

# Buckhannon-Upshur High School

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## Academic Handbook and Course Descriptions

### Administration

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**West Virginia Standards for 21<sup>st</sup> Century Learning**

**Grade 9-12 Standards for 21<sup>st</sup> Century Learning**

Upon completion of the twelfth grade, the student uses advanced skills of analysis, synthesis and evaluation to create new knowledge and visualizes the connections between seemingly unrelated ideas to produce well-developed solutions. The student continues to develop critical thinking and problem solving skills and uses technology tools to solve problems and make decisions related to classroom, community and world issues. The student demonstrates ethical behavior related to acceptable use of information and communication technology, protects his/her identify on line and in email and/or websites, and makes informed choices among available advanced technology systems, resources and services for completing projects, solving problems and managing information. The high school student will integrate advanced technology application skills in the use of the word processor, database, spreadsheet and presentation software.

<b>9-12</b>	Standards for 21 <sup>st</sup> Century Learning
<b>Standard</b>	<b>Standard 1: Information and Communication Skills</b>
<b>21C.S.9-12.1</b>	The student will access, analyze, manage, integrate, evaluate, and create information in a variety of forms using appropriate technology skills and communicate that information in an appropriate oral, written, or multimedia format.

<b>9-12</b>	Standards for 21 <sup>st</sup> Century Learning
<b>Standard</b>	<b>Standard 2: Thinking and Reasoning Skills</b>
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<b>Standard</b>	<b>Standard 3: Personal and Workplace Skills</b>
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## About Advanced Placement\*

AP can change your life. Through college-level AP courses, you enter a universe of knowledge that might otherwise remain unexplored in high school; through AP Exams, you have the opportunity to earn credit or advanced standing at most of the nation's colleges and universities.

### Why Participate?

With [37 courses and exams](#) across 22 subject areas, AP offers something for everyone. Here are just a few reasons to sign up:

#### **Gain the Edge in College Preparation**

- Get a head start on college-level work.
- Improve your writing skills and sharpen your problem-solving techniques.
- Develop the study habits necessary for tackling rigorous course work.

#### **Stand Out in the College Admissions Process**

- Demonstrate your maturity and readiness for college.
- Show your willingness to take the most rigorous courses available to you.
- Emphasize your commitment to academic excellence.

#### **Broaden Your Intellectual Horizons**

- AP is an accelerated program of study reserved for exceptional students who are willing to commit time and effort beyond the regular school day for study.
- Explore the world from a variety of perspectives, most importantly your own.
- Study subjects in greater depth and detail.
- Assume the responsibility of reasoning, analyzing, and understanding for yourself.

### How Do I Enroll?

- Once you've decided to take the AP challenge it's easy to enroll.
- Talk to an AP teacher or the AP Coordinator at your school about the course you want to take. Discuss the course's workload and any preparation you might need.
- If you are a homeschooled student, you can still participate. Each year hundreds of students participate through independent study. Some states even sponsor online AP courses.
- Students in all Advanced Placement classes at B-UHS are required to take and pay for AP examinations at the end of the term. Students who fail to take exams will not receive AP credit.

\* From the College Board website

\*AP and the Advanced Placement Program are registered trademarks of the College Entrance Examination Board, which was not involved in the production of this document.

## Dual Credit Instruction through Pierpont Community and Technical College

The Dual Credit Program at B-UHS with Pierpont Community and Technical College allows high school students to take college courses for which students can simultaneously earn both college and high school credit.

Qualified students may enroll in college courses at B-UHS that will be applied to the credits required for a Buckhannon-Upshur High School diploma. Successful completion of these courses also allows high school students the opportunity to make substantial progress toward their college education before finishing high school.

For the most part, dual credit opportunities are limited to junior and senior students. Student performance in dual credit courses will directly affect their high school records and graduation requirements.

In order to qualify, students taking courses for dual credit must meet the same requirements for enrollment into an individual course as other college students. Enrollment into most entry-level courses requires proof of academic readiness as indicated on the ACT and/or the SAT. Some courses require a 3.0 cumulative grade point average.

Students will earn  $\frac{1}{2}$  credit toward their high school diploma for each semester they are enrolled in a college course they successfully complete.

Textbooks are provided by funds from the local Levy, but tuition for each class—at a reduced rate—must be paid by individual students.

## English/Language Arts

### **English 9**      **4009**

English Language Arts ninth grade students will continue enhancing skills in a developmentally-appropriate progression of standards. Following the skill progressions from eighth grade, students will

- understand the relationship between historical writings and literature that draws upon them
- read and analyze literature reflecting the cultural experience and point of view of authors from outside the United States
- assess claims and arguments; make judgements about whether evidence is trustworthy and reasoning is logical
- complete in-depth research projects with material from multiple sources
- use complex ideas, strong evidence and cohesive structure to express a point of view in argumentative writing
- expand writing of observational, situational or conflict-centered stories or essays
- use observations, facts and arguments from different perspectives to understand multiple sides of an issue and respond thoughtfully
- connect a discussion to larger themes or ideas; clarify and challenge conclusions
- enhance findings and evidence using digital media
- demonstrate an understanding of figures of speech and analyze their role in a text
- build a comprehensive vocabulary; learn new words and phrases using context and related words
- learn and use new techniques to make writing compelling, such as parallel structure and a variety of clause/phrases.
- read texts that fall in the 1050-1185 Lexile range in order to meet college- and career-readiness expectations.

### **English 9H**      **4009**

*Prerequisite: a score of mastery within the Reading/Language Arts subtest on the state test and a grade of "B" in their English class the previous year or administrative permission.*

This course covers the same content as English 9 and additionally prepares students to read at the higher end of the text complexity range with less scaffolding. Students planning to take PRE AP English courses should take this course.

### **English 10**      **4010**

*Prerequisite: English 9 credit or teacher/administrative permission.*

English Language Arts ninth grade students will continue enhancing skills in a developmentally-appropriate progression of standards. Following the skill progressions from ninth grade, students will

- understand the relationship between historical writings and literature that draws upon them
- read and analyze literature reflecting the cultural experience and point of view of authors from outside the United States
- assess claims and arguments; make judgements about whether evidence is trustworthy and reasoning is logical
- complete in-depth research projects with material from multiple sources
- use complex ideas, strong evidence and cohesive structure to express a point of view in argumentative writing
- expand writing of observational, situational or conflict-centered stories or essays

- use observations, facts and arguments from different perspectives to understand multiple sides of an issue and respond thoughtfully
- connect a discussion to larger themes or ideas; clarify and challenge conclusions
- enhance findings and evidence using digital media
- demonstrate an understanding of figures of speech and analyze their role in a text
- build a comprehensive vocabulary; learn new words and phrases using context and related words
- learn and use new techniques to make writing compelling, such as parallel structure and a variety of clause/phrases.
- read texts that fall in the 1050-1185 Lexile range in order to meet college- and career-readiness expectations.

**English 10H                      4010**

*Prerequisite: English 9 credit with a minimum grade of “B”, teacher recommendation and a score of mastery within the Reading/Language Arts subtest on the state test or administrative permission.*

This course covers the same content as English 10 and additionally prepares students to read at the higher end of the text complexity range with less scaffolding. Students planning to take AP courses and not qualifying for PRE AP English 10 should take this course.

**English 11                      4011**

*Prerequisite: English 10 credit or administrative permission.*

English Language Arts eleventh grade students will continue enhancing skills in a developmentally-appropriate progression of standards. Following the skill progressions from tenth grade, students will

- evaluate how word choices and phrasing convey meaning and add complexity to works of historical and modern authors
- read increasingly challenging texts; examine themes, and use evidence to support summaries and analyses of literary and informational texts
- write argumentative pieces that include fairly used arguments and counterarguments; use accurate information from trustworthy sources
- when writing a narrative, establish characters; points of view, depict a central conflict, and provide descriptive details, dialogue, and settings
- evaluate others’ points of view during class discussions; give thoughtful feedback on the effectiveness of arguments, veracity of evidence, and overall strength of viewpoint; accept feedback graciously
- give class presentations that contain an original perspective on a subject, use evidence to support arguments, and address opposing points of view
- understand and use complex phrases and figures of speech including hyperbole; use a range of techniques to determine an unfamiliar word’s meaning
- use proper spelling, capitalization, and punctuation in written arguments; demonstrate knowledge of Standard English conventions when speaking and writing
- read texts that fall in the 1185-1385 Lexile range in order to meet college- and career-readiness expectations.

**English 11H 4011**

*Prerequisite: English 10 credit with a minimum grade of “B”, teacher recommendation and a score of mastery within the Reading/Language Arts subtest on the WESTEST 2 or administrative permission.*

This course covers the same content as English 11 and additionally prepares students to read at the higher end of the text complexity range with less scaffolding.

**AP English Language and Composition\*\* 4041      weighted**

*Prerequisites: English 10 with a minimum 3.0 and a teacher/administrative recommendation*

This is a college-level course open to juniors and seniors who have excelled in previous English classes and who have high language and reading scores on the state assessment. Involving training for prose reading, the course provides the practice and criticism necessary to compose in a variety of modes and purposes. Emphasis is on the interaction between authorial purpose, audience needs, subject, generic conventions, and resources of languages. With an emphasis on American Literature, this class substitutes for English 11.

**English 12                      4012**

*Prerequisite: English 11 credit or administrative permission.*

English Language Arts twelfth grade students will continue enhancing skills in a developmentally-appropriate progression of standards. Following the skill progressions from eleventh grade, students will

- evaluate how word choices and phrasing convey meaning and add complexity to works of historical and modern authors
- read increasingly challenging texts; examine themes, and use evidence to support summaries and analyses of literary and informational texts
- write argumentative pieces that include fairly used arguments and counterarguments; use accurate information from trustworthy sources
- when writing a narrative, establish characters; points of view, depict a central conflict, and provide descriptive details, dialogue, and settings
- evaluate others' points of view during class discussions; give thoughtful feedback on the effectiveness of arguments, veracity of evidence, and overall strength of viewpoint; accept feedback graciously
- give class presentations that contain an original perspective on a subject, use evidence to support arguments, and address opposing points of view
- understand and use complex phrases and figures of speech including hyperbole; use a range of techniques to determine an unfamiliar word's meaning
- use proper spelling, capitalization, and punctuation in written arguments; demonstrate knowledge of Standard English conventions when speaking and writing
- read texts that fall in the 1185-1385 Lexile range in order to meet college- and career-readiness expectations.

**AP English Literature and Composition\*\* 4042      weighted**

*Prerequisites: English 11 credit, a minimum 3.0 or better and a teacher/administrative recommendation*

This is a college-level class open only to seniors who have excelled in their previous English classes and who have excellent scores on state and national tests. The class involves extensive reading of classical works with major emphasis on writing assignments and critical thinking. Reading novels is an essential component of Advanced Placement English. The class substitutes for English 12. For those who score well on the Advanced Placement Examination, three hours or more of college credit may be earned.

**English 1104 Written English I (Dual Credit) 4012      weighted**

*Prerequisite: Minimum COMPASS Writing Skills score of 71, or ACT English score of 18, or SAT-Critical Reading*

This course offers a process-oriented practice in drafting, revising, and editing texts. Students learn the principles of expository writing, thesis formulation, organization, paragraph development, audience analysis, appropriate diction, and sentence structure. The course also

includes an introduction to reading for content in texts selected from across the disciplines. A grade of "C" or better in ENGL 1104 is a graduation requirement for all degrees. ENGL 1104 is a prerequisite for enrollment in all other ENGL courses.

**English 1108 Written English II (Dual Credit) 4012 weighted**

***Prerequisite:* ENGL 1104**

This is a continuation of Written English I that provides experience in analyzing and writing argument and persuasive prose. A central feature of the course is a library research project that is intended to develop familiarity with reference sources and skill in summarizing the diverse points of view of multiple sources. A grade of "C" or better in ENGL 1108 is a graduation requirement for all degrees. ENGL 1104 must have been completed with a grade of "C" or better.

**ELA 12 TR 4014**

***Requirements:* English 11 credit, counselor request.**

English Language Arts twelfth grade students who do not meet the college- and career-readiness benchmark on the West Virginia General Summative Assessment must enroll in Transition English Language Arts for Seniors or a higher level English language arts course. This course is designed to develop mastery of the skills necessary to meet or exceed the benchmark score.

**American Sign Language 7659**

American Sign Language Level I objectives primarily focus on the acquisition and development of communication skills. Students will likely enter this course from various signing backgrounds. Students who are deaf, have a deaf parent, or have a close association with members of the Deaf community may enter the course with some proficiency in signing. Other students, particularly those with little association with deaf individuals, may enter with no prior knowledge or skills in ASL. ASL Level I also introduces students to aspects of the Deaf culture, encouraging them to compare the components of ASL with those of the English language and American culture(s). Students are also encouraged to establish connections to the Deaf community and to carry their new knowledge and skills beyond the classroom and into the community at large.

**Broadcasting 4061**

***Requirements:* Journalism, 10<sup>th</sup> through 12<sup>th</sup> grade**

This introductory study of broadcast media aims to analyze and criticize the mass media through the perspective of the humanities. The course will include technical instruction in the media, including: mass media theory, writing for the ear, editing news scripts, video-editing, camera operation, and news show production. The main focus of the course is to prepare students to produce the BUCS news program, edit the program with various software, and post on the BUCS Broadcasting website. Smaller projects will be included. Success in this class depends on your ability to work with a group to accomplish daily and long term goals.

**Chaucer and His Age**

In this course students study selections from Chaucer, the Pearl poet, Langland, Malory, medieval drama, and lyrics.

**Creative Writing I 4022**

***Prerequisites:* 10<sup>th</sup> through 12<sup>th</sup> grade, B average in English, and teacher approval**

Open to all students in grades 10-12 who have at least a B average in English, have submitted a writing sample and garnered teacher approval. Students will study all genres of writing and



participate in a variety of writing contests for publication. Students will be required to complete assignments of five to seven pages.

**Creative Writing II                      4023**

*Prerequisites: Creative Writing I, teacher approval*

Open to all students in grades 11 through 12 who have at least a B average in English, completed Creative Writing I and have teacher approval. Students will study all genres of writing and participate in a variety of writing contests for publication. Students will be required to complete assignments of eight to ten pages.

**Holocaust                                      4137**

Literature of the Holocaust is taught by a WV Certified Holocaust educator. The course focuses on nonfiction, drama, poetry, primary and secondary sources, photographs, and survivor testimonies. By challenging the students to look at the Holocaust through the eyes of many different groups, students will gain a richer understanding of this event in history. The most important part of Holocaust history is awareness and understanding; Holocaust history and the lessons of the Holocaust are stressed. Sensitive material will be read and viewed.

**Mythology                                      4138**

This course is open to students in grades 10, 11 and 12 who maintain a C or above average in English. It is a course with focus on the myths from various cultures, such as Greek, Roman, Norse, Celtic, African, and Native American.

**Journalism                                      4051**

*Prerequisites: B average in English, application, and teacher approval*

The journalism student debates the role of journalism and defends its impact on politics and social history. The student assesses the impact of legal and ethical issues on journalism. The student rates the use of technology in the production of a product. The student prioritizes the parts of a story and judges the integration of the principals of layout and design and photocomposition to produce a final product. The student debates the appropriateness of journalistic writing to address specific writing purposes and audiences. The student composes and defends the leads, including the five "W"s and an "H", and integrates supporting material into a final product using appropriate word processing and editing strategies. The student evaluates the use of persuasive language and techniques of propaganda in copy. Special application of these principles of journalism is integral as a prerequisite to high school newspaper, yearbook, broadcasting, and other special projects.

**Newspaper                                      4066**

*Prerequisite: Journalism, writing sample, teacher approval*

To become a member of the *Buccaneer* publication staff, students must possess good writing skills, the ability to work in a lab setting with computer technology, and an interest in newspaper production. Basic writing, editing, interviewing, and graphic design skills are included in instruction. The *Buccaneer* is published quarterly utilizing computers.

**Shakespeare**

In this course students study Shakespearean sonnets, songs, comedies, histories, and tragedies not covered in English classes. Students will also look at the interpretations of Shakespearean plays in modern film.

**Speech/Oral Communication****4076**

In this course the students learn basic communication skills. Students learn to deliver a variety of speeches: informative, impromptu, sales, etc. Emphasis is placed on public speaking. This course must be completed before students are eligible for either Advanced Communication or Broadcasting. Students should have a C or above average in English. Dual credit through Pierpont Community and Technical College maybe arranged through the instructor. Tuition will be required for college credit.

