Mathematics
3 Credits Required

Course #	Course Title	Open to:
3061/3062	Algebra 1	9, 10, 11, 12
3065/3066	Algebra Extension	9, 10, 11, 12
3081/3082	Geometry and Trigonometry	9, 10, 11, 12
3085/3086	Geometry and Trigonometry Extensions	9, 10, 11, 12
3101/3102	Algebra 2	9, 10, 11, 12
3101A/3102A	Algebra 2 Extensions	10,11,12
3073/3074	Advanced Placement Statistics	9, 10, 11, 12
3111A/3112A	College Algebra	9, 10, 11, 12
3121/3122	Precalculus	10, 11, 12
3131/3132	Advanced Placement Calculus AB	11, 12
3135/3136	Advanced Placement Calculus BC	11, 12
3123/3124	Mathematics for the Trades	12
3127/3128	College Math	12
9211E/9212E	IB Mathematics Year 1: Core Topics	11
9213A/9214A	IB Mathematics: Applications/Interpretations SL Year 2	11,12
9215A/9216A	IB Mathematics: Analysis and Approaches SL Year 2	11,12
3103/3104	Algebra 2 and Precalculus	9, 10 ,11, 12
3121A/ 3122A	Pre-Calculus-Earn College Credit Too	10, 11, 12
3103A/3104A	Algebra 2 for Precalculus	9, 10, 11, 12

MATHEMATICS

The understanding of mathematics is important for each citizen as everyday functions become more complex. Solving mathematical problems challenges students to apply their understanding in a new or complex situation, to exercise their basic skills, and to see mathematics as a way of finding answers to the problems they encounter in and outside the classroom. Students become better mathematicians through practice of the skills used in class, thus daily students will be asked to complete problems to show their progress and understanding.

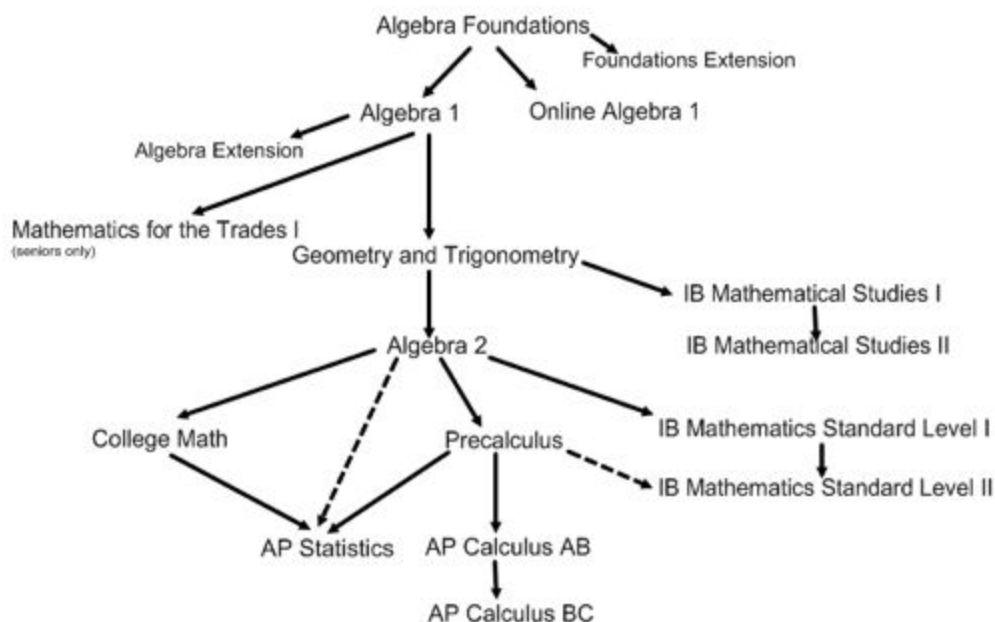## IMPORTANT NOTES AND RECOMMENDATIONS

Howard Suamico School District requires three (3) credits of math for high school graduation.
Students anticipating a post-high school education (4-year college, 2-year college, technical college), it is our recommendation that they take a course structure through Algebra 2.

It is the philosophy of the Math Department that a calculator is one of the many tools available to today's math students, however, as with any tool, the student must learn not only how to use it, but when to use it. The instructor of each course is responsible for helping students to identify when a calculator is an appropriate tool for the problem at hand, and when it is not. Even for a course that requires a calculator, there may be topics where its use will not be allowed.

In our class sequence, a scientific calculator is required for Foundations of Algebra through Geometry.

A graphing calculator is recommended in the following courses, with the recommended calculator listed:
    Algebra 2, IB Math Studies, IB Math SL. TI-84 is recommended. (The **TI-89** graphing calculator is prohibited on IB exams). AP Stats and AP Calculus: TI-89 recommended, but TI 84 Plus is acceptable.

