

MATH

Intervention Math 101 and 102

1 semester .5 credit

Prerequisite
None

Fees and Costs
None

Course Overview

This intensive math intervention course is for students who do not qualify for special education math placement and have scored L1 or low L2 on the 8th grade Math MSP and have a spring MAP Math score < 220. The purpose of this class is to close gaps in student learning so they have the math skills necessary to be successful in Algebra I in the 10th grade and pass the Math EOC (End of Course Assessment) required for graduation. Students will be pre-assessed to determine deficiencies and appropriate interventions provided. Skills may include multiplication, division, fractions, decimals, and pre-algebra. Some learning may be computer assisted.

Algebra I 101 and 102

1 semester .5 credit

Prerequisite
None

Fees and Costs
None

Course Overview

The program is designed to build a foundation in linear, exponential and quadratic equations. Other topics include variables and expressions, proportions and percents, operations with polynomials, factoring, inequalities, rational and irrational numbers, data analysis and an emphasis on problem solving. Algebra I is a fundamental math class and essential to success in more advanced math course work. It is recommended that students who have taken Algebra I prior to 9th grade and earned less than a B grade REPEAT the course to improve their success rate in Algebra II/Trig and other advanced math courses.

*In some cases, students who are struggling but showing diligence may be recommended for a program stretching the 2 years of Algebra 1 and Geometry into a 3 year course beginning in the 9th grade. We refer to these as Algebra A,B,C and Geometry A,B,C

Algebra II/Trigonometry

Math 301 & 302

2 semesters 1 credit

Prerequisite

C- or better in Geometry as a sophomore, Passing grade in Geometry as a freshman

Fees and Costs

At a minimum, a student must have a scientific calculator. Purchase of a TI-83+ or TI-84+ is recommended, as it will play a major role in all math classes at WVHS. Some graphing calculators will be available for use in the classroom only, and only for units that require their extra features.

Course Overview

Following Geometry, Algebra 2 is the next step in the foundational high school mathematics instructional material to meet the state's required curriculum. While maintaining much of the approach of the previous courses, Algebra 2 marks a turning point for the college bound student by beginning a transition to increased emphasis on algebraic processes. This course deals primarily with foundations for functions, linear functions, linear systems, quadratic functions, polynomial functions, exponential and logarithmic functions, rational and radical functions, properties and attributes and functions, probability and statistics, sequences and series, trigonometric functions, and trigonometric graphs and identities.

Student Learning Objectives

As a result of required instruction, the student will be able to:

1. Understand and use proper notation and vocabulary to describe sets of numbers.
2. Distinguish between a relation and a relations that is also a function.
3. Transform a variety of parent functions in the coordinate plane.
4. Curve fit linear, quadratic, polynomial, trigonometric, exponential and logarithmic functions.
5. Solve problems involving linear, quadratic, polynomial, rational, radical, trigonometric, exponential and logarithmic functions.
6. Graph linear, quadratic, polynomial, rational, radical, trigonometric, exponential and logarithmic functions.
7. Solve quadratic equations by factoring, completing the square, graphing and the quadratic formula.
8. Perform basic probability computations and interpret results.
9. Compute and interpret measures of central tendency and variation.
10. Work with and use the notation of sequences and series.
11. Solve problems with right triangle trigonometry, law of sines and law of cosines.

AP Statistics 503 & 504

2 semesters 1 credit

Prerequisite

B or better in Algebra 2 (both semesters), or passing grade in Pre-Calculus

Fees:

This is an A.P. course - college credit will vary with the institution and requires a score on the A.P. Statistics Exam, which has an associated fee of around \$80.

Recommended tools

In order to efficiently deal with the large data sets that are used in the class, it is recommended that students own either or both of the following: TI-nSpire graphing calculator (~\$140) or Fathom computer software - available through KeyPress.com (~\$40). In preparation for the A.P. Statistics Exam, we also recommend purchase of an A.P. Statistics Test Guide for additional practice (instructor will have recommendations).

Course Overview

Curriculum for this course follows the AP Statistics curriculum set by the College Board and is intended to prepare students for the AP Statistics exam. The purpose of the AP course in statistics is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. This course draws connections between all aspects of the statistical process, including design, analysis, and conclusions. This course will help students to learn how to use and interpret the statistical data on graphing calculators and computers.

