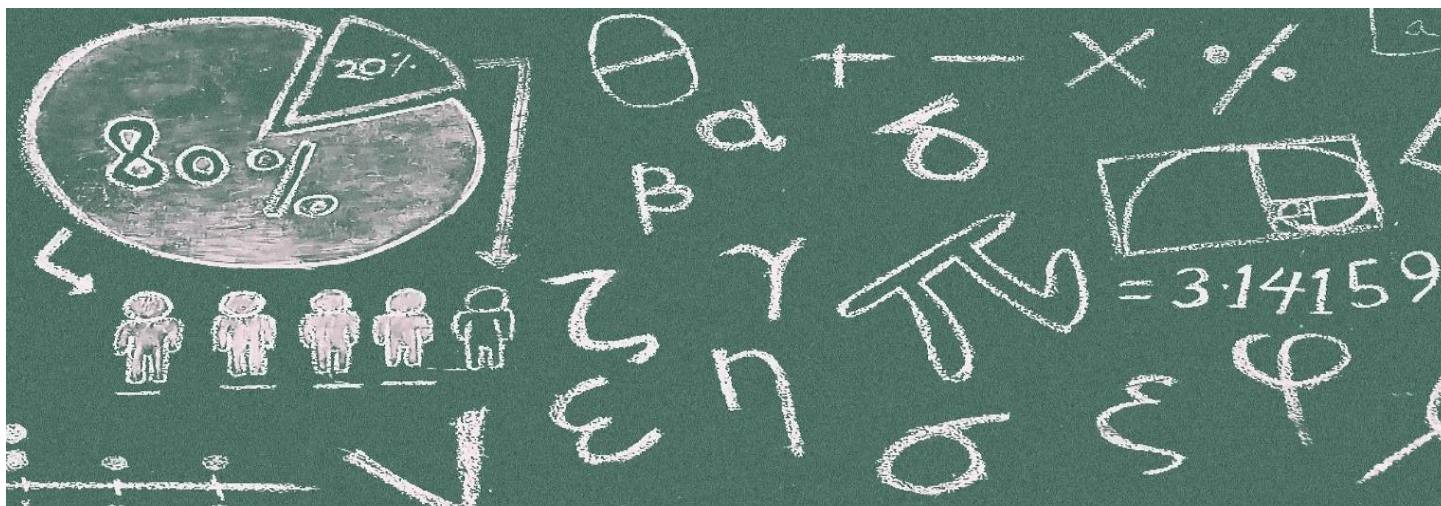


V. COURSE DESCRIPTIONS - MATHEMATICS

MATHEMATICS



FUNDAMENTALS OF ALGEBRA I

Course Number: 6000

Placement: 9-12

Credits: 1

Prerequisite: ARD Approval

This course will study linear, quadratic, and exponential functions and their related transformations, equations, and associated solutions. Student will connect functions and their associated solutions in problem situations. Topics also covered will be polynomials of degree one and two, radical expressions, sequences, and laws of exponents. The course will include linear systems. This course encompasses a modified curriculum for Alg I.

ALGEBRA I

Course Number: 6030

Placement: 9

Credits: 1

Prerequisite: 8th grade Math

This course will study linear, quadratic, and exponential functions and their related transformations, equations, and associated solutions. Student will connect functions and their associated solutions in problem situations. Topics also covered will be polynomials of degree one and two, radical expressions, sequences, and laws of exponents. The course will include linear systems.

PRE-ADVANCED PLACEMENT ALGEBRA I

Course Number: 6033

Placement: 9

Credits: 1

Prerequisite: 8th grade Math

In addition to material usually covered in Algebra I, topics will be expanded and taught at a more rigorous, in-depth level. Emphasis will be placed on the application of concepts and skills introduced in Algebra I. The level of instruction/curriculum will focus on preparing the student for advanced placement mathematics courses.

FUNDAMENTALS OF GEOMETRY

Course Number: 6003

Placement: 9-12

Credits: 1

Prerequisite: ARD Approval

Relations, properties, and measurement of surfaces, lines, and angles in one, two, and three-dimensional figures are investigated and used in this course. Students will use deductive reasoning to justify, prove formally and apply theorems about geometric figures. Probability concepts are included in this course. This course encompasses a modified curriculum for Geometry.

