



OTTO-ELDRED REGISTRATION BULLETIN

Grades 9 – 12

2020-2021 Academic Year

EQUAL RIGHTS AND OPPORTUNITIES POLICY

The Otto-Eldred School District declares itself to be an Equal Rights and Opportunities District. It does not discriminate against individuals or groups because of race, color, national origin, ethnicity, religion, age, sex, marital status, veteran status, or handicap or disability status. The District's commitment to nondiscrimination extends to students, employees, prospective employees, and the community.

This statement is in compliance with federal laws (including Title IX of Education Amendments of 1972, section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990, the Individuals with Disabilities Education Act), state laws, and State Department of Education regulations concerning equal rights and opportunities. To assure compliance within our community, the Compliance Officer is the High School Principal; phone number (814) 817-1381.

SPECIAL PROGRAMS

Otto-Eldred Junior Senior High School has special education services available for students with identified exceptionalities. Information on these programs may be obtained in the Guidance Office.

INTRODUCTION

All students must be proficient in the State standards. To ensure that our students are competent in all State standards, Otto-Eldred Jr. Sr. High School requires that each graduate successfully completes **24** credits from grades 9-12 in standards-aligned courses. **To earn an Otto-Eldred High School diploma, students must score proficient on the Biology, Algebra, and Literature Keystone Exams(K). Students that are not able to successfully pass each Keystone Exam will be required to successfully complete supplemental instruction prior to graduation. Requirements will be in accordance with the most current PDE regulations. In addition, a graduation project must be completed for a student to be eligible for graduation. Components of the graduation project are completed in a student's junior and senior year.**

This registration bulletin has been carefully designed to help you plan for the selection of those course offerings that will be most beneficial in preparing for a successful and productive life. This should be done in consultation with your parents, teachers, school counselor, and administration.

We consider this a most important task. The school counselor, faculty, and administration are ready to help you in this effort. Contact them if you have any questions concerning your schedule.

The program of studies you select for concentration in the senior high school (grades 9, 10, 11 and 12) should be the one which provides you with the most personal satisfaction and which helps you prepare for life's work. If you are interested in furthering your education after high school, it may be necessary for you to choose your courses from the **Academic** program to include foreign languages, mathematics and sciences. You may wish to choose the **Practical Arts** program with a concentration in *Industrial Arts*, or apply for one of nine **Career/Technical** programs.

*If you are selected to major in one of the **CAREER and TECHNICAL** programs, you must stay in the program for the duration of the school year.* **Some programs require purchasing of proper outfits, footwear and/or materials as well as additional paperwork in order to be eligible to start the program. Before requesting a specific program, be sure you are aware of the requirements necessary to enter the program.**

GRADE LEVEL CLASSIFICATIONS

The placement of a student in a particular grade level and homeroom is based on credits earned in grades 9-11 and the recommendation of the high school principal. In general, students should earn a minimum of six credits per year to maintain his or her class standing.

SCHEDULE CHANGES

Because of the negative effect that numerous changes have on class balance and other schedule factors, alterations to the student's schedule will be considered only for urgent reasons. Required courses may not be dropped at all. Any course change must be done in the summer. You may add or drop a course with the approval of the course teacher, school counselor, and high school principal.

SCHEDULING YOUR PROGRAM

On the following pages, you will find the required courses and the suggested levels for each program in the curricula. Also included in this booklet are course descriptions, prerequisites, and grade levels in which courses are offered.

We advise all students to schedule electives at the grade level where they are initially offered to avoid conflicts in scheduling wherever possible. You will also be asked to select an alternative or two for elective choices in the event you cannot be given your first choice.

All courses carried as requirements in a given curriculum automatically become electives in all other curriculum areas, except where listed otherwise. Students are expected to choose a complete, nine period schedule. As a general rule you may not schedule more than six (6) periods of study hall per cycle.

World languages, art courses, and music courses are electives in all programs.

S.T.E.M. indicates science, technology, and math courses.

Dual Enrollment (DE) courses count toward graduation requirements and also can transfer to colleges as credits earned. Students must meet the requirements to be eligible for these courses. These requirements include: junior or senior status, proficiency on the Keystone Exams, proficiency on a related placement exam, a minimum SAT or PSAT score, and/or faculty and administration approval.

You will be asked to complete a four-year plan for the particular curricular area you choose. This plan then will be followed as you move from grade 9 through 12. It is possible that you will need to alter your plan as you register for courses each year; but—particularly with the state curriculum requirements—it is important that you develop a program of studies to direct you toward your goals in life. The faculty, school counselor, and administrative staff are ready to help you make your choices. Your parents also need to be involved as you make these important decisions. There are options available to help you achieve your scheduling goals. More information regarding these options is available in the Guidance Office.

OTTO-ELDRED JR SR HIGH SCHOOL GRADUATION REQUIREMENTS

Updated January 2013

Below is a listing of graduation requirements approved by the Otto-Eldred School Board of Directors. These course and credit requirements meet the expectations set in Chapter 4 of the PA School Code. In order to graduate from Otto-Eldred Junior Senior High School, a student must complete the following minimum credits of approved study:

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|------------------------------------|-------------|
| ENGLISH | 4.00 |
| HISTORY | 4.00* |
| S.T.E.M. (3 math-3 science) | 8.00*^ |
| PHYSICAL EDUCATION | 1.83+ |
| HEALTH EDUCATION | .5 |
| ELECTIVES | <u>5.67</u> |
| MINIMUM GRADUATION CREDITS | 24.00 |

All students must complete the school board approved graduation project. All students must score proficient on available Keystone Exams or meet the requirement through supplementary coursework.

Credit for Career & Technical Center (CTC) program is 3 CREDITS PER YEAR.

*Because of period limitations, the number of Math, Science, and History credits required of CTC and co-op students is one less than listed. For every year in a CTC program, the FOUR core credit requirement is dropped to THREE.

+Physical Education is required each year.

^Students MUST take at least 2 credits of science and 2 credits of math including Biology, Algebra I, and Geometry. The remaining 4 S.T.E.M. credits can come from courses in math, science, or technology.

GRADUATION REQUIREMENTS

The following are the minimum course requirements in grades 9 through 12 for each curricular area.

MINIMUM GRADUATION REQUIREMENTS: The minimum requirements to receive an Otto-Eldred High School diploma are outlined in the previous section. To be eligible for a mantle in the academic curriculum, practical arts curriculum, or CTC curriculum see the requirements listed below.

ACADEMIC CURRICULUM: four credits of English, four credits of history, four years of physical education, health, at least a two credit sequence of a foreign language, eight credits of S.T.E.M., including Advanced Math and Chemistry, and at least two of the following: Calculus, Biology II, Physics, College English Composition, College Literature, College History, Psychology, and Chemistry II.

PRACTICAL ARTS CURRICULUM: four credits of English, four years of physical education, four credits of history, eight credits of S.T.E.M., health, Drafting & Design I, Drafting & Design II, Drafting & Design III, Wood I, Wood II, and Metal Shop.

CTC CURRICULUM: four credits of English, four years of physical education, three credits of history, six credits of S.T.E.M., health, and the complete CTC program of at least two years.

2020-2021 OFFERED COURSES

ART

TWO DIMENSIONAL ART (101) 0.5 credit— Learn the basics of drawing, painting, and printmaking. During the course you will synthesize design principles to create portraits, landscapes, still lifes, and abstract artwork. Technology will be used to develop a digital portfolio.

THREE DIMENSIONAL ART (102) 0.5 credit— In this course we will explore sculpture both additive and subtractive. Emphasis will be placed on knowledge of artists and their techniques. Technology will be used to create a digital portfolio.