Student Learning Objectives

As a result of required instruction the student will be able to:

1. Explore data by describing patterns and departures from patterns
2. Construct and interpret graphical displays of distribution of univariate data
3. Model sampling, experimentations, planning and conducting a study
4. Explore random phenomena using probability and simulation
5. Understand and apply statistical inference by estimating population parameters and testing hypothesis
6. Apply statistics by modeling real world data

CHS Calculus 501 & 502

2 semesters 1 credit

Prerequisite

B Grade or better in Pre-Calculus 401 and 402

Prerequisite for College Credit

Student must have already passed MATH 154 with a grade of a C or higher, or score 152+ on the APTP Advanced Math, or 46+ on the Compass Trigonometry, or 100+ on the Accuplacer College Math Exam, or 76% on the ALEKS.

Fees and Costs

\$275 for Central Washington University credits (fee determined by Central Washington University)

At a minimum, a student must have a scientific calculator. Purchase of a TI-83+ or TI-84+ is recommended, as it will play a major role in all math classes at WVHS. Some graphing calculators will be available for use in the classroom only, and only for units that require their extra features.

Course Overview

This class follows the CWU calculus syllabus. It is a standard calculus class that covers the following topics: limits, derivatives of polynomials, power functions, trigonometric functions, inverse trig functions, exponential functions, logarithmic functions, and combinations and compositions of the former functions and parametric functions, applications of derivatives, anti-derivatives, definite integrals, fundamental theorem of calculus, and applications of anti-derivatives.

Student Learning Objectives

As a result of required instruction the student will be able to:

1. Evaluate limits by a variety of methods
2. Compute derivatives - by definitions, numerically, and by derived patterns
3. Apply chain rule, quotient rule and product rule appropriately
4. Evaluate derivatives of parametric functions
5. Apply techniques to evaluate derivatives of inverse trig, exponential and logarithmic functions
6. Model functions and use derivatives to evaluate critical points
7. Apply anti-differentiation techniques including integration by parts, trig substitution, and partial fractions
8. Understand and apply the fundamental theorem of calculus

CHS Math 101

1 semester .5 credit

Prerequisite

C Grade or better in Algebra 2

Prerequisite for College Credit

Student must score 500+ on the SAT Math, or 19+ on the ACT Math, or 50+ on the Compass Pre-Algebra, or 26+ on the Compass Algebra, or 31+ on the Compass College Algebra, or 31+ on the Compass Trigonometry, or 60+ on the Accuplacer Elementary Algebra exam, or 100+ on the Accuplacer Arithmetic Exam, or 3+ on the Smarter Balance Exam, or 51% on the ALEKS, or have already passed a higher level math course.

Fees and Costs

\$275 for Central Washington University credits (fee determined by Central Washington University)

At a minimum, a student must have a scientific calculator. Purchase of a TI-83+ or TI-84+ is recommended, as it will play a major role in all math classes at WVHS. Some graphing calculators will be available for use in the classroom only, and only for units that require their extra features.

Course Overview

This is a project oriented course covering a variety of mathematical concepts from the modern world. Topics covered include finance, voting, and mathematical modeling.

Student Learning Objectives

As a result of required instruction the student will be able to:

1. Understand the power of compound interest and its applications in finance (including investing and credit).
2. Identify problems in context.
3. Understand and interpret large numbers and index numbers
4. Understand and apply exponential and mixed growth
5. Analyze and quantify fairness in voting and apportionment methods
6. Construct mathematical models for real-life situations

CHS Math 130

1 semester .5 credit

Prerequisite

C Grade or better in Algebra 2

Prerequisite for College Credit

Student must score 500+ on the SAT Math, or 19+ on the ACT Math, or 50+ on the Compass Pre-Algebra, or 26+ on the Compass Algebra, or 31+ on the Compass College Algebra, or 31+ on the Compass Trigonometry, or 60+ on the Accuplacer Elementary Algebra exam, or 100+ on the Accuplacer Arithmetic Exam, or 3+ on the Smarter Balance Exam, or 51% on the ALEKS, or have already passed a higher level math course.

Fees and Costs

\$275 for Central Washington University credits (fee determined by Central Washington University)

At a minimum, a student must have a scientific calculator. Purchase of a TI-83+ or TI-84+ is recommended, as it will play a major role in all math classes at WVHS. Some graphing calculators will be available for use in the classroom only, and only for units that require their extra features.

Course Overview

This is a project oriented course. Material covered includes: introduction to probability; mathematical decision making; introduction to statistics; introduction to logic and reasoning.

Student Learning Objectives

As a result of required instruction the student will be able to:

1. Read and generate a variety of graphs
2. Use and interpret basic statistical summaries
3. Explain the limitations of statistics
4. Interpret and explain relationships expressed through symbols
5. Identify problems in context
6. Interpret quantitative data in a specific context
7. Analyze and construct arguments using symbolic logic
8. Understand the differences between inductive and deductive reasoning

CHS Pre-Calculus 401 & 402

1 semester .5 credit

Prerequisite

C Grade or better in Algebra 2

Prerequisite for College Credit

Student must score 66+ on the Compass Algebra, or 31+ on the Compass College Algebra, or 148+ on the APTP General Math, or 35+ on the Accuplacer College Math Exam, or 85+ on the Accuplacer Elementary Algebra Exam, or 51% on the ALEKS.