V. COURSE DESCRIPTIONS - MATHEMATICS

GEOMETRY

Course Number: 6050

Placement: 9-10

Credits: 1

Prerequisite: Algebra I

Relations, properties, and measurement of surfaces, lines, and angles in one, two, and three-dimensional figures are investigated and used in this course. Students will use deductive reasoning to justify, prove formally and apply theorems about geometric figures. Probability concepts are included in this course.

PRE-ADVANCED PLACEMENT GEOMETRY

Course Number: 6053

Placement: 9-10

Credits: 1

Prerequisite: Algebra I or Pre-AP Algebra I

In addition to material usually covered in Geometry, topics will be expanded and taught at a more rigorous, in-depth level. Emphasis will be placed on the application of concepts and skills introduced in Geometry. The level of instruction/curriculum will focus on preparing the student for advanced placement mathematics courses.

FUNDAMENTALS OF MATHEMATICAL MODELS WITH APPLICATIONS

Course Number: 6005

Placement: 11-12

Credits: 1

Prerequisite: ARD Approval

Students will use a variety of representations (concrete, numerical, graphical, verbal, and tabular) and technology to solve applied problems. Students will use a basic mathematical modeling cycle to solve real-life application problems involving personal finance, science, engineering, fine arts, and social sciences. This course encompasses a modified curriculum for Mathematical Models with Applications.

MATHEMATICAL MODELS WITH APPLICATIONS

Course Number: 6060

Placement: 11-12

Credits: 1

Prerequisite: Algebra I

Students will use a variety of representations (concrete, numerical, graphical, verbal, and tabular) and technology to solve applied problems. Students will use a basic mathematical modeling cycle to solve real-life application problems involving personal finance, science, engineering, fine arts, and social sciences. **This course is recommended to be taken after Geometry.**

STATISTICS

Course Number: 6067

Placement: 11-12

Credits: 1

Prerequisite: Algebra I

Students will broaden their knowledge of variability and statistical processes. Students will study sampling and experimentation, categorical and quantitative data, probability and random variables, inference, and bivariate data. Students will connect data and statistical processes to real-world situations. In addition, students will extend their knowledge of data analysis. **This course is recommended to take after Algebra II or Algebraic Reasoning.**

ALGEBRAIC REASONING

Course Number: 6095

Placement: 10-12

Credits: 1

Prerequisite: Algebra I

Students will broaden knowledge of functions and relationships, including linear, quadratic, square root, rational, cubic, cube root, exponential, absolute value, and logarithmic functions. Study of functions will be made through analysis and application that includes explorations of patterns and structure, number and algebraic methods, and modeling from data using tools that build to workforce and college readiness such as probes, measurement tools, and software tools, including spreadsheets. **This course is recommended to take after Geometry.**

ALGEBRA II

Course Number: 6070

Placement: 10-12

Credits: 1

Prerequisite: Algebra I

This course is a continuation of the topics studied in Algebra I. Students will broaden their knowledge of quadratic functions, exponential functions, and systems of equations. Students will study logarithmic, square root, cubic, cube root, absolute value, rational functions, and their related equations. Students will extend their knowledge of data analysis and numeric and algebraic methods. **This course is recommended to be taken after Geometry. Students must successfully complete Algebra II prior to taking a higher math class. This course (or the Pre-AP level) is required for a Distinguished Level of Achievement or STEM Endorsement.**

V. COURSE DESCRIPTIONS - MATHEMATICS

PRE-ADVANCED PLACEMENT ALGEBRA II

Course Number: 6080

Placement: 10-11

Credits: 1

Prerequisite: Algebra I or Pre-AP Algebra I

In addition to the material usually covered in Algebra, topics will be expanded and taught at a more rigorous, in-depth level. Emphasis will be placed on the application of concepts and skills introduced in Algebra II. The level of instruction/curriculum will focus on preparing the student for further advanced placement courses. **This course is recommended to be taken after Geometry. Students must successfully complete prior to taking a higher math class.**

ADVANCED QUANTITATIVE REASONING (AQR)

Course Number: 6090

Placement: 11-12

Credits: 1

Prerequisite: Geometry, Algebra II or Pre-AP Algebra II

Students will develop and apply skills necessary for college, careers, and life. Course content consists primarily of applications of high school mathematics concepts to prepare students to become well-educated and highly informed 21st century citizens. Students will develop and apply reasoning, planning, and communication to make decisions and solve problems in applied situations involving numerical reasoning, probability, statistical analysis, finance, mathematical selection, and modeling with algebra, geometry, trigonometry, and discrete mathematics. This course is eligible as a 5th math option for the STEM endorsement.