Algebra Foundations

Foundations Extension

Algebra 1   Online Algebra 1

Algebra Extension

Mathematics for the Trades I
(seniors only)

Geometry and Trigonometry

IB Mathematical Studies I

IB Mathematical Studies II

Algebra 2

College Math   Precalculus

IB Mathematics Standard Level I

IB Mathematics Standard Level II

AP Statistics   AP Calculus AB

AP Calculus BC

Summer Academy:

ALGEBRA 1:
Grades: 9, 10, 11, 12
Year/ 1 credit

Algebra is the language of mathematics. Through the use of variables and functions, mathematical models can be built which are essential to personal, scientific, economic, social, medical, artistic, and civic fields of inquiry. In Algebra 1 the student will discover, describe, and generalize simple and complex patterns and relationships. Algebra 1 provides the fundamental mathematical background for more advanced courses in mathematics.   The course consists of three main topics: (1) Solving equations and inequalities, (2) the arithmetic of polynomials, and (3) graphing.   Any calculator may be used with teacher consent.

ACCELERATED GEOMETRY AND TRIGONOMETRY
Prerequisite: Open to students who have completed Algebra 1
* A scientific calculator is required.
Grade 9-12

Geometry is a study of figures and deductive thinking with an introduction to basic trigonometry. Geometry and Trigonometry meets the prerequisite for Algebra 2.

3061/3062   ALGEBRA 1
Prerequisite: None
Grades: 9, 10, 11, 12
Year/ 1 credit

Algebra is the language of mathematics. Through the use of variables and functions, mathematical models can be built which are essential to personal, scientific, economic, social, medical, artistic, and civic fields of inquiry. In Algebra 1 the student will discover, describe, and generalize simple and complex patterns and relationships. Algebra 1 provides the fundamental mathematical background for more advanced courses in mathematics.   The course consists of three main topics: (1) Solving equations and inequalities, (2) the arithmetic of polynomials, and (3) graphing.   Any calculator may be used with teacher consent.

3065/3066   ALGEBRA EXTENSION
　　　　　Prerequisite: None
　　　　　Grades: 9, 10, 11, 12
　　　　　Year/ 1 credit

Algebra Extension is a course to be enrolled in concurrently with Algebra 1. The intention of the course is to offer a support system for students. The course will consist of review and preview of the concepts of Algebra 1. This course counts as an elective and not math credit.

3081/3082   GEOMETRY AND TRIGONOMETRY
　　　　　Prerequisite: Open to sophomores, juniors, and seniors having completed Algebra 1
　　　　　　　　*A scientific calculator is required.
　　　　　Grades: 9, 10, 11, 12
　　　　　Year/ 1 credit

Geometry is a study of figures and deductive thinking with an introduction to basic trigonometry. Geometry and Trigonometry meets the prerequisite for Algebra 2.

3085/3086   GEOMETRY AND TRIGONOMETRY EXTENSIONS
　　　　　Prerequisite: None
　　　　　Grades 9, 10, 11, 12
　　　　　Year / 1 credit

Geometry Extension is a course to be enrolled in concurrently with Geometry. The intention of the course is to offer a support system for the students. Students should conference with their teachers about enrolling in the course. The course will be consist of a review and preview of the concepts of Geometry. This course counts as an elective and not a math credit.

3101/3102   ALGEBRA 2
　　　　　Prerequisite: Algebra 1 and Geometry and Trigonometry
　　　　　　　　*A Texas Instruments graphing calculator is recommended, the TI-84 Plus.
　　　　　　　　　　See above information about the calculators used in other classes.
　　　　　Grades: 9, 10, 11, 12
　　　　　Year/ 1 credit

Algebra 2 is a companion course to Algebra 1 and has similar aims. After a review of basic material from earlier work in Algebra, students study polynomial functions, graphing transformations, complex numbers, logarithms and exponents, and trigonometry

3101A/3102A   ALGEBRA 2 EXTENSIONS
　　　　　Prerequisite: None
　　　　　Grades: 10, 11, 12
　　　　　Year/ 1 Credit

Algebra 2 Extension is a course to be enrolled in concurrently with Algebra 2. The intention of the course is to offer a support system for students. Students should conference with their teachers about enrolling in the course. The course will consist of review and preview of the concepts of Algebra 2. This course counts as an elective and not a math credit.

3103A/3104A ALGEBRA 2 FOR PRECALCULUS
>> Prerequisite: Algebra 1 and Geometry and Trigonometry
>>> *A Texas Instruments graphing calculator is recommended, the TI 84 Plus
>> Grades: 9, 10, 11, 12
>> Year/ 1 credit

Algebra 2 is a companion course to Algebra 1 and has similar aims. After a review of basic material from earlier work in Algebra students study polynomial functions, graphing transformations, complex numbers, logarithms and exponents and trigonometry. This course is intended for students who will proceed to take Pre Calculus after Algebra 2. It will be a more depth study of the Algebra 2 concepts in preparation for Precalculus.