PAINTING/PRINT MAKING (103) 0.5 credit - Paint and Printmaking will cover multiple mediums in painting and printmaking such as watercolor, acrylic, block printing, and monoprinting.

CERAMICS (104) 0.5 credit— First you will learn basic hand building techniques in earth clay. Then using these techniques you will apply knowledge to create advanced wheel-thrown and sculptural ceramic projects. The history of cross cultural design will be explored through clay. Technology will be used to create a digital portfolio.

COMPUTER EDUCATION

COMPUTER APPLICATIONS (120) 0.33 S.T.E.M. credit—9th grade: Typing proficiency; basic Microsoft Office skills. This course will cover intermediate to advanced instruction and use of the following software applications: word processing (MS Word), spreadsheet (MS Excel), desktop publishing (MS Publisher), and multimedia presentation (MS PowerPoint). Students will learn basic use of peripherals such as a digital camera as well as basic photo editing. Other software or digital resources will be used in addition to Microsoft products.

21st CENTURY SKILLS (121) 1 S.T.E.M. credit—Prerequisites: Typing proficiency; Basic word processing/document formatting skills. Ability to work independently as well as collaboratively with others. The course objectives are the skills being demanded in all areas of employment: Critical Thinking, Problem Solving, Collaboration, Communication, Creativity and Innovation. This class will explore, learn, test and apply various 21st Century digital tools to adapt and apply them to course objectives. Web 2.0 tools will be used with a concentrated focus on using digital cameras, video cameras and audio/video editing techniques. A class website will be developed and maintained to showcase student work.

Entrepreneurship (802) 1 credit – This course will prepare students to carry out the entrepreneurial process and due to the strong emphasis on business concepts, will essentially prepare all students for the workforce. Students will be introduced to concepts that will help them grow and meet the demands of the ever-changing

marketplace. Throughout this course, students will focus on business concepts including, but not limited to: Economics, Marketing, Accounting, and Finance.

ENGLISH

LANGUAGE ARTS 9 (209) 1 credit—Students are offered the opportunity to explore real world connections through reading, writing, speaking, and listening. The literature component allows students to vicariously visit different areas of culture and learn about ways of life. Along with the readings, honing the written skills necessary to be successful and practicing the art of the spoken word are only a few of the expectations this class experiences that will prepare students for other high school courses and any post-secondary goals and adventures.

COMPOSITION (200) 1 credit—Composition, a course based on Pennsylvania's Common Core State Standards for English/Language Arts provides students with frequent and continual opportunities to learn and apply essential skills in writing, using a process that includes: (1) prewriting, (2) drafting, (3) revising, (4) editing, and (5) producing a final, corrected product. Strategies should include evaluating and responding to the writing of others. Instruction in grammar, usage, and mechanics is integrated with writing instruction so that students develop a common language for discussion. (NCAA approved)

LITERATURE (201) (K) 1 credit—Literature, a course based on Pennsylvania's Common Core State Standards for English/Language Arts, is a study of language, literature, composition, and oral communication with a focus on exploring characterization across universal themes and a wide variety of genres. Students read, analyze, evaluate, critique, and actively respond to a wide variety of literary genres, including quality works of various ethnic and cultural minorities. (NCAA approved)

LANGUAGE ARTS 11 (211) 1 credit—In ELA 11, students will be expected to learn to analyze, interpret, write, speak, and listen more effectively. The student will study vocabulary, usage, and grammar as needed. A survey of world literature is studied to emphasize point of view with its effect on time, subject, and theme. An understanding of irony and satire becomes necessary in the study of world literature, which includes such forms as the short story, the novel, the essay, the play, and the poem. The course will provide activities to enhance oral and written communication skills and to improve critical-thinking skills. Certain assignments will require the use of research skills and technology. (NCAA approved)

LANGUAGE ARTS 12 (Academic) (212) 1 credit—World Literature, Pennsylvania's Common Core State Standards for English/Language Arts, is a study of language, literature, composition, and oral communication focusing on an exploration of point of view or perspective across of ancient and modern representative works by major authors. Students examine a wide variety of literary genres and themes. Students analyze how the ideas and concepts presented in the works are both interconnected and reflective of the cultures and historical periods of the countries represented by the authors. Students write fictional narratives, short stories, responses to literature, reflective compositions, and historical investigation reports. Students write and deliver

grade-appropriate multimedia presentations and access, analyze, and evaluate online information. (NCAA approved)

LANGUAGE ARTS 12 (Technical) (212) 1 credit—World Literature, an integrated English course based Pennsylvania's Common Core State Standards for English/Language Arts, is a study of language, literature, composition, and oral communication. Students use literary interpretation, analysis, comparisons, and evaluation to read and respond to representative works of historical or cultural significance for World Literature in classic and contemporary literature balanced with nonfiction. They will also study and apply the processes and conventions needed for effective technical writing-communication. TECHNICAL WRITING PROJECT: Students complete a project, such as a multi-media advertising campaign for a generic product or idea or a multi-media proposal of an action plan to implement a project or service, which demonstrates knowledge, application, and writing progress in the Technical Communication course content. (NCAA approved)

ENGLISH COMPOSITION I (DE202) 1.06 credits— This course focuses on the writing process and on the kinds of writing common in the academic disciplines. Academic students interested in taking College English need to meet course requirements prior to course registration. A combination of PSSA results and faculty recommendation will be taken into consideration for students' entry. This course compares favorably as a college freshman English. DUAL-ENROLLMENT COURSE. 3 CREDITS UNIVERSITY OF PITTSBURGH @ BRADFORD. (NCAA approved)

LITERATURE AND INTERPRETATION (DE203) 1.06 credits—This course is an examination of the ways in which both literary and nonliterary texts create meaning and an introduction to some of the methods of literary interpretation. Beginning with literary concepts such as genre, narrative, character, and figurative language, this course considers the interaction among the reader, the writer, and the text itself, and between different texts. DUAL-ENROLLMENT COURSE. 3 CREDITS UNIVERSITY OF PITTSBURGH @ BRADFORD. (NCAA approved)

YEARBOOK I (204), II (205), and III (206) 1 credit—*The Ottocrat* is completed entirely online. Students learn to design, write, and photograph pages for the yearbook.

THEATER ARTS I (105), II (106), and III (107) 1 credit — This course for students in grades 10, 11, and 12 is a performance class that covers theatre from pantomime to improvisation and acting to production. Students will have the opportunity to develop characters, design sets and costumes as well as possibly putting on a stage play for an audience. This course requires students to work both individually and in groups to learn different acting techniques.

SHORT STORIES (217) .5 credit— Short Stories, a course based on Pennsylvania's Common Core State Standards for English/Language Arts, is a study of the distinct features of the short story. The course may be organized by historical periods, themes, or authors. Students examine short stories with themes by a variety of authors from the perspective of audience, purpose, and historical development. Students analyze what distinguishes the short story genre from other literary genres, such as the novel, epic, romance, biography, and others.

CREATIVE WRITING (218) .5 credit—Creative writing is designed to aid students in their creative expression, as well as delivery of one's writing. Students will read and discuss articles on the craft of writing. Students will focus on fiction and poetry by reading and evaluating the effectiveness of the varying styles. Students will write and share a variety of their own works. Students will be expected to deliver their writing to an audience.

HEALTH and PHYSICAL EDUCATION

HEALTH Multi-Grade (602) .5 credit—This course is offered to students in grades 10 and 11. It is traditionally offered on days opposite PE.

PHYSICAL EDUCATION (609-12/Multi 613) (Grades 9–12) .33-.50 credit each year—All students are required to take two to three periods a cycle of physical education and receive a passing grade for all four years of senior high school.