PRE-CALCULUS

Course Number: 6150

Placement: 11-12

Credits: 1

Prerequisite: Algebra I, Geometry, and Algebra I

This course approaches topics from a function point of view. Students systematically work with functions and their multiple representations. Students investigate and explore mathematical ideas, develop multiple strategies for analyzing complex situations, and use technology to build understanding, make connections between representations, and provide support in solving problems. This course is eligible as a 5th math option for the STEM endorsement.

PRE-ADVANCED PLACEMENT PRE-CALCULUS

Course Number: 6160

Placement: 11-12

Credits: 1

Prerequisite: Algebra I, Geometry, and Pre-AP Algebra II/Algebra II

In addition to the topics studied in Pre-Calculus, topics will be expanded and taught at a more rigorous, in-depth level. Emphasis will be placed on the application of concepts and skills. The level of instruction/curriculum will focus on preparing the student for advanced placement courses. This course is eligible as a 5th math option for the STEM endorsement.

ADVANCED PLACEMENT CALCULUS AB

Course Number: 6201

Placement: 11-12

Credits: 1

Recommended Prerequisite: Pre-AP Pre-Calculus

This course is designed for the student who has displayed both exceptional talent and diligence in the study of all other selected high school courses. Topics of study will include limits and continuity, derivatives, the fundamental theorem of calculus, special functions, techniques of integration, partial derivatives, and multiple integration. Analytic geometry will be included as needed. A TI-84 will be used in the classroom, and graphing calculators of this type will be required for homework. A graphing calculator with numerical differentiation and integration capabilities is required for the Advanced Placement Calculus Test. This course is the equivalent of a Calculus I course at the college level. At the conclusion of this course, students may take the Advanced Placement AB Calculus Test which provides the opportunity to earn college credit in calculus. This course is eligible as a 5th math option for the STEM endorsement.

ADVANCED PLACEMENT CALCULUS BC

Course Number: 6202

Placement: 12

Credits: 1

Recommended Prerequisite: Pre-AP Pre-Calculus

This course is an expansion of the Advanced Placement Calculus AB course. It includes all topics covered in Advanced Placement Calculus AB plus additional topics. Common topics require a similar depth of understanding. This course is the equivalent of a combined Calculus I and Calculus II course at the college level. Broad concepts and widely applicable models are emphasized. The TI-84 will be used in the classroom, and graphing calculators of this type will be required for homework. Extensions to AP Calculus AB include: parametric, polar, and vector functions; use of slope fields and Euler's method to find solutions to differential equations; improper integrals and series; solving logistic equations; polynomial approximations and series, including Taylor and Maclaurin series. At the conclusion of this course, students may take the Advanced Placement BC Calculus Test which provides the opportunity to earn college credit in calculus. This course is eligible as a 5th math option for the STEM endorsement.

V. COURSE DESCRIPTIONS - MATHEMATICS

ADVANCED PLACEMENT STATISTICS

Course Number: 6203

Placement: 11-12

Credits: 1

Recommended Prerequisite: Algebra II and Geometry

The purpose of this Advanced Placement course in statistics is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Therefore, AP Statistics would be an excellent choice for students interested in pursuing a career in business or medicine. Students are exposed to the four broad conceptual themes which follow: 1) Exploring data – observing patterns and departures from patterns; 2) Planning a study – deciding what and how to measure; 3) Anticipate patterns – producing models using probability and simulation; and 4) Statistical inference – confirming models. This is a communications course in which students are taught to analyze data utilizing calculators and computers. At the conclusion of this course, students may take the Advanced Placement Statistics Test which provides the opportunity to earn college credit in statistics. This course is eligible as a 5th math option for the STEM endorsement.