**Survey of African-American Literature**

Students focus on the genre of African-American Literature. Students will study selected major African-American literature pieces, with emphasis on twentieth-century writers.

**Survey of Appalachian Literature**

Students focus on the genre of Appalachian Literature. Students will study selected major Appalachian literature, with emphasis on twentieth-century writers.

**Survey of British Literature**

Students focus on the genre of Appalachian Literature. Students will study major British literature pieces.

**Survey of Science Fiction and Fantasy Literature**

Students will focus on the genres of Science Fiction and Fantasy. Students will survey the histories of these genres and recognize how world events have been reflected onto other worlds.

**Survey of Young Adult Literature**

Students focus on the genre of Young Adult Literature. Students will study selected major pieces of Young Adult literature, with emphasis on twentieth-century and twenty-first century writers.

**Yearbook I****4071**

*Prerequisite: Journalism, B average in English, application, and teacher/administrative approval*

The yearbook student manages and prioritizes collaborative tasks as a staff member and evaluates performance of assigned duties. The student manages a publication from inception to camera-ready form. The student manages the advertising and subscription accounts and critiques advertisements. The student implements an advertising campaign to increase circulation and manages sound financial record-keeping methods. The student evaluates publications after distribution and incorporates recommended improvements. The student debates the appropriateness of journalistic writing to address specific writing purposes and audiences.

**Yearbook II****4072**

*Prerequisite: Yearbook I, application and teacher/administrative approval.*

The yearbook student manages and prioritizes collaborative tasks as a staff member and evaluates performance of assigned duties. The student manages a publication from inception to camera-ready form. The student manages the advertising and subscription accounts and critiques advertisements. The student implements an advertising campaign to increase circulation and manages sound financial record-keeping methods. The student evaluates publications after distribution and incorporates recommended improvements. The student debates the appropriateness of journalistic writing to address specific writing purposes and audiences.

## Foreign Language: French/Spanish

### **Spanish I 5661**

The level one course in modern foreign languages allows students to comprehend and produce simple, short sentences and ideas using memorized words and phrases in the target language. Topics of reading and conversation that center around communicative tasks are facilitated by memorization patterns, resulting in fewer errors. During level one study, students also learn to recognize people, products and viewpoints of the target culture and begin to compare native and target cultures. Students are introduced to ways in which the target language is connected to the native language to other disciplines and to resources beyond the classroom. Students will be expected to comprehend the main idea of short conversations and narratives on familiar topics, recognize linguistic similarities and differences in an effort to expand both the English and foreign language. Students will also be asked to prepare and deliver short communications to listeners.

### **French II 5622/ Spanish II 5662**

Prerequisite: French I / Spanish I

The level two foreign languages expand the students' knowledge of structure and vocabulary so they understand and produce more complex ideas in the target language. Students identify the products, practices, and viewpoints of the target culture and learn to discuss generalizations about the cultures. Level two students are more aware of similarities and differences between target and native languages and cultures. They also become adept at using information and skills common to the target language which could be transferred to other disciplines. French will only be offered online.

### **French III 5623/ Spanish III 5663**

Prerequisite: French II / Spanish II

The level three foreign languages expand the students' knowledge of structure and vocabulary so they can understand short passages and authentic texts on familiar topics and themes using learned vocabulary structures and context clues. In classes, students create short messages, letters and simple conversations from sentence through paragraph length using past, present, and future time. As they develop a more sophisticated understanding of the target culture, level three students discuss, analyze and explain various cultural aspects. They interpret cultural connotations of common linguistics items and, in the modern languages, begin to incorporate appropriate behaviors and gestures in language use. Students transfer information, skills and resources from the target language to other disciplines and vice versa. They seek opportunities to use or apply the target language outside the school environment. French will be offered only online.

### **French IV 5624/ Spanish IV 5664**

Prerequisite: French III / Spanish III

In modern foreign languages, level four students initiate, sustain and bring to closure a wide variety of communicative tasks. They begin to solve problems using the language and acquire new knowledge from authentic sources. Students at this level demonstrate an increased ability to express chronology and abstract ideas. As students continue to expand their knowledge of various aspects of the target culture(s), they also apply, evaluate, explain and integrate this information. By the fourth year of study, students are able to synthesize and apply information from target language sources to other disciplines and vice versa. They independently locate target language sources and opportunities to expand language use beyond classroom experiences. French will be offered only online.

## Mathematics

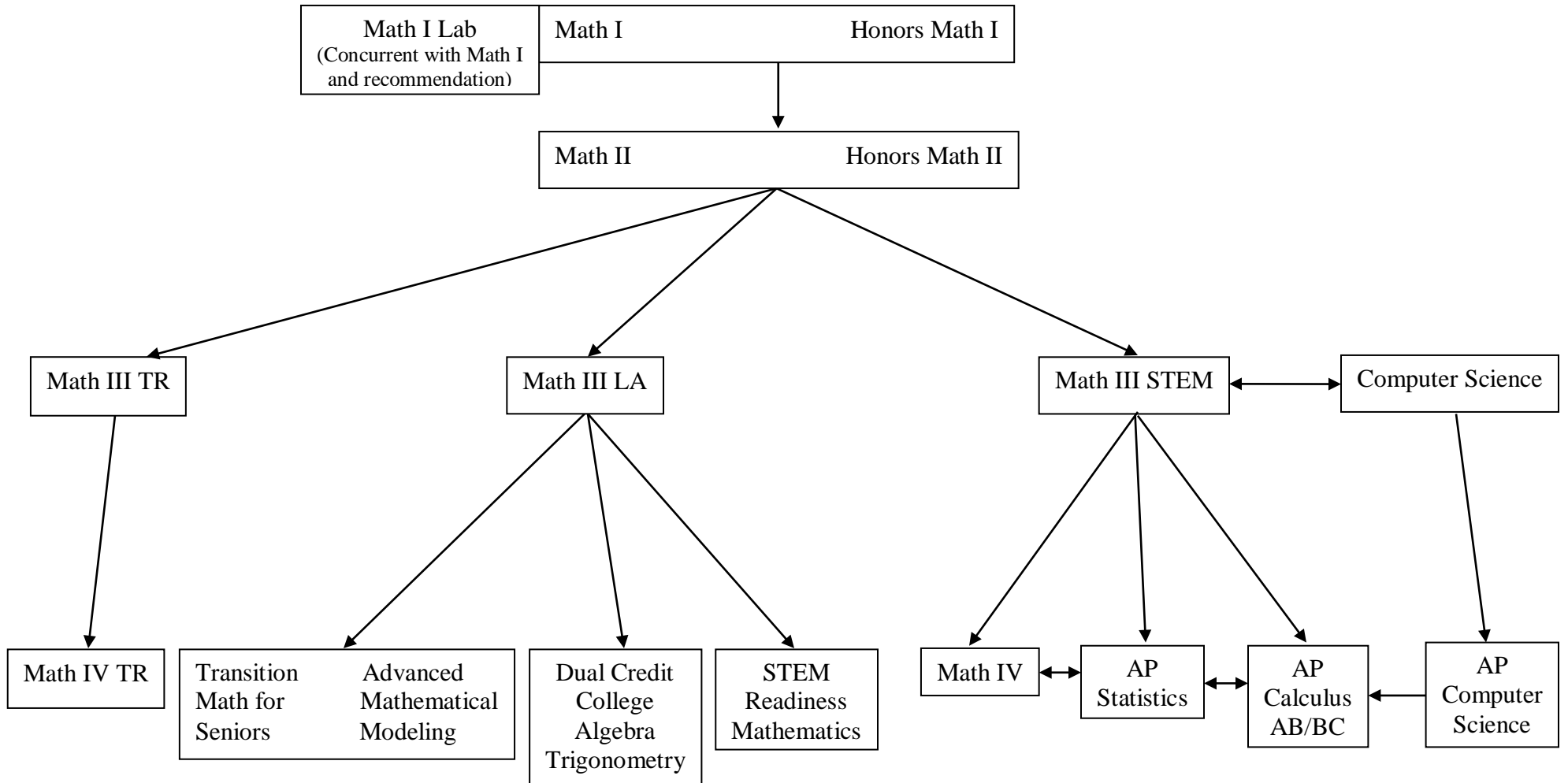
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## B-UHS Mathematics Flow Map



\*Transition Mathematics for Seniors: Policy 2510 states that all public school students enrolled in grade 12 who did not meet the minimum score on the mathematics benchmark test must be scheduled into Transition Mathematics for Seniors or a substituted higher level mathematics course agreed upon in writing as designated in Policy 2510.

## **Math I Lab grade 9** (must be currently enrolled in Math I)

Math I Lab is designed for our “at risk” student population. Mathematics taught in the ninth grade year is often referred to as “gatekeeper” content to higher level mathematics. Struggling ninth grade students may benefit from a Math I Lab experience that is responsive to their individual academic needs. Students enrolled in Math I Lab will participate in a heterogeneous mix of students in regular classroom instruction of Math I. Because some of the highest priority content for college and career readiness comes from Grades 6-8, the Math I Lab experiences will address the CSOs for mathematical practice and connect to the Math I CSOs while including powerfully useful proficiencies such as applying ratio reasoning in real-world and mathematical problems, computing fluently with positive and negative fractions and decimals, and solving real-world and mathematical problems involving angle measure, area, surface area, and volume. Students will be provided with additional interventions such as re-teaching targeted concepts or skills, providing additional practice and supporting classroom PBLs. During the first semester, the “at risk students” go to a Math I class as well as a Math I Lab class. This is repeated second semester, allowing the student to learn new concepts at the pace in the regular Math I class and then providing the intervention needed during the Math I Lab class. Manipulatives, interactive java applets, Math I online standards-based Units of Instruction and Instructional Guides may be used to bridge the gap from the concrete to the abstract. Available technology such as calculators, computers, and interactive utilities are to be used as tools to enhance learning. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. Upon successful completion, students enrolled in a Math I Lab course will receive one mathematics credit toward graduation. Institutions of higher education will not recognize this class as a credit in mathematics. Students planning on attending college should check with that institution to see if four mathematics credits are required for admission. (1 year/1 credit)

## **Math I grade 9**

Math I builds on the WVCCR Grade 8 Standards and is correspondingly more advanced than our previous algebra course. The fundamental purpose of Math I is to formalize and extend the mathematics that students learned in the middle grades. Because many of the topics previously included in an algebra course are in the WVCCR Grade 8 Standards, Math I starts with more advanced topics and includes more in depth work with linear functions, exponential functions and relationships, transformations and connecting algebra and geometry through coordinates. The critical areas, organized into units, deepen and extend understanding of linear relationships, in part by contrasting them with exponential phenomena, and in part by applying linear models to data that exhibit a linear trend. Math I uses properties and theorems involving congruent figures to deepen and extend understanding of geometric knowledge from prior grades. The final unit in the course ties together the algebraic and geometric ideas studied. It also goes beyond the previous high school CSOs in statistics. The Mathematical Habits of Mind apply throughout the course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. (1 year/1 credit)

**Critical Area 1:** Students have had a variety of experiences working with expressions and creating equations. They continue working with expressions and creating equations by using quantities to model and analyze situations, to interpret expressions, and by creating equations to describe situations.

**Critical Area 2:** Students will learn function notation and develop the concepts of domain and range. They move beyond viewing functions as processes that take inputs and yield outputs and start viewing functions as objects in their own right. They explore many examples of functions, including sequences; they interpret functions given graphically, numerically, symbolically and verbally, translate between representations and understand the limitations of various representations. They work with functions given by graphs and tables, keeping in mind that, depending upon the context, these representations are likely to be approximate and incomplete. Their work includes functions that can be described or approximated by formulas as well as those that cannot. When functions describe relationships between quantities arising from a context, students reason with the units in which those quantities are measured. Students build on and informally extend their understanding of integer exponents to consider exponential functions. They compare and contrast linear and exponential functions, distinguishing between additive and multiplicative change. They interpret arithmetic sequences as linear functions and geometric sequences as exponential functions.

**Critical Area 3:** This unit builds on these earlier experiences by asking students to analyze and explain the process of solving an equation and to justify the process used in solving a system of equations. Students develop fluency writing, interpreting and translating between various forms of linear equations and inequalities

and using them to solve problems. They master the solution of linear equations and apply related solution techniques and the laws of exponents to the creation and solution of simple exponential equations. Students explore systems of equations and inequalities, and they find and interpret their solutions. All of this work is grounded on understanding quantities and on relationships between them.

**Critical Area 4:** This unit builds upon students' prior experiences with data, providing students with more formal means of assessing how a model fits data. Students use regression techniques to describe approximately linear relationships between quantities. They use graphical representations and knowledge of the context to make judgments about the appropriateness of linear models. With linear models, they look at residuals to analyze the goodness of fit.

**Critical Area 5:** Students establish triangle congruence criteria, based on analyses of rigid motions and formal constructions. They solve problems about triangles, quadrilaterals and other polygons. They apply reasoning to complete geometric constructions and explain why they work.

**Critical Area 6:** Students use a rectangular coordinate system to verify geometric relationships, including properties of special triangles and quadrilaterals and slopes of parallel and perpendicular lines.

## **Honors Math I grade 9**

The fundamental purpose of Honors Math I is to formalize and extend the mathematics that students learned in the middle grades. It moves at an accelerated pace to cover the Math I content in greater depth and is designed primarily for the strong STEM (Science, Technology, Engineering and Mathematics) college-bound student. The critical areas, organized into units, deepen and extend understanding of linear relationships, in part by contrasting them with exponential phenomena, and in part by applying linear models to data that exhibit a linear trend. Honors Math I uses properties and theorems involving congruent figures to deepen and extend understanding of geometric knowledge from prior grades. The final unit in the course ties together the algebraic and geometric ideas studied. The Mathematical Habits of Mind apply throughout the course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful, and logical subject that makes use of their ability to make sense of problem situations. 21<sup>st</sup> Century learning skills, technology tools and content emphasizing analytic proof will be essential components of classroom instruction. (1 year/1 credit)

**Critical Area 1:** Students have had a variety of experiences working with expressions and creating equations. They continue working with expressions and creating equations by using quantities to model and analyze situations, to interpret expressions, and by creating equations to describe situations.

**Critical Area 2:** Students will learn function notation and develop the concepts of domain and range. They move beyond viewing functions as processes that take inputs and yield outputs and start viewing functions as objects in their own right. They explore many examples of functions, including sequences; they interpret functions given graphically, numerically, symbolically and verbally, translate between representations and understand the limitations of various representations. They work with functions given by graphs and tables, keeping in mind that, depending upon the context, these representations are likely to be approximate and incomplete. Their work includes functions that can be described or approximated by formulas as well as those that cannot. When functions describe relationships between quantities arising from a context, students reason with the units in which those quantities are measured. Students build on and informally extend their understanding of integer exponents to consider exponential functions. They compare and contrast linear and exponential functions, distinguishing between additive and multiplicative change. They interpret arithmetic sequences as linear functions and geometric sequences as exponential functions.

**Critical Area 3:** This unit builds on these earlier experiences by asking students to analyze and explain the process of solving an equation and to justify the process used in solving a system of equations. Students develop fluency writing, interpreting and translating between various forms of linear equations and inequalities and using them to solve problems. They master the solution of linear equations and apply related solution techniques and the laws of exponents to the creation and solution of simple exponential equations. Students explore systems of equations and inequalities, and they find and interpret their solutions. All of this work is grounded on understanding quantities and on relationships between them.

**Critical Area 4:** This unit builds upon students' prior experiences with data, providing students with more formal means of assessing how a model fits data. Students use regression techniques to describe approximately linear relationships between quantities. They use graphical representations and knowledge of the context to make judgments about the appropriateness of linear models. With linear models, they look at residuals to analyze the goodness of fit.

**Critical Area 5:** Students establish triangle congruence criteria, based on analyses of rigid motions and formal constructions. They solve problems about triangles, quadrilaterals and other polygons. They apply reasoning to complete geometric constructions and explain why they work.

**Critical Area 6:** Students use a rectangular coordinate system to verify geometric relationships, including properties of special triangles and quadrilaterals and slopes of parallel and perpendicular lines.