HISTORY AND RELATED SUBJECTS

U.S. HISTORY (309) (Grade 9) 1 credit—All ninth grade students must take the second part of United States History. This course is a continuation of eighth grade history, and will emphasize the important causes and results of major events in U.S. History from the beginning of the Civil War through the culmination of WWI and the Great Depression. The contributions of individuals who help to shape the history of the United States during this period will also be discussed. (NCAA approved)

WORLD HISTORY (310) (Grade 10) 1 credit—All tenth grade students will be required to complete a full year's course in world history. The course will focus primarily on a study of world cultures from ancient civilizations to the beginning of the 20th century and will emphasize the study of individuals and events, which have had a significant impact on the United States and the western world. Students @ CTC will be exempt. DUAL-ENROLLMENT COURSE. 3 CREDITS PENN HIGHLANDS COMMUNITY COLLEGE. (NCAA approved)

AMERICAN GOVERNMENT and ECONOMICS (311/DE302) (Grade 11) 1.03

credit—This course is designed to acquaint the student with the U.S. Constitution and the functions of American government. Current issues will also be analyzed and discussed in this course. In addition, the course will acquaint students with basic economic concepts and issues such as Scarcity, Opportunity Costs, Trade-offs, Business Cycle, GDP, Supply and Demand, Budgeting nationally and personally, as well as content emphasizes graphs and problem solving as well as the general workings of the U.S. economy. DUAL-ENROLLMENT COURSE. 3 CREDITS UNIVERSITY OF PITTSBURGH@BRADFORD. (NCAA approved)

TWENTIETH CENTURY UNITED STATES AND WORLD HISTORY 1877 – PRESENT (312/DE303) (Grade 12) 1.03 credit

—Seniors will be scheduled for this. The course will examine the major events in United States and World History from the end of World War I to the present. Included in this year-long course are an examination of the causes and results of the Great Depression, the rise of totalitarian dictatorships, World War II, the Cold War, and major United States domestic and foreign policy issues of the post World War II era. DUAL-ENROLLMENT COURSE. 3 CREDITS PENN HIGHLANDS COMMUNITY COLLEGE. (NCAA approved)

PSYCHOLOGY – (DE304) (Grades 11-12) 1.03 credit

—Psychology is a senior high elective that introduces students to the world of research methods, systematic thinking, and the utilization of their own higher order thinking skills. Students will be exposed to a range of psychological issues giving them a background for an introductory course of college Psychology. The course will focus on popular psych topics, including the following themes: Neurobiology, Famous Psychiatrists and Psychologists, Learning, Development and Behavior, Personality Theory, and Abnormal Psychology. The debate of nature vs. nurture will be central to class discussions, as will modern perceptions of psychological illnesses and treatments. The course will be taught at a fast, college-prep pace, challenging students with oral reports, written arguments, tests, and quizzes. Time permitting; students will also be exposed to first-hand research and hypothesis development. Students should be prepared to expand their knowledge base as well as their own prejudices and preconceived notions as they delve into this mature subject matter. DUAL-ENROLLMENT COURSE. 3 CREDITS PENN HIGHLANDS COMMUNITY COLLEGE. (NCAA approved)

MATHEMATICS

ALGEBRA 1A (500) 1 S.T.E.M. credit—Algebra 1A is a course that will help students develop skills to meet the general needs of mathematics in today's vocational fields. Students planning to take Algebra 1A as a freshman, should plan to take Algebra IB as a sophomore.

ALGEBRA 1B(K) (501) 1 S.T.E.M. credit—Algebra 1B is a rigorous course that will provide the academic student with a basic foundation in mathematics. It is the study of

the properties and relations of numbers and of symbols representing numbers. The greatest difference between Algebra 1B and arithmetic is that algebra makes more use of symbols to represent ideas and numbers. 8th grade students will be allowed in Algebra 1B by recommendation of the math department, school counselor and principal. (NCAA approved)

GEOMETRY A (502) 1 S.T.E.M. credit—Prerequisite Algebra 1A or Algebra 1B. The course emphasizes everyday applications in geometry. Time is spent on measurement, percent, scaling, etc.

GEOMETRY B (503) 1 S.T.E.M. credit—Prerequisite – Algebra 1. This branch of mathematics deals with the relations, properties, and measurements of solids, planes, lines, points, and angles. This subject is useful and needed in any type of advanced mathematics. Those persons who study advanced math – engineers, electricians, craftsmen, nurses, etc. will benefit from the course content. (NCAA approved)

ALGEBRA 2 (DE504) 1.06 S.T.E.M. credits—Prerequisite—Algebra 1 & Geometry (or concurrent w/ Geometry). This course is a continuation of Algebra 1. More emphasis is put on functions and function analysis. Algebra 2 is exceedingly important for people planning to attend college or pursue a military career, especially those preparing for a science, technical or business related career. It is expected that most students will complete Algebra 2 prior to graduation. Students who plan to take physics in their senior year must schedule Algebra 2 in their junior year. Graphing calculators are required and provided for this course. DUAL-ENROLLMENT COURSE. 3 CREDITS UNIVERSITY OF PITTSBURGH@ BRADFORD. (NCAA approved)

CONSUMER MATH (513) 1 S.T.E.M. credit—The emphasis in this course will be placed on mathematics skills to help in the business of living. It is not technical mathematics, but one of everyday uses for math. Topics will include personal income, taxes, banking, charts and tables, discounts, and practical math problems.

PRECALCULUS WITH TRIGONOMETRY (DE505) 1.06 S.T.E.M. credits—Prerequisite -- Algebra 2 and Geometry. Trigonometry and precalculus integrate the disciplines of geometry and algebra. The emphasis is on applied mathematics as well as the abstract nature of mathematics. This course prepares students for calculus and higher mathematics. Graphing calculators are required and provided for this course. DUAL-ENROLLMENT COURSE. 4 CREDITS UNIVERSITY OF PITTSBURGH@ BRADFORD. (NCAA approved)

INTRODUCTION TO CALCULUS (DE506) 1.06 S.T.E.M. credits—Prerequisite – Advanced Math. Calculus is a system of mathematical reasoning through the use of symbols. This course is designed as an elective for the serious math student that is interested in furthering his studies at the college level in mathematics. Graphing calculators are required and provided for this course. ADVANCED PLACEMENT COURSE for college credit. DUAL-ENROLLMENT COURSE. 4 CREDITS UNIVERSITY OF PITTSBURGH@ BRADFORD. (NCAA approved)

MUSIC

SENIOR CHOIR (110) (Grades 9–12) 1 or .5 credit—The student in this course studies and performs all types of vocal literature from classical music to the present “pop” style. Basic choreography is added to enhance the performance. Previous participation in junior choir is suggested but not required.

SENIOR BAND (112) (Grades 9–12) 1 or .5 credit—Senior Band refines the instrumental techniques learned in Elementary and Junior Band. A wide range of musical styles is explored including “pop,” jazz, classical, and 20th century. The band presents two concerts per year as well as offering opportunities to participate in special festivals and performances. Previous participation in Junior Band is suggested but not required.

VOICE I (108) (Grades 9–12) .50 credit—This course is offered to students in grades 9 through 12 who are interested in performing serious vocal literature. Extensive vocal training will be explored as well as performing art songs in various languages. The student must be enrolled in choir. There is no prerequisite. Class enrollment is limited.

KEYBOARDING (113) (Grades 9–12) .50 credit—This course is offered to students in Grades 9–12 who are interested in learning to play keyboard instruments. This course will be taught based on the individual needs and previous training. Class enrollment is limited due to the number of keyboards available.

