- Calculator
- Internet access is highly desirable. Most notes and blank homework sheets will be available on Mrs. Dunn's website.

## **GRADING POLICY**

You will receive points for tests, quizzes, homework, and classwork. When quarter grades are calculated the different categories will be weighted by a percentage as follows:

|                    |     |
|--------------------|-----|
| Tests/quizzes      | 60% |
| Homework           | 20% |
| Classwork/Projects | 20% |

Daily homework will be checked and/or collected. Since this course is a one-semester course, the final grade will be calculated the average of 5 parts – 3<sup>rd</sup> quarter grade is counted two-fifths, the 4<sup>th</sup> quarter grade is counted two-fifths and the final examination grade is counted one-fifth. There will be a final exam in this course and will be administered in June during exam week.

## **ADDITIONAL HELP AND GUIDANCE**

It is your responsibility to make sure that you understand the assigned homework problems. That means seeking out other classmates, the instructor, or others as needed. Because new material generally builds off previous topics, *do not wait until it is too late to seek help.*

If you need or want extra help, you are encouraged to make arrangements to meet with me. I am available during planning periods (periods 2, 3, and 8) 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 will need a pre-signed pass from me to show your study hall teacher.

**COURSE OUTLINE:** See Attached (subject to change)

# Concepts in Math

Problem solving will be revisited throughout the semester with material appropriate word problems. Use multiple teaching techniques to connect graphical, numerical and algebraic representations of problems.

1. Problem Solving and Critical Thinking
  - a. Inductive and deductive reasoning
  - b. Exploring number patterns
  - c. Estimation, graphs, and mathematical models
  - d. Problem solving
2. Logic
  - a. Statements, Negations, and Quantified Statements
    - i. Identify English sentences as statements
    - ii. Form the negation of a statement
    - iii. Translate symbolic form of to English
    - iv. Translate from English to symbolic form
    - v. Write negations of quantified statements
  - b. Compound Statements and Connectives
  - c. Truth Tables
    - i. Use the definitions of negation, conjunction, and disjunction
    - ii. Create truth tables for statements involving two variables
    - iii. Determine equivalence of statements using truth tables
3. Consumer Mathematics
  - a. Percent Increase/Decrease
    - i. Convert from fractions to decimals to percents
    - ii. Solve applied problems involving percent increase/decrease
  - b. Simple Interest
    - i. Calculate simple interest
    - ii. Use future value formula
  - c. Compound Interest
    - i. Use compound interest formula
    - ii. Calculate present value
    - iii. Compute annual yield
4. Geometry
  - a. Points, Lines, Planes, and Angles
    - i. Understand points, lines, and planes (in geometry)
    - ii. Solve problems involving angle measure
    - iii. Solve problems involving angles formed by parallel lines and transversals
  - b. Triangles
    - i. Angle relationships in triangles
    - ii. Similar triangles
    - iii. Pythagorean Theorem
  - c. Polygons and Perimeter
    - i. Characteristics of polygons
    - ii. Sum of the polygon's angles
    - iii. Find polygons' perimeters

- d. Area and Circumference
    - i. Find area of plane regions and circles
    - ii. Find the circumference of a circle
  - e. Volume
    - i. Use volume formulas to compute volume of three-dimensional figures
5. Statistics
- a. Sampling, Frequency Distributions, and Graphs
    - i. Describe populations
    - ii. Select appropriate sampling technique
    - iii. Visual displays of data
  - b. Measures of Central Tendency
    - i. Determine mean, median, mode, and midrange
  - c. Measures of Dispersion
    - i. Determine the range for a data set
    - ii. Determine the standard deviation for a data set
  - d. Normal Distribution
    - i. Characteristics of normal distribution
    - ii. Find scores at a specified standard deviation from the mean
    - iii. Z-scores
    - iv. Solving problems with normal distribution