3103/3104 ALGEBRA 2 and PRECALCULUS
>> Prerequisite: Algebra 1 and Geometry and Trigonometry
>>> *A Texas Instruments graphing calculator is recommended, the TI-84 Plus
>>> See above information about the calculators used in other classes.
>> Grades 9, 10, 11, 12
>> Year/2 credit

This will be a block class, containing the content from both Algebra 2 and Precalculus, throughout the entire school year.
Algebra 2 is a companion course to Algebra 1 and has similar aims. After a review of basic material from earlier work in Algebra, students study polynomial functions, graphing transformations, complex numbers, logarithms and exponents, and trigonometry.   For best results, the mathematics department recommends a grade of B or better to go on to Precalculus. Precalculus is designed to prepare students to take a college level calculus course.   Topics include probability, polynomial equations, graphing, exponents, logarithms, trigonometry, conics, sequences, and series.

3073/3074 ADVANCED PLACEMENT STATISTICS
>> Prerequisite: Open to students who have completed Algebra 2
>>> *A Graphing calculator is required.
>> Grades: 9, 10, 11, 12
>> Year/ 1 credit
>> *Weighted Grading*

Advanced Placement Statistics is designed for those students who have successfully completed Algebra 2 with a B or better. The course content will follow the College Board's Advanced Placement standards as stated in its AP syllabus for Statistics. Students, at the conclusion of this course, will be able to take the AP exam (fee charged) for potential college placement and/or credit.   A Texas Instruments graphing calculator is recommended (TI-83/84/89).

3111A/3112A COLLEGE ALGEBRA
>> Prerequisite: Algebra 2.
>>> *A scientific calculator is required.
>> Grades: 9, 10, 11, 12
>> Year/ 1 credit

College Algebra is designed to help students make the transition from high school math courses to college work. Students study linear and quadratic functions, polynomial functions, complex numbers, logarithms, exponents, rational functions, irrational functions, conics, sequences and series, probability, and trigonometric functions

3121/3122   PRECALCULUS
        Prerequisite: Algebra 2
                *A scientific calculator is required *A Texas Instruments Graphing calculator (TI-84 for
                future calculus students) is recommended
        Grades: 10, 11, 12
        Year/ 1 credit

Precalculus is designed to prepare students to take a college level calculus course.   Topics include probability, polynomial equations, graphing, exponents, logarithms, trigonometry, conics, sequences,and series.

3131/3132   ADVANCED PLACEMENT CALCULUS AB
        Prerequisite: Precalculus
                * Utilizes a graphing calculator
        Grades: 11, 12
        Year/ 1 credit
        Weighted Grading

AP Calculus is designed for those students who have successfully completed Precalculus. The course content will follow the College Board's Advanced Placement standards as stated in its AP syllabus for Calculus. Students, at the conclusion of this course, will be able to take the AP exam (fee charged) for potential college placement and/or credit.

3135/3136   ADVANCED PLACEMENT CALCULUS BC
        Prerequisite:Calculus AB
                * Utilizes a graphing calculator
        Grades 11, 12
        Year/ 1 credit
        Weighted Grading

AP Calculus BC is designed for those students who have successfully completed AP Calculus AB. The course content will follow the College Board's Advanced Placement standards as stated in its BC syllabus for Calculus. Students, at the conclusion of this course, will be able to take the AP exam (fee charged) for potential college placement and/or credit in both first semester Calculus and second semester Calculus.

3123/3124   MATHEMATICS FOR THE TRADES I
        Prerequisite: Algebra 1
                *Scientific calculator is recommended
        Grade: 12
        Year/1 credit…Transcribed

Northeast
Wisconsin Technical College

SENIOR ONLY course.   This course provides the opportunity for the learner to develop the knowledge skills process and understanding of whole numbers, fractions, decimals, measurement, trigonometry, integers, algebraic equations, word problems, and practical plane geometry. This course is a transcribed course with NWTC. Students enrolled in this course are concurrently enrolled at NWTC and can earn NWTC credit for the class. The following programs at NWTC require students to take Mathematics for the Trades I: Wood Techniques, Electrical Power Distribution, Machine Tool Operation, Welding, Industrial Mechanic, Gas Utility Construction and Service, Machine Tool Techniques, CNC Technician, and Power Engineering and Boiler Operator.