## **Math II grade 10**

The focus of Mathematics II is on quadratic expressions, equations, and functions; comparing their characteristics and behavior to those of linear and exponential relationships from Math I as organized into six critical areas or units. The need for extending the set of rational numbers arises; real and complex numbers are introduced so that all quadratic equations can be solved. The link between probability and data is explored through conditional probability and counting methods, including their use in making and evaluating decisions. The study of similarity leads to an understanding of right triangle trigonometry and connects to quadratics through Pythagorean relationships. Circles with their quadratic algebraic representations complete this course. The Mathematical Habits of Mind apply throughout this course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful and logical subject that makes use of their ability to make sense of problem situations. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. (1 year/1 credit) **Prerequisite:** Math I credit

**Critical Area 1:** Students extend the laws of exponents to rational exponents and explore distinctions between rational and irrational numbers by considering their decimal representations. Students learn that when quadratic equations do not have real solutions the number system must be extended so that solutions exist, analogous to the way in which extending the whole numbers to the negative numbers allows  $x + 1 = 0$  to have a solution. Students explore relationships between number systems: whole numbers, integers, rational numbers, real numbers and complex numbers. The guiding principle is that equations with no solutions in one number system may have solutions in a larger number system.

**Critical Area 2:** Students consider quadratic functions, comparing the key characteristics of quadratic functions to those of linear and exponential functions. They select from among these functions to model phenomena. Students learn to anticipate the graph of a quadratic function by interpreting various forms of quadratic expressions. In particular, they identify the real solutions of a quadratic equation as the zeros of a related quadratic function. When quadratic equations do not have real solutions, students learn that the graph of the related quadratic function does not cross the horizontal axis. They expand their experience with functions to include more specialized functions—absolute value, step, and those that are piecewise-defined.

**Critical Area 3:** Students begin by focusing on the structure of expressions, rewriting expressions to clarify and reveal aspects of the relationship they represent. They create and solve equations, inequalities and systems of equations involving exponential and quadratic expressions.

**Critical Area 4:** Students use the language of set theory to expand their ability to compute and interpret theoretical and experimental probabilities for compound events, attending to mutually exclusive events, independent events, and conditional probability. Students should make use of geometric probability models wherever possible. They use probability to make informed decisions.

**Critical Area 5:** Students apply their earlier experience with dilations and proportional reasoning to build a formal understanding of similarity. They identify criteria for similarity of triangles, use similarity to solve problems and apply similarity in right triangles to understand right triangle trigonometry, with particular attention to special right triangles and the Pythagorean Theorem. It is in this unit that students develop facility with geometric proof. They use what they know about congruence and similarity to prove theorems involving lines, angles, triangles, and other polygons. They explore a variety of formats for writing proofs.

**Critical Area 6:** Students prove basic theorems about circles, such as a tangent line is perpendicular to a radius, inscribed angle theorem, and theorems about chords, secants and tangents dealing with segment lengths and angle measures. In the Cartesian coordinate system, students use the distance formula to write the equation of a circle when given the radius and the coordinates of its center, and the equation of a parabola with vertical axis when given an equation of its directrix and the coordinates of its focus. Given an equation of a circle, they draw the graph in the coordinate plane and apply techniques for solving quadratic equations to determine intersections between lines and circles or a parabola and between two circles. Students develop informal arguments justifying common formulas for circumference, area and volume of geometric objects, especially those related to circles.



## **Honors Math II grade 10**

The focus of Honors Math II is on quadratic expressions, equations, and functions; comparing their characteristics and behavior to those of linear and exponential relationships from Math I as organized into six critical areas or units. It moves at an accelerated pace to cover the Math II content in greater depth and is designed primarily for the strong STEM (Science, Technology, Engineering and Mathematics) college-bound student. The need for extending the set of rational numbers arises. Real and complex numbers are introduced so that all quadratic equations can be solved. The link between probability and data is explored through conditional probability and counting methods, including their use in making and evaluating decisions. The study of similarity leads to an understanding of right triangle trigonometry and connects to quadratics through Pythagorean relationships. Circles, with their quadratic algebraic representations, complete this course. The Mathematical Habits of Mind apply throughout the course and, together with the content standards, prescribe that students experience mathematics as a coherent, useful and logical subject that makes use of their ability to make sense of problem situations. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. (1 year/1 credit) **Prerequisite:** Math I credit

**Critical Area 1:** Students extend the laws of exponents to rational exponents and explore distinctions between rational and irrational numbers by considering their decimal representations. Students learn that when quadratic equations do not have real solutions the number system must be extended so that solutions exist, analogous to the way in which extending the whole numbers to the negative numbers allows  $x + 1 = 0$  to have a solution. Students explore relationships between number systems: whole numbers, integers, rational numbers, real numbers and complex numbers. The guiding principle is that equations with no solutions in one number system may have solutions in a larger number system.

**Critical Area 2:** Students consider quadratic functions, comparing the key characteristics of quadratic functions to those of linear and exponential functions. They select from among these functions to model phenomena. Students learn to anticipate the graph of a quadratic function by interpreting various forms of quadratic expressions. In particular, they identify the real solutions of a quadratic equation as the zeros of a related quadratic function. When quadratic equations do not have real solutions, students learn that the graph of the related quadratic function does not cross the horizontal axis. They expand their experience with functions to include more specialized functions—absolute value, step, and those that are piecewise-defined.

**Critical Area 3:** Students begin by focusing on the structure of expressions, rewriting expressions to clarify and reveal aspects of the relationship they represent. They create and solve equations, inequalities and systems of equations involving exponential and quadratic expressions.

**Critical Area 4:** Students use the language of set theory to expand their ability to compute and interpret theoretical and experimental probabilities for compound events, attending to mutually exclusive events, independent events, and conditional probability. Students should make use of geometric probability models wherever possible. They use probability to make informed decisions.

**Critical Area 5:** Students apply their earlier experience with dilations and proportional reasoning to build a formal understanding of similarity. They identify criteria for similarity of triangles, use similarity to solve problems and apply similarity in right triangles to understand right triangle trigonometry, with particular attention to special right triangles and the Pythagorean Theorem. It is in this unit that students develop facility with geometric proof. They use what they know about congruence and similarity to prove theorems involving lines, angles, triangles, and other polygons. They explore a variety of formats for writing proofs.

**Critical Area 6:** Students prove basic theorems about circles, such as a tangent line is perpendicular to a radius, inscribed angle theorem, and theorems about chords, secants and tangents dealing with segment lengths and angle measures. In the Cartesian coordinate system, students use the distance formula to write the equation of a circle when given the radius and the coordinates of its center, and the equation of a parabola with vertical axis when given an equation of its directrix and the coordinates of its focus. Given an equation of a circle, they draw the graph in the coordinate plane and apply techniques for solving quadratic equations to determine intersections between lines and circles or a parabola and between two circles. Students develop informal arguments justifying common formulas for circumference, area and volume of geometric objects, especially those related to circles.

## **Math III TR grade 11**

The High School Math III course builds on the Math II course and offers more personalized learning pathways. It is in Math III TR (Technical Readiness) that students pull together and apply the accumulation of learning that they have from their previous courses, with content grouped into four critical areas, organized into units. Math III

TR & Math IV TR are course options (for juniors and seniors) built from the mathematics content of Math III through integration of career clusters. The mathematics content is spread over two years of coursework. These courses integrate the mathematics standards with hands-on career content. Students study mathematical applications related to their technical fields. Students bring together all of their experience with functions and geometry to create models and solve contextual problems. The Mathematical Habits of Mind apply throughout each course and together with the content standards, prescribe that students experience mathematics as a coherent, useful and logical subject that makes use of their ability to make sense of problem situations. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. (1 year/1 credit) **Prerequisite:** Math II credit

### **Math III LA grade 11**

The High School Math III course builds on the Math II course and offers more personalized learning pathways. It is in Math III LA (Liberal Arts) that students pull together and apply the accumulation of learning that they have from their previous courses, with content grouped into four critical areas, organized into units. The completion of the content for Math III LA exposes students to the content deemed by the authors of the Common Core State Standards for Mathematics as the College and Career Ready Line. Math III LA is designed primarily for the college-bound students pursuing Liberal Arts majors. They apply methods from probability and statistics to draw inferences and conclusions from data. Students expand their repertoire of functions to include polynomial, rational and radical functions. In this course rational functions are limited to those whose numerators are of degree at most 1 and denominators of degree at most 2; radical functions are limited to square roots or cube roots of at most quadratic polynomials. They expand their study of right triangle trigonometry to include general triangles. Finally, students bring together all of their experience with functions and geometry to create models and solve contextual problems. The Mathematical Habits of Mind apply throughout each course and together with the content standards, prescribe that students experience mathematics as a coherent, useful and logical subject that makes use of their ability to make sense of problem situations. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. (1 year/1 credit)

**Prerequisite:** Math II credit

**Critical Area 1:** Students see how the visual displays and summary statistics they learned in earlier grades relate to different types of data and to probability distributions. They identify different ways of collecting data—including sample surveys, experiments, and simulations—and the role that randomness and careful design play in the conclusions that can be drawn.

**Critical Area 2:** Students develop the structural similarities between the system of polynomials and the system of integers. Students draw on analogies between polynomial arithmetic and base-ten computation, focusing on properties of operations, particularly the distributive property. Students connect multiplication of polynomials with multiplication of multi-digit integers and division of polynomials with long division of integers. Students identify zeros of polynomials and make connections between zeros of polynomials and solutions of polynomial equations. The standards culminate with the fundamental theorem of algebra. Rational numbers extend the arithmetic of integers by allowing division by all numbers except 0. Similarly, rational expressions extend the arithmetic of polynomials by allowing division by all polynomials except the zero polynomial. A central theme of the standards is that the arithmetic of rational expressions is governed by the same rules as the arithmetic of rational numbers.

**Critical Area 3:** Students develop the Laws of Sines and Cosines in order to find missing measures of general (not necessarily right) triangles. They are able to distinguish whether three given measures (angles or sides) define 0, 1, 2, or infinitely many triangles. This discussion of general triangles opens up the idea of trigonometry applied beyond right triangles. Students build on this idea to develop the notion of radian measure for angles and extend the domain of the trigonometric functions to all real numbers. They apply this knowledge to model simple periodic phenomena.

**Critical Area 4:** Students synthesize and generalize what they have learned about a variety of function families. They extend their work with exponential functions to include solving exponential equations with logarithms. They explore the effects of transformations on graphs of diverse functions, including functions arising in an application, in order to abstract the general principle that transformations on a graph always have the same effect regardless of the type of the underlying functions. They identify appropriate types of functions to model a situation, adjust parameters to improve the model and compare models by analyzing appropriateness of fit and making judgments about the domain over which a model is a good fit. The description of modeling as “the process of choosing and using mathematics and statistics to analyze empirical situations, to understand them better, and to make decisions” is at the heart of this unit. The narrative discussion and diagram of the modeling

cycle should be considered when knowledge of functions, statistics and geometry is applied in a modeling context.

### **Math III STEM grade 11**

The High School Math III course builds on the Math II course and offers more personalized learning pathways. It is in Math III STEM that students pull together and apply the accumulation of learning that they have from their previous courses, with content grouped into four critical areas, organized into units. It moves at an accelerated pace to cover the Math III content in greater depth and goes beyond the minimum requirements of college and career readiness providing additional mathematics designed primarily for the strong STEM (Science, Technology, Engineering and Mathematics) college-bound student. They apply methods from probability and statistics to draw inferences and conclusions from data. Students expand their repertoire of functions to include polynomial, rational and radical functions. In this course rational functions are limited to those whose numerators are of degree at most 1 and denominators of degree at most 2; radical functions are limited to square roots or cube roots of at most quadratic polynomials. They expand their study of right triangle trigonometry to include general triangles. Finally, students bring together all of their experience with functions and geometry to create models and solve contextual problems. The Mathematical Habits of Mind apply throughout each course and together with the content standards, prescribe that students experience mathematics as a coherent, useful and logical subject that makes use of their ability to make sense of problem situations. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. (1 year/1 credit)

**Prerequisite:** Math II credit

**Critical Area 1:** Students see how the visual displays and summary statistics they learned in earlier grades relate to different types of data and to probability distributions. They identify different ways of collecting data—including sample surveys, experiments, and simulations—and the role that randomness and careful design play in the conclusions that can be drawn.

**Critical Area 2:** Students develop the structural similarities between the system of polynomials and the system of integers. Students draw on analogies between polynomial arithmetic and base-ten computation, focusing on properties of operations, particularly the distributive property. Students connect multiplication of polynomials with multiplication of multi-digit integers and division of polynomials with long division of integers. Students identify zeros of polynomials and make connections between zeros of polynomials and solutions of polynomial equations. The standards culminate with the fundamental theorem of algebra. Rational numbers extend the arithmetic of integers by allowing division by all numbers except 0. Similarly, rational expressions extend the arithmetic of polynomials by allowing division by all polynomials except the zero polynomial. A central theme of the standards is that the arithmetic of rational expressions is governed by the same rules as the arithmetic of rational numbers.

**Critical Area 3:** Students develop the Laws of Sines and Cosines in order to find missing measures of general (not necessarily right) triangles. They are able to distinguish whether three given measures (angles or sides) define 0, 1, 2, or infinitely many triangles. This discussion of general triangles opens up the idea of trigonometry applied beyond right triangles. Students build on this idea to develop the notion of radian measure for angles and extend the domain of the trigonometric functions to all real numbers. They apply this knowledge to model simple periodic phenomena.

**Critical Area 4:** Students synthesize and generalize what they have learned about a variety of function families. They extend their work with exponential functions to include solving exponential equations with logarithms. They explore the effects of transformations on graphs of diverse functions, including functions arising in an application, in order to abstract the general principle that transformations on a graph always have the same effect regardless of the type of the underlying functions. They identify appropriate types of functions to model a situation, adjust parameters to improve the model and compare models by analyzing appropriateness of fit and making judgments about the domain over which a model is a good fit. The description of modeling as “the process of choosing and using mathematics and statistics to analyze empirical situations, to understand them better, and to make decisions” is at the heart of this unit. The narrative discussion and diagram of the modeling cycle should be considered when knowledge of functions, statistics and geometry is applied in a modeling context.

## **Math IV TR grade 12**

The High School Math IV TR course builds on the Math II and Math III TR courses and offers more personalized learning pathways. It is in Math IV TR (Technical Readiness) that students pull together and apply the accumulation of learning that they have from their previous courses, with content grouped into four critical areas, organized into units. Math III TR & Math IV TR are course options (for juniors and seniors) built from the mathematics content of Math III through integration of career clusters. The mathematics content is spread over two years of coursework. These courses integrate the mathematics standards with hands-on career content. Students study mathematical applications related to their technical fields. Students bring together all of their experience with functions and geometry to create models and solve contextual problems. The Mathematical Habits of Mind apply throughout each course and together with the content standards, prescribe that students experience mathematics as a coherent, useful and logical subject that makes use of their ability to make sense of problem situations. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. (1 year/1 credit) **Prerequisite:** Math III TR credit

## **Advanced Mathematical Modeling grade 12**

Students continue to build upon their algebra, and geometry foundations and expand their understanding through further mathematical experiences. The primary focal points of Advanced Mathematical Modeling include the analysis of information using statistical methods and probability, modeling change and mathematical relationships, mathematical decision making in finance, and spatial and geometric modeling for decision-making. Students learn to become critical consumers of the quantitative data that surround them every day, knowledgeable decision makers who use logical reasoning and mathematical thinkers who can use their quantitative skills to solve problems related to a wide range of situations. As they solve problems in various applied situations, they develop critical skills for success in college and careers, including investigation, research, collaboration and both written and oral communication of their work. As students work with these topics, they continually rely on mathematical processes, including problem-solving techniques, appropriate mathematical language and communication skills, connections within and outside mathematics and reasoning. Students also use multiple representations, technology, applications and modeling and numerical fluency in problem-solving contexts. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. (1 year/1 credit) **Prerequisite:** Math III LA credit

### **Developing college and career skills**

The student develops and applies skills used in college and careers, including 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.

### **Finance**

The student creates and analyzes mathematical models to make decisions related to earning, investing, spending and borrowing money. Students investigate the purposes of various taxes and how they are calculated.

### **Probability**

The student uses basic rules of counting and probability to analyze and evaluate risk and return in the context of everyday situations. Students continue to develop their understanding of probability concepts through experiments and simulations, using technology where appropriate.

### **Statistics**

The student makes decisions based on understanding, analysis and critique of reported statistical information and summaries. Statistical methods are applied to design and conduct a study that addresses one or more particular questions. The student communicates the results of reported and student-generated statistical studies.

### **Modeling**

The student analyzes numerical data in everyday situations using a variety of quantitative measures and numerical processes. Likewise, the student conducts investigations, models data, makes predictions and judges the validity of predictions based on data analysis. Mathematical models are used to represent, analyze and solve problems involving change.

### **Networks**

The student uses a variety of network models represented graphically to organize data in quantitative situations, make informed decisions, and solve problems.

