

## ACADEMIC & CAREER PLANNING

### CAREER CLUSTERS

- AGRICULTURE, FOOD, & NATURAL RESOURCES
- ARCHITECTURE & CONSTRUCTION
- ARTS, A/V TECHNOLOGY, & COMMUNICATIONS
- BUSINESS, MANAGEMENT, & ADMINISTRATION
- EDUCATION & TRAINING
- FINANCE
- GOVERNMENT & PUBLIC ADMINISTRATION
- HEALTH SCIENCE
- HOSPITALITY & TOURISM
- HUMAN SERVICES
- INFORMATION TECHNOLOGY
- LAW, PUBLIC SAFETY, CORRECTIONS & SECURITY
- MANUFACTURING
- MARKETING
- STEM
- TRANSPORTATION, DISTRIBUTION, & LOGISTICS

### COURSE OFFERINGS

#### MIDDLE SCHOOL COURSES

- ENGLISH
- SCIENCE
- SOCIAL STUDIES
- MATH
- HEALTH
- PHYSICAL EDUCATION
- ART
- COMPUTERS
- GATEWAY TO TECHNOLOGY
- MUSIC
- WORLD LANGUAGES

#### HIGH SCHOOL COURSES

- ENGLISH
- HEALTH
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- SCIENCE
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- COMPUTER SCIENCE
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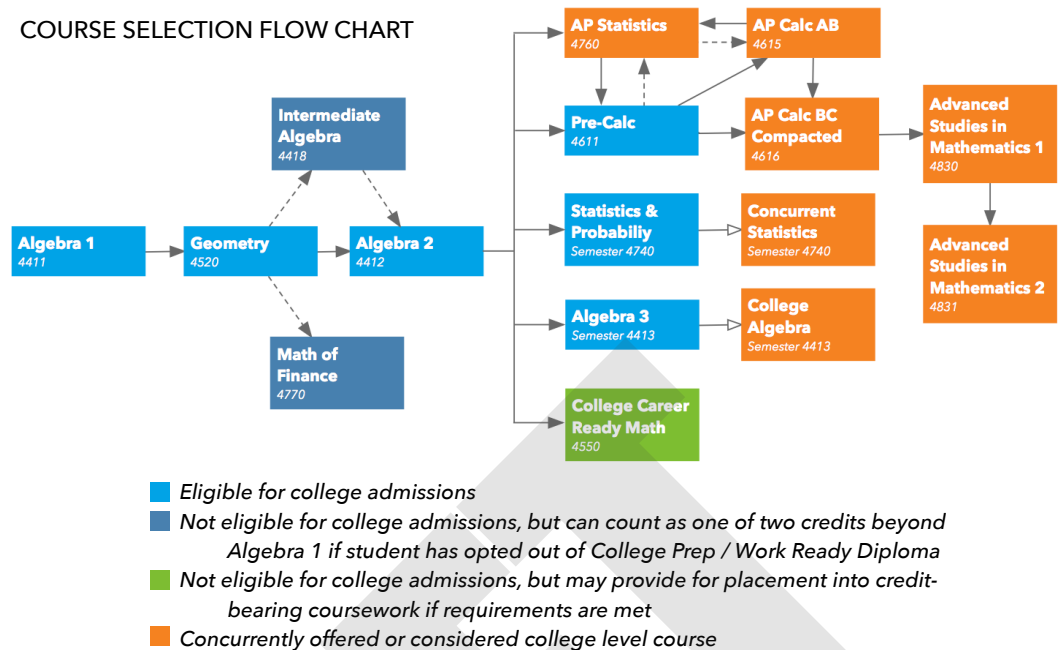
### CAREER & SERVICE LEARNING PROGRAM

# MATH

**Graduation Requirements:** 3.0 Credits (*Algebra 1 and two credits beyond, including no fewer than three credits in grades 9-12*)

COURSE OFFERINGS  
HIGH SCHOOL

### COURSE SELECTION FLOW CHART



## Algebra 1

**Foundational Course**

**Credit: 1.0**

**Prerequisite:** Pre-Algebra

XXX The mathematics learning experience in Algebra 1 will build on their understanding of linear equations with one variable and linear functions in Pre-Algebra. Students in this course deepen their knowledge of multiple representations of data and situations and develop mathematical reasoning by using symbolic and visual representations including graphs, tables, verbal or written statements and algebraic equations to solve and communicate solutions in real-world situations.