STAAR/EOC MATHEMATICS REMIEDIATION/ENRICHMENT/ACCELERATION

Course Number 6300

Placement: 9-12

Credits: ½-1

Prerequisite: None

This course will provide remediation/ enrichment/ acceleration for students who did not pass the Algebra EOC, or students who require additional support based on previous performance on State math assessments/math academic performance. This course will enable students to improve mathematical skills. This course may **not** be used to fulfill any of the math requirements for graduation. It will count for local elective credit only.

(TCC) ALGEBRA

Course Number: 0610

Placement: 11-12

Credits: ½

Prerequisite: Successful completion of Algebra II, 80+ Overall GPA & TSI Assessment

TCC corresponding college credit:

MATH 1314 – College Algebra (3 semester hours)

This is a regular college-level Algebra class with an in-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Students will attend TCC classes on their home campus. This course meets .5 of the fourth year math high school graduation requirement. **The math TSI Assessment must be passed before students will be allowed to enroll in TCC classes.**

(TCC) STATISTICS

Course Number: 0614

Placement: 11-12

Credits: ½

Prerequisite: Successful completion of Algebra II, 80+ Overall GPA & TSI Assessment

TCC corresponding college credit:

MATH 1342 – Elementary Statistical Methods (3 semester hours)

This is a regular college-level Statistics course examining collection, analysis, presentation and interpretation of data. Students will attend TCC classes on their home campus. This course meets .5 of the fourth year math high school graduation requirement.

The reading and math TSI Assessments must be passed before students will be allowed to enroll in TCC classes.

(TCC) PRE-CALCULUS

Course Number: 0617

Placement: 11-12

Credits: 1

Prerequisite: Successful completion of MATH 1314 & TSI Assessment

TCC corresponding college credit: MATH 2412 – Pre-Calculus (4 semester hours).

This is a regular college-level Pre-Calculus course offering an in-depth study of algebra, trigonometry, and other topics for calculus readiness. Students will attend TCC classes on their home campus. This course meets the fourth year math high school graduation requirement. This course is double blocked. **The math TSI Assessment must be passed before students will be allowed to enroll in TCC classes.**

(TCC) MATHEMATICS FOR BUSINESS

Course Number: 0611

Placement: 12

Credits: ½

Prerequisite: 80+ Overall GPA & TSI Assessment

TCC corresponding college credit: MATH 1324 – Mathematics for Business and Social Science (3 semester hours).

This is a regular college-level mathematics course including the study of algebra, mathematics of finance, linear programming, systems of linear equations, applications to management, economics and business. Students will attend TCC classes on their home campus. **The math TSI Assessment must be passed before students will be allowed to enroll in TCC classes.**

(TCC) MATHEMATICS FOR BUSINESS II

Course Number: 0612

Placement: 12

Credits: ½

Prerequisite: Math 1324 or Math 1314

TCC corresponding college credit: MATH 1325 – Mathematics for Business and Social Science II (3 semester hours). This is a regular college-level mathematics course including the study of limits and continuity, derivatives, graphing, and optimization, exponential and logarithmic functions, antiderivatives, integration, applications to management, economics, and business. Students will attend TCC classes on their home campus. **The math TSI Assessment must be passed before students will be allowed to enroll in TCC classes.**

COLLEGE READINESS MATH I

Course Number: 0618

Placement: 12

Recommended Prerequisite: TSI Assessment (not required)

Credits: ½

TCC corresponding course: MATH 0361-Developmental Math I. This course will study topics in mathematics such as arithmetic operations, basic algebraic concepts and notation, geometry, and real and complex number systems. The content revisits concepts from Algebra I and Geometry to support student readiness for college level mathematics. Students that scored a 500 or below on their 11th grade PSAT would be good candidates for this course. This course follows the TCC grading guidelines. The TSI Assessment will be administered at the end of this course.