HISTORY OF ROCK 'N ROLL (117) .5 credit—This course will tour rock music from the beginning to present. We will explore the connections between modern music and the artists and groups from the past, exploring the social and historical context that gave birth to musical genre and the enjoyment of music.

MUSIC EXPLORATIONS (118) .5 credit —Designed to give the music enthusiast basic musical concepts, along with history and appreciation of the arts. The course offers exploration through the course of technology with focus on contemporary content. Use of iPads and other technologies are a regular part of this class.

BASICS OF GUITAR I (115) .5 credit—A beginner course to develop performance skills on the guitar through participation in small group instruction and individualized practicum. We will look at connection of reading traditional notation and tablature. This course will also cover proper posture, performance, care, stringing and tuning of the instrument.

BASICS OF GUITAR II (116) .5 credit—An intermediate course to develop performance skills on the guitar. It is beneficial for students in this course to own their own guitar; however, it is not required.

PRACTICAL ARTS

WOODWORKING 1 (123) 1 S.T.E.M. credit—This course provides students with basic information about wood and wood products; selection, safe use, and care of hand and power tools; and proper woodworking procedures. Woodworking 1 offers exploratory experience designed to give the student insight into the major areas of woodworking. Woodworking 1 is intended to help students develop competent technical skills for good performance in the area of woodworking.

WOODWORKING 2 (124) .5 S.T.E.M. credit—Prerequisite: Woodworking 1. This course provides students with a more in-depth and advanced experience in the area of woodworking. The students will engage in the opportunity to learn about various career opportunities and how a company operates by actually forming a company to mass produce a product. In addition, the technical aspects of wood structure, growth and physical properties of wood are also involved in the total outcome of this class.

WOODWORKING 3 (125) (Grades 11-12) 0.5 or 1 S.T.E.M. credit— Prerequisite(s): Wood 1 and 2. This advanced woodworking class focuses on shop and school maintenance, community service and an opportunity to work on an involved senior project.

SR. HIGH STEM (417) (Grade 9-12) 1 S.T.E.M. credit—In the STEM lab, individuals and small teams of students will rotate through a series of learning stations. At points during the rotation, the teacher will supplement module-based learning exercises with other activities designed to “dive deeper” into various science and engineering concepts. Teamwork, networking, and critical thinking will be key points of emphasis. Students will learn content while drawing connections to real world applications. Practical use of certain productivity tools will also be included in this curriculum.

STEM 9 (9TH Grade Rotation) 0.33 S.T.E.M. credit—In STEM 9 students will be experience higher-level learning through many hands-on experiments. This course which is designed for students to take responsibility for their own learning, focuses on students involved in tasks designed around Science, Technology, Engineering, and Math (STEM).

SCIENCES

AGRICULTURAL SCIENCE & NATURAL RESOURCES (AGSCI) 1.0 S.T.E.M. credit -

HUMAN BIOLOGY (DEHUMBIO) (GRADE 10-12) 1.06 S.T.E.M. credit -

This course provides a general overview of Human Anatomy and Physiology. Topics include: levels of organization, cell structure and function, homeostasis, cytology, histology, and a survey of the following body systems: Integumentary System, Skeletal System, Muscular System, Nervous System, Endocrine System, Cardiovascular System, Lymphatic and Immune System, Respiratory System, Urinary System, Digestive System, and Reproductive System. This course is specifically intended for students who are interested in seeking medical career programs following high school. Student will also be exploring medical imaging, research methods, experimental techniques, and basic clinical terminology during this course. Prerequisites: C or better in Biology B and has taken or is concurrently taking Chemistry I. 3 credits UNIVERSITY OF PITTSBURGH @ BRADFORD. (NCAA approved)

BIOLOGY 1A (400) (Grade 9) 1 S.T.E.M. credit—This course is designed to give students a solid foundation in the nature of science, biological principles, and biochemistry prior to entering the Biology B curriculum.

BIOLOGY 1B (401) (K) (Grade 9-10) 1 S.T.E.M. credit—This is a course designed for academic students. The purpose of this course is to build upon the students' basic knowledge of the life sciences and enhance their comprehension of the biological fields. A “hands-on” approach will be emphasized. Prerequisite to Biology 2. (NCAA approved)

BIOLOGY 2 (402)) 1.06 S.T.E.M. credits—Prerequisite – Biology 1, Chemistry (may be taken concurrently). A conceptually oriented course, Biology 2 is offered primarily for students who desire to pursue careers in science. Only juniors or seniors who have completed chemistry or who are scheduled to take chemistry concurrently may take this course. (NCAA approved)

BIOLOGY 3 (403) (Grade 12) 1.06 S.T.E.M. credits—Prerequisite – Biology 1,2 and Chemistry. Independent study curriculum catered to individuals whose anticipated course of study in post-secondary education is Biology.

ENVIRONMENTAL SCIENCE (DE414) (Grades 11-12) 1.06 S.T.E.M. credits—With sustainability as the central theme, this course will cover major issues related to environmental science in our world today. The course will utilize a blend of hands-on activities, labs, case studies and critical thinking exercises to explore big ideas in environmental science and promote environmental stewardship within students. Dual Enrollment course. 3 credits UNIVERSITY OF PITTSBURGH @ BRADFORD.

CHEMISTRY I (405) 1 S.T.E.M. credit—Prerequisite – Algebra 1 or Basic Algebra.

Chemistry is not limited to the academic student. Laboratory work and hands on

activities with a focus on practical applications of chemical concepts is an important

part of the course and is integrated with the class work. Good study habits are encouraged as the students keep classroom notebooks and complete lab reports.

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| <p>AUTOMOTIVE MECHANICS PROGRAM LENGTH 3 years CERTIFICATION PA State Inspection License</p> | <p>Work on valve train, suspension, brakes and exhaust systems Use current tools/equipment such as scanning tools, approved -Automotive front end aligner -Prepare for a career as a Front End Mechanic, Brake Repairer, Transmission Specialist or Automobile Mechanic -Students should be able to solve a problem solving and measurement skills and be willing to work in a sometimes dirty work environment</p> | <p>BUILDING OCCUPATIONS PROGRAM LENGTH 3 years</p> | <p>Students should be able to round up -Interpret blue prints and specifications -Construct wood products and structures from rough lumber to finish grade -Operate a wide range of hand power tools, air tools, and machines -Prepare for a career as a Carpenter, Construction Carpenter, Construction Manager or Business Owner -Students should have good measurement skills, be able to work at heights up to 50 feet and be willing to work in inclement weather</p> |
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CHEMISTRY 2 (DE406) (Grades 11-12) 1.56 S.T.E.M. credits Prerequisite: Chemistry 1

Chemistry 1. Chemistry 2 is offered for the student planning to pursue a career in chemistry, chemical engineering, medical fields, or environmental science. This course

is not to be substituted for physics without seeking approval from your teacher concerning your career choice. Topics will include a review of the mole method, organic chemistry, acid base chemistry, kinetic molecular theory, and other advanced topics in inorganic chemistry. Formal lab periods and reports are an integral part of the course.

