Senior Math*
Curriculum Guide
(Special Education Elective Class)

- 5 Credits
- Written Summer 2007/Revised March 2008
- Senior Statistics is designed for senior special education students as an elective class who upon graduation are going to enroll in a post-secondary school.
- The curriculum and course objectives are followed; however, the student's Individualized Education Plan dictates any accommodations or instructional strategies utilized.
- High Point Regional High School's curriculum and instruction are aligned to the state's Core Curriculum Content Standards and address the elimination of discrimination by narrowing the achievement gap, by providing equity in the educational programs, and by providing opportunities for students to interact positively with others regardless of race, creed, color, national origin, ancestry, age, marital status, affectional or sexual orientation, gender, religion, disability, or socioeconomical status.
- Students will be using a wide array of materials including teacher made worksheets, teacher made assessments, *Fantasy Football and Mathematics* text and student workbook, *Algebra* and *Pre Algebra* texts, as well as other materials deemed necessary by the instructor.
- Incorporated into the curriculum will be the use of newspapers, magazines, the Internet, graphs, word processing, as well as other technology deemed necessary by the instructor.

Senior Math (Revised 3/08)
Course Outline

Unit 1: Number Sense and Patterns

- Goals: To understand and classify numbers. To recognize, create and extend numerical patterns and sequences.
- Objectives:
    1. Classify rational and irrational numbers (4.1 A)
    2. Classify prime and composite numbers. (4.1 A)
    3. Find the prime factorization of a number. (4.1 A)
    4. Identify the least common multiple of a set of numbers. (4.1 A)
    5. Identify the greatest common factor of a set of numbers. (4.1 A)
    6. Use the LCM and GCF to solve word problems. (4.1 A)
    7. Identify and describe math properties. (4.3 D)
    8. Calculate the nth term in arithmetic/geometric sequences (4.3 A)

Unit 2: Number Sense and Numerical Operations

- Goals: To understand and compute fractions and decimals.
- Objectives:
    1. Identify equivalent fractions. (4.1 A,B)
    2. Change mixed numbers to improper fractions and vice versa. (4.1 A,B)
    3. Add, subtract, multiply, and divide fractions and mixed numbers. (4.1 B)
    4. Apply the rules of the order of operations to evaluate mixed numbers and fractions. (4.1 B)
    5. Add, subtract, multiply, and divide decimals. (4.1 B)
    6. Convert fractions to decimals and decimals to fractions. (4.1 A)
    7. Organize and order mixed numbers including fractions, decimals, and integers. (4.1 B)
    8. Analyze word problems involving fractions and decimals. (4.1 B)
    9. Read, understand and create stem and leaf plots. (4.4 A) (4.5 E)

Unit 3: Percentages

- Goals: To understand and apply this understanding to percentages.
- Objectives:
    1. Demonstrate an understanding of percents. (4.1 A, B)
    2. Convert percents to decimals and fractions. (4.1 A,B)
    3. Find what percent one number is of another number. (4.1 A,B)
    4. Calculate percents greater than 100. (4.1 A,B)
    5. Calculate the price increase and decrease of items. (4.1 A,B)
    6. Calculate sales tax, interest, and deprecation. (4.1 A,B)
    7. Write numbers in scientific notation and standard form. (4.1 A,B)
    8. Analyze and solve word problems involving percents. (4.1 A,B) (4.5 A,D,E)
    9. Construct, read, and understand circle graphs. (4.5 E)

Unit 4: Ratios, Proportions, Probability, and Data Analysis.

- Goals: To understand ratios, proportions, probability, and data analysis, and to apply this understanding.
- Objectives:
    1. Express ratios in simplest form. (4.1 A,B,C)
    2. Compare two or more ratios. (4.1 A,B,C)
    3. Solve proportions. (4.1 A,B,C)
    4. Find the probability of both independent and dependent events.
    5. Apply the counting principle, permutations, and combinations to find outcomes. (4.4 B,C)
    6. Compare the odds for different outcomes (4.4 B,C)
    7. Compute the mean, median, mode, range for data. (4.4 A) (4.5 F)
    8. Use statistics to make predictions. (4.4 A) (4.5 C,D)
    9. Construct and analyze scatter plots. (4.4 A) (4.5 E)

Unit 5: Concepts of Algebra

- Goals: To understand and apply concepts of Algebra.
- Objectives:
    1. Find squares, roots, and cubed roots of numbers. (4.1 B)
    2. Develop methods for solving problems involving negative exponents. (4.1 B)
    3. Apply the properties of exponents to simplify expressions containing integer exponents. (4.1 B)
    4. Simplify expressions contatining square roots and radicals. (4.1 B) (4.3 D)
    5. Identify different polynomials and their degree. (4.3 D)
    6. Simplify algebraic expressions containing multiplication and addition of polynomials. (4.3 D)
    7. Evaluate expressions with one variable. (4.1 B)
    8. Evaluate expressions with more than one variable. (4.1 B)
    9. Add, subtract, multiply, and divide polynomials. (4.3 D)
    10. Factor a monomial out of a polynomial. (4.3 D)
    11. Evaluate algebraic fractions through addition, subtraction, multiplication, and division. (4.3 D)

Unit 6: Linear Equations and Systems of Equations

- Goals: To understand linear equations, inequalities, systems of equations, and graphing.
- Objectives:
    1. Solve linear equations with one variable. (4.3 B,D)
    2. Solve linear inequalities. (4.3 C)
    3. Use systems of equations to solve equations with two variables. (4.3 B)
    4. Graph linear equations on a coordinate grid. (4.3 B)
    5. Graph absolute value functions on a coordinate grid. (4.3 B)

6. Graph two equations to determine their point of intersection. (4.3 B)
7. Solve quadratic equations.

- Note: Many of the goals and objectives are part of the Mathematical Processes standard of the NJCCCS which included:
    A. Problem Solving
    B. Communication
    C. Connections
    D. Reasoning
    E. Representations
    F. Technology