## **Social Decision Making**

The student analyzes the mathematics behind various methods of ranking and selection and considers the advantages/disadvantages of each method.

## **Geometry**

The student uses a variety of tools and methods to represent and solve problems involving static and dynamic situations.

## **Transition Mathematics for Seniors grade 12**

Transitional Mathematics for Seniors prepares students for their entry-level credit-bearing liberal studies mathematics course at the post-secondary level. This course will solidify their quantitative literacy by enhancing numeracy and problem solving skills. Students will investigate and use the fundamental concepts of algebra, geometry, and data and statistics. The CSOs which comprise this course are selected from Math I, Math II and Math III. Full integration of calculators, computers, and interactive utilities are essential for mastery. Cooperative learning groups are particularly effective in allowing students to become proficient in the practical uses of mathematics. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. The college transition mathematics course may be counted as a required mathematics credit for high school graduation. (1 year/1 credit) **Prerequisite:** High School Senior

## **STEM Readiness Mathematics grade 12**

This course is designed for students who have completed the Math III (LA) course and subsequently decided they are interested in pursuing a STEM career. It includes standards that would have been covered in Math III (STEM) but not in Math III (LA) (i.e. standards in the CCSS document that are marked with a "+"), selected topics from the Math IV course, and topics drawing from standards covered in Math I and Math II as needed for coherence. The Mathematical Habits of Mind apply throughout each course and together with the content standards, prescribe that students experience mathematics as a coherent, useful and logical subject that makes use of their ability to make sense of problem situations. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. (1 year/1 credit) **Prerequisite:** Math III LA credit

### **Arithmetic and algebra of complex numbers**

This unit reviews the arithmetic of complex numbers with the goal of extending algebraic ideas to the complex number system, for example polynomial identities, the quadratic formula and the Fundamental Theorem of Algebra. Students identify zeros of polynomials, including complex zeros of quadratic polynomials and make connections between complex zeros of polynomials and solutions of polynomial equations. A central theme of this unit is that the arithmetic and algebra of expressions involving rational numbers is governed by the same rules as the arithmetic and algebra of real numbers.

### **Polynomials, rational, and radical relationships**

Students draw on analogies between polynomial arithmetic and base-ten computation, focusing on properties of operations, particularly the distributive property. Students connect multiplication of polynomials with multiplication of multi-digit integers, and division of polynomials with long division of integers. Rational numbers extend the arithmetic of integers by allowing division by all numbers except 0. Similarly, rational expressions extend the arithmetic of polynomials by allowing division by all polynomials except the zero polynomial. A central theme of this unit is that the arithmetic of rational expressions is governed by the same rules as the arithmetic of rational numbers, which is governed by the same rules as the arithmetic of complex numbers.

### **Probability for decisions**

Students see the role that randomness and careful design play in the conclusions that can be drawn. The concept of statistical significance is developed informally through simulation as meaning a result that is unlikely to have occurred solely as a result of random selection in sampling or random assignment in an experiment.

### **Trigonometry of general triangles**

Students develop the Laws of Sines and Cosines in order to find missing measures of general (acute, right, or obtuse) triangles. They are able to distinguish whether three given measures (angles or sides) define 0, 1, 2, or infinitely many triangles. Area is another measure that can be included. This discussion of general triangles opens up the idea of trigonometry applied beyond the right triangle—that is, at least to obtuse angles. Students build on this idea to develop the notion of radian measure for angles and extend the domain of the trigonometric functions to all real numbers. They apply this knowledge to model simple periodic phenomena.

### **Functions and modeling**

Students synthesize and generalize what they have learned about a variety of function families. They extend

their work with exponential functions and trigonometric functions to include solving exponential equations with logarithms and giving general solutions incorporating periodicity. They explore the effects of transformations on graphs of diverse functions, including functions arising in an application, in order to abstract the general principle that transformations of a graph always have the same effect regardless of the type of the underlying functions. They identify appropriate types of functions to model a situation, adjust parameters to improve the model and compare models by analyzing appropriateness of fit and making judgments about the domain over which a model is a good fit.

### **Math IV grade 12**

The fundamental purpose of Mathematics IV is to generalize and abstract learning accumulated through previous courses and to provide the final springboard to calculus. Students take an extensive look at the relationships among complex numbers, vectors, and matrices. They build on their understanding of functions, analyze rational functions using an intuitive approach to limits and synthesize functions by considering compositions and inverses. Students expand their work with trigonometric functions and their inverses and complete the study of the conic sections begun in Mathematics II. They enhance their understanding of probability by considering probability distributions. Previous experiences with series are augmented. The Mathematical Habits of Mind apply throughout each course and together with the content standards, prescribe that students experience mathematics as a coherent, useful and logical subject that makes use of their ability to make sense of problem situations. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. (1 year/1 credit)

**Prerequisite:** Math III STEM credit

#### **Building Relationships among Complex Numbers, Vectors, and Matrices**

Students analyze complex numbers geometrically and draw on analogies between complex numbers and vector quantities. Students utilize vectors to model physical phenomena and solve related problems. Vectors are then generalized to matrices, with emphasis on utilizing matrices in transformations and applications. Matrices are additionally developed as a tool for solving systems of equations. The fundamental idea of this unit is the development of new arithmetic operations that have a commonality with each other and are a precursor to the algebraic thinking in linear algebra.

#### **Analysis and Synthesis of Functions**

Students have previously analyzed the graphs of polynomial functions. Students extend their experiences to describe the properties of rational functions. They also explore composition of functions to generalize the concept of inverses developed in Math II.

#### **Trigonometric and Inverse Trigonometric Functions of Real Numbers**

Students advance their thinking about trigonometric functions to a more abstract level. They blend the more concrete trigonometric ideas developed in Math II and III with the general function concepts in Unit 2.

#### **Derivations in Analytic Geometry**

Students extend their understanding of the definitions of the conic sections to include ellipses and hyperbolas and use them to model physical phenomena. Students develop informal arguments justifying the formulas for the volumes of more complex solids.

#### **Modeling with Probability**

Students interpret geometrically probability concepts developed since the middle grades. They then examine the role of expected value in decision making.

#### **Series and Informal Limits**

Students develop sigma notation and infinite geometric series building on ideas from Math I and Math III. This unit provides an opportunity for students to deepen their informal understanding of limits while developing formulas used in Calculus.

### **Dual Credit Intermediate Algebra grade 12**

Intermediate Algebra is a course in techniques for performing operations on polynomial, exponential, and rational expressions and subsequently solving linear and quadratic equations and inequalities. Equations and inequalities using absolute value are studied. Set notation and function notation are also studied. Graphing linear and quadratic equations and the forms of equations of a line are studied as well as the solutions of systems of linear equations in two variables. This course offers three hours of institutional credit only. Credit hours will not apply toward hours required for graduation. This course cannot be used as mathematical certification for teaching mathematics or for the general studies requirement in mathematics. **Prerequisite:** 3.0

minimum cumulative average, Math III credit and ACT Math 19 or SAT Math 500 or Accuplacer elementary algebra score 76.

### **Dual Credit College Algebra grade 12**

Dual Credit College Algebra is designed for students who have successfully completed the objectives for Math III and have met the prerequisites below. The specific goals of this course will be to stress an algebraic, graphical, and numerical approach to the study of: understanding and using the concept of function, mathematical application problems, solving equations and inequalities in one variable using multiple representations, graphing equations and functions, lines, parabolas, and circles, higher order polynomial, rational, radical, absolute value, exponential, and logarithmic functions, and systems of equations and matrices. Focus is on advanced algebra concepts and is equivalent to Math 1112 at Fairmont State University as well as Pierpont Community and Technical College. 21<sup>st</sup> Century learning skills, technology tools and content will be

essential components of classroom instruction. ( $\frac{1}{2}$  year/ $\frac{1}{2}$  credit and 3 college credits) **Prerequisite:** 3.0

minimum cumulative average, Math III credit and ACT Math 21 or SAT Math 500 or Accuplacer elementary algebra score 80 or final grade of C or better in Intermediate Algebra.

### **Dual Credit College Trigonometry grade 12**

The specific goals of the trigonometry course are to stress an algebraic, graphic, and numeric approach to: the concept of function, especially trigonometric functions arising from the study of circular motion, right angle trigonometry and trigonometric functions of general angles, the application of trigonometric functions in modeling problems, trigonometric equations, inequalities, and identities, graphing trigonometric functions, applying trigonometric functions to polar coordinates, complex numbers, and vectors. To accomplish these goals the class incorporates interactive laboratories using technology and student activities that emphasize writing and

student cooperation as integral parts of the class. ( $\frac{1}{2}$  year/ $\frac{1}{2}$  credit and 3 college credits) **Prerequisite:** 3.0

minimum cumulative average, Math III credit and final grade of C or better in College Algebra or ACT Math 23 or SAT Math 540 or Accuplacer algebra score 80.

### **AP Statistics grades 11 – 12**

The AP Statistics course is equivalent to a one-semester, introductory, non-calculus-based college course in statistics. The course introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. There are four themes in the AP Statistics course: exploring data, sampling and experimentation, anticipating patterns, and statistical inference. Students use technology, investigations, problem solving, and writing as they build conceptual understanding. Students who are enrolled in AP Statistics are expected to describe patterns and departures from patterns, plan and conduct a study, explore random phenomena using probability and simulation, and estimate population parameters and test hypotheses. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. AP Statistics represents college-level statistics for which most colleges grant \*Advanced Placement credit. The instructional objectives for this course are outlined in the College Board Publications. It is required that students enrolled in AP Statistics take the AP exam. (1 year/1 credit) **Prerequisite:** Math III STEM credit

### **AP Calculus AB grade 12**

AP Calculus AB is roughly equivalent to a first semester college calculus course devoted to topics in differential and integral calculus. The AP course covers topics in these areas, including concepts and skills of limits, derivatives, definite integrals, and the Fundamental Theorem of Calculus. The course teaches students to approach calculus concepts and problems when they are represented graphically, numerically, analytically, and verbally, and to make connections amongst these representations. Students learn how to use technology to help solve problems, experiment, interpret results, and support conclusions. Students who are enrolled in AP Calculus AB are expected to

- Work with functions represented in multiple ways: graphical, numerical, analytical, or verbal. They should understand the connections among these representations.
- Understand the meaning of the derivative in terms of a rate of change and local linear approximation and use derivatives to solve problems.
- Understand the meaning of the definite integral as a limit of Riemann sums and as the net accumulation of change and use integrals to solve problems.
- Understand the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus.
- Communicate mathematics and explain solutions to problems verbally and in writing.
- Model a written description of a physical situation with a function, a differential equation, or an integral.
- Use technology to solve problems, experiment, interpret results, and support conclusions.
- Determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement.
- Develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment.

21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. AP Calculus represents college-level calculus for which most colleges grant \*Advanced Placement credit. The instructional objectives for this course are outlined in the College Board Publications. It is required that students enrolled in AP Calculus AB take the AP exam. (1 year/1 credit) **Prerequisite:** Senior with Math III STEM credit

### **AP Calculus BC grade 12**

AP Calculus BC is roughly equivalent to both first and second semester college calculus courses and extends the content learned in AB to different types of equations and introduces the topic of sequences and series. The AP course covers topics in differential and integral calculus, including concepts and skills of limits, derivatives, definite integrals, the Fundamental Theorem of Calculus, and series. The course teaches students to approach calculus concepts and problems when they are represented graphically, numerically, analytically, and verbally, and to make connections amongst these representations. Students learn how to use technology to help solve problems, experiment, interpret results, and support conclusions. Students who are enrolled in AP Calculus BC are expected to

- Work with functions represented in multiple ways: graphical, numerical, analytical, or verbal. They should understand the connections among these representations.
- Understand the meaning of the derivative in terms of a rate of change and local linear approximation and use derivatives to solve problems.
- Understand the meaning of the definite integral as a limit of Riemann sums and as the net accumulation of change and use integrals to solve problems.
- Understand the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus.
- Communicate mathematics and explain solutions to problems verbally and in writing.
- Model a written description of a physical situation with a function, a differential equation, or an integral.
- Use technology to solve problems, experiment, interpret results, and support conclusions.
- Determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement.
- Develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment.

21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. AP Calculus represents college-level calculus for which most colleges grant \*Advanced Placement credit. The instructional objectives for this course are outlined in the College Board Publications. It is required that students enrolled in AP Calculus BC take the AP exam. Students taking the AP Calculus BC exam will receive scores for both AB and BC. (1 year/1 credit) **Prerequisite:** Senior with Math III STEM credit

### **Computer Science/Programming grades 10 – 12**

Computer Science/Programming objectives are designed for students who have successfully completed the objectives for Math I and Math II. A student may progress to Computer Science/Programming while enrolled in Honors Math II. This area of study introduces the student to the fundamentals of computers and web page design using HTML and Java. This course is designed and paced primarily for the strong STEM (Science, Technology, Engineering and Mathematics) college-bound student. Computer science is the study of computers



and algorithmic processes, including their principles, their hardware and software designs, their applications, and their impact on society. Topics include web design, computer graphics, arithmetic operations, input and output statements, control statements, looping, subscript variables, arrays, objects, applets, graphics classes, images in web pages, animation, program debugging, storage, retrieval, and entering data. Students will develop web pages using HTML and Java fundamentals learned in this course. 21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. (1 year /1 credit)

**Prerequisite:** Math II credit or concurrent with Honors Math II

### **AP Computer Science grades 11 – 12**

AP Computer Science A is equivalent to a first-semester, college-level course in computer science. The course introduces students to computer science with fundamental topics that include problem solving, design strategies and methodologies, organization of data (data structures), approaches to processing data (algorithms), analysis of potential solutions, and the ethical and social implications of computing. The course emphasizes both object-oriented and imperative problem solving and design using Java language. These techniques represent proven approaches for developing solutions that can scale up from small, simple problems to large, complex problems. The AP Computer Science A course curriculum is compatible with many CS1 courses in colleges and universities. Students should be able to

- Design, implement, and analyze solutions to problems,
- Use and implement commonly used algorithms,
- Develop and select appropriate algorithms and data structures to solve new problems,
- Write solutions fluently in an object-oriented paradigm,
- Write, run, test, and debug solutions in the Java programming language, utilizing standard Java library classes and interfaces from the AP Java subset,
- Read and understand programs consisting of several classes and interacting objects;
- Read and understand a description of the design and development process leading to such a program, and
- Understand the ethical and social implications of computer use.

21<sup>st</sup> Century learning skills, technology tools and content will be essential components of classroom instruction. AP Computer Science represents college-level computer science for which most colleges grant \*Advanced Placement credit. The instructional objectives for this course are outlined in the College Board Publications. It is required that students in AP Computer Science A take the AP exam. (1 year/1 credit) **Prerequisite:** Computer Science/Programming credit

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# Science

## **Earth and Space Science - Grade 9** 6201

The ninth grade Earth and Space Science (ESS) course builds upon science concepts from middle school by revealing the complexity of Earth's interacting systems, evaluating and using current data to explain Earth's place in the universe and enabling students to relate Earth Science to many aspect of human society. Disciplinary core ideas, science and engineering practices, and crosscutting concepts are intertwined as students focus on five ESS content topics: Space Systems, History of Earth, Earth's Systems, Weather and Climate, and Human Sustainability. The objectives strongly reflect the many societally relevant aspects of ESS (resources, hazards, environmental impacts) with an emphasis on using engineering and technology concepts to design solutions to challenges facing human society. Engineering, Technology, and the Application of Science objectives are integrated throughout instruction as students define problems and design solutions related to the course objectives. There is a focus on several scientific practices which include developing and using models, planning and conducting investigations, analyzing and interpreting data, using mathematical and computational thinking, constructing explanations and designing solutions. Students will engage in active inquiries, investigations, and hands-on activities as they develop and demonstrate conceptual understandings and research and laboratory skills described in the objectives. Safety instruction is integrated in all activities, and students will implement safe procedures and practices when manipulating equipment, materials, organisms, and models.

## **Biology - Grade 10** 6023

The tenth grade Biology content provides more in-depth studies of the living world and enables students to make sense of emerging research findings and apply those understandings to solving problems. Disciplinary core ideas, science and engineering practices, and crosscutting concepts are intertwined as students focus on five life science topics: Structure and Function, Inheritance and Variation of Traits, Matter and Energy in Organisms and Ecosystems, Interdependent Relationships in Ecosystems, and Natural Selection and Evolution. Engineering, Technology, and the Application of Science objectives are integrated throughout instruction as students define problems and design solutions related to the course objectives. There is a focus on several scientific practices which include developing and using models, planning and conducting investigations, analyzing and interpreting data, using mathematical and computational thinking, constructing explanations and designing solutions. Students will engage in active inquiries, investigations, and hands-on activities as they develop and demonstrate conceptual understandings and research and laboratory skills described in the objectives. Safety instruction is integrated in all activities, and students will implement safe procedures and practices when manipulating equipment, materials, organisms, and models.