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| <p>CULINARY ARTS PROGRAM LENGTH 3 years CERTIFICATION ServSafe Sanitation Certificate</p> | <p>Work side-by-side with professional chefs -Make gourmet foods with artistic presentation -Prepare for a career in Catering, Pastry, and Fine Operation of a full service restaurant -Prepare for a career as a Cook, Pastry Cook, Kitchen Helper or Waiter/Waitress -Students must be willing to taste food, learn French Baking (NOA Approved) with a good public eye, and should have good measurement skills</p> | <p>TEACHER EDUCATION PROGRAM LENGTH 3 years CERTIFICATION CDA</p> | <p>Early Childhood Education program is designed to teach students the aspects of teaching and working with young children -Other advanced topics in and develop the characteristics of successful teachers/ childcare providers -Apply theoretical concepts to real-life situations -Students will learn how to meet the developmental needs and interests of young children.</p> |
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SCIENCE TECHNOLOGY & SOCIETY (416) (Grades 11-12) 1 S.T.E.M. credit—This course will be offered for students in their junior or senior year. It is required of all students not electing chemistry. The purpose of the course is to provide students with the information base needed to foster understanding and intelligent decision-making with respect to environmental science issues. Topics will include global warming, ozone depletion, waste disposal, pollution, and current events in science.

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| <p>HEALTH ASSISTANT PROGRAM LENGTH 3 years CERTIFICATION Nurse Aide</p> | <p>-Work side-by-side with health care professionals -Practice hands-on care -Gain clinical experience at long-term care facilities -Prepare for a career as a Nurse Assistant or -Students must have a good health record and be able to accept and carry out precise orders</p> | <p>HOMELAND SECURITY PROGRAM LENGTH 3 years</p> | <p>Acquire skills from public safety areas of firefighting, law enforcement, and emergency services -Receive instruction; participate in practical applications and situational learning experiences -Prepare for national and professional certifications in all three areas of public safety -Reveal personal career opportunities and choose personal career opportunities and an area of specialization of public safety</p> |
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PHYSICAL SCIENCE (413) (Grades 9-12) 1 S.T.E.M. credit—This course is suggested for the academic or general student who is not intending a career in the physical sciences or engineering. This course is appropriate for elementary education majors, non-science secondary education majors, business majors and nursing students. Physical science is an activity based course that covers science topics that are relevant to today's modern society such as climate change, alternative energy, telecommunication, and more. May be taken multiple years in multiple topics.

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| <p>WELDING TECHNOLOGY PROGRAM LENGTH 3 years</p> | <p>-Use MIG, TIG, stick, and oxyfuel welding -Perform oxyfuel and plasma cutting and air arc cutting -Learn to choose the best welding and cutting process for the job at hand -Fabrication Welder -Students should have good measurement skills and be willing to work outside and to get dirty -Design, build, configure, and troubleshoot networks -Program routers and switches -Explore wireless and security methods -Learn with interactive and hands-on activities through the Cisco Academy -Prepare for a career as a Network Administrator, Technology Coordinator, Computer Support Specialist or Cable Installer -Students should be enthusiastic about computers and technology and have a strong interest in mathematics and have above average math reading and science abilities and excellent problem solving skills</p> | <p>ENGINEERING TECHNOLOGY PROGRAM LENGTH 2 years CERTIFICATION NIMS Certification Comp. Design Ar Comp I/II</p> | <p>Use mills, CNC mills, and lathes -Learn to use precision measurement tools -Read the prints or design parts and machine them to precise specifications -Students should have good problem solving skills -Computer Integrated Manufacturing -Principles of Engineering -Engineering Design & Development -Service, diagnose, repair, and rebuild trucks, tractors, logging, and construction equipment -Work on both gasoline and diesel powered engines -Use arc welding, oxy/acetylene cutting, and fabrication techniques -Prepare for a career as an Equipment Mechanic, Truck and Trailer Equipment Manager or Auto Clerk</p> |
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PHYSICS (PHYSICS) (Grades 11-12) 1 S.T.E.M. credit— Prerequisite: Has taken or is currently taking advanced math. This physics course is suggested for the student who is intending a career in the physical sciences or engineering. Physics is a rigorous math oriented course that covers the traditional physics topics of kinematics, Newton's Laws energy, and other topics. Students will be challenged to apply their knowledge of the laws of physics to solve physics related critical thinking problems. Formal lab activities and reports are an integral part of the course.

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| <p>NETWORK SYSTEMS TECHNOLOGY PROGRAM LENGTH 3 Years CERTIFICATION Cisco Certified A+ Comp I/A</p> | <p>-Design, build, configure, and troubleshoot networks -Program routers and switches -Explore wireless and security methods -Learn with interactive and hands-on activities through the Cisco Academy -Prepare for a career as a Network Administrator, Technology Coordinator, Computer Support Specialist or Cable Installer -Students should be enthusiastic about computers and technology and have a strong interest in mathematics and have above average math reading and science abilities and excellent problem solving skills</p> | <p>VEHICLE MAINTENANCE PROGRAM LENGTH 2 years CERTIFICATION PA State Inspection License</p> | <p>Service, diagnose, repair, and rebuild trucks, tractors, logging, and construction equipment -Work on both gasoline and diesel powered engines -Use arc welding, oxy/acetylene cutting, and fabrication techniques -Prepare for a career as an Equipment Mechanic, Truck and Trailer Equipment Manager or Auto Clerk -Solving and measurement skills and be willing to work outside in inclement weather and in a sometimes dirty environment</p> |
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ONLINE ELECTIVES

The following courses are online electives aligned with one or more career clusters. These courses are designed to provide relevant content knowledge to students interested in a specific career path. Courses are subject to change based on availability. All courses are open to students in grades 9-12 and are 1 credit courses, unless otherwise noted.

A NOTE ABOUT ONLINE LEARNING:

Online courses require a great deal of independence and time management. Do not take them lightly. Most courses require the completion of one or more lessons each day. As in all other classes, staying on pace or missing classes will require students to complete work on their own time.

World Languages

Unless noted otherwise*, all world languages consist of two semesters per year. Both semesters must be completed to earn 1.0 credit. The following languages are available.

Spanish I Students begin their introduction to high school Spanish with fundamental building blocks in four key areas of foreign language study: listening comprehension, speaking, reading, and writing. Each unit consists of an ongoing adventure story, a new vocabulary theme and grammar concept, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, and multimedia cultural presentations covering major Spanish-speaking areas in Europe and the Americas.

Spanish II High school students continue their introduction to Spanish with fundamental building blocks in four key areas of foreign language study: listening comprehension, speaking, reading, and writing. Each unit consists of an ongoing adventure story, a new vocabulary theme and grammar concept, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, cultural presentations covering major Spanish-speaking areas in Europe and the Americas, and assessments.

Spanish III In this expanding engagement with Spanish, high school students deepen their focus on four key skills in foreign language acquisition: listening comprehension, speaking, reading, and writing. In addition, students read significant works of literature in Spanish and respond orally or in writing to these works. Continuing the pattern and building on what students encountered in the first two years, each unit consists of a new vocabulary theme and grammar concept, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, and multimedia cultural presentations covering major Spanish-speaking areas in Europe and the Americas.

French I Students in high school begin their introduction to French with fundamental building blocks in four key areas of foreign language study: listening comprehension, speaking, reading, and writing. Each unit consists of an ongoing adventure story, a new vocabulary theme and grammar concept, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, and multimedia cultural presentations covering major French-speaking areas in Europe and across the globe.

French II Students continue their introduction to French in this second-year, high school language course with review of fundamental building blocks in four key areas of foreign language study: listening comprehension, speaking, reading, and writing. Each unit consists of an ongoing adventure story, a new vocabulary theme and grammar concept, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, cultural presentations covering major French-speaking areas across the globe, and assessments.

French III In this expanding engagement with French, high school students deepen their focus on four key skills in foreign language acquisition: listening comprehension, speaking, reading, and writing. In addition, students read significant works of literature in French and respond orally or in writing to these works. Continuing the pattern and building on what students encountered in the first two years, each unit consists of a new vocabulary theme and grammar concept, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, and multimedia cultural presentations covering major French-speaking areas in Europe and the Americas.