COLLEGE READINESS MATH II

Course Number: 0619

Placement: 12

Credits: ½

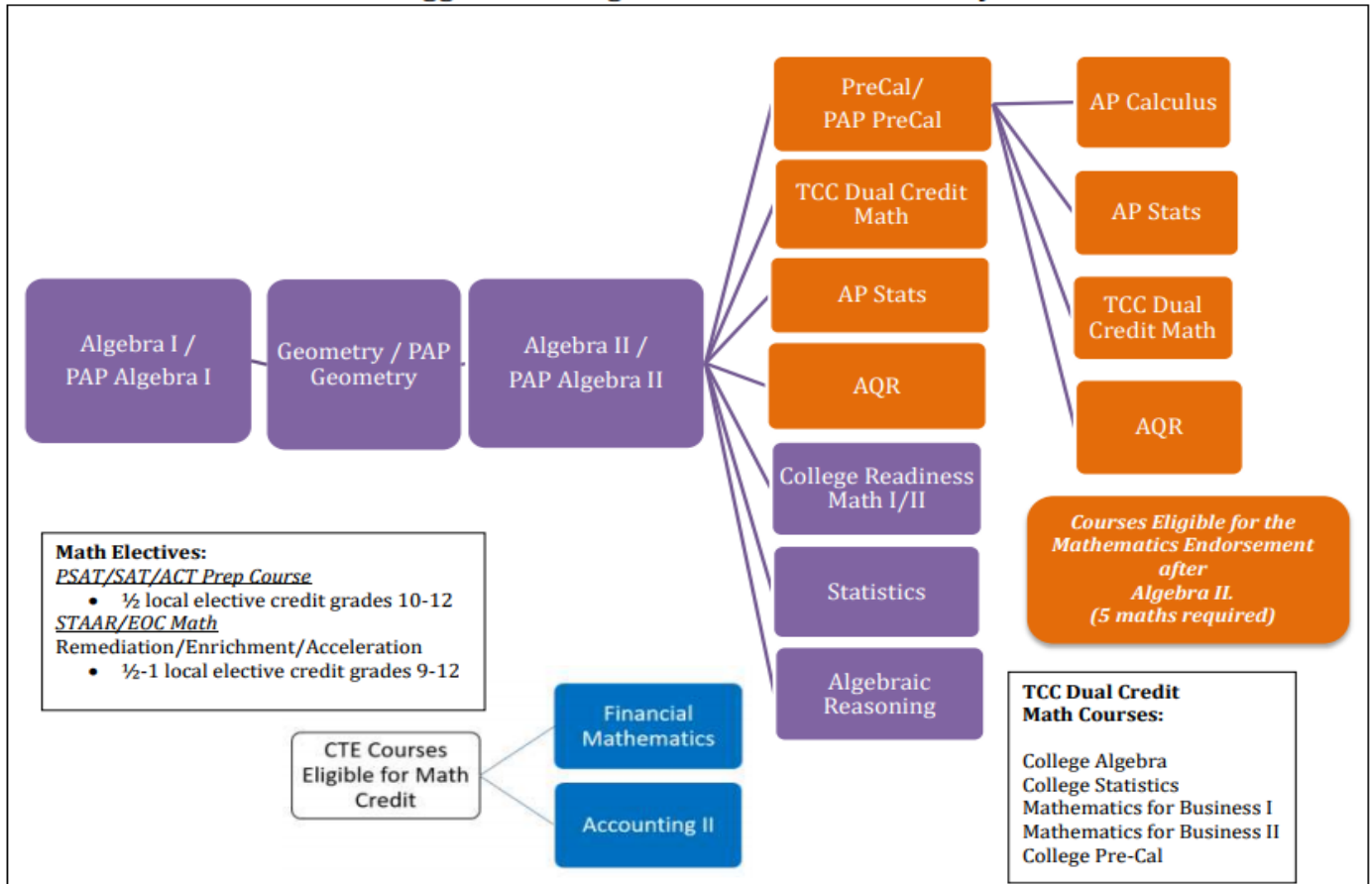
Prerequisite: TSI Assessment or College Readiness Math I

TCC corresponding course: MATH 0362-Intermediate Algebra (Developmental Math II)

This course is a study of relations and functions, inequalities, algebraic expressions and equations (absolute value, polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations. The content prepares for student readiness in college level mathematics. Students that scored a 500 or below on their 11th grade PSAT would be good candidates for this course. This course follows TCC grading guidelines. **Upon successful completion of this course with a grade of 70 or above, a student will be TSI exempt with TCC for up to one year after high school graduation and may enroll into entry level TCC math courses.**

V. COURSE DESCRIPTIONS - MATHEMATICS

Suggested College Readiness Math Pathways



Alternative College Readiness Math Pathways