3127/3128   COLLEGE MATH
        Prerequisite: Algebra 1
                *Scientific Calculator is recommended
        Grade: 12
        Year/1 credit

An introductory level course designed to review and develop fundamental concepts of arithmetic, algebra, geometry, and statistics. Emphasis will be placed on computational skills and applications of rational numbers; problem solving skills with ratios, proportions, and percent; basic principles and application of algebra, geometry, graphing, and statistics; measurement skills in U.S. Customary and Metric Systems; and the use of

calculators as a tool. The following programs at NWTC require students to take College Math: judicial reporting, paralegal, broadcast captioning, instructional assistant, radiography, diagnostic medical sonography, fire protection engineering technology, criminal justice, human services assistant, viticulture, auto collision repair, diesel equipment technology, journey worker, heating, ventilation, air conditioning, and refrigeration technology, and prototype & design.

9211E/9212E IB MATHEMATICS YEAR 1: CORE TOPICS
>   Prerequisite: Successful Completion of at least Geometry
>   *Graphing calculator (TI-84 Plus) is required
>   Grade: 11
>   Year/ 1 credit *Weighted grading*

Students will study 5 core topics of IB mathematics throughout the year to prepare them for the consecutive IB Math course of Applications & Interpretations OR Analysis & Approaches. The core topics include the following: number and algebra, functions, geometry and trigonometry, statistics and probability, and calculus. The course is designed for students who enjoy developing their mathematics to become fluent in the construction of mathematical arguments and develop strong skills in mathematical thinking. They will explore real and abstract applications, sometimes with technology, and will enjoy the thrill of mathematical problem solving and generalization.

9213A/9214A IB MATHEMATICS: APPLICATIONS AND INTERPRETATIONS SL (YEAR 2)
>   Prerequisite: IB Mathematics Year 1: Core Topics or at least successful completion of Algebra 2
>   *Graphing Calculator (TI-82 PLUS) required
>   Grade: 11,12
>   Year/1 credit *Weighted grading*

Applications and Interpretations SL is appropriate for students who are interested in developing their mathematics for describing our world and solving practical problems. This subject is aimed at students who will go on to study subjects such as social sciences, natural sciences, statistics, business, some economics, psychology, and design, for example.

9215A/9216A IB MATHEMATICS: ANALYSIS AND APPROACHES SL (YEAR 2)
>   Prerequisite: IB Mathematics Year 1: Core Topics or at least successful completion of Algebra 2
>   *Graphing calculator (TI-84 PLUS) required
>   Grade: 11, 12
>   Year/ 1 credit *Weighted grading*

Analysis and Approaches at SL is appropriate for students who enjoy developing their mathematics to become fluent in the construction of mathematical arguments and develop strong skills in mathematical thinking. They will also be fascinated by exploring real and abstract applications of these ideas, with and without the use of technology. Students who take Mathematics: Analysis and approaches will be those who enjoy the thrill of mathematical problem solving and generalization. This subject is aimed at students who will go on to study subjects with substantial mathematics content such as mathematics itself, engineering, physical sciences, or economics for example.

3121A/3122A <u>PRE-CALCULUS-EARN COLLEGE CREDIT TOO</u>

        Prerequisite: Algebra 2

         *Scientific Calculator is required *A Texas Instruments Graphing calculator (TI-84 for future calculus students) is recommended

        Grade: 10,11,12

        Year/1 credit

This class is college algebra and trigonometry taught with a functional approach. We will cover polynomial, exponential, logarithmic, circular, and trigonometric functions. The class is designed to give students the algebraic tools they need to be successful in college level mathematics or science courses. We will focus on learning the basic concepts of pre-calculus, problem solving, and critical thinking.

College credit can be achieved through two different programs:

CCIHS-College Credit in High School Program

You will earn both high school and college credit through UW Green Bay which can be transferred to many universities. (UW Madison and University of MN included.)

Your grade is made up of the homework, quizzes, tests, and final exams that you will take in your high school class.

Cost: 4 college credits for $400.

This is a heavily discounted price for college credits. This class at UWGB costs $1300. A 3 credit class at UWO costs about $802, UWMadison-$1358, and Marquette-$3225.

(If you plan to earn college credit through the CCIHS program you need Miss Cooper both semesters of pre-calc.)

(More Info: Google UWGB CCIHS Program)

CLEP-College Level Examination Program:

You will earn college credit for taking one cumulative examination at the end of second semester. Your score consists of two parts, a raw score for how many problems you got correct and a converted score that ranges from 20-80. Colleges are recommended to give credit with a score of 50 or above, but some institutions may require a higher score to achieve college credit. For example UW La Crosse you need a 50, but UW Eau Claire you need a 61. You should look up your college prior to your decision.

Cost: $89 for one cumulative exam that is 90 minutes long and contains approximately 48 questions. 25 questions using a calculator and 23 questions with no calculator. There will also most likely be a $25 administration fee.

(More Info: Google College Board CLEP Program)