German I High school students begin their introduction to German with fundamental building blocks in four key areas of foreign language study: listening comprehension, speaking, reading, and writing. Each unit consists of an ongoing adventure story, a new vocabulary theme and grammar concept, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, and cultural presentations covering major German-speaking areas in Europe.

German II Students continue their introduction to high school German in this second-year course with review of fundamental building blocks in four key areas of foreign language study: listening comprehension, speaking, reading, and writing. Each unit consists of an ongoing adventure story, a new vocabulary theme and grammar concept, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, and cultural presentations covering major German-speaking areas in Europe.

Chinese I High school students begin their introduction to Chinese with fundamental building blocks in four key areas of foreign language study: listening comprehension, speaking, reading, and writing. Each unit consists of an ongoing adventure story, a new vocabulary theme and grammar concept, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, and multimedia cultural presentations covering major Chinese-speaking countries.

Chinese II Students in high school continue their introduction to Chinese in this second-year course with review of fundamental building blocks in four key areas of foreign language study: listening comprehension, speaking, reading, and writing. Each unit consists of an ongoing adventure story, a new vocabulary theme and grammar concept, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, and multimedia cultural presentations covering major Chinese-speaking countries.

Latin I High school students begin their introduction to Latin with fundamental building blocks in four key areas of foreign language study: listening comprehension, speaking, reading, and writing. Each unit consists of a new vocabulary theme and grammar concept, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, cultural presentations covering significant aspects of Roman culture or their modern-day manifestations, and assessments.

Latin II Students continue their introduction to high school Latin by continuing to cover the fundamental building blocks in four key areas of foreign language study: listening comprehension, speaking, reading, and writing. Each unit consists of a new vocabulary theme and grammar concept, a notable ancient myth in Latin, numerous interactive games reinforcing vocabulary and grammar, reading and listening comprehension activities, speaking and writing activities, cultural presentations covering significant aspects of Roman culture or their modern-day manifestations, and assessments.

American Sign Language* 1.0 credit

Students must complete both Sign Language I *and* II in the same academic year to earn 1.0 credit. No second year credit will be available.

Sign Language IA and IB: In the first semester students are introduced to the fundamental concepts of American Sign Language. Students explore vocabulary, grammar, and conversational skills using basic signing and fingerspelling techniques. They are exposed to activities and exercises that help them understand the culture of deaf and hard-of-hearing people.

Sign Language IIA and IIB In the second semester, students continue their study of American Sign Language (ASL). Students expand their ASL vocabulary, grammar, and conversational skills. In addition, students complete activities and exercises that help them understand the culture of the deaf and hard-of-hearing community, including analyzing Deaf View/Image Art (De'VIA).

Business Administration

This class is comprised of:

Hospitality and Tourism: Traveling the Globe –With greater disposable income and more opportunities for business travel, people are traversing the globe in growing numbers. As a result, hospitality and tourism is one of the fastest growing industries in the world. This course will introduce students to the hospitality and tourism industry, including hotel and restaurant management, cruise ships, spas, resorts, theme parks, and other areas. Students will learn about key hospitality issues, the development and management of tourist locations, event planning, marketing, and environmental issues related to leisure and travel. The course also examines some current and future trends in the field.

AND

International Business: Global Commerce in the 21st Century – This course is designed to help students develop the appreciation, knowledge, skills, and abilities needed to live and work in a global marketplace. It takes a global view on business, investigating why and how companies expand internationally. The course provides students with a conceptual tool that can help them understand how economic, social, cultural, political, and legal factors influence both domestic and international business. Business structures, global entrepreneurship, business management, marketing, and the challenges of managing international organizations will all be explored. Students will become aware of the ways history, geography, language, cultural studies, research skills, and continuing education are important to modern business.

OR

Sports/Entertainment Marketing – Have you ever wanted to play sports professionally? Have you dreamed of one day becoming an agent for a celebrity entertainer? If so, you'll want to learn more about sports and entertainment marketing. Although this particular form of marketing bears some resemblance to traditional marketing, there are many differences as well – including a lot more glitz and glamour! In this course, you'll have the opportunity to explore marketing principles and delve deeper into the multi-billion dollar sports and entertainment marketing industry. You'll learn how professional athletes, sports teams, and entertainers are marketed as commodities and how some of them become billionaires as a result. In addition, you'll find out what happens behind the scenes of major sporting events and learn about the fundamentals of careers in entertainment marketing.

Child Development

This class is comprised of:

Early Childhood Education 1 – Want to have an impact on the most important years of human development? Students will learn how to create fun and educational environments, keep the environment safe, and encourage the health and well-being of infants, toddlers, and school-aged children.

Real World Parenting – What is the best way to care for children and teach them self-confidence and a sense of responsibility? Parenting involves more than providing a child with food and shelter. Learn what to prepare for, what to expect, and what vital steps parents can take to create the best environment for their children. Parenting roles and responsibilities, nurturing and protective environments for children, positive parenting strategies, and effective communication in parent/child relationships are some of the topics covered in this course.

Criminal Justice I

This class is comprised of:

Careers in Criminal Justice: Criminal Justice Operations 1 – The criminal justice system offers a wide range of career opportunities. In this course, students will explore different areas of the criminal justice system, including the trial process, the juvenile system, and the correctional system.

Law and Order: Introduction to Legal Studies – Every society has laws that its citizens must follow. From traffic laws to regulations that affect the operation of the government, laws help provide society with orders and structure. Our lives are guided and regulated by our society's legal expectations. Consumer laws help protect us from faulty goods; criminal laws help to protect society from individuals who harm others; and family law handles the arrangements and issues that arise in areas including divorce and child custody. This course focuses on the creation and application of laws in various areas of society. By understanding the workings of the US court system, as well as how laws are actually put into effect and enforced, students can become more informed and responsible citizens.

Criminal Justice II

This class is comprised of:

Sociology – The field of sociology explores the development, dynamics, and structure of societies and society's connections to human behavior. Sociology examines the ways in which groups, organizations, communities, social categories (such as class, sex, age, or race), and various social institutions (such as kinship, economic, political, or religious) affect human attitudes, actions, and opportunities. In this course, students learn about the concepts and tools used to understand individuality, social structure, inequality, family structure, education, economics, politics, and social change.

Criminology: Inside the Criminal Mind – In today's world, crime and deviant behavior rank at or near the top of many people's concerns. This course covers the field of Criminology, the study of crime. You will look at possible explanations for crime from psychological, biological, and sociological perspectives; explore the categories and social consequences of crime; and investigate how the criminal justice system handles not only criminals, but also their misdeeds. Why do some individuals commit crimes, but others do not? What aspects of culture and society promote crime and deviance? Why are different punishments given to different people who commit same crime? What factors, from arrest to punishment, help shape the criminal case process?

Criminal Justice III

This class is comprised of:

Forensic Science 1: Secrets of the Dead – Fingerprints. Blood Spatter. DNA analysis. The world of law enforcement is increasingly making use of techniques and knowledge from the sciences to better understand crimes and catch the individuals responsible for those crimes. Forensic science applies scientific knowledge to the criminal justice system. This course focuses on some of the techniques and practices used by forensic scientists during a crime scene investigation (CSI). Starting with how clues and data are corded and preserved, students will follow evidence trails until the CSI goes to trial, examining how various elements of the crime scene are analyzed and processed.

Forensic Science 2: More Secrets of the Dead – Although the crime scene represents the first step in solving crimes through forensic science, the crime laboratory plays a critical role in the analysis of evidence. This course focuses on the analysis of evidence that takes place within this setting. You will examine some of the basic scientific principles and knowledge that guide forensic laboratory processes, such as those testing DNA, toxicology, and material analysis. Techniques including microscopy, chromatography, odontology, entomology, mineralogy, and spectroscopy will be examined.