## **Chemistry** 6031 (Recommended STEM Elective)

Chemistry is an advanced elective course designed for students pursuing Science Technology Engineering Mathematics (STEM) education and careers. Students will develop a deeper understanding of the core concepts of: Structure and Properties of Matter and Chemical Reactions as they prepare for college chemistry requiring a strong mathematical foundation. The chemistry course prepares high school students to explain more in-depth phenomena central not only to the physical sciences, but to life and earth and space sciences as well. The chemistry objectives blend the core ideas with scientific and engineering practices and crosscutting concepts to support students in developing useable knowledge to explain ideas across the science disciplines. There is a focus on several scientific practices which include developing and using models, planning and conducting investigations, analyzing and interpreting data, using mathematical and computational thinking, and constructing explanations. Students will use these practices to demonstrate understanding of the core ideas as well as demonstrate understanding of several engineering practices, including design and evaluation. Students will engage in active inquiries, investigations, and hands-on activities as they develop and demonstrate conceptual understandings and research and laboratory skills described in the objectives. Safety instruction is integrated in all activities, and

students will implement safe procedures and practices when manipulating equipment, materials, organisms, and models.

**Physics            6041**  
(Recommended STEM Elective)

Physics is an advanced elective course designed for students pursuing Science Technology Engineering Mathematics (STEM) education and careers. The course emphasizes a mathematical approach to the topics of Forces and Interactions; Energy, and Waves and Electromagnetic Radiation and prepares student for college physics. The physics course prepares high school students to explain more in-depth phenomena central not only to the physical sciences, but to life and earth and space sciences, as well. These objectives blend the core ideas with scientific and engineering practices and crosscutting concepts to support students in developing useable knowledge to explain ideas across the science disciplines. There is a focus on several scientific practices which include developing and using models, planning and conducting investigations, analyzing and interpreting data, using mathematical and computational thinking, and constructing explanations. Students will use these practices to demonstrate understanding of the core ideas as well as demonstrate understanding of several engineering practices, including design and evaluation. Students will engage in active inquiries, investigations, and hands-on activities as they develop and demonstrate conceptual understandings and research and laboratory skills described in the objectives. Safety instruction is integrated in all activities, and students will implement safe procedures and practices when manipulating equipment, materials, organisms, and models.

**Environmental Science            6312**

Environmental Science is an advanced, high school elective course which builds on foundational knowledge of the chemical, physical, biological, geological processes and focuses on the natural world. Through an inquiry-based program of study, all students will demonstrate environmental literacy as they explore the economic, social, political, and ecological interdependence in urban and rural areas and on local and global scales. As students fuse experiences across disciplines, they will acquire knowledge, values, and skills needed to protect and improve the environment. There is a focus on several crosscutting concepts including the following: Cause and Effect, Systems and System Models, Energy and Matter, and Stability and Change. Science practices and Engineering, Technology, and the Application of Science objectives are integrated as students ask questions and define problems, develop and use models, plan and conduct investigations, analyze and interpret data, and construct explanations and design solutions. Students will engage in active inquiries, investigations, and hands-on activities as they develop and demonstrate conceptual understandings and research and laboratory skills described in the objectives. Safety instruction is integrated in all activities, and students will implement safe procedures and practices when manipulating equipment, materials, organisms, and models.

**Forensic Science            6044**  
(Elective) - *Prerequisites: Biology*

Forensic Science is an advanced, high school elective course designed to provide students with hands-on experiences in various aspects of a criminal investigation. Science content and Engineering, Technology, and the Application of Science objectives are integrated as students ask questions and define problems, develop and use models, plan and conduct investigations, analyze and interpret data, construct explanations and design solutions as they consider crime scenes, evidence, and protocol. As students demonstrate proficiency in evidence collection--maintenance of data integrity, formulation of a conclusion/summary, and succinct communication of findings--they prepare for forensic-related careers and other occupational opportunities in science, technology, engineering, and math. Students will engage in active inquiries, investigations, and hands-on activities as they develop and demonstrate conceptual understandings and research and laboratory skills described in the objectives. Safety instruction is integrated in all activities, and students will implement safe procedures and practices when manipulating equipment, materials, organisms, and models.

## **Human Anatomy and Physiology      6103**

Human Anatomy and Physiology is an advanced, high school elective course designed for those students wanting a deeper understanding of the structures and functions of the human body. The body will be viewed as a whole using anatomical terminology necessary to describe location. Instruction will be at both micro and macro levels reviewing cellular functions, biochemical processes, tissue interactions, organ systems and the interaction of those systems as it relates to the human organism. Systems covered include integumentary, skeletal, muscular, respiratory, circulatory, digestive, excretory, reproductive immunological, nervous and endocrine. Content standards are integrated with Engineering, Technology, and the Application of Science objectives as students develop conceptual understandings and research and laboratory skills, evaluate the academic requirements, and prepare for occupational opportunities in health and medical fields. Students will engage in active inquiries, investigations, and hands-on activities as they develop and demonstrate conceptual understandings and research and laboratory skills described in the objectives. Safety instruction is integrated in all activities, and students will implement safe procedures and practices when manipulating equipment, materials, organisms, and models.

## **Biology II      6023**

(STEM Elective) - *Prerequisites: Biology with a Grade of "C" or better*

Biology II is an advanced course that is an elective designed for students who have successfully completed Biology and desire an in-depth and rigorous study of the content found in many biological fields of endeavor. This course is designed to build upon and extend their understanding of all life science concepts and skills. Students interested in health and scientific related careers will evaluate the required academic preparations while building and expanding their laboratory skills and experiences. Students will engage in active inquiries, investigations, and hands-on activities as they develop and demonstrate conceptual understandings and research and laboratory skills described in the objectives. Safety instruction is integrated in all activities, and students will implement safe procedures and practices when manipulating equipment, materials, organisms, and models.

## **Advanced Placement Chemistry      6321      weighted**

(College Level STEM Elective) - *Prerequisites: Chemistry*

The AP Chemistry course provides review and enhancement of the concepts and principles equivalent to two semesters of a college level chemistry. Coursework emphasizes the development of critical thinking and problem-solving ability. A student in this course should be proficient in algebra, and be willing work outside class time to complete assignments. The course requires an extensive laboratory component involving the creation and writing of 16 investigation and experimentation procedures. All content objectives for this course will be those set nationally by the College Board Advanced Placement Program Guidelines for the current year. This AP Chemistry course provides an excellent second year exploration of chemical concepts for students who may wish to study sciences at the college level. All students who take the course should take the AP Chemistry Examination

## **Advanced Placement Physics 1      6323      weighted**

(College Level STEM Elective) - *Prerequisite: Math II or Physics*

The AP Physics 1 course provides a systematic introduction to the main principles and concepts equivalent to one semester of a college level physics. Coursework emphasizes the development of critical thinking and problem-solving ability. A student in this course must be very familiar with algebra and trigonometry, and be willing work outside class time to complete assignments. The course requires an extensive laboratory component involving the creation and writing of a minimum of 7 investigation and experimentation procedures. All content objectives for this course are those set nationally by the College Board Advanced Placement Program Guidelines for the current year. This course provides an excellent foundation in physics for students who wish to study engineering or other applied sciences. All students who take the course should take the AP Physics 1 Examination.

## Social Studies

### **World Studies to 1900 7010**

Ninth Grade World Studies engages students in the study of development and evolution of the historic, economic, geographic, political and social structure of the cultural regions of the world from the dawn of civilization to the Twentieth Century. Special attention is given to the formation and evolution of societies into complex political and economic systems. Students are engaged in critical thinking and problem-solving skills, using maps, spreadsheets, charts, graphs, text and other data from a variety of credible sources. Students synthesize the information to predict events and anticipate outcomes as history evolves through the ages.

### **World Studies to 1900 Honors 7010**

*Prerequisite: a grade of "B" in their Social Studies class the previous year or teacher/administrative permission.*

This course is a more in depth version of the Ninth Grade World Studies required course. It emphasizes more enrichment activities and higher level thinking and reading skills.

### **United States Studies to 1900 7009**

Tenth Grade United States Studies examines the evolution of the Constitution as a living document and the role of participatory democracy in the development of a rapidly changing technological society. This study of the United States is an examination of the formative years from the colonization of what would be the United States to its transformation as a dominant political and economic influence in the world at the beginning of the twentieth century. Special emphasis is placed on how the challenges of settling expansive and diverse physical environments were met by a culturally diverse population.

### **Honors United States Studies to 1900 7009**

*Prerequisite: 3.0 or better in previous social studies class or teacher/administrative recommendation*

This course covers the same content as the Tenth Grade United States Studies required course and additionally prepares the student for greater success in AP United States History and the AP US History exam. Students planning on taking AP US History their Eleventh Grade year and the AP US History exam should take this course.

### **Contemporary Studies 7011**

Eleventh Grade Contemporary Studies examines the interactions between the United States and the world since 1914 to present day. Teachers will engage students in critical thinking and problem-solving skills as students learn and work with factual historical content, geography, civics, economics and other social studies concepts. Maps, spreadsheets, charts, photographs, the arts, music, graphs, primary source documents, textbooks and data from a variety of credible electronic and non-electronic sources will be used to synthesize, analyze, interpret and predict outcomes. Careful analysis of the interactions of the United States and other nation states will help students recognize the interdependencies of the United States and other countries as the concept of globalization is explored and evaluated. Teachers will provide a venue for students to examine factors that influence changing political and economic relationships and foreign policies between the United States and its world neighbors. The impact of world events on the individual citizen and the reciprocal impact of an individual citizen's actions, in the democratic process, on world events will be emphasized.

### **Advanced Placement United States History\*\* 7046 **weighted****

*Prerequisite: 3.0 or better in previous social studies class or teacher/administrative recommendation*

Advanced Placement US History is a college level class open to eleventh graders that excelled in their previous United States History class and intend on attending a four year college after high school. Research, extensive reading and writing assignments are used. Students taking the class are should take the Advanced Placement Examination and if passed, six hours of college credit may be earned. It is recommended that those taking the class also have strong research and writing skills. This class substitutes for Contemporary Studies. (11th grade Social Studies Requirement)

### **Dual Credit United States History I and II      weighted**

*Prerequisites: Must be an 11th/12th Grader to enroll in Dual Credit Classes - Need a 3.0 or better in previous social studies class and/or teacher recommendation.*

This class is being offered through Pierpont Community College. Students in this class have the opportunity for 6 hours of college credit. It is broken up into two classes. The Fall Semester is United States History 1 - which covers American Colonization through Reconstruction. The Spring Semester is United States History 2 - which covers Reconstruction through Present Day. Students in this class must enroll at Pierpont Community College and pay the fees in order to receive college credit for receiving an "A", "B", or a "C" as a grade in this class. This credit can be transferred to colleges/universities throughout the state. Students in this class need to be organized, efficient writers, and have a strong work ethic. **This class substitutes for Contemporary Studies (11th Grade Social Studies Requirement)**

### **Civics for the Next Generation      7031**

Civics is designed as a culminating history class that fosters informed citizens essential to the perpetuation of the American Republic. Students learn and utilize knowledge and skills for responsible, participatory citizenship based on a firm understanding of the principles and practices of our government coupled with civil rights and responsibilities, sound financial literacy and global awareness. Students investigate what has happened, explore what is happening and predict what will happen with the social, political and economic problems that beset America and the world using the skills and resources of the past centuries and the present. Students continue to develop their critical thinking and problem-solving skills collaboratively and independently to become informed citizens and consumers who practice economically sound decision-making, are geographically aware of physical and human landscapes of the world, and protect, preserve and defend their system of government. New and refined knowledge gained in Civics for the Next Generation is communicated and shared throughout the community as students engage in community service and service-learning that makes classrooms span continents and serve as the heart of the community.

### **Advanced Placement U.S. Government\*\*      7044      weighted**

*Prerequisite: 3.0 or better in previous social studies class or teacher/administrative recommendation*

This course is concerned with the nature of the American political system, its development over the past two hundred years, and how it works today. We examine in some detail the processes and institutions through which the political system functions, as well as some of the public policies that these institutions establish and how they are implemented. We look primarily at national government and politics. The AP government test should be taken for college credit. This course substitutes for Civics for the Next Generation. (12<sup>th</sup> grade Social Studies Requirement)

### **Current Events      7214**

Current Events is a contemporary course that addresses the issues of the day on the local, state, national, and international levels. News makers, both people and events, are covered on a timely basis as they develop, relate to, and impact the various cultures and societies of the world. Maps and economic geography are also incorporated into the course.

### **Geography (World and U.S.)      7033**

The power and beauty of geography allows all students to see, understand and appreciate the web of relationships between people, places and environments. Geography provides knowledge of Earth's physical and human systems and of the interdependency of living things and physical environments. This geography course is based on the six essential elements and five themes of geography stressing the contemporary world and the role of the U.S. in the global community. Students will use geographic perspectives and technology to interpret culture, environment and the connection between them. Students will use the geographic skills of asking geographic questions, acquiring geographic information, organizing geographic information, analyzing geographic information and answering geographic questions.

**Economics 7032**

*Prerequisite: This Elective Course is for 10<sup>th</sup>- 12<sup>th</sup> Graders*

Understanding economics is essential for all students to enable them to reason logically about key economic issues that affect their lives as workers, consumers and citizens. A better understanding of economics enables students to understand the forces that affect them every day and helps them identify and evaluate the consequences of personal decisions. As resources become scarce, as the economic environment changes, and as the economic impact of decisions becomes more immediate, students must - make sense of the array of economic concepts, facts, events, observations and issues in everyday life and the ability to make effective decisions about economic issues.

**Psychology 7321**

*Prerequisite: This Elective Course is for 10<sup>th</sup>-12<sup>th</sup> Graders*

Psychology is an introductory course involving the behavioral sciences. Units on modes of inquiry, child developmental theories, adolescent psychology, stress management, the family unit, personality development, and abnormal psychology are covered.

**Advanced Placement Psychology\*\* 7047                      **weighted****

*Prerequisite: 3.0 in their previous Social Studies Classes, This Elective Course is for 11<sup>th</sup> and 12<sup>th</sup> Graders.*

This course takes an in-depth look into the world of psychology. Units that are covered in this class include: Biological Basis of Psychology, Sensation and Perception, Stress Management, Gender and Human Sexuality, Developmental Psychology, Consciousness, Abnormal Psychology, and many others. This class is a good class to take to get the feel for a college psychology course. To complete the course, students should take the AP Psychology Exam for college credit and complete the required course work.

**World Religions 4342**

This course covers the development, history, and social practices of the World's religions. The student not required to believe any of the topics that we discuss but is expected to attempt to understand its origins and how it relates to other religions or groups. The first semester will examine the predominant polytheistic religions of the Mediterranean region, Northern Europe, and Asia. The second semester will examine Judaism, Christianity, and Islam. If time permits we might also explore religion in the modern world.

**West Virginia Studies**

This is an elective course which engages students in the comprehensive study of West Virginia, from the Pre-Columbian period to the present day. Special emphasis is placed on the interdependence of geographic, cultural, political, environmental and economic factors affecting the development and future of the state. Students develop empathy for citizens worldwide as they demonstrate connections and loyalty to homeland. Students are actively engaged citizens of their school and community and develop national and global civic perspective and responsibility. Students become economically literate to understand West Virginia's global connectivity in the marketplace both as a producer and a consumer of international goods and services. Students synthesize their information to predict the future development and evolution of their state.

**Civil War Studies**

This is an elective course in which students will focus on issues and events that face the nation and led to the conflict. Students will conduct an in-depth study of the war including military strategies, battles, and leaders. The course will also address consequences of the war, conditions that arose during Reconstruction, and the effects on the people of the nation.

## **Sociology**

*Prerequisite: This Elective Course is for 11<sup>th</sup> and 12<sup>th</sup> Graders*

This is an elective course which provides students an intensive introduction to human behavior in groups including a study of family, education, religion, government, ecology, and deviancy. Basic concepts and terminology are emphasized as well as the development of the skills of synthesizing information, understanding cause and effect, and analytical thinking and writing.