## Geometry

**Foundational Course**

**Credit: 1.0**

**Prerequisite:** Algebra 1

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4411

## Algebra 2

**Foundational Course**

**Credit: 1.0**

**Prerequisite:** Geometry, or concurrent enrollment

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4412

4520

## Pre-Calculus

**Credit: 0.5 (if offered sequentially with Trigonometry) or 1.0**

**Prerequisite:** Algebra 2

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4611

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## CAREER &amp; SERVICE LEARNING PROGRAM

## MATH

COURSE OFFERINGS  
HIGH SCHOOL

## Statistics &amp; Probability 4740

**Credit:** 1.0 or 0.5 if offered in tandem with College Statistics

**Prerequisite:** Algebra 2

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## Algebra 3 4413

**Credit:** 1.0 or 0.5 if offered in tandem with College Algebra

**Prerequisite:** Algebra 2

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## AP Statistics 4760

**Credit:** 1.0

**Prerequisite:** Pre-Calculus or a B or higher in Algebra 2

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## AP Calculus AB 4615

*(Calculus Semester 1)*

**Credit:** 1.0

**Prerequisite:** Pre-Calculus

Within this course students will study

functions, their graphs, limits, derivatives, and integrals as determined by the College Board. Enrollment in this course requires taking the Advanced Placement examination in early May. This course is a highly rigorous course that covers collegiate level Calculus 1 content in one year.

## AP Calculus BC 4616

*(Calculus 1 and 2 Compacted)*

**Credit:** 2.0

**Prerequisite:** Pre-Calculus or a B or higher in Algebra 2

Within this course students will study functions, their graphs, limits, derivatives, integrals, polynomial approximations, and series as determined by the College Board. Enrollment in this course requires taking the Advanced Placement examination in early May. This course is a highly rigorous course that covers collegiate level Calculus 1 and Calculus 2 content in one year.

## Collegiate Statistics 4740

**Credit:** 0.5

**Prerequisite:** Statistics & Probability

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## College Algebra 4550

**Credit:** 1.0

**Prerequisite:** Algebra 3

XXX This course is designed to support students who intend to go to college, have completed Algebra I, Geometry and Algebra II, but do not have an adequate ACT Math subject score or SAT equivalent. Seniors with scores in the range of 13 to 18 are encouraged to complete College Career Math Ready. Students completing the course with **no less than an A or B in each unit** will be recommended for placement in a college-level math course, rather than a remedial math course.

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## CAREER &amp; SERVICE LEARNING PROGRAM

## MATH

COURSE OFFERINGS  
HIGH SCHOOL

## College Career Math Ready 4550

**Credit:** 1.0 (elective credit only)**Prerequisite:** Algebra 2 and a 13-18 on the math section of the ACT or SAT equivalent**Grade Level:** 12

This course is designed to support students who intend to go to college, have completed Algebra I, Geometry and Algebra II, but do not have an adequate ACT Math subject score or SAT equivalent. Seniors with scores in the range of 13 to 18 are encouraged to complete College Career Math Ready. Students completing the course with **no less than an A or B in each unit** will be recommended for placement in a college-level math course, rather than a remedial math course.

## Intermediate Algebra 4418

**Credit:** 1.0 (not eligible for college admissions)**Prerequisite:** Geometry, or concurrently enrolled

XXX This is not a terminal math course! This will build on their understanding of linear equations with one variable and linear functions in Pre-Algebra. Students in this course deepen their knowledge of multiple representations of data and situations and develop mathematical reasoning by using symbolic and visual representations including graphs, tables, verbal or written statements and algebraic equations to solve and communicate solutions in real-world situations.