Economics I

Economics—This full year course invites students to broaden their understanding of how economic concepts apply to their everyday lives—including microeconomic and macroeconomic theory and the characteristics of mixed-market economies, the role of government in a free-enterprise system and the global economy, and personal finance strategies. Throughout the course, students apply critical-thinking skills while making practical economic choices. Students also master literacy skills through rigorous reading and writing activities. Students analyze data displays and write routinely and responsively in tasks and assignments that are based on scenarios, texts, activities, and examples. In more extensive, process-based writing lessons, students write full-length essays in informative and argumentative formats.

Health Science I

This class is comprised of:

Health Science 1: The Whole Individual We know the world is filled with different health problems and finding effective solutions is one of our greatest challenges. How close are we to finding a cure for cancer? What's the best way to treat diabetes and asthma? How are such illnesses as meningitis and tuberculosis identified and diagnosed? This course provides the answers to these questions and more as it introduces you to such health science disciplines as toxicology, clinical medicine, and biotechnology. Understanding the value of diagnostics and research can lead to better identification and treatment of many diseases, and by learning all the pertinent information and terminology you can discover how this amazing field will contribute to the betterment of human life in our future.

Health Science 2: Patient Care and Medical Services Are you looking for a job that's challenging, interesting, and rewarding? These three words describe many of the different careers in health care, and Health Sciences 2: Patient Care and Medical Services will show you how to become part of this meaningful vocation. Promoting wellness, communicating with patients, and understanding safety in the workplace are just a few of the essential skills you will learn, all the while becoming familiar with some of the more prominent areas in the field, such as emergency care, nursing, infection control, and pediatrics. You'll learn about some of the inherent challenges faced by this age-old profession and how you can become a significant part of the solution.

Health Science II (S.T.E.M.)

This class is comprised of:

Biotechnology – This course provides students with a comprehensive and engaging look at the field of biotechnology. Students explore the history of biotechnology and advances in the field, as well as basic information about biotechnology laboratories and careers. Students learn about chemistry; the units of measurement used in biotechnology; and the biology of the cell, DNA, RNA, and proteins. The course concludes with a survey of the applications of biotechnology in the research lab and in industry, including enzymes, techniques, and plasmids.

Health Science II (S.T.E.M.) continued

Epidemiology – Epidemiologists investigate the causes of disease and other public health problems in an effort to prevent them from spreading. This course introduces students to the field of epidemiology, including the basic concepts related to infectious diseases, specializations in epidemiology, including the basic concepts related to infectious diseases, specializations in epidemiology, and study design. Students learn about the specific parts of an epidemiology study and their importance, including types of sampling, selection bias, standardization, confidence intervals, and evidence-based research.

Genetics - Through this introduction to the field of genetics, students learn about the theories of Darwin and Wallace; the concepts of adaptation, genotype, and phenotype; and basic concepts related cells, DNA, and RNA. Students study Gregor Mendel’s pioneering work in genetic variation and the basic concepts that have been developed as a result of his findings. Finally, students explore applications of genetics, including metagenomics, genetically modified organisms, DNA technologies, genetic testing, and other clinical and nonclinical applications of genetics.

Stem Cells – In this course, the diverse and rapidly changing field of stem cell research comes alive for students. Students learn about the different types of stem cells; how stem cells were discovered; their importance to research; and the goals, challenges, and controversies in the field. Students explore human and mouse embryonic stem cells and a variety of types of stem cells found in different parts of the body, as well as the potential clinical applications of these cells in human medicine. Finally, students study stem cell research models.

Introduction to Engineering (S.T.E.M.)

This course is comprised of:

Chemical Engineering – This course offers students a comprehensive and engaging look at the field of chemical engineering. Students learn the basic concepts used in chemical engineering, including systems of units, the periodic table of elements, molecules, compounds, bonding, temperature, and pressure. Students explore chemical systems and reactions, including stoichiometry, open and closed systems, multiple-component systems, and chemical reactions. Finally, students study gases and gas laws, pressure, systems, energy and enthalpy. At the end of this course, students have gained a knowledge of and appreciation for chemical engineering and its growing importance in today’s society.

Computer Engineering – In this course, students learn the concepts used in computer engineering, including the essential parts of a computer, how information is quantified, organized, and used, and the different types of information. Students learn about information compression and information theory, the different types of coding, the theory of sound, and how sound is converted into a signal. Finally, students learn about applications of computer engineering, including digital telephones, real-time data transmission, bandwidth limits, different types of systems, and information security.

Introduction to Engineering (S.T.E.M.) continued

Electrical Engineering – In this introduction to electrical engineering, students learn about electrical engineering concepts including electricity, circuits, energy, work, power, the components of circuits, and some simple applications of electricity. Students explore basic circuit concepts, including series and parallel circuits, laws of electricity, and how circuits are used. At the end of this course, students have knowledge of and appreciation for the field of electrical engineering and its many applications.

Mechanical Engineering – This course introduces students to the field of mechanical engineering and its many applications in the world today. Students learn basic mechanical engineering concepts, including systems of units, vectors, forces, moments, force systems, couples, and equilibrium problems. Students explore the methods of joints and sections, define centroids, explain distributed loads and centers of mass and axes, and state the Pappus-Guldinus theorems. This course concludes with lessons about dry friction, beams, cables, load distribution, pressure, and potential energy. At the end of this course, students have knowledge of and appreciation for the field of mechanical engineering and its importance in today's society.

Introduction to Manufacturing (S.T.E.M.)

This class is comprised of:

Concepts of Engineering and Technology—Each day, we are surrounded by technology and engineering projects. From our phones to the bridges we drive over, engineering and technology influence many parts of our lives. In Concepts of Engineering and Technology, you will learn more about engineering and technology careers and what skills and knowledge you'll need to succeed in these fields. You'll explore innovative and cutting-edge projects that are changing the world we live in and examine the design and prototype development process. Concepts of Engineering and Technology will also help you understand the emerging issues in this exciting career field.

Introduction To Manufacturing: Product Design & Innovation Think about the last time you visited your favorite store. Have you ever wondered how the products you buy make it to the store shelves? Whether it's video games, clothing, or sports equipment, the goods we purchase must go through a manufacturing process before they can be marketed and sold. In this course, you'll learn about the types of manufacturing systems and processes used to create the products we buy every day. You'll also be introduced to the various career opportunities in the manufacturing industry including those for engineers, technicians, and supervisors. As a culminating project, you'll plan your own manufacturing process for a new product or invention! If you thought manufacturing was little more than mundane assembly lines, this course will show you just how exciting and fruitful the industry can be.

Probability and Statistics (S.T.E.M.)

Statistics/Probability (Online)— Prerequisite – Algebra 2 Statistics/Probability course is designed to provide a basic understanding of descriptive and inferential statistics. Topics include the measures of central tendency, standard deviation, combinations and permutations, probability, sampling, and various distributions. Emphasis is on applications of statistical concepts. Students will complete course utilizing online resources and One Note Applications.

Public Administration

This class is comprised of:

Law and Order: Introduction to Legal Studies – Every society has laws that its citizens must follow. From traffic laws to regulations that affect the operation of the government, laws help provide society with order and structure. Our lives are guided and regulated by our society's legal expectations. Consumer laws help protect us from faulty goods; criminal laws help to protect society from individuals who harm others; and family law handles the arrangements and issues that arise in areas including divorce and child custody. This course focuses on the creation and application of laws in various areas of society. By understanding the workings of the US court system, as well as how laws are actually put into effect and enforced, students can become more informed and responsible citizens.