## **Health, Physical Education and Driver Education**

### **Health 6909**

This program of study builds on the foundation established in the K-8 health education curriculum and prepares students to become wise health care consumers and responsible, productive citizens. The relationships among personal, community and world health and economic, cultural, sociological, biological, and environmental factors are examined through interdisciplinary discussions, debates, and class projects. Students examine personal health choices and the connection to the world of work and assumption of adult roles. In-depth analysis of current health issues and concepts coupled with school-wide opportunities that promote and reinforce the importance of good health and positive choices are coordinated to have the greatest impact on adolescent behavior. Instruction limiting the negative consequences of high-risk behavior promotes values and norms that are age-appropriate and realistic. Students should have a personal perception of risk, the ability to recognize and resist social pressures and the skills to build positive social relationships.

Note: In accordance with West Virginia Code 18-2-9, the West Virginia Department of Education shall provide a standardized health education assessment to be administered in high school health education classes in order to measure student health knowledge and program effectiveness.

### **Physical Education 6609**

Physical Education is a vehicle through which high school students' transition from adolescence to adulthood. High school physical education focuses on fitness, offers diverse movement patterns, stimulates development of motor skills, and emphasizes lifetime activities. Students need to be exposed to a wide variety of activities, both competitive and non-competitive, that bring them enjoyment and challenge, thus enabling them to maintain an active lifestyle for a lifetime.

Note: In accordance with West Virginia Code 18-2-7a, The FITNESSGRAM shall be administered to all students.

### **Driver Education 6811**

*Prerequisite: grades 10 – 12 and must not have had a CA-2 served the previous school year*

The program of study includes cognitive development relating to traffic laws and ordinances, traffic signs, signals and markers, natural laws, fuel conservation and vehicle restraint systems. Also included are the physical, psychological, and legal aspects, effects, and consequences of the use of alcohol and drugs as related to the driving of a motorized vehicle. Instruction is provided to develop the perceptual and psychomotor skills required for basic control of the vehicle, lane changing, passing, following, entering and exiting from traffic, driving in cities/towns, on rural and urban roads and freeways, responding to emergencies, various road and weather conditions, defensive driving techniques, identify and explain driving behaviors that are distracting to the driver and the consequences for violating them, and interaction with other highway users including motorcycles, ATVs, and trucks.



**Fitness and Conditioning 6709**

*Prerequisite: Physical Education*

This course is offered to those students who have successfully completed the general Physical Education class and are interested in learning the skills and techniques used in weight training, distance running, agility, crossfit, etc. Student learning is focused on personal fitness goals, the body systems, flexibility, reaction time/quickness, exercise consciousness, and how they are utilized through physical exercise. Students are expected to participate on a daily basis to receive credit.

**Fitness and Wellness (Dual Credit) weighted**

*Prerequisite: Juniors and seniors*

This course is designed to provide an opportunity for students to make intelligent choices concerning lifelong wellness and to achieve optimum levels of fitness through regular exercise, proper nutrition, weight control and stress management.

**Advanced School Health Topics 6922**

*Prerequisite: B or above in Health or teacher/administrative recommendation*

This course is an in-depth exploration of developmental health and wellness in the school-age population. Specific topics include school health services, health education trends, safety and emergency planning in the school system, community and environmental health issues, and the importance of physical and mental wellness and preventative lifestyle intervention in school age children.

**Team Sports 6757**

*Prerequisite: Physical Education and 11<sup>th</sup> and 12<sup>th</sup> grade*

This course breaks down individual, dual, and team sports into all components including, but not limited to, basic skills, rules and regulations, safety and management, statistics, officiating, and coaching. Students will also learn basic coaching principles and study the psychology of the modern athlete. Students will also be required to volunteer with local athletic agencies (high school, middle school, rec/youth leagues, etc.) to work with and shadow officials and/or coaches.

**Active Lifestyles (Lifetime Fitness)**

*Prerequisite: Physical Education*

The Lifetime Fitness class is an introduction to general fitness principles and techniques that the student can take with them through life. The students will work on improving overall fitness through activities that will help them build strength, endurance and flexibility. Example activities include, but are not limited to walking, badminton, sand volleyball, Bocce ball, Pickleball and golf along with other lifetime activities.

## **Fine Arts - Visual**

**General Art I 3211**

Art I is designed to reinforce and build on 21st Century Knowledge and Skills developed by the K-8 Visual Arts Content Standards and Objectives. Students produce two-dimensional and three-dimensional artworks using a variety of media, techniques, technology, and processes. They relate art skills and strategies to other disciplines, various cultures, major art movements, and historical periods. They practice responsible workplace skills and review career options which encompass 21st Century content, literacy and life skills.

## **Art Appreciation**

A less rigorous class than General Art I, the students identify, discuss, and compare cultural and multi-cultural influences on the arts, including social, political, economic, functional and aesthetic considerations. They develop a variety of critical analyses. They examine different philosophies and viewpoints. Students' experiences with art media within its historical context connects selected artwork to the artist's process. Products and/or presentations relate cognitive learning to artistic practices. All of these activities demonstrate 21st Century Content, Skills, and Illiteracies. Knowledge of related careers in the fields of art history and aesthetics are covered as well as the application of technology to assist learning.

### **General Art II**

Prerequisite: Art I with a "B" or better

Students in Art II extend artistic skills, critical skills, and concept development through well-defined experiences in creating, reflecting, and discussing artworks. Students focus on compositional awareness through the proficient use of elements, principles, structures, and functions. Students practice responsible workplace skills and safety. They explore career opportunities in visual art. The teacher introduces the concept of portfolio development.

## **Studio Art I Electives**

Studio Art electives provide in-depth study in selected media, techniques, and processes. Expectations encompass proficiency of craftsmanship; participation in field experiences; incorporation of modern technology; study of 21st century art careers and related professions; an understanding of contemporary or related vocabulary literacy; understanding the properties of the media; and the safe and responsible use and care of equipment, tools and materials reflecting life skills. Studio Art electives include but are not limited to the following courses taught at the proficiency level: Ceramics, Crafts, Drawing & Painting, Photography and Stained Glass & Murals.

### **Studio I: Ceramics and Sculpture 3337**

*Prerequisite: Art I with a "B" or better*

This class includes work in various materials and techniques; students use clay, plaster, wood, plastic, paper mache, cloth, metal, wax and other materials. Students create stoneware pottery and assemble, sculpt, glue, construct, and build a variety of abstract and representational pieces.

### **Studio I: Crafts 3319**

*Prerequisite: Art I with a "B" or better*

This course permits students to explore a variety of craft processes and techniques and to study the historical and cultural backgrounds of class projects. Some areas of study include stenciling, ceramics, folk toys, needle work, paper crafts, and folk art painting.

### **Studio I: Drawing/Painting (AP Studio Art Track)**

*Prerequisite: 10<sup>th</sup> and 11<sup>th</sup> graders who have had Art I with a "B" or better*

This course offers students opportunities to develop and use advanced techniques in drawing and painting with various media. It teaches students to develop a sketchbook and prepare work to frame and display. Students are encouraged to compile a portfolio of work either by scrapbook or digital photography.

### **Studio I: Photography**

*Prerequisite: Art I with a "B" or better*

Photography students learn the basics of camera handling, picture taking technique, black and white film development and printing. They explore digital photography as well as the use of digital design software. Historical and cultural backgrounds of photography and media are studied along with aesthetic qualities and critical processes.

### **Studio I: Stained Glass**

*Prerequisite: Art I with a "B" or better*

This course will provide students with an in-depth study of the aspects of 2-dimensional and 3-dimensional glass art. Students will explore the history of stained glass and its place in American art. They will use the copper foil method to create several stained glass pieces. Mosaics using glass tesserae will also be created. Students will learn to design their own patterns and well as use commercial patterns. The principles of design will be applied to the student artwork.

### **Studio II**

*Prerequisite: Studio I with a "B" or better*

Studio Art II electives provide advanced in-depth study of selected media, techniques, and processes. The advanced level classes requires Studio Art I prerequisites in the same area of study or teacher approval. Students demonstrate advanced levels of craftsmanship; knowledge of art careers and related professions; advanced level skills in the use of related vocabulary; and proficiency in the selection and use of the media.

### **Studio Art III 3243**

*Prerequisite: Studio II with a "B" or better*

Studio III electives provide advanced in-depth study of selected media, techniques, and processes. Students demonstrate advanced levels of craftsmanship; knowledge of art careers and related professions; advanced level skills in the use of related vocabulary; and proficiency in the selection and use of the media. They practice field experiences, application of contemporary technology and the safe and responsible care and use of the media. These skills and concepts build on the 21st century skills of the Studio II course, further developing and refining them. Studio Art II electives include but are not limited to the following courses taught at the advanced level: ceramics, crafts, drawing & painting, photography, and stained glass. The advanced level classes require Studio Art II prerequisites in the same area of study or teacher approval. Projects are done on an independent study/contract basis within the Studio III classroom setting.

### **AP Studio Art\*\* 3222                      **weighted****

*Prerequisite: Successful completion of three or more art classes; an intention to major in Art in college.*

AP Studio Art offers the student the opportunity to gain college credit for an art course while in high school. Three portfolios (pathways) are offered: Drawing, Two Dimensional Design and Three Dimensional Design. Students will follow a syllabus of projects throughout both semesters to create artwork to be submitted to AP Central by May 8. Both actual work and digital photos will be submitted. Students who gain a score of 3 or higher will qualify for 3 hours of college art elective credit. Summer work on art projects is encouraged.

## **Fine Arts - Performing**

### **Dance 3401**

This course will provide students with the fundamentals necessary for advancing as creative movers and dancers. Further, this course will develop students' appreciation of dance as an art form and lifetime activity. The class is designed to familiarize students with technique and vocabulary as well as different forms of dance, issues in dance, dance as a folk art, and the history of dance. The students will develop kinesthetic awareness, movement memory, creative abilities and aesthetic appreciation of various dance forms. The class will also focus on flexibility and physical fitness. This class is open to anyone who is interested.

**Beginning Choir**                    **3621**

*Prerequisite: Successful audition*

Previous choral experience is preferred but not required for this class. Choir class is for singers and is designed to expose the student to the best of accompanied and unaccompanied choral literature. Public performance is an outgrowth of this class and all members will be required to participate. The ability to read music will be heavily focused on as will healthy singing technique. This class is open to anyone who is interested in being in a choir.

**Concert Choir**                    **3768**

*Prerequisite: Successful audition*

Concert choir is for the experienced singer and is designed to expose the student to the best of accompanied and unaccompanied choral literature. Public performance is an outgrowth of this class and all members will be required to participate. The ability to read music will be heavily focused on as will healthy singing technique. There will be after school rehearsals from time to time.

**Theater I**                                **3801**

In this class, students will gain a basic understanding of many of the fundamentals of theatre arts including: history, etiquette, terminology, improvisation, pantomime, acting, voice/diction, movement/dance, script writing, production, and technical theatre. The class requires participation as it is a performance based class. This class is open to anyone who is interested. Course will be offered in the 2016-2017 school year.

**Theatre II**                                **3802**

*Prerequisite: Theatre I*

In this class, students will gain a more in-depth understanding of the topics uncovered in Theatre 3801. In addition, students will study costume design, makeup design, stage management, and directing. Students in this class will also be required to participate in the spring production and will assist in the maintenance and running of the school's auditorium. This class is open to all who successfully complete theatre 3801. Course will be offered in the 2017-2018 school year.

**Music Appreciation**                **3671**

Students develop skills in reading and understanding music notation and explore the expressions and organization of musical ideas. Students study music as it relates to human experiences. Students will describe, notate and critically analyze music. Students will also learn the history of music, how it relates to the other humanities, influences historical decisions, and the role music plays in defining today's global society.

**Appalachian Music**                **3661**

Though often misunderstood and misrepresented, Appalachia is a region of impressive cultural and ecological diversity. Stretching up and down the east coast, its mountains, forests, and communities have inspired generations of musicians, artists, and writers. Unfortunately, however, Appalachia has also been the site of significant poverty, exploitations, and environmental degradation. This course surveys Appalachian music, art, literature, folklore, and culture from its roots in other countries while exposing common themes found throughout the region. Students will all learn to play the mountain dulcimer and will learn to play one other Appalachian instrument of their choosing. In addition, the class will perform from time to time. This class is open to all students. Owning a traditional instrument is encouraged. Class will be offered in the 2016-2017 school year.

## **Guitar 3728**

Students in this class will learn basic musicianship as they learn to play the guitar. They will learn to play both melodies and chord accompaniments to songs. In addition, students will learn the history of the guitar and will learn to tune and care for their instruments. This class is open to all students. Owning a guitar is highly recommended. Course will be offer in the 2017-2018 school year.

## **Concert Band (Band I)**

*Prerequisite: Prerequisite: Prior involvement in the Upshur County Band program or audition*

Concert Band will consist of primarily freshmen students. This course is designed to give students participating in high school band more individualized attention in order to develop the skills necessary to succeed in the upperclassmen symphonic band. Students will refine playing technique through study of scales, etudes, method books, and literature from the West Virginia Bandmasters' Association Graded Music List. This group still performs with the marching band. Students are expected to attend band activities, including but not limited to summer band rehearsals, band camp, football games, parades, and concert and festival dates. Significant costs are borne by the student, including but not limited to uniform separates, instrument care and maintenance, and some travel costs. Upperclassmen may join this class with instructor permission AND once all necessary course requirements for graduation have been met.

## **Symphonic Band (Band II, III, IV) 3611**

*Prerequisite: Prior involvement in the Upshur County Band program or audition*

This course includes membership in the marching and concert bands. Students are expected to attend band activities, including but not limited to summer band rehearsals, band camp, football games, parades, and concert and festival dates. Significant costs are borne by the student, including but not limited to uniform separates, instrument care and maintenance, and some travel costs. Students will continue to refine playing skills and study various composers, compositions, and styles. He/she learns to play in more keys, use ornamentation, and perform with more precision. The advanced level student studies the formal structures and elements of music and learns how these are used by composers. The student plays music from the West Virginia Bandmasters Association Graded Music List.

## **Jazz Band 3712**

*Prerequisite: Must be a band member and successfully audition/have director approval*

Students learn to interpret varying styles of jazz ensemble music including contemporary Big Band, Latin, Rock, Funk, Be-Bop, and Big Band Swing. Students are exposed to a variety of recordings to develop an appreciation for jazz musicians and their music. This group performs at many outside activities throughout the school year. Students will learn the basics of improvisational technique and beginning jazz theory on which the art form is based.

## **Advanced Musicianship**

*Prerequisite: concurrent enrollment in Symphonic Band and director approval*

This course meets in conjunction with the Concert Band (Band I) and requires approval from the Director of Bands. A select number of upperclassmen, who are members of Symphonic Band, will rehearse and perform with the Concert Band. These students will learn rehearsal techniques, score annotation/preparation, how to run small group rehearsals, assist students of the same instrument type, and servant leadership skills in coordination with Buckhannon-Upshur High School's goal of preparation for college and career readiness. Students will work one-on-one with the Director of Bands to explore careers in the field of music and, specifically, music education. To be considered for this course, students must be extremely proficient on their instrument(s), exemplify natural leadership and professionalism within the band setting, and have the attitude, commitment, and shared vision to move the band program into the future. This course is intended for students possessing interest in a career in the music or education industries.

### **Music Theory 3756**

*Prerequisite: Must be a member of band, choir, or orchestra AND have ensemble instructor's permission.*

This is college prep course. Students will study and analyze different forms of music. They will create compositions from existing and original music. This is an advanced course designed to prepare students for post-secondary education or careers in music. Students will learn basic notation systems, figured bass, part writing skills, and other skills needed to succeed in the field of music. Students will learn to create chord analysis and dissect pieces of music, as well as learn the fundamentals of sight-singing on moveable "do" and numbers systems.

### **Orchestra 3641**

*Prerequisite: Prior involvement in the Upshur County string program or audition*

In this course, students who play violin, viola, cello, and bass study orchestral literature from various time periods. Students will continue to refine their playing techniques with the bow, pizzicato, and hand position. Special attention will be given to playing in various keys, ornamentation, and sight-reading. The group performs several times throughout the school year. Advanced students will be permitted to audition for the All State Orchestra.

### **Percussion Ensemble**

*Prerequisite: Must be a member of the band and drumline*

Students on drumline will learn to play more rudiments and develop battery and mallet technique. Literature chosen will be appropriate for the skill level of the group, consisting of drumline cadences, field show music, special performance music, percussion ensemble music, and concert band music. This group performs as the drumline with the marching band and percussion section with the concert band. The percussion ensemble also functions as its own ensemble.