Fees and Costs

\$275 for Central Washington University credits (fee determined by Central Washington University)

At a minimum, a student must have a scientific calculator. Purchase of a TI-83+ or TI-84+ is recommended, as it will play a major role in all math classes at WVHS. Some graphing calculators will be available for use in the classroom only, and only for units that require their extra features.

Course Overview

Pre-calculus is the final step in the transition from the contextual-based program with broad applications to the mathematics requires for success in calculus. The class follows the CWU Pre-calculus syllabus. Topics include: functions in multiple representations, exponential and logarithmic functions, polynomials, trigonometric functions, right triangle trigonometry, alternate logarithmic functions, polynomials, trigonometric functions, right triangle trigonometry, alternate coordinate systems, vectors, matrices, analytic geometry, and basic combinatorics.

Student Learning Objectives

As a result of required instruction the students will be able to:

1. Recognize and represent functions in written, graphical and algebraic forms
2. Be able to transform functions and combinations of functions
3. Construct exponential and logarithmic models
4. Construct and analyze inverses of functions
5. Model oscillations and right triangles with trigonometric functions
6. Recognize and exploit connections between complex numbers, polar coordinates, and vectors
7. Use matrices to solve systems of equations
8. Explore and solve equations involving conic sections

Financial Algebra

NOTE: These courses count as either an occupational or a math credit.

2 one-semester independent courses, 0.5 credits each.

Prerequisite

Jr. or Sr. standing. Passing scores on Algebra and/or Geometry EOC . Geometry 201/202, Sophomores with a grade of C in Algebra 2 or lower.

Fees and Costs

None

Course Overview

This is an algebra 2 level course that builds on your prior knowledge of math concepts from other courses (algebra 1, geometry), taking you step-by-step through strategies to help you expand your understanding of the application of these concepts through practical, financial problem settings. The applications-based practice problems use real-life scenarios that have been researched and field-tested by students over many years.

Student Learning Objectives

As a result of required instruction the student shall be able to:

1. Model with and solve equations involving linear, quadratic, cubic, exponential, rational, square root and piecewise functions
2. Apply and compute statistical information including: measures of central tendency, quartiles, and expected value.
3. Construct and interpret representations of data including: histograms, line graphs, bar graphs, circle graphs, frequency tables, stem-and-leaf plots and box plots.
4. Use spreadsheets to store information and apply formulas.

5. Use vocabulary from geometry and geometric formulas to compute distance, area and volume.
6. Recognize when to use and how to solve inequalities.
7. Compute basic probabilities.

Geometry

Math 201 & 202

2 semesters 1 credit

Prerequisite

Passing grade in Algebra 1

Fees and Costs

At a minimum, a student must have a scientific calculator. Purchase of a TI-83+ or TI-84+ is recommended, as it will play a major role in all math classes at WVHS. Some graphing calculators will be available for use in the classroom only, and only for units that require their extra features.

Course Overview

Following Algebra 1, Geometry is the next step in the foundational high school mathematics instructional material to meet the state's required curriculum. While maintaining much of the approach of the previous courses, Geometry marks a turning point for the student by beginning a transition to increased emphasis on geometric processes. This course deals primarily with foundations of geometry, geometric reasoning, parallel and perpendicular lines, triangle congruence, properties and attributes of triangles, polygons and quadrilaterals, similarity, right triangles and trigonometry, extending perimeters, circumference, and area, spatial reasoning, circles, and extending transformational geometry.

Student Learning Objectives

As a result of required instruction, the student will be able to:

1. Measure and construct segments and angles.
2. Apply geometric formulas including distance and midpoint, and pythagoras.
3. Perform geometric transformations in the Euclidean plane.
4. Understand the structure of logical statements and reason inductively and deductively.
5. Construct basic geometric proofs from theorems, definitions, and postulates.
6. Name and know the relationships of angles formed by transversals.
7. Prove triangles congruent and similar.
8. Identify parts and properties of triangles and other polygons.
9. Use proportional reasoning to solve problems.
10. Solve problems using basic right triangle trigonometry.
11. Find perimeter, area and volume of polygonal and circular shapes.
12. Solve problems involving circles, arcs, chords, tangents, secants and angles in a circle

Honors Geometry 201 and 202

1 semester .5 credit

Prerequisite

"B" or better in Algebra 101-102

Fees and Costs

None

Course Overview

This course emphasizes spatial perception and development of deductive and inductive reasoning. Topics include points, lines, planes and angles, parallel lines and planes, congruent triangles, quadrilaterals, similar polygons, right triangles, circles, constructions, areas, volumes, coordinate geometry and transformations. Students who do not meet the criteria are expected to attend a 2 week math boot camp in August to improve their skills before moving to the next level.