Principles of Public Service: To Serve and Protect—Have you ever wondered who decides where to put roads? Or makes sure that someone answers the phone when you call 911? Or determines that a new drug is safe for the public? These tasks and many more are part of public service, a field that focuses on building healthy societies. Public service includes many different types of careers, but they all have in common the goal of working for others. This course will explore some of the most common career paths in public service. Working for the public also comes with a very specific set of expectations since protecting society is such an important mission. So if you want to work for the greater good, there is probably a public service career for you!

Social Problems

Social Problems 1: A World in Crisis – Students will become aware of the challenges faced by social groups and learn about the complex relationship among societies, governments, and individuals. Each unit focuses on a particular area of concern, often within a global context, and examines possible solutions at both the individual and structural levels. Students will not only learn more about how social problems affect them personally, but begin to develop the skills necessary to help make a difference in their communities and in the world.

Social Problems 2: Crisis, Conflicts, & Challenges – The Social Problems II course continues to examine the current social issues affecting individuals and societies around the globe. Each unit focuses on a particular social problem, including racial discrimination, drug abuse, the loss of a community, and urban sprawl. Students learn about the overall structure of the social problem, its relevance to their lives, and possible solutions at both individual and structural levels. For each issue, students examine the connections in the global arena involving societies, governments, and individuals.

Sociology

Sociology The field of sociology explores the development, dynamics, and structure of societies and society's connections to human behavior. Sociology examines the ways in which groups, organizations, communities, social categories (such as class, sex, age, or race), and various social institutions (such as kinship, economic, political, or religious) affect human attitudes, actions, and opportunities. In this course, students learn about the concepts and tools used to understand individuality, social structure, inequality, family structure, education, economics, politics, and social change.

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| <p>AUTOMOTIVE MECHANICS</p> <p>PROGRAM LENGTH 3 years</p> <p>CERTIFICATION PA State Inspection License</p> | <ul style="list-style-type: none"> -Service, repair, and maintain engines -Work on valve trains, suspension, brakes, and exhaust systems -Use current tools/equipment such as scanning tools and computerized front end aligner -Prepare for a career as a Front End Mechanic, Brake Repairer, Transmission Specialist or Automobile Mechanic -Students should have good mechanical problem solving and measurement skills and be willing to work in a sometimes dirty work environment | <p>BUILDING CONSTRUCTION OCCUPATIONS</p> <p>PROGRAM LENGTH 3 years</p> | <ul style="list-style-type: none"> -Build a residential house from the ground up -Interpret blue prints and specifications -Construct wood products and structures from rough lumber to finish grade -Operate a wide range of hand power tools, air tools, and machines -Prepare for a career as a Carpenter, Construction Carpenter, Construction Manager or Business Owner -Students should have good measurement skills, be able to work at heights up to 50 feet and be willing to work in inclement weather |
| <p>CULINARY ARTS</p> <p>PROGRAM LENGTH 3 years</p> <p>CERTIFICATION ServSafe Sanitation Certificate</p> | <ul style="list-style-type: none"> -Work side-by-side with professional chefs -Make gourmet foods with artistic presentation -Participate in catering projects and in the operation of a full- service restaurant -Prepare for a career as a Cook, Pastry Cook, Kitchen Helper or Waiter/Waitress -Students must be willing to taste food, learn French cooking terminology, work in the public eye, and should have good measurement skills | <p>EARLY CHILDHOOD EDUCATION</p> <p>PROGRAM LENGTH 3 years</p> <p>CERTIFICATION CDA</p> | <ul style="list-style-type: none"> -Early Childhood Education program is designed to teach students the aspects of teaching and working with young children. -Students will: explore career pathways and develop the characteristics of successful teachers/ childcare providers. -Apply theoretical concepts to real-life situations -Students will learn how to meet the developmental needs and interests of young children. |
| <p>HEALTH ASSISTANT</p> <p>PROGRAM LENGTH 3 years</p> <p>CERTIFICATION Nurse Aide</p> | <ul style="list-style-type: none"> -Work side-by-side with health care professionals -Learn medical terminology and anatomy -Practice hands-on care -Gain clinical experience at long-term care facilities -Prepare for a career as a Nurse Assistant or Medical Assistant -Students must have a good health record and be able to accept and carry out precise orders | <p>HOMELAND SECURITY</p> <p>PROGRAM LENGTH 3 years</p> | <p>Acquire skills from public safety areas of firefighting, law enforcement, and emergency services</p> <p>Receive instruction; participate in practical applications and situational learning experiences</p> <p>Prepare for national, state and local certifications in all three areas of public safety</p> <p>Refine personal career opportunities and choose personal career opportunities in an area of specialization of public safety</p> |
| <p>WELDING TECHNOLOGY</p> <p>PROGRAM LENGTH 3 years</p> | <ul style="list-style-type: none"> -Use MIG, TIG, stick, and oxyfuel welding -Perform oxyfuel and plasma cutting and air arc gouging -Learn to choose the best welding and cutting process for the job at hand -Prepare for a career as a Construction or Fabrication Welder -Students should have good measurement skills and be willing to work outside and to get dirty | <p>ENGINEERING TECHNOLOGY</p> <p>PROGRAM LENGTH 3 years</p> <p>CERTIFICATION NIMS Certification Cisco Certified A+ CompTIA</p> | <p>Use mills, CNC mills, and lathes</p> <ul style="list-style-type: none"> -Learn to use precision measurement tools -Read blueprints or design parts and machine them to precise specifications -Students should have good problem solving skills -Introduction to Engineering Design -Computer Integrated Manufacturing -Principles of Engineering -Engineering Design & Development |
| <p>NETWORK SYSTEMS TECHNOLOGY</p> <p>PROGRAM LENGTH 3 Years</p> <p>CERTIFICATION Cisco Certified A+ CompTIA</p> | <ul style="list-style-type: none"> -Design, build, configure, and troubleshoot networks -Program routers and switches -Explore wireless and security methods -Learn with interactive and hands-on activities through the Cisco Academy -Prepare for a career as a Network Administrator, Technology Coordinator, Computer Support Specialist or Cable Installer -Students should be enthusiastic about computers and technology, be able to communicate well with others, and have above average math, reading, and science abilities and excellent problem solving skills | <p>HEAVY EQUIPMENT MAINTENANCE</p> <p>PROGRAM LENGTH 3 years</p> <p>CERTIFICATION PA State Inspection License</p> | <ul style="list-style-type: none"> -Service, diagnose, repair, and rebuild trucks, tractors, logging, and construction equipment -Work on both gasoline and diesel powered engines -Use arc welding, oxy/acetylene cutting, and fabrication techniques -Prepare for a career as an Equipment Mechanic, Truck Mechanic, Equipment Manager or Parts Clerk -Students should have good mechanical problem solving and measurement skills and be willing to work outside in inclement weather and in a sometimes dirty environment |

PC NOW COLLEGE COURSES

Automotive Mechanics

AMT112 Brake Systems

AMT113 Steering and Suspension

Culinary Arts

FHD118 ServSafe – Sanitation

Heavy Equipment Maintenance

DSM119 Fuel Systems

DSM141 Heavy Duty Brake Systems

Network Systems Technology

CSC124 Information, Technology, and Society (1st Year Students)

CIT112 Introduction to Gaming and Simulation (2nd Year Students)

To view current advanced credit opportunities articulated with postsecondary institutions, go to the Equivalency Search results at www.collegetransfer.net Select PA

Bureau of Career and Technical Education at the from drop down menu.

The **Capstone Work Experience Program** is available for recommended students in all CTC programs of study.

Seneca Highlands CTC is an equal rights and opportunities school.