### **Chamber Brass Ensemble (CLUBS/ENRICHMENT OPTION)**

*Prerequisite: Must be a band member, brass player, and have director approval*

Students will be playing a small group setting, traditional brass ensemble literature. This is an advanced study of making music in the chamber setting. Additional technical skills, articulation, style, and ensemble playing will be developed as part of this course. Chamber Brass is a quality course for students exploring All State Band, Honor Bands, Solo and Ensemble Festival, or post-secondary education in music.

### **Chamber Woodwinds (CLUBS/ENRICHMENT OPTION)**

*Prerequisite: Must be a band member, woodwind player, and have director approval*

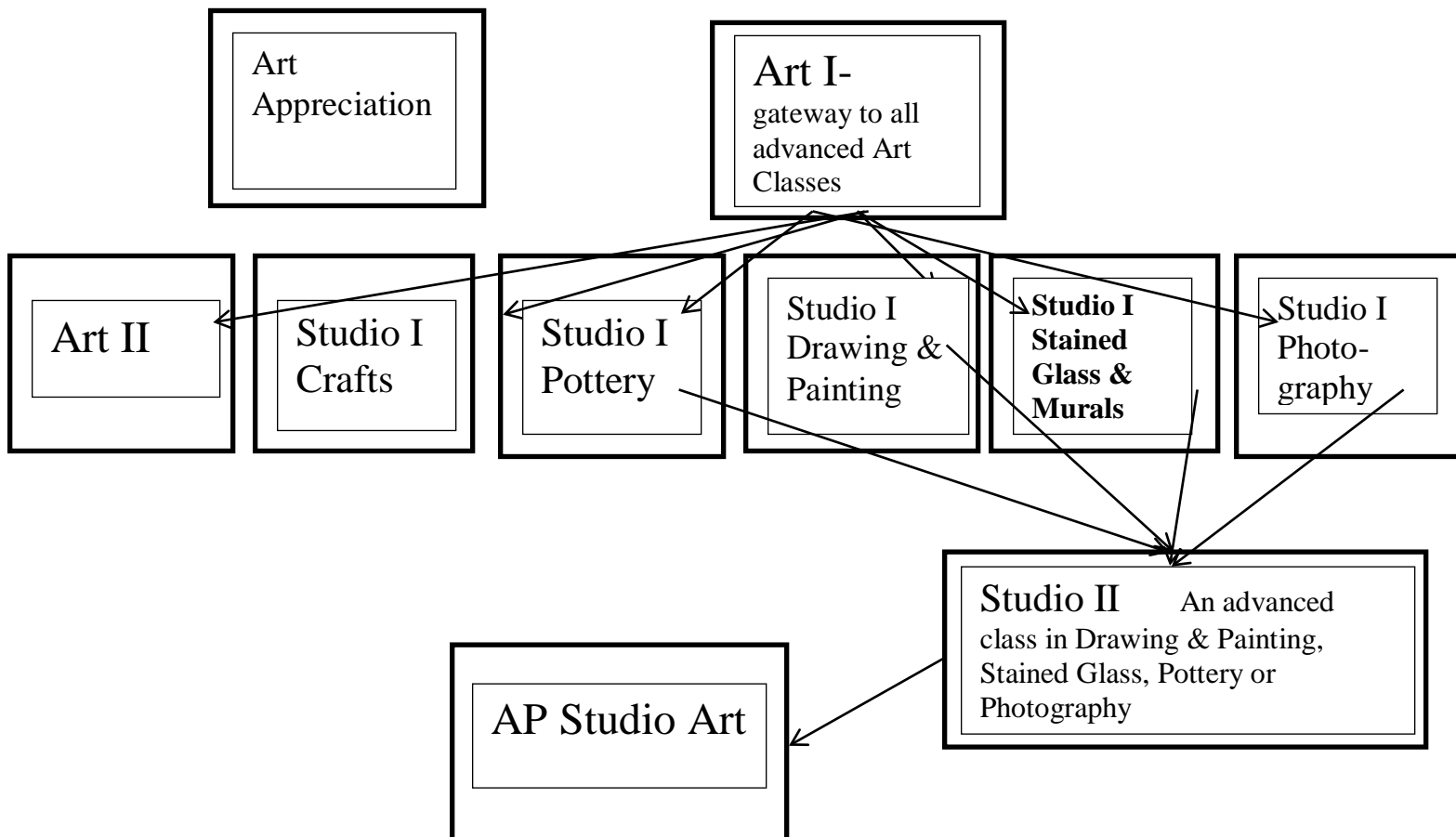
Students will be playing a small group setting, traditional woodwind ensemble literature. This is an advanced study of making music in the chamber setting. Additional technical skills, articulation, style, and ensemble playing will be developed as part of this course. Chamber Woodwinds is a quality course for students exploring All State Band, Honor Bands, Solo and Ensemble Festival, or post-secondary education in music.

### **Jazz Combo/Small Group Jazz (CLUBS/ENRICHMENT OPTION)**

*Prerequisite: Must be a member of jazz band and have director approval*

Students enrolled in this course will study advanced improvisational technique in a small group setting. Most professional jazz musicians spend much time playing in intimate settings as these. Students will be playing from Jamey Abersold Studies, the RealBook, Charlie Parker Omnibook, among others. Students will develop the skills to read lead sheets, analyze chord changes, and refine jazz technique through additional work with improvisation and jazz modes/scales.

# Buckhannon-Upshur High School Visual Arts Flow Chart



## **Business & Technology Department at B-UHS**

Business and Technology classes prepare students for postsecondary education and careers in business, marketing, management, entrepreneurship, design, technology, graphics, animation and other computer related fields. Students are provided opportunities to complement their academic preparation while exploring a variety of careers as well as practicing business and technology concepts. Students will broaden their understanding of basic business practices that are essential to participate in the global marketplace. Computer literacy and proficiency are emphasized. Students are encouraged to become active members of the student organization, Future Business Leaders of America - FBLA.

### **OFFERED CLUSTERS**

*These clusters will meet pathway requirements. Complete all classes listed as required and choose from electives as indicated. Students should take required courses as listed.*

#### **Accounting**

Accounting Principles I (Required)

Accounting Principles II (Required)

##### ***Choose 2 electives***

Personal Finance

Business and Marketing Essentials

BCA I

BCA II

Workplace Practicum

#### **Information Management**

##### **(Interactive Media)**

BCA I (Required)

Digital Imaging I (Required) Web

Page Publishing (Required)

##### ***Choose 1 elective***

BCA II

Desktop Publishing

Digital Imaging II

#### **Management and Administrative**

##### **Support**

Business and Marketing Essentials (Required)

##### ***Choose 3 electives***

Accounting Principles I

Accounting Principles II

BCA I

BCA II

Marketing Principles

Personal Finance

Workplace Practicum

#### **Visual Arts**

Digital Imaging I (Required)

Web Page Publishing (Required)

Art III (Studio Art) (Required)

Art IV (Studio Art) (Required)



### **Accounting Principles I 1401**

**This course serves as technology credit for graduation.** This course is designed to develop student understanding and skills in such areas as the basic principles, concepts, and practices of the accounting cycle. Journalizing, posting, and analyzing of financial statements as well as banking and payroll procedures are included. An introduction to careers and types of business ownership are incorporated. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. **This course is especially valuable for students who plan to major in Accounting, Business Administration, or a related business field in college.**

### **Accounting Principles II 1403**

*Prerequisite: Successful completion of Accounting Principles I and must complete an application.*

This course is designed to develop student understanding and skills in such areas as advanced accounting procedures and techniques utilizing both manual and computer-based accounting. There is a strong emphasis on problem solving, analysis and financial decision-making. Students study the advanced principles, concepts and practices of the accounting cycle and partnerships, corporations, cost accounting, inventory and tax accounting. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. *This class may participate in the development/operation of a school retail location project.*

### **Business and Marketing Essentials 1439**

This course is designed to develop student understanding and skills required for success in today's workplace. Students acquire knowledge of fundamental business activities and factors affecting business, develop verbal and written communication skills, use information literacy skills, utilize job-seeking strategies, and participate in career planning. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. **It is strongly recommended that students take this course in their freshman year, although it is open to all students. This course will be especially beneficial to freshmen who have chosen or are considering a business concentration and will assist them in determining specific areas of interest as well as in selecting additional courses.** *This class may participate in the development/operation of a school retail location project.*

### **Business Computer Applications I 1411**

**This class serves as technology credit for graduation.** Students will learn the fundamentals of Microsoft Word and PowerPoint and work towards obtaining Microsoft Certification in these programs, a nationally recognized certification. Students will learn how to use skills in Microsoft Word to write reports for other classes, create bibliographies and citation pages, create a cover letter and resume. In Microsoft PowerPoint students will learn how to make effective PowerPoint presentations using the latest skills to create a visually appealing presentation.

### **Business Computer Applications II 1413**

**This class serves as technology credit for graduation.** In this course students will learn the fundamentals of Microsoft Excel and Access to work towards obtaining Microsoft Certification in these programs, a nationally recognized certification. Students will learn how to use Excel to create valuable spreadsheets and workbooks to complete mathematical functions and calculations. Microsoft Access will prepare students to create and manage databases used in the industry

### **Desktop Publishing 1429**

*Prerequisite: Successful completion of Business Computer Applications I or Digital Imaging I, and must complete an application*

This course focuses on the use of various design programs to create print advertisements, flyers, books, magazine covers and etc. Students will combine appropriate text, graphics, and design to communicate the desired message effectively. Planning and design principles are used to analyze and organize information, set up a design structure, and to select or create appropriate visuals. This course will be part of the Simulated Workplace. *This class will participate in the development/operation of a school retail location project by creating print designs and other forms of advertisement to promote the school retail location.*

### **Digital Imaging/Multimedia I 1431**

This course focuses on producing images through hands-on activities and experiences which will include: operating a digital camera, using imaging software (Adobe Photoshop), using drawing software (Adobe Illustrator), creating simple animations, setting up photo backdrop settings, and manipulating audio recordings. **This class is a prerequisite to many other classes and should be taken during the freshman or sophomore year. This class is not intended for seniors unless for a graduation requirement.**

### **Digital Imaging/Multimedia II 1432**

*Prerequisite: Successful completion of Digital Imaging/Multimedia I and must complete an application*

This course focuses on advanced techniques in digital imaging, drawing, animation, and video software; using programs such as Photoshop, Lightroom, Premiere Elements, Flash and additional programs such as Movie Maker and Audacity. Projects will involve advanced tools and techniques of each discipline. Students will interact with clients and complete real-world projects. In addition to the above listed techniques students will use Adobe Flash to create animations and simple games/apps. This course will be part of the Simulated Workplace. *This class will participate in the development/operation of a school retail location project by creating digital designs and working with the printing process for the products sold in the store.*

### **Marketing Applications 0425**

*Prerequisite: Business and Marketing Essentials, Marketing Principles and complete an application*

This course is designed to develop student understanding and skills in such areas as the various marketing functions. Students coordinate channel management with other marketing activities, discuss the nature of marketing plans, generate product ideas, coordinate activities in the promotional mix and demonstrate specialized sales processes and techniques. Economic and financial concepts are also stressed throughout the course. Current technology will be used to acquire information and to complete the projects. Formal reflection is an on-going component of the course along with four projects. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. *This class may participate in the development/operation of a school retail location project.*

### **Office Management 1449**

*Prerequisite: Successful completion of Business Computer Applications I, open only to Juniors and Seniors*

This course is designed to develop student understanding and skills in such areas as personal development and employability skills, managing records, processing mail, communication duties, keeping financial records, applying computing, accounting, and data skills, processing business correspondence, operating office equipment, using management skills, and completing office support activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of

course concepts. Students may participate in the school store or as office assistants. Students are encouraged to become active members of the student organizations, DECA or FBLA.

**Personal Finance 1451**

This course is designed to develop student understanding and skills in such areas such as money management, budgeting, financial goal attainment, credit, insurance, investments and consumer rights and responsibilities. The course culminates in a personal financial literacy workshop requiring students to share their knowledge with others. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts.

**Web Page Publishing1455**

*Prerequisite: Successful completion of Business Computer Applications or Digital Imaging I and must complete an application.*

Students will develop a website in this course and have the opportunity to publish it. This course is designed to develop student understanding and skills in such areas as Web page design including using Web page development software, creating page layouts, adding images and frames, creating elements and components, creating tables, managing files, publishing to the Internet, creating hyperlinks, organizing tasks, and using codes (markup languages). Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students will develop a website in this course and have the opportunity to publish it. This course will be part of the Simulated Workplace.

**Career  
Opportunities**

Accounting, Finance, Business Administration, Business Management, Small Business Entrepreneurship, Marketing Communications and Promotion, Marketing-Information Management, Marketing Research, Merchandising, Professional Sales, Information Technology, Office Systems Technology, Graphic Design

# Human Services

## Cluster Description:

The Human Services Cluster focuses on careers related to assisting and empowering individuals, families, groups and communities to meet their needs and live more satisfying and productive lives. Career pathways include: education and restaurant management.

## Early Childhood Education

**Courses:** 1003 Early Childhood Education I  
1004 Early Childhood Education II  
1008 Early Childhood Education III  
1009 Early Childhood Education IV

## Concentration Description:

The Early Childhood Education concentration focuses on the knowledge, skills, attitudes and practices of childhood development required for careers in the field of Early Childhood Education. Emphasis is placed on the integration of all aspects of development into best practices for nurturing children. This concentration prepares students for the Apprenticeship for Child Development Specialist (ACDS), Childhood Development Associate (CDA) and/or AAFCS Pre-PAC Certification in Early Childhood Education.

## Early Childhood Education I                      **1003**

*Prerequisite: 2.5 cumulative GPA, less than 5 days unexcused absence, no OSS in the previous school year, 3 letters of recommendation from faculty.*

This course is designed to provide an overview of early childhood career paths, early childhood programs, regulatory requirements, universal precautions, child abuse and neglect, code of ethical conduct, mobility, motor skills, rough and tumble play, gaining competence, perceptual motor integration, representation, nutrition, brain development, and outcomes of children's play. Students will use reasoning processes, individually and collaboratively, to take responsible action in families, workplaces, and communities. Students will utilize problem solving techniques and participate in hands-on activities. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of a student organization such as FCCLA or FEA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

## Early Childhood Education II                      **1004**

This course is designed to explore ethical issues of early childhood education and social and cultural issues such as attachments, trust, temperament types, the secure base, separation, autonomy, initiative, social competence, building community relationships with adults, prosocial environment, scaffolding prosocial behavior, and social challenges. Students will use reasoning processes, individually and collaboratively, to take responsible action in families, workplaces, and communities. Students will utilize problem solving techniques and participate in hands-on activities. Teachers should provide each student with real world learning opportunities and instruction.

Students are encouraged to become active members of a student organization such as FCCLA or FEA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

## Early Childhood Education III                      **1008**

This course is designed to explore various perspectives on early childhood such as personal educational theory; professional practices; learning theory; learning through play; constructivism; social constructivism; and Erickson's, Piaget's, and Vygotsky's theories. Students will use reasoning processes, individually and collaboratively, to take responsible action in families, workplaces, and communities. Students will utilize problem solving techniques and participate in hands-on activities. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of a student organization such as FCCLA or FEA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

#### **Early Childhood Education IV                      1009**

This course is designed to provide a review of previous concepts; investigate cognitive and intellectual concepts such as: language development, receptive and expressive language, bilingual development, symbolic thought, imagination, theory of mind, socio-dramatic play, metacommunication, multiple intelligences, literacy, print awareness, numeracy and inquiry; and develop opportunities for professional growth. Students will use reasoning processes, individually and collaboratively, to take responsible action in families, workplaces, and communities. Students will utilize problem solving techniques and participate in hands-on activities. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of a student organization such as FCCLA or FEA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

#### **ProStart Restaurant Management**

Courses: 1013 Restaurant and Culinary Foundations  
1014 Restaurant Management Essentials  
1019 Advanced Principles in Food Production  
1020 The Restaurant Professional

#### **Program of Study Description:**

The ProStart Restaurant Management Program of Study focuses on the skills needed for a successful employment in a restaurant environment, but has applicability for students interested in culinary nutrition, dietary services, and child nutrition services. ProStart curriculum integrates performance-based learning with academics, entrepreneurship, and technology skills to prepare students for successful employment in the 21st Century. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, SkillsUSA or FCCLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

#### **Restaurant and Culinary Foundations                      1013**

This course focuses on the basic preparation and service of safe food, basic introduction to industry safety standards, basic introduction to restaurant equipment, kitchen essentials in knife skills, stocks and sauces, and communication concepts in the restaurant industry. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

**Restaurant Management Essentials 1014**

This course is designed to focus management essentials in the restaurant industry, guest service, food production, and career exploration and pursuit. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

**Advanced Principles in Food Production 1019**

This course is designed to examine advanced food production, nutrition, and cost control. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

**The Restaurant Professional 1020**

This course is designed to provide content related global cuisine, sustainability, desserts and baked goods, and marketing. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

**Agriculture Education Course Descriptions and Completer Pathways**

Revised 3/3/16

To be a “completer” you must choose a pathway and successfully complete three courses in selected pathway. YOU MUST COMPLETE <b>2 YEARS</b> of SAE RECORDS along with 3 classes.	
<b>PLANT SYSTEMS</b>	
REQUIRED COURSES	
0101	Intro. to Ag
0212	Horticulture
0134	SAE (this credit takes 2 complete calendar years of records)
ELECTIVE COURSES *Select at least ONE course to be a completer	
0220	Greenhouse Production and Management
0213	Floriculture

To be a “completer” you must choose a pathway and successfully complete three courses in selected pathway. YOU MUST COMPLETE <b>2 YEARS</b> of SAE RECORDS along with 3 classes.	
<b>AGRIBUSINESS</b>	
REQUIRED COURSES	
0101	Intro. to Ag
0102	Science of Agriculture
0134	SAE (this credit takes 2 complete calendar years of records)
ELECTIVE COURSES *Select at least ONE course to be a completer	
0183	Forest Management
0212	Horticulture
0140	Animal Production and Management
0212	Fundamentals of Agriculture Mechanics
0132	Agricultural Biotechnology
0200	Natural Resources Management

### 0101 Introduction to Agriculture, Food, and Natural Resources

\*Must be a Freshman or sophomore

This course is required to take any other agriculture course. Learners will be exposed to a broad range of agriculture, food and natural resources careers. Students will utilize problem solving techniques and participate in hands-on activities to develop an understanding of course concepts. Each student will be exposed to real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA.