Honors Algebra 2/Trig 301 and 302

1 semester .5 credit

Prerequisite

“B” or better in Algebra 101-102 and Geometry 201-202

Fees and Costs

None

Course Overview

Following Geometry, Algebra 2 is the next step in the foundational high school mathematics instructional material to meet the state’s required curriculum. While maintaining much of the approach of the previous courses, Algebra 2 marks a turning point for the college bound student by beginning a transition to increased emphasis on algebraic processes. This course deals primarily with the foundations for functions, linear functions, linear systems, quadratic functions, polynomial functions, exponential and logarithmic functions, rational and radical functions, properties and attributes and functions, probability and statistics, sequences and series, trigonometric functions, and trigonometric graphs and identities. Students who do not meet the criteria are expected to attend a 2 week math boot camp in August to improve their skills before moving to the next level.

Bridges to College Mathematics 402

2 semesters 1 credit

Prerequisite

College-bound seniors who score below “college-ready” on the 11th grade Smarter Balanced assessment.

Fees and Costs

None

Course Overview

Bridge to College Mathematics is a year-long course focusing on the key mathematics readiness standards from Washington State’s K-12 Learning Standards for Mathematics (the Common Core State Standards, CCSS-M) as well as the eight Standards for Mathematical Practices. The course is designed to prepare students for entrance into non-calculus pathway introductory college level mathematics courses. The course addresses key learning standards for high school including Algebra I, statistics, geometry, and Algebra II standards essential for college- and career-readiness.

Course Name and Code: Bridge to College Mathematics - #02099

Important Notes:

1. The Bridge to College Mathematics course can qualify as a 3rd credit of math if the student has already attempted Algebra 2 or is credit-deficient.
2. Currently, the Bridge to College Mathematics Course does not qualify for NCAA or for a COE course. However, we are continuing to pursue both of these options and intend to have guidance on both by the end of May 2015.
3. Baccalaureate Requirements: To meet the minimum admissions requirements for state baccalaureate institutions, students need to pass Algebra 2 for their 3rd credit of math. The Bridge to College Mathematics Course does meet the baccalaureate senior year requirement for a math or quantitative reasoning course as determined by the Washington Student Achievement Council (College Academic Distribution Requirements (CADR), 2014).

FAQ

1. What are the basic terms of the agreement for students interested in attending a community or technical college in Washington?
 - Students scoring level 4 can choose any entry-level college course without additional placement testing (however if they wanted to start in a course not considered entry-level (e.g., calculus, English 102) they would need some additional placement process unless the college chose to extend the agreement to include those courses.
 - Students scoring at level 3 can access English Composition or Math &107 or Math &146 without

additional conditions or placement processes. In math, if they want to start in pre-calculus, they would need to either show they're succeeding in a calculus track course—pre-calculus, calculus, or any algebra-based course with Algebra 2 as a formal or informal prerequisite as a senior—or do some additional placement process.

- Students scoring below college-ready (levels 2 and 1) would need to go through additional placement processes at the college, with the exception of students who score at level 2 and then succeed (B or better) in one of the specifically designated and coded Bridge to College courses that will be available in roughly 75 districts and 125 high schools in 2015-16, and potentially statewide by 2016-17. We're finalizing the list of high schools offering the courses next year now and will publicize it as soon as it's ready.
- The agreement is provisional, effective through the graduating class of 2018; it will then be reviewed based on evaluation data collected to date and a decision will be made at that point about extending, adjusting, or discontinuing the agreement.
- The full text of the formal agreement can be found on the Washington Core to College web site (<https://c2cwa.wordpress.com/>) as well as the Washington Student Achievement Council college readiness web page: <http://www.wsac.wa.gov/college-readiness>

2. Does the same placement agreement apply to all of the community and technical colleges?

Yes, all 34 community and technical colleges are using Smarter Balanced scores for placement under a common agreement (the baccalaureates and independent colleges have separate, slightly different agreements).

3. Based on the Smarter Balanced scores alone, can colleges offer students placement into additional college-level courses beyond what is defined in this agreement?

Yes, colleges may extend the opportunities for placement without requiring additional testing or transcript information. Anything not specifically defined in the language of the agreement is left up to individual colleges to determine.