## Mathematics of Finance 4770

**Credit:** 1.0 (not eligible for college admissions)**Prerequisite:** Geometry, or concurrently enrolled

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## Advanced Studies in Math 1 4830

**Credit:** 1.0**Prerequisite:** AP Calculus AB or BC

Within this course students will study

advanced concepts in mathematics as determined by consultation with the mathematics department chair and counselors. This course is a highly rigorous course that covers collegiate level mathematics such as Differential Equations, Linear Algebra, etc.

## Advanced Studies in Math 2 4830

**Credit:** 1.0**Prerequisite:** Advanced Studies in Math 1

Within this course students will study advanced concepts in mathematics as determined by consultation with the mathematics department chair and counselors. This course is a highly rigorous course that covers collegiate level mathematics such as Differential Equations, Linear Algebra, etc.

## Math Intensification 4405

**Credit:** 0.5 (elective credit only)

This class is designed to provide intervention in targeted mathematics skills offered in tandem with Algebra 1. Students are placed into this course, which counts toward elective credit only, through consultation with their mathematics instructor and the counselors.

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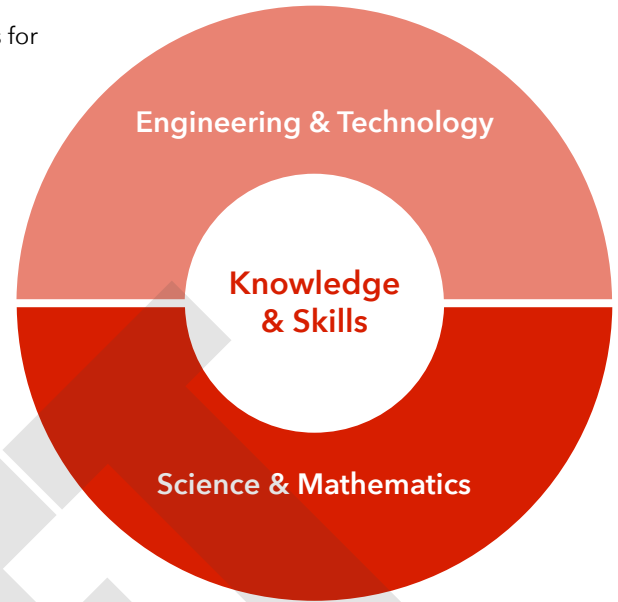
### CAREER & SERVICE LEARNING PROGRAM

## STEM (Science, Technology, Engineering and Math)

This Program of Study prepares learners for careers in numerous fields that relate to sciences, technology, engineering, and mathematics. Other Programs of Study are linked to this more broad area, including Agriculture, Food, & Natural Resources; Health Sciences; Architecture & Construction; Information & Technology; Manufacturing; and Transportation, Distribution, & Logistics.