### 0102 The Science of Agriculture

\*Prerequisites: Introduction to Agriculture, Food, and Natural Resources

This course focuses on the basic scientific principles and processes related to the production of plants and animals for the food and fiber systems. Topics of instruction include basic understanding of the livestock/poultry industry and its various components, career opportunities, soil science, crop science/agronomy, weed science, basic agricultural mechanics and related industry careers, environmental stewardship, entrepreneurship, and leadership/personal development. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization, FFA.

### 0183 Forest Management

\*Prerequisites: Introduction to Agriculture, Food, and Natural Resources, The Science of Agriculture

This course is designed to be a basic forestry course for students interested in forestry. The course will covers topics on best management practices, timber felling basics, dendrology, tree measurement basics, water quality, forest fire, read topography maps and basic log road layout, forest hazards ID, basic forestry concepts of edge, diversity, succession and structure, forest business and economics, forest insects, forest disease, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization, FFA.

### **0212 Horticulture**

\*Prerequisites: Introduction to Agriculture, Food, and Natural Resources, The Science of Agriculture

This course provides instruction on the broad field of horticulture with emphasis on the scientific and technical knowledge for a career in horticulture. Topics in this course include plant growth and development, plant nutrition, media selection, basic plant identification, pest management, chemical disposal, customer relations, career opportunities, leadership development and entrepreneurial skills. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization, FFA.

### **0140 Animal Production and Management**

\*Prerequisites: Introduction to Agriculture, Food, and Natural Resources, The Science of Agriculture

This course is designed to be a core course in the Animal Systems concentration. The course will cover topics on animal restraint, animal management techniques, animal health and welfare, balancing rations, pedigree analysis, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization, FFA.

### **0112 Fundamentals of Agriculture Mechanics**

\*Prerequisites: Introduction to Agriculture, Food, and Natural Resources, The Science of Agriculture

Mechanics This course introduces the knowledge and skills for applying the physical science principles and principles of operation and maintenance to mechanical equipment, welding and fabrication, structures, plumbing, electrical wiring, power utilization, entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization, FFA.

### **0200 Natural Resources Management**

\*Prerequisites: Introduction to Agriculture, Food, and Natural Resources, The Science of Agriculture

This specialization course covers topics on soil and water conservation, basic wildlife management, environmental law and regulations, basic forestry, and land management. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA.

### **0132 Agricultural Biotechnology**

\*Prerequisites: Introduction to Agriculture, Food, and Natural Resources, The Science of Agriculture

This course provides instruction in the technologically advanced world of agriculture and life sciences. Current applications of biotechnology in animal science, environmental science, food science, and plant science are emphasized. Basic concepts of genetics and microbiology are applied to the agriculture industry and its success in providing food and fiber for the world. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA.

### **0212 Horticulture**

\*Prerequisites: Introduction to Agriculture, Food, and Natural Resources

This course provides instruction on the broad field of horticulture with emphasis on the scientific and technical knowledge for a career in horticulture. Topics in this course include plant growth and development, plant nutrition, media selection, basic plant identification, pest management, chemical disposal, customer relations, career opportunities, leadership development and entrepreneurial skills. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA.

### **0214 Greenhouse Production and Management**

\*Prerequisites: Introduction to Agriculture, Food, and Natural Resources, Horticulture

This specialization course covers instruction that expands the scientific knowledge and skills to include more



advanced scientific computations and communication skills needed in the horticulture industry. Topics include greenhouse plant production and management, bedding plant production, watering systems light effects, career planning, leadership development and entrepreneurial skills. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA.

### **0213 Floriculture**

\*Prerequisites: Introduction to Agriculture, Food, and Natural Resources

This specialization course covers topics on floral design, business planning, market plan development, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA.

## Fred W. Eberle Technical Center



The Fred W. Eberle Technical Center will give you the opportunity to gain job entry skills in a technical area. This training will help prepare you for employment upon graduating from high school.

Students from Phillip Barbour, Buckhannon-Upshur, and Lewis County High School attend the Technical Center. Programs of study are two year programs in which juniors and seniors attend for half of their day earning four (4) credits each year.



**FRED W. EBERLE  
TECHNICAL CENTER**

**PROGRAM OF STUDIES  
(Secondary)**

**2017-2018**

## **Automotive Technology – TR1620**

The Automotive Technology concentration focuses on careers that will build a knowledge base and technical skills in all aspects of the automotive industry. Students will have the opportunity to acquire hours towards certification and be exposed to skills to develop positive work ethics. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

*Core Courses include:*

**Fundamentals of Automotive Technology - WVEIS Code: 1631**  
**Basic Engine Concepts - WVEIS Code: 1623**  
**Brake Systems - WVEIS Code: 1625**  
**Suspension and Steering Diagnosis – WVEIS Code: 1637**

*Elective Courses include:*

**Electrical/Electronic Systems – WVEIS Code: 1627**  
**Manual/Automatic Drive Trains – WVEIS Code: 1635**  
**Engine Performance – WVEIS Code: 1629**  
**Heating & Air Conditioning – WVEIS Code: 1633**

## **Carpentry – AR1820**

The Carpentry concentration focuses on careers that will build a knowledge base and technical skills in all aspects of the carpentry industry. Learners will be exposed to a broad range of construction careers and foundation knowledge including basic safety; plan reading; use of tools and equipment; basic rigging; and how to employ positive work ethics in their careers. Students will have the opportunity to earn NCCER certification for each skill set mastered. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

*Core Courses include:*

**Carpentry I – WVEIS Code: 1842**  
**Carpentry II – WVEIS Code: 1843**  
**Carpentry III – WVEIS Code: 1844**  
**Carpentry IV – WVEIS Code: 1845**

*Elective Courses include:*

**Applications in Commercial Construction – WVEIS Code: 1820**  
**Concrete Finishing - WVEIS Code: 1821**  
**Blueprint Reading for Construction - WVEIS Code: 1822**  
**Masonry and Plumbing – WVEIS Code: 1829**

## **Computer Systems Repair Technology – IT1680**

The Computer Systems Repair Technology concentration validates foundation-level knowledge and skills necessary for a career in PC support. It is the starting point for a career. The CompTIA A+ and Network+ certifications are both international and vendor-neutral and prove competence in areas such as installation, preventative maintenance, networking, security and troubleshooting. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

*Core Courses include:*

**Fundamentals of Computer Systems – WVEIS Code: 1705**

**A+ Essentials – WVEIS Code: 1664**

**A+ Practical Applications – WVEIS Code: 1665**

**Networking Essentials – WVEIS Code: 1694**

## **Cisco Networking Academy – IT1640**

The Cisco CCENT Certification validates the skills required for entry-level network support positions, the starting point for many successful careers in networking. CCENT certified professionals have the knowledge and skill to install, operate, and troubleshoot a small enterprise branch network, including basic network security. CCENT Certification is the first step toward achieving Associate-level certifications including CCNA Routing and Switching, CCNA Voice, CCNA Security, CCNA Wireless, and CCNA SP Ops. Students interested in pursuing advanced networking credentials will take electives: CCNA1, CCNA2, CCNA3 and CCNA4 to prepare for ICND1 and ICND2 exams. Emphasis will be placed on personal and professional ethics and students will explore a variety of career opportunities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

*Core Courses include:*

**CCENT1 - WVEIS Code: 1642**

**CCENT2 - WVEIS Code: 1644**

**CCENT3 - WVEIS Code: 1646**

**CCENT4 - WVEIS Code: 1648**

## **Collision Repair Technology – TR1670**

The Collision Repair Technology concentration focuses on careers that will build a knowledge base and technical skills in all aspects of the Collision Repair industry. Students will have the opportunity to acquire hours towards ICAR certification and be exposed to skills to develop positive work ethics. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

*Core Courses include:*

**Fundamentals of Collision Repair Technology – WVEIS Code: 1671**  
**Non-Structural Analysis and Damage Repair – WVEIS Code: 1675**  
**Structural Analysis and Damage Repair – WVEIS Code: 1677**  
**Surface Preparation and Refinishing – WVEIS Code: 1679**

*Elective Courses include:*

**Detailing and Interior Parts – WVEIS Code: 1672**  
**Mechanical and Electrical Components – WVEIS Code: 1673**  
**Advanced Refinish Techniques – WVEIS Code: 1674**  
**Custom Finishing Processes – WVEIS Code: 1676**

### **Cosmetology- Hair Stylist – HU2310**

The Cosmetology program focuses on the knowledge, skills, attitudes and practices required for careers in the field of Cosmetology. This program is designed for licensure by the State Board of Barbers and Cosmetologists and includes three concentration areas: hair stylist, aesthetics and nail technology. Hair stylist is a pre-requisite for the other two.

*Core Courses include:*

**Cosmetology Professional I – WVEIS Code: 1734**  
**Cosmetology Professional II – WVEIS Code: 1735**  
**Cosmetology Professional Advanced – WVEIS Code: 1736**  
**Barbers and Cosmetology Foundations – WVEIS Code: 1737**

*Elective Courses include:*

**Cosmetology Science I – WVEIS Code: 1738**  
**Cosmetology Science II – WVEIS Code: 1740**  
**Cosmetology Chemicals I – WVEIS Code: 1730**  
**Cosmetology Chemicals II – WVEIS Code: 1735**

### **Diesel Technology – TR1740**

The Diesel Equipment Technology concentration focuses on careers that will build a knowledge base and technical skills in all aspects of the Diesel Equipment Technology industry. Students will have the opportunity to acquire hours towards industry ASE/NATEF certification and be exposed to skills to develop positive work ethics. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of

Revised 3/3/16

course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

*Core Courses include:*

**Diesel Engine Components – WVEIS Code: 1741**  
**Electronic Engine Controls – WVEIS Code: 1744**  
**Diesel Support Systems – WVEIS Code: 1747**  
**Fundamentals of Diesel Technology – WVEIS Code: 1751**

*Elective Courses include:*

**Diesel Electrical Systems – WVEIS Code: 1742**  
**Diesel Engine Tune-up – WVEIS Code: 1743**  
**Diesel Preventive Maintenance and Inspection – WVEIS Code: 1745**  
**Truck Chassis Components – WVEIS Code: 1749**

### **Electrical Technology – AR1760**

The Electrical Technician concentration focuses on careers that will build a knowledge base and technical skills in all aspects of the Electrical Trades industry. Students will have the opportunity to earn NCCER certification for each skill set mastered and be exposed to skills to develop positive work ethics. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

*Core Courses include:*

**Electrical Trades I – WVEIS Code: 1756**  
**Electrical Trades II – WVEIS Code: 1757**  
**Electrical Trades III – WVEIS Code: 1758**  
**Electrical Trades IV – WVEIS Code: 1759**

*Elective Courses include:*

**Integrated Electrical Lab – WVEIS Code: 1766**  
**National Electrical Code – WVEIS Code: 1767**  
**Residential Wiring – WVEIS Code: 1769**  
**Rotating Devices and Control Circuitry – WVEIS Code: 1771**

### **Therapeutic Services – HE0723 (2 Year Program)**

The Therapeutic Services Concentration allows the student to explore careers focused primarily on changing the health status of the patient over time. Health professionals in this concentration work directly with patients; they may provide care, treatment, counseling and health education information. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship and Technology

Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and content standards and objectives.

*Core Courses include:*

**Foundations of Health Science - WVEIS Code: 0711**

**Advanced Principles of Health Science - WVEIS Code: 0715**

**Clinical Specialty I – WVEIS 0789**

**Select 1:** Certified Nursing Assistant **(A)** ECG Certified Technician **(B)** Certified Phlebotomy Technician **(C)**

**Clinical Specialty II – WVEIS Code: 0790**

This course is designed to allow the student to choose a career work-based experience from the following specializations:

**Select 1:** Pre-Pharmacy Technician **(D)** Veterinary Science **(E)** Physical Therapy Aide **(F)** Sports Trainer **(G)** Certified Health Unit Coordinator **(H)**

*Elective Courses include:*

**Body Structure & Functions - WVEIS Code: 0716**

**Medical Terminology - WVEIS Code: 0721**

**Understanding Human Behavior – WVEIS Code: 0725**

**Nutrition and Wellness - WVEIS Code: 0739**

### **Therapeutic Services – HE0723 (1 Year Program)**

The Therapeutic Services Concentration allows the student to explore careers focused primarily on changing the health status of the patient over time. Health professionals in this concentration work directly with patients; they may provide care, treatment, counseling and health education information. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and content standards and objectives.

*Core Courses include:*

**Foundations of Health Science - WVEIS Code: 0711**

**Advanced Principles of Health Science - WVEIS Code: 0715**

**Clinical Specialty I – WVEIS 0789**

This course is designed to allow the student to choose a career work-based experience from the following specializations:

**Select 1:** Certified Nursing Assistant **(A)** ECG Certified Technician **(B)** Certified Phlebotomy Technician **(C)**

**Clinical Specialty II – WVEIS Code: 0790**

This course is designed to allow the student to choose a career work-based experience from the following specializations:

**Select 1:** Pre-Pharmacy Technician **(D)** Veterinary Science **(E)** Physical Therapy Aide **(F)** Sports Trainer **(G)** Certified Health Unit Coordinator **(H)**

**Optional 2<sup>nd</sup> Year** – *(In order to offer students the chance to receive two additional certifications the following courses will be offered the second year should a student choose to attend.)*

**Medical Terminology - WVEIS Code: 0721**



**Nutrition and Wellness - WVEIS Code: 0739**

**Clinical Specialty I (3) – WVEIS 078912**

**Select 1:** Certified Nursing Assistant **(A)** ECG Certified Technician **(B)** Certified Phlebotomy Technician **(C)**

**Clinical Specialty II (4) – WVEIS Code: 079022**

This course is designed to allow the student to choose a career work-based experience from the following specializations:

**Select 1:** Pre-Pharmacy Technician **(D)** Veterinary Science **(E)** Physical Therapy Aide **(F)** Sports Trainer **(G)** Certified Health Unit Coordinator **(H)**

### **Welding Technology – MA1980**

The Welding concentration focuses on careers that will build a knowledge base and technical skills in all aspects of the Welding industry. Students will have the opportunity to earn both NCCER certification and the WV Welding Certification for each skill set mastered and be exposed to skills to develop positive work ethics. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

*Core Courses include:*

**Welding I – WVEIS Code: 1862**

**Welding II – WVEIS Code: 1863**

**Welding III – WVEIS Code: 1864**

**Welding IV – WVEIS Code: 1865**

*Elective Courses include:*

**Gas Metal Arc Welding- WVEIS Code: 1987**

**Ornamental Metalwork - WVEIS Code: 1982**

**Blueprint Reading & Metallurgy - WVEIS Code: 1983**

**Gas Tungsten Arc Welding - WVEIS Code: 1989**