#### Pathways:

- Engineering & Technology
- Science & Mathematics



## Suggested Learning Experiences

<b>MIDDLE SCHOOL ELECTIVES</b>	<ul style="list-style-type: none"> <li>Elective Wheel (includes Graphic Arts, Computer Science, and PLTW Gateway), Computer Science Exploratory, PLTW Gateway – Engineering and Design, Electricity and Robotics, Green Engineering, World Languages</li> </ul>
<b>HIGH SCHOOL COURSEWORK</b> <i>This coursework is directly aligned to this Program of Study. It does not include required core coursework that is applicable to all programs.</i>	<ul style="list-style-type: none"> <li><b>ENGLISH:</b> AP Language and Composition, College &amp; Career Writing &amp; Composition</li> <li><b>MATH:</b> Pre-Calculus, Statistics &amp; Probability, AP Statistics, AP Calc AB, AP Calc BC, Advanced Studies in Math 1 &amp; 2</li> <li><b>SCIENCE:</b> AP Biology, Human Anatomy and Physiology A &amp; B, AP Chemistry, Environmental Science, AP Environmental Science, Earth/Space Science, Astronomy, Physics, AP Physics I, AP Physics II, AP Physics C</li> <li><b>BUSINESS:</b> Personal Financial Literacy, Concepts in Employability &amp; Human Resources I &amp; II</li> <li><b>COMPUTER SCIENCE:</b> Exploring Computer Science I &amp; II, Computer Programming, AP Computer Science, including numerous Career Tech courses</li> <li><b>TECHNOLOGY EDUCATION:</b> Introduction to Engineering Design, Introduction to Manufacturing, including numerous Career Tech courses</li> </ul>
<b>OTHER COURSEWORK</b> (e.g., Post-secondary alignment)	<ul style="list-style-type: none"> <li>Student selected via enrollment such as - Intro to Networking, Introduction to CAD, Computer Applications in Industrial Engineering</li> </ul>
<b>STUDENT ORGANIZATIONS</b>	<ul style="list-style-type: none"> <li>Robotics Club, Math Team, Science Clubs, BUILD Team, SkillsUSA, HOSA, Technology Student Association</li> </ul>
<b>ENRICHMENT</b>	<ul style="list-style-type: none"> <li>Industry tours in Manufacturing, Information Technology, Job Shadow Days, Independent Study</li> </ul>
<b>CAREER EXPERIENCES / WORK-BASED LEARNING</b>	<ul style="list-style-type: none"> <li>Apprenticeship, Mentorship, Job Shadow, STEM Endorsement</li> </ul>
<b>SERVICE-BASED LEARNING</b>	<ul style="list-style-type: none"> <li>Service Learning, State Youth Leadership Certificate</li> </ul>



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### CAREER & SERVICE LEARNING PROGRAM

## STEM (Science, Technology, Engineering and Math)

### Career Types by Pathway

HIGH SCHOOL DIPLOMA & ON-THE-JOB TRAINING	CERTIFICATE/ LICENSE	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
SCIENCE AND MATHEMATICS				
		Biology Chemistry Laboratory Science Technology Medical Laboratory Technology	Chemistry Economics Mathematics Molecular Energy Physics	Biochemistry Biological Sciences Chemistry Physics and Astronomy Statistics
ENGINEERING AND TECHNOLOGY				
	Industrial Technology Computer User Support Specialists*	Architectural Design Technology Civil Engineering Technology Industrial Technology Surveying and Computer Aided Drafting (CAD) Software Developers Computer Systems Analysts	Agricultural Engineering Biological Systems Engineering Chemical Engineering Construction Engineering Technology Industrial Engineering	Agriculture and Biological Systems Architectural Engineering Chemical Engineering Civil Engineering Mechanical Engineering

### STEM Endorsement

Students interested in earning the STEM endorsement have several options. In addition to the state graduation requirements, **students will need to successfully complete additional courses in math and science (one each), two computer science courses, plus electives, and choose one of the five options below to earn your remaining STEM endorsement credits.**

\* Note that students can earn one or more Performance Acknowledgments in addition to any graduation program they follow, for any of the following areas: **A) Bilingualism and biliteracy; B) Earning a nationally or internationally recognized business or industry certification or license; C) PSA, ACT-PLAN, SAT, or ACT score. Talk to your school Counselor for specific guidelines.**

<b>OPTION 1</b> Career Technology Education (CTE)	Complete consecutive levels of three or more CTE courses coming from the same career cluster. Must include relevant internship or job shadowing.
<b>OPTION 2</b> Advanced Computer Science	In addition to the two required Computer Science courses, two Computer Science courses such as Computer Science 2, Programming 2, AP CS Principles, and AP CS A. Must include relevant internship or job shadowing.
<b>OPTION 3</b> Advanced Mathematics	In addition to the four required math course (three of which are beyond Algebra 1), one advanced mathematics course with Algebra 2 as a pre-requisite. Must include relevant internship or job shadowing.
<b>OPTION 4</b> Advanced Science	In addition to the four required science course, one advanced science course with Biology 1 or Physical Science as a pre-requisite. Must include relevant internship or job shadowing.
<b>OPTION 5</b> Integrated	In addition to the stated requirements, three courses from no more than two of the areas listed in options 1-4. Must include relevant internship or